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Agricultural and storage choices, environmental conditions and human dynamics from the Iron Age to the Early Medieval period in Northern Portugal

Luís Seabra

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# Agricultural and storage choices, environmental conditions and human dynamics from the Iron Age to the Early Medieval period in Northern Portugal

Luís Seabra

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# Agricultural and storage choices, environmental conditions and human dynamics from the Iron Age to the Early Medieval period in Northern Portugal


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# Resumo

Através de um trabalho multidisciplinar e amplo, pretendemos caracterizar os cultivos, as escolhas agrícolas e práticas de armazenagem no Norte de Portugal, bem como compreender a conexão destas com as condições ambientais locais e regionais e as dinâmicas humanas durante um longo intervalo de tempo, que vai desde a segunda metade do primeiro milénio A.N.E. (Idade do Ferro) até aos séculos X/XI (Alta Idade Média). Para tal, foram analisados seis conjuntos carpológicos (frutos e sementes) oriundos de sítios com diferentes características arqueológicas e cronológicas: "Casa Romana" do Castro de São Domingos (Idade do Ferro-Antiguidade Tardia), Freixo/Tongobriga (Idade do Ferro/Antiguidade Tardia), Castelinho (Idade do Ferro-Período Alto-Imperial), Rei Ramiro (Idade do Ferro-Antiguidade Tardia), Castro S. João das Arribas (Antiguidade Tardia) e Senhora do Barrocal (Alta Idade Média). Foi realizada igualmente uma análise detalhada sobre o centeio (*Secale cereale*), que abrangeu todos os períodos anteriormente mencionados.

Os resultados obtidos demonstraram que os cereais foram sempre dominantes em todos os períodos cronológicos, sendo estes particularmente relevantes em diversos contextos de armazenagem. Os frutos, as leguminosas e as plantas fibrosas/oleaginosas foram incomparavelmente menos abundantes e ubíquas no registo carpológico. O milho-miúdo (*Panicum miliaceum*) foi o cultivo mais ubíquo, tendo sido recuperado em abundância e de forma recorrente em todos os períodos. O milho-painço (*Setaria italica*) foi outro milho frequente em todos os períodos abordados, embora, na maior parte das vezes, encontrava-se em montantes mais reduzidos do que o milho-miúdo. A presença de trigos vestidos e, mais precisamente, de trigo espelta (*Triticum spelta*) foi significativa em depósitos da Idade do Ferro, especialmente em estruturas de armazenagem, mas rara em contextos mais recentes. O trigo de grão nu (*Triticum aestivum/durum*) também foi comum, tendo sido particularmente abundante em conjuntos da Idade do Ferro e Alto-Imperiais associados a estruturas de armazenagem sobrelevadas (*horrea*). A cevada (*Hordeum vulgare*) foi recorrentemente um cereal secundário ou escasso no registo carpológico. Foram encontrados grãos de aveia (*Avena* sp.) em níveis da Idade do Ferro, mas a ausência de bases de flórula de plantas domésticas (*Avena sativa* ou *Avena strigosa*) não permitiu esclarecer se a aveia teria efetivamente sido cultivada durante este período. Foram recuperadas bases de flórula de aveias domésticas na "Casa Romana" do Castro de São Domingos, onde uma datação por radiocarbono sobre grãos de aveia encontrados na mesma unidade

estratigráfica, sugeriu uma cronologia Alto-Imperial para estes restos vegetais. A aveia foi um cultivo primordial no sítio da Alta Idade Média da Senhora do Barrocal. O centeio (*Secale cereale*) terá sido introduzido entre o século III A.N.E. e a primeira metade do século I A.N.E. no Noroeste Peninsular. Desde então e até à viragem da era, foi provavelmente uma erva daninha em campos de trigo espelta. O centeio foi um cultivo importante na Antiguidade Tardia, revelando um registo crescente. A expansão do centeio poderá ter sido uma resposta a vários constrangimentos, tais como mudanças das condições ambientais, dinâmicas culturais ou económicas. O centeio encontrava-se amplamente difundido no período Medieval.

Palavras-chave: Idade do Ferro, Romanização, Antiguidade Tardia, Alta Idade Média, vale do Douro, Norte de Portugal, Análises carpológicas, Biometria, Datações por radiocarbono, Diversidade de cultivos, Estratégias de armazenagem, Condições ambientais, Dinâmicas humanas.

# Abstract

Through a multidisciplinary and broad archaeobotanical approach, we intend to characterize agricultural and storage choices in Northern Portugal and comprehend their connection with the local and regional environmental conditions and human dynamics during a long time-span from the 2nd half of the 1st millennium BCE (Iron Age) to the 10th/11th centuries (Early Medieval Period). For such purpose, six fruits/seeds assemblages from sites with particular archaeological and chronological features were analysed: "Casa Romana" (Roman house) of the Castro de São Domingos (Iron Age-Late Antiquity), Freixo/Tongobriga (Iron Age/Late Antiquity), Castelinho (Iron Age-Early Roman period), Rei Ramiro (Iron Age-Late Antiquity), Castro S. João das Arribas (Late Antiquity) and Senhora do Barrocal (Early Medieval Ages). Along with a detailed analysis of rye (*Secale cereale*), which covered all the aforementioned periods.

Independently of the chronology, the results showed cereals were always dominant, being particularly relevant in multiple storage contexts. Fruits, pulses, and oil/fibre plants were incomparably less abundant and less ubiquitous in the fruits/seeds record. Broomcorn millet (*Panicum miliaceum*) was the most ubiquitous crop, being collected in considerable numbers and recurrent in every period. Foxtail millet (*Setaria italica*) was another millet frequent in all periods addressed, although most times it was recovered in smaller amounts than broomcorn millet. The presence of hulled wheats, and more precisely spelt (*Triticum spelta*) was significant in Iron Age deposits, especially in storage facilities, but rare in later contexts. Naked wheat (*Triticum aestivum/durum*) was also common, and particularly abundant in Iron Age and Early Roman assemblages associated with elevated granaries (*horrea*). Hulled barley (*Hordeum vulgare*) was recurrently a secondary or scarce cereal in the fruits/seeds record. Oat grains (*Avena* sp.) were found in Iron Age levels but the lack of floret bases from domesticated plants (*Avena sativa or Avena strigosa*) did not clarify the doubts about the cultivation of oat during this period. Floret bases with domesticated traits were recovered at "Casa Romana" (Roman house) of the Castro de São Domingos, where a radiocarbon date on oat grains from the same archaeological layer suggested an Early Roman chronology. Oat was a main crop in the Early Medieval site of Senhora do Barrocal. Rye (*Secale cereale*) should have been introduced between the 3rd century BCE and the first half of the 1st century BCE in Northwest Iberia. Since then and until the turn of the Era, it was likely a weed in spelt fields. Rye was an important crop in Late Antiquity, in which period it becomes more frequent in the archaeobotanical record. The expansion of rye might

have been a response to several constraints such as changing environmental conditions, cultural or economic dynamics. It was widespread in the Medieval period.

Keywords: Iron Age, Romanization, Late Antiquity, Early Medieval period, Douro valley, Northern Portugal, Fruits/seeds analyses, Biometry, Radiocarbon dating, Crop diversity, Storage strategies, Environmental conditions, Human dynamics.

# Table of Contents

Table of Contents ..... ix

List of Tables ..... xv

List of Figures ..... xix

**Section A (General Introductions)** ..... 1

Chapter 1 - Introduction ..... 2

1.1. Background: Archaeobotany in Northwest Iberia ..... 2

1.2. Goals ..... 6

1.3. Thesis' structure ..... 8

References ..... 9

Chapter 2 - Materials and Methods ..... 17

2.1. Study area ..... 17

2.1.1. Biogeographical and ecological characterization ..... 18

2.1.2. Chronological context ..... 19

2.2. Sampling strategy ..... 21

2.3. Laboratory work ..... 22

References ..... 24

**Section B (Results)** ..... 29

Chapter 3 - Fruits and seeds from "Casa Romana" (Roman house) of the Castro de São Domingos (Lousada, Northern Portugal) ..... 30

Abstract ..... 31

3.1. The "Casa Romana" (Roman house) of the Castro de São Domingos ..... 31

3.2. Materials and Methods ..... 33

3.2.1. Samples recovered and archaeological contexts ..... 33

3.2.2. Laboratory work ..... 38

3.3. Results ..... 39

3.4. Discussion ..... 46

3.4.1. Archaeological contexts and the interpretation of the plant macrorremains 46

3.4.2. Crops ..... 48
3.5 Conclusions ..... 50
References ..... 52
Chapter 4 - Over the centuries: Long-term crop selection and diversity at Freixo/Tongobriga (Northwest Iberia) ..... 58
Abstract ..... 59
4.1. Introduction ..... 59
4.2. Materials e Methods ..... 62
4.2.1. Sampling and analysed contexts ..... 62
4.2.1.1. South Section - Wall ..... 64
4.2.1.2. Housing Complex I ..... 65
4.2.2. Laboratory work ..... 67
4.3. Fruits/Seeds Results ..... 68
4.3.1. Overall Results ..... 68
4.3.2. Results per Context ..... 71
4.4. Discussion ..... 72
4.4.1. Archaeological contexts, plant remains, and radiocarbon dates: how they complement each other ..... 72
4.4.2. Crops ..... 74
4.5. Final Remarks ..... 76
References ..... 78
Chapter 5 - Crops behind closed walls: Fortified storage at Castelinho in the Late Iron Age of NW Iberia ..... 87
Abstract ..... 88
5.1. Introduction ..... 88
5.2. The site: Castelinho ..... 91
5.3. Material and methods ..... 95
5.3.1. Sampling strategy and archaeological contexts ..... 95
5.3.2. Methods ..... 102

5.3.2.1. Carpological analysis ..... 102
5.3.2.2. Charcoal analysis ..... 103
5.4. Results ..... 103
5.4.1. Carpology ..... 103
5.4.2. Charcoal analysis ..... 108
5.5. Discussion ..... 111
5.5.1. Crops, charcoal and storage structures: how are they related ..... 111
5.5.2. What and how were the crops stored ..... 114
5.5.3. Castelinho in a regional perspective ..... 115
5.6. Conclusions ..... 119
References ..... 121
Chapter 6 - Archaeobotany with Douro view: fruits and seeds from the site of Rei Ramiro (Vila Nova de Gaia, Northern Portugal) ..... 130
Abstract ..... 131
6.1. Introduction ..... 131
6.2. Rei Ramiro ..... 133
6.3. Materials and Methods ..... 134
6.3.1. Sampling strategy and approach to the archaeological contexts ..... 134
6.3.2. Laboratory procedures ..... 137
6.4. Results ..... 137
6.5. Discussion and Conclusions ..... 141
6.5.1. Storage ..... 141
6.5.2. Cereals and fruits ..... 142
References ..... 144
Chapter 7 - Crops on the edge of a cliff: Storage at Castro S. João das Arribas (Northwest Iberia) in the Late Antiquity ..... 147
Abstract ..... 148
7.1. Introduction ..... 148
7.2. The Castro S. João das Arribas site ..... 151

7.2.1. Area 2 and excavated features ..... 152
7.3. Materials and Methods ..... 155
7.3.1. Sampling and associated contexts ..... 155
7.3.2. Laboratory analysis ..... 156
7.4. Results ..... 158
7.4.1. Characterization of the assemblage ..... 158
7.4.2. Spatial distribution ..... 161
7.5. Discussion ..... 163
7.5.1. Crops ..... 163
7.5.2. Storage ..... 166
7.6. Final remarks ..... 168
References ..... 170
Chapter 8 - Crops on the Rocks: Production, Processing, and Storage at the Early Medieval Site of Senhora Do Barrocal (Municipality of Sátão, Central Portugal) ..... 179
Abstract ..... 180
8.1. Introduction ..... 180
8.2. The Medieval site ..... 183
8.3. Materials and Methods ..... 187
8.3.1. Sampling Strategy ..... 187
8.3.2. Laboratory analysis ..... 189
8.3.2.1. Fruits/Seeds ..... 189
8.3.2.2. Charcoal analysis ..... 190
8.3.2.3. Analysis of Food Remains ..... 191
8.4. Results ..... 192
8.4.1. Fruits/Seeds ..... 192
8.4.2. Charcoal Analysis ..... 199
8.4.3. Food Remains ..... 201
8.5. Discussion ..... 204
8.5.1. Storage ..... 204

8.5.2. Crop diversity ..... 209
8.6. Conclusions ..... 212
References ..... 214
Chapter 9 - The introduction and spread of rye in the Iberian Peninsula ..... 224
Abstract ..... 225
9.1. Introduction ..... 225
9.2. Rye in Iberia ..... 226
9.3. Materials and Methods ..... 228
9.3.1. Selection of sites ..... 228
9.3.2. Chronology ..... 229
9.3.3. Biometry ..... 230
9.4. Results ..... 231
9.4.1. Rye in the archaeobotanical record ..... 231
9.4.2. Radiocarbon dating, Bayesian and Kernel Density analysis ..... 233
9.4.3. Biometric approach ..... 237
9.5. Discussion ..... 239
9.5.1. Rye in the Iron Age and Early Roman periods: crop or weed? ..... 239
9.5.2. The (re)introduction of rye ..... 242
9.5.3. The spread of rye in Medieval times ..... 244
9.6. Final Remarks ..... 245
References ..... 247
**Section C (Discussion and Main Conclusions)** ..... 258
Chapter 10 - Synthesizing the results ..... 259
10.1. General overview ..... 259
10.2. Iron Age and Romanization ..... 260
10.3. Late Antiquity ..... 266
10.4. Early Medieval Ages ..... 269
References ..... 271

Chapter 11 - Crop diversity and storage practices, environment and past societies from the Iron Age to the Early Medieval period in Northwest Iberia ..... 278

11.1. Crops: a diachronic perspective..... 278

11.2. Storage of crops in Northwest Iberia..... 285

References..... 289

Chapter 12 - Main conclusions and future work ..... 298

12.1. Final considerations and the future ahead of us ..... 298

References..... 301

Attachments..... 306

Attachment 1 - Fruits and seeds from “Casa Romana” (Roman house) of the Castro de São Domingos (Lousada, Northern Portugal) (Supplementary material of Chapter 3)..... 307

Attachment 2 - Over the centuries: Long-term crop selection and diversity at Freixo/Tongobriga (Northwest Iberia) (Supplementary material of Chapter 4) ..... 321

Attachment 3 - Crops behind closed walls: Fortified storage at Castelinho in the Late Iron Age of NW Iberia (Supplementary material of Chapter 5)..... 336

Attachment 4 - Archaeobotany with Douro view: fruits and seeds from the site of Rei Ramiro (Vila Nova de Gaia, Northern Portugal) (Supplementary material of Chapter 6) ..... 366

Attachment 5 - Crops on the edge of a cliff: Storage at Castro S. João das Arribas (Northwest Iberia) in the Late Antiquity (Supplementary material of Chapter 7)..... 388

Attachment 6 - Crops on the Rocks: Production, Processing, and Storage at the Early Medieval Site of Senhora Do Barrocal (Municipality of Sátão, Central Portugal) (Supplementary material of Chapter 8)..... 391

Attachment 7 - The introduction and spread of rye in the Iberian Peninsula (Chapter 9)..... 468

References (Attachment 7)..... 479

# List of Tables

## Chapter 2

Table 2.1 - Overview of the recovery/processing strategies applied in each archaeological site. ..... 22

## Chapter 3

Table 3.1 - Inventory of samples, provenance and archaeological contextualization... 35
Table 3.2 - Radiocarbon dates obtained at “Casa Romana” (Roman house) of the Castro de São Domingos. Calibration through OxCal software (version 4.4.4), calibration curve IntCal 13 (Reimer et al., 2020). ..... 38
Table 3.3 - Carpological results (units and per type of archaeological context) from “Casa Romana” (Roman house) of the Castro de São Domingos. ..... 42

## Chapter 4

Table 4.1 - Radiocarbon dates obtained at Freixo/Tongobriga. Calibration OxCal 4.4.4 software (Bronk Ramsey, 2001), IntCal 20 calibration curve (Reimer et al., 2020). The calibrated ages were rounded to the nearest five (uncertainties below 25) and 10 (uncertainties above 25) years, following Bayliss and Marshall (2022)..... 64
Table 4.2 - Fruits/Seeds Results per Context, at Freixo/Tongobriga. ..... 70

## Chapter 5

Table 5.1 - Radiocarbon dates from the storage facilities at Castelinho. Calibration OxCal 4.3 software, IntCal 13 calibration curve (Reimer et al., 2013). ..... 95
Table 5.2 - Typology of contexts. ..... 97
Table 5.3 - Carpology: results per storage facility (units only, for data including fragments see Table A3.3 in Attachment 3). ..... 104
Table 5.4 - Charcoal and taxa ubiquity per context typology (Ubi = ubiquity). ..... 110

## Chapter 6

Table 6.1 - Synthesis of the sampled contexts at Rei Ramiro. ..... 136
Table 6.2 - Carpological results at Rei Ramiro (only units). ..... 140

## Chapter 7

Table 7.1 - Radiocarbon date from Vessel 1 at Castro S. João das Arribas. Calibration OxCal 4.4 software (Bronk Ramsey, 2009), IntCal20 calibration curve (Reimer et al., 2020). ..... 155
Table 7.2 - Inventory from Area 2, at CSJAMD. ..... 156
Table 7.3 - Subsampling applied over light fractions, at CSJAMD ..... 157
Table 7.4 - Carpological results at CSJAMD. ..... 159

## Chapter 8

Table 8.1 - Radiocarbon dates obtained from Sector 1 at SB. Calibration OxCal 4.4.2 software (Bronk Ramsey, 2009), IntCal 20 calibration curve (Reimer et al., 2020). ... 186
Table 8.2 - Overview of the sampling and recovery strategies applied by phase and moment (detailed data in Table A6.1 in Attachment 6). ..... 188
Table 8.3 - Fruits/Seeds of crops and likely cultivated species. ..... 195
Table 8.4 - Charcoal results from SB. ..... 200

## Chapter 9

Table 9.1 - Rye grains measured (provenance and amounts). ..... 231
Table 9.2 - Rye record per site and period. For more details, see Table A7.2 in Attachment 7. ..... 233
Table 9.3 - Rye $^{14}C$ dates. Calibration OxCal 4.4.4 software (Bronk Ramsey, 2001), IntCal20 calibration curve (Reimer et al., 2020). The calibrated ages were rounded to the nearest five ($^{14}C$ dates with uncertainties below 25) and 10 ($^{14}C$ dates with uncertainties equal to or above 25) years, following Bayliss and Marshall (2022)). ..... 234
Table 9.4 - General results of the biometric study. Minimum (Min.), maximum (Max.), mean, and standard deviation (SD) values of each measurement point (length, width, thickness). ..... 237

## Chapter 10

Table 10.1 - General fruits/seeds results of the study cases (individual sites). For more details, see the respective chapter of each study in section B. ..... 260
Table 10.2 - Radiocarbon date obtained at Terronha de Pinhovelo. Calibration through OxCal software (version 4.4.4) (Bronk Ramsey, 2001) IntCal20 calibration curve (Reimer et al., 2020). ..... 263

## Attachment 1

Table A1.1 - Subsampling applied at “Casa Romana” (Roman house) of the Castro de São Domingos. ..... 308
Table A1.2 - Full Carpological results from “Casa Romana” (Roman house) of the Castro de São Domingos. ..... 309

## Attachment 2

Table A2.1 - Freixo/Tongobriga Inventory. ..... 322
Table A2.2 - Subsampling applied at Freixo/Tongobriga. ..... 323
Table A2.3 - Results per sample and s.u. (both units and fragments). ..... 324

## Attachment 3

Table A3.1 - Castelinho Inventory. ..... 337
Table A3.2 - Light fractions subsampled at Castelinho. ..... 344
Table A3.3 - Total results of the Carpological analysis. In some contexts, volume was not recorded (N.A.= Non Available). In others it was only partially recorded (see Table A3.1) and number of remains per litre may be slightly overestimated. ..... 345
Table A3.4 - Total results of the Charcoal analysis. ..... 359

## Attachment 4

Table A4.1 - Rei Ramiro Inventory. ..... 367
Table A4.2 - Subsampling applied at Rei Ramiro. ..... 369
Table A4.3 - Full carpological results from Rei Ramiro. ..... 370

## Attachment 5

Table A5.1 - Full Carpological results (units and fragments). ..... 389

## Attachment 6

Table A6.1 - General Inventory. ..... 392
Table A6.2 - Subsampling strategy. ..... 398
Table A6.3 - Fruits/seeds results per S.U., Moment and Phase (units only). ..... 399
Table A6.4 - Fruits/seeds results per Sample..... 403
Table A6.5 - Fruits/Seeds results per Square and S.U. ..... 439
Table A6.6 - Fruits/seeds per litre (units and only samples from 2016 campaign). ..... 455
Table A6.7- Charcoal results (Phase 1). ..... 459
Table A6.8 - Charcoal results (Phase 2). ..... 462
Table A6.9 - Tree ring curvature, vitrification, and radial cracks per taxon. ..... 466
Table A6.10 - Analysed charred food products. ..... 467

## Attachment 7

Table A7.1 - Sites with macroremains of rye in Iberian Peninsula until the Late Medieval period (15th century CE), and the amount of both grains and chaff remains recovered in each one of them. ..... 469
Table A7.2 - Representativeness of rye in the archaeobotanical record of the 15 sites addressed in this approach. Analysis per period, including the identification of the predominant cereal and other cereals as well. ..... 470
Table A7.3 - Table with the results of the KDE and Bayesian analysis, including only modelled data (adapted from the OxCal software (version 4.4.4.) (Bronk Ramsey, 2001) and applying IntCal20 calibration curve (Reimer et al., 2020). The Medieval 14C date from SB was not included. All modelled ages were rounded to the nearest five years, following Bayliss and Marshall (Bayliss and Marshall, 2022). ..... 471

# List of Figures

## Chapter 2

Figure 2.1 - Study area and sites analysed. Legend: 1-“Casa Romana” (Roman house) of the Castro de São Domingos; 2-Freixo/Tongobriga; 3-Castelinho; 4-Rei Ramiro; 5-Castro S. João das Arribas; 6-Senhora do Barrocal. ..... 18
Figure 2.2 - Period of time addressed in each study case (Chapters). Legend: 3-“Casa Romana” (Roman house) of the Castro de São Domingos, 4-Freixo/Tongobriga, 5-Castelinho, 6-Rei Ramiro, 7-Castro S. João das Arribas, 8-Senhora do Barrocal, 9-Rye. For more details, see the individual chapters in the results section (B). ..... 20

## Chapter 3

Figure 3.1 - Location of the sites mentioned in the paper (Northwest Iberia): 1-“Casa Romana” (Roman house) of the Castro de São Domingos; 2-Crastoeiro; 3-Freixo/Tongobriga. ..... 33
Figure 3.2 - Aerial view of the “Casa Romana” (Roman house) of the Castro de São Domingos with indication of the sampled contexts. ..... 36
Figure 3.3 - Main carpological remains identified at “Casa Romana” (Roman house). Legend: 1-Grape (pedicel); 2-Rye (rachis segment); 3-Spelt (glume base); 4-Oat (floret base); 5-Naked wheat (rachis segment); 6-Grape (pip); 7-Rye (grain); 8-Spelt (grain); 9-Oat (grain); 10-Naked wheat (grain); 11-Faba bean (seed); 12-Hulled barley (grain); 13-Broomcorn millet (grain); 14- Foxtail millet (grain); 15- Bread wheat (rachis segment). ..... 41
Figure 3.4 - Main cereals (grains) identified at “Casa Romana” (Roman house) per archaeological context. ..... 45
Figure 3.5 - Main cereals (chaff) identified at “Casa Romana” (Roman house) per archaeological context. ..... 46

## Chapter 4

Figure 4.1 - Location of the sites mentioned in the article: 1-Freixo/Tongobriga; 2-Monte Mozinho; 3-“Casa Romana” (Roman house) of the Castro de São Domingos; 4-Crastoeiro; 5-Castro de Guifões; 6-Rei Ramiro; 7-*Aquae Flaviae*; 8–O Areal. ..... 62
Figure 4.2 - Location of the habitational areas (yellow) and studied contexts (orange). Adapted from Lima et al., 2020 (Proposal of the Wall´s perimeter by António Lima, drawn by António Freitas). Scale 400 meters. ..... 63
Figure 4.3 - Excavation of [5], next to the Iron Age wall. Scale 50cm. ..... 65
Figure 4.4 - Round hut (blue) and excavated area in 2015 (orange). Scale 1m..... 66
Figure 4.5 - Above: a) *Impluvium* house (adapted from Rocha et al., 2014) and excavated area (orange). Scale 4m. Below: b) Drainage system covered by stones [10]; c) Stratigraphic section (after the excavation). Scales 0.50 cm. ..... 67
Figure 4.6 - Main cereal grains in the Wall, *Impluvium* house and Round hut, at Freixo/Tongobriga. ..... 72

## Chapter 5

Figure 5.1 - Location of the sites mentioned in the article (NW Iberia): 1-Castelinho; 2-Cemitério dos Mouros; 3-Chã; 4-Quinta de Crestelos; 5-Terraço das Laranjeiras; 6-Crasto de Palheiros; 7-Crastoeiro; 8-As Laias; 9-Castrovite; 10-La Corona /El Pesadero; 11-Quintal da Casa Grande; 12-Casa do Nelo; 13-Vale do Mouro. ..... 91
Figure 5.2 - Castelinho location and its proximity with Cemitério dos Mouros and the Sabor River (Adapted from Santos and Ladra, 2016). ..... 92
Figure 5.3 - Castelinho overview plan. ..... 93
Figure 5.4 - Two fire structures identified at Castelinho: Left – Hearth 480; Right – Oven 750. Photo Credit: Filipe Santos. ..... 97
Figure 5.5 - Storage facilities found at Castelinho. Above: Left – *Horreum* III; Right – *Horreum* II. Below: Left – Semicircular structure 380; Right – *Dolium* 352. Photo Credit: Filipe Santos ..... 99
Figure 5.6 - *Horrea* in the southwest area. Photo Credit: Filipe Santos. ..... 100
Figure 5.7 - Main crops at Castelinho: *Triticum aestivum/durum* (1), *Hordeum vulgare* (2), *Panicum miliaceum* (3). Scale (1 mm). ..... 105

## Chapter 6

Figure 6.1 - Two structures identified at Rei Ramiro: storage structure (*horreum*) and one circular house (Context B). Location of the site in Northwest Iberia (at the top right corner). ..... 132

## Chapter 7

Figure 7.1 - Location of the sites mentioned in the text (NW Iberia): 1-Castro S. João das Arribas; 2-Quinta de Crestelos; 3-Agro de Deus; 4-A Mourela; 5-Tabacalera. ..... 150
Figure 7.2 - Aerial view of Area 2. Legend: W - Wall; S - Structure; V - Vessel; P - Pit. ..... 152
Figure 7.3 - Detailed view of Structures [229] (above) and [247] (below). ..... 153
Figure 7.4 - Some of the fruits/seeds remains identified at CSJAMD. Grains of *Hordeum vulgare* (1), *Triticum aestivum/durum* (2), *Secale cereale* (3), *Panicum miliaceum* (4), *Setaria italica* (5). Seed (6), capsule (7), pedicel (8) of *Agrostemma githago*. Grain of *Bromus* sp. (9). ..... 160
Figure 7.5 – Ceramic vessel with carpological remains inside..... 161
Figure 7.6 – Individual results of the main cereal crops at CSJAMD. ..... 163

## Chapter 8

Figure 8.1 - Location of Senhora do Barrocal (SB) and other sites in Central Portugal with fruits/seeds. ..... 183
Figure 8.2 - Sector 1 implantation (**A**); Sector 1 overview (**B**); wall 112 dismantling (**C**). ..... 184
Figure 8.3 - Relation between the archaeological contexts, structures, and site phasing. ..... 185
Figure 8.4 - Individual results of the main cereal grains and chaff per square in Sector 1 (total results); only units. Foxtail millet grains were scarce, and for that reason are not graphically represented. Results from the first moment as well from row G onwards revealed few remains and for that reason are not included. ..... 193
Figure 8.5 - Some of the fruits/seeds found at SB: 1—rye grain; 2— Hulled grain of oat; 3—barley grain with husk remains still attached; 4—naked wheat grain; 5—broomcorn

millet grain; 6—faba bean seed; 7- lentil seed; 8—berry and pip of grape; 9—chestnut fruit. With the exception of chestnut (5 mm scale), all remains show a 1 mm scale... 194
Figure 8.6 - Square analysis per phase. All fruits/seeds (**A, B**); main cereal grains (**C, D**); only units. Results from the first moment as well from row G onwards revealed few remains and for that reason are not included. ..... 197
Figure 8.7 - Several SEM micrographs of food fragments from SB: (**1**) porridge-like fragment from s.u. 130 made with coarse plant flour; (**2**) bread-like fragment from s.u. 125 made with fine plant flour; (**3A**) SEM micrograph showing fragment of cereal grain embedded in the food matrix; (**3B**) detail of cereal fragment with visible cross-section of epidermis layers (bran and aleurone layers); (**4A**) SEM micrograph showing fragments of aleurone layers embedded in the food matrix; (**4B**) detail of aleurone layer fragment showing the typical rectangular and elongated shape and arrangement of rye/oats aleurone cells; (**5A**) SEM micrograph showing a fragment of cereal bran embedded in the food matrix; (**5B**) detail of bran fragment with visible wheat transverse cells, which differ from those of rye and oats in their elongated shape and prolonged, pointy ends; (**6A**) SEM micrograph showing fragment of legume seed embedded in the food matrix; (**6B**) detail of legume seed with visible hourglass and palisade layer, which measured approximately 30–50 µm in thickness. This is consistent with measurements ranging from 20–70 µm for small pulses such as lentil (*Lens culinaris*) or vetch (*Vicia sativa*). ..... 204

## Chapter 9

Figure 9.1 - Iberian sites with macroremains of rye until the Late Medieval period (15th century CE) (see more details in Table A7.1 in Attachment 7). Legend: 1-Can Gelats, 2-Vilauba, 3- l´Esquerda, 4-Els Mallols, 5-Camp Vermell, 6-Roc d´Enclar, 7-Carrer dels Bafart, 8-Bovalar, 9-Las Sillas, 10-El Quemao, 11-Cabezo de la Cisterna, 12-Los Pozos de Bureta, 13-La Mora Encantada, 14-Palacio de Bulbuente, 15-Casa Conventual de Ambel, 16-Gasteiz, 17-Gózquez, 18-Melque, 19-Albalat, 20-Castro S. João das Arribas, 21-Cabeço da Grincha, 22-Quinta de Crestelos, 23-Castelo Pequeno de Santigoso, 24-São Gens, 25-Senhora do Barrocal, 26-Crastoeiro, 27-Quinta da Torrinha, 28-Cruito, 29-Castro de Astariz, 30-Freixo/Tongobriga, 31-“Casa Romana” (Roman house) of the Castro de São Domingos, 32-Monte Mozinho, 33-Castelo de Silves, 34-Castelo de Crestuma, 35-A Rocha Forte, 36-Convento de S. Francisco de Santarém, 37-Ponte do Burgo, 38-Castro de Guifões. ..... 228

Figure 9.2 - Fruits/seeds assemblages with (blue dots) and without (grey dots) rye from Iron Age and Early Roman contexts (4th century BCE-1st century CE) in Northwest Iberia. Legend of sites with rye: 1-CDCR, 2-CRT, 3-CPS, 4-CRUI, 5-TONG. ..... 231
Figure 9.3 - Fruits/seeds assemblages with (blue dots) and without (grey dots) rye from Roman and Late Antique contexts (2nd century CE-7th century CE) in Northwest Iberia. Legend of sites with rye: 1-CDCR, 2-GUIF, 3-CRES, 4-MOZ, 5-TONG, 6-AST, 7-CDG, 8-QCREST, 9-CSJAMD. The only medieval site with a 14C date of rye (SB) was also included in this figure. ..... 232
Figure 9.4 - OxCal plots of the Bayesian and KDE analysis. Above: Stacked plot with start (green) and end (red) boundaries as well as the KDE_Plots of each group (blue). Below: Multiple plot including the two sequential phases and the respective boundaries as well as the modelled data (dark grey) of each radiocarbon date. Model carried out through OxCal 4.4.4 software (Bronk Ramsey, 2001), IntCal20 calibration curve (Reimer et al., 2020). All modelled ages were rounded to the nearest five years, following Bayliss and Marshall (2020). ..... 235
Figure 9.5 - Graphical representation of the measurements and some of the ratios obtained (see full details in A7.1 Figs. in Attachment 7). Sites are arranged chronologically from left (earlier) to right (later). ..... 238
Figure 9.6 - Rye grains (dorsal, lateral, and ventral views) from all analysed periods. Legend: a) CRT (Iron Age/Early Roman), b) MOZ (Late Antiquity), c) CSJAMD (Late Antiquity); d) SB (Medieval). Scale 1mm. ..... 244

## Chapter 10

Figure 10.1 - Iron Age contexts (5th century BCE to the late 1st century BCE) with fruits/seeds remains (Northwest Iberia). The grey circles correspond to the fruits/seeds studies developed until this thesis started (2019), whereas the red circles correspond to the studies carried out during the course of this thesis, whether on the scope of this work or other projects. Legend: 1-“Casa Romana” (Roman house) of the Castro de São Domingos (Chapter 3); 2-Freixo/Tongobriga (Chapter 4); 3-Castelinho (Chapter 5); 4-Rei Ramiro (Chapter 6); 5-Terronha de Pinhovelo (this chapter); 6-Castelo Pequeno de Santigoso (Chapter 9); 7-Castro de Guifões (Seabra et al., 2020); 8-Cruito (Pinto da Silva, 1990); 9-Cidadelhe (Vaz et al., 2016b); 10-Quinta de Crestelos (Tereso et al., 2018a); 11-Chã (Vaz et al, 2016c); 12-Castro de Palheiros (Figueiral et al., 2017; Leite et al., 2018); 13-Crastoeiro (Seabra et al., 2018); 13-Briteiros (Tereso and Cruz, 2014); 15- Frijão (Tereso and Silva, 2014); 16-Cossourado (Silva, 2008); 17-S. João de Rei

(Dopazo Martínez, 1996); 18-Lesenho (Tereso, 2012); 19-Cristelo (Silva, 2008); 20-Castro de Nabás (Martín-Seijo et al., 2019; Teira-Brión, 2019); 21-Castro da Illa de Toralla (Teira-Brión, 2019); 22-Castro de Punta do Muíño do Vento (Teira-Brión, 2019); 23-Castromao (García Rollán, 1971); 24-Monte do Facho (Teira-Brión, 2019); 25-Castro de Montealegre (Teira-Brión, 2019); 26-As Laias (Tereso, 2012; Tereso et al., 2013b); 27-El Castrelín (López-Merino et al., 2010); 28-Montaz (Téllez et al., 1990); 29-Cortegada (Arnanz and Chamorro, 1990); 30-Alto do Castro (Dopazo Martínez et al., 1996); 31-Castrolandín (Teira-Brión, 2019); 32-Castro da Cidá (Teira-Brión, 2019); 33-Castrovite (Teira-Brión, 2019); 34-Castro de Recarea (Teira-Brión, 2019); 35-Borneiro (Bettencourt, 1999); 36-Castro de Vixil (Ramil Rego, 1993). Fruits/seeds assemblages with unclear archaeobotanical and/or chronological data were excluded from this figure. ..... 261

Figure 10.2 - Early Roman contexts (late 1st century BCE – 3rd century CE) with fruits/seeds remains (Northwest Iberia). The grey circles correspond to the fruits/seeds studies developed until this thesis started (2019), whereas the red circles correspond to the studies carried out during the course of this thesis, whether on the scope of this work or other projects. Legend: 1-“Casa Romana” (Roman house) of the Castro de São Domingos (Chapter 3); 2-Castelinho (Chapter 5); 3-Rei Ramiro (Chapter 6); 4-Castro de Guifões (Seabra et al., 2020); 5- Necropolis of *Via XVII* (Vaz et al., 2021); 6-Olival do Poço da Barca (Tereso et al., 2020); 7-Cemitério dos Mouros (Tereso et al., 2020); 8-Olival da Santa (Tereso et al., 2020); 9-Foz da Ribeira do Poio (Tereso et al., 2018b, 2020); 10-Cidadelhe (Vaz et al., 2016b); 11-Quinta de Crestelos (Tereso et al., 2018a); 12-Chã (Vaz et al., 2016c); 13-Castro de Palheiros (Figueiral et al., 2017; Leite et al., 2018); 14- Ermidas (Queiroga, 1992); 15-Briteiros (Tereso and Cruz, 2014); 16-A Burgueira (Peña-Chocarro et al., 2019b); 17-Monte Baixo (Teira-Brión, 2019); 18-San Cibran de Lás (Tereso et al., 2013a); 19-Reza Vella (Teira-Brión, 2019); 20-Castro de Orellán (López-Merino et al., 2010); 21-Castrolandín (Teira-Brión, 2019); 22-Montaz (Arnanz and Chamorro, 1990); 23-Castrovite (Teira-Brión, 2019); 24-Castro Pedro (Criado Boado, 1991); Petón do Castro (Dopazo-Martínez, 1996). Fruits/seeds assemblages with unclear archaeobotanical and/or chronological data were excluded from this figure. ..... 266

Figure 10.3 - Late Antique contexts (3rd-7th centuries CE) with fruits/seeds remains. The grey circles correspond to the fruits/seeds studies developed until this thesis started (2019), whereas the red circles correspond to the studies carried out during the course of this thesis, whether on the scope of this work or other projects. Legend: 1-“Casa Romana” (Roman house) of the Castro de São Domingos (Chapter 3); 2-

Freixo/Tongobriga (Chapter 4); 3-Rei Ramiro (Chapter 6); 4-Castro S. João das Arribas (Chapter 7); 5-Castelo de Crestuma (Chapter 9); 6-Castro de Guifões (Seabra et al., 2020); 7-Necropolis of *Via XVII* (Vaz et al., 2021); 8-Cemitério dos Mouros (Tereso et al., 2020); 9-Olival da Santa (Tereso et al., 2020); 10-Vale da Bouça (Tereso et al., 2020); 11-Cabeço da Grincha (Tereso et al., 2020); 12-Monte Mozinho (Tereso et al., 2013c; Vaz et al., 2017); 13-Quinta de Crestelos (Tereso et al., 2018c); 14-Castro de São Lourenço (Tereso, 2012); 15-*Aquae Flaviae* (Vaz et al., 2016a); 16-O Areal (Teira-Brión, 2010, 2019, 2022);17-Agro de Deus (Peña-Chocarro et al., 2019b); 18- Rua Ferreiría nº59 (Teira-Brión, 2019); 19-Cova do Xato (Teira-Brión et al., 2012); 20-A Mourela (Antolín and Alonso, 2009); 21-La Tabacalera (Carrión Marco et al., 2015; Peña-Chocarro et al., 2019a). Fruits/seeds assemblages with unclear archaeobotanical and/or chronological data were excluded from this figure. ..... 267

Figure 10.4 - Early Medieval contexts ($8^{th}$-$10^{th}$/$11^{th}$ centuries CE) with fruits/seeds remains. The grey circles correspond to the fruits/seeds studies developed until this thesis started (2019), whereas the red circle corresponds to the study carried out on the scope of this work. Legend: 1-Senhora do Barrocal (Chapter 8); 2-São Gens (Queiroz, 2009b; Oliveira et al., 2017) 3-Soida (Queiroz 2009a); 4- Penedo dos Mouros (Queiroz and Ruas, 2001; Queiroz and van Leeuwaarden, 2003); 5-Quinta de Crestelos (Tereso et al., 2018c) 6-Cova Eirós (Teira-Brión et al., 2012); 7-A Pataqueira (Teira-Brión, 2013); 8-A Mourela (Antolín and Alonso, 2009). Fruits/seeds assemblages with unclear archaeobotanical and/or chronological data were excluded from this figure. ..... 270

## Attachment 7

Figures A7.1 - Figures obtained through the statistical analyses carried out in R (biometric approach). ..... 472

# Section A (General Introductions)

# Chapter 1 - Introduction

## 1.1. Background: Archaeobotany in Northwest Iberia

In the last 25 years there has been considerable progress in the Archaeobotany of Northwest Iberia as the number of investigators and sites studied increased and the work carried out in both fruits/seeds and charcoal analysis gained further impact in the interpretation of several chronological and cultural realities. The earliest fruits/seeds findings occurred almost a century ago (Netolitzky, 1935; Neuweiler, 1935; López-Cuevillas, 1953; Afonso do Paço, 1954), although more frequent analyses were only conducted some decades after, by A. R. Pinto da Silva in Northern Portugal (e.g. Santos and Isidoro, 1963; Jorge, 1980; Pinto da Silva, 1988). In this initial phase, the recovery of plant remains was sporadic and restricted to handpicking of large visible remains, such as acorns (*Quercus* sp.) or pseudobulbs of tuber oat-grass (*Arrhenatherum elatius* subsp. *bulbosum*), easily recovered in the field. Some cereals were sometimes found. Still, despite following procedures far from the current standards, those pioneering studies raised some awareness towards Archaeobotany and its scientific relevance.

Around the 1990s, archaeobotanical research developed by closely interpreting archaeological contexts and botanical remains, as well as through improvements in both field and laboratory works, which were already observed elsewhere (e.g. Pearsall, 2015). Thus, the archaeobotanical studies gradually increased in Northwest Iberia, mostly those addressing fruits/seeds (e.g. Aira Rodriguez et al., 1990; Ramil-Rego and Rodriguez, 1993; Dopazo Martínez, 1996) and charcoal analyses (e.g. Figueiral, 1990; Badal, 1992; Vernet and Figueiral, 1993), although the recovery and processing of sediment samples continued to be occasional. This started to change slowly and with geographic and chronological asymmetries in the first two decades of the 21$^{st}$ century.

Meanwhile, and until this thesis started (2019), several approaches to fruits/seeds assemblages were carried out, on the scope of academic works (Oliveira, 2000; Tereso, 2007, 2012; Seabra, 2015; Leite, 2017; Teira-Brión, 2019) or other projects (e.g. Antolín and Alonso, 2009; Teira-Brión, 2010a; Tereso and Silva, 2014; Tereso et al., 2018a; Peña-Chocarro et al., 2019b), and besides site-studies new chronological/regional synthesis were produced. Moreover, research on specific topics, such as storage (e.g. Parcero Oubiña and Ayán Vila, 2009; Teira-Brión et al., 2016), particular species (e.g. Teira-Brión, 2013; Moreno-Larrazabal et al., 2015), or methodological procedures

(Martín-Seijo et al., 2010) showed the integration of Archaeobotany in multidisciplinary approaches of archaeological studies.

Although studies were carried out in sites spread across the whole Northwestern territory, the vast majority has focused on Protohistoric and Roman chronologies, with a particular emphasis in Iron Age hillforts. In these sites, plant remains were frequently found charred and the assemblages of fruits and seeds were dominated by crops, particularly cereals (see syntheses of Tereso (2012) and Teira-Brión (2019)). Two hulled wheats, namely emmer (*Triticum dicoccum*) and spelt (*Triticum spelta*), and broomcorn millet (*Panicum miliaceum*) were recovered more often and in larger proportions (Figueiral, 2008; Tereso, 2012; Figueiral et al., 2017; Leite et al., 2018; Seabra et al., 2018; Teira-Brión, 2019). Grains and spikelets of those hulled wheats were difficult to distinguish, being often designated as emmer/spelt (*Triticum dicoccum/spelta*) (Figueiral, 2008; Tereso, 2012; Figueiral et al., 2017; Leite et al., 2018; Teira-Brión, 2019). When distinguishable, it was observed that spelt was dominant (Tereso, 2012; Tereso et al., 2013b; Seabra et al., 2018). Another important crop in Northwest Iberia was broomcorn millet, at least since the Late Bronze Age (Aira Rodríguez et al., 1990; Tereso, 2012; Tereso et al., 2016). In Iron Age levels, higher concentrations of broomcorn millet were found, demonstrating its relevance increased (Dopazo Martínez, 1996; Rey Castiñeira et al., 2011; Tereso, 2012; Figueiral et al., 2017; Tereso et al., 2018a; Teira-Brión, 2019).

Other cereals were also significant in the fruits/seeds record. Hulled barley (*Hordeum vulgare*) and naked wheat (*Triticum aestivum/durum*) were common, but in most cases, they were collected in small amounts, particularly the former (Tereso, 2012; Teira-Brión, 2019). Until recently, evidence of foxtail millet (*Setaria italica*) was rare. Several new findings, including abundant concentrations of grains, suggest that it was also an important crop throughout the Iron Age in Northwest Iberia (Seabra et al., 2018; Martín-Seijo et al., 2019; Teira-Brión, 2019).

There are several sites with oat (*Avena* sp.) grains and some revealed considerable assemblages (Dopazo Martínez, 1996; Tereso, 2012; Tereso et al., 2013a, Tereso et al., 2013c; Seabra et al., 2018; Teira-Brión, 2019). Oat was perhaps a crop in the Iron Age, although some caution is required since it is also a common weed, and floret bases were not found in those assemblages, being those crucial for the crop/weed distinction. Analogous questions were raised by the presence of rye (*Secale cereale*) in a Late Iron Age context at Crastoeiro (Mondim de Basto, Northern Portugal). Grains were radiocarbon dated and showed the oldest chronology ($2^{nd}$-$1^{st}$ centuries BCE) of rye in the whole Iberian Peninsula (Seabra, 2015; Seabra et al., 2018). However, at the

moment the work for this thesis started, the cultural and chronological contexts of rye´s introduction were not completely clear, as well as if those remains correspond to weeds or crops.

Other remains rather than cereals were rare in Iron Age contexts. The main pulses were pea (*Pisum sativum*) and chiefly faba bean (*Vicia faba*). The fruits found are often hard to interpret. Acorn was the most conspicuous wild fruit. Independently of the recovery/sampling strategies, acorn remains were repeatedly present (Pinto da Silva, 1988; Tereso, 2012; Seabra et al., 2018; Teira-Brión, 2019). Pips and pedicels of grape (*Vitis vinifera*) were also recurrent (Tereso, 2012; Leite et al., 2018; Seabra et al., 2018; Teira-Brión, 2019). However, remains found are insufficiently to conduct morphological analysis in order to properly classify those as wild or domesticated (e.g. Bouby et al., 2013; Pagnoux et al., 2015; Valamoti et al., 2020). An identical interpretation could be pointed to the rare olive stones (*Olea europaea*) recovered (Silva, 2008; Tereso et al., 2018a). Plus, wine or oil presses were found in the region, but while some were ascribed to the Roman period, others were difficult to date and none has been securely attributed an Iron Age chronology. The blackberry/raspberry (*Rubus* sp. / *Rubus fruticosus*) was another typical fruit in Northwestern sites (Tereso, 2012; Vaz et al., 2016b; Seabra et al., 2018; Teira-Brión, 2019). Remains of stone pine (*Pinus pinea*), strawberry tree (*Arbutus unedo*), and wild pear (*Pyrus* sp. / *Pyrus cordata*) were scarce and mostly related to single-site findings (Figueiral, 2008; Figueiral et al., 2017; Leite et al., 2018; Teira-Brión, 2019). Most of these edible fruits were probably gathered and consumed frequently by Iron Age communities but as they were consumed fresh and/or had no contact with fire, they were not preserved in the archaeobotanical record.

The majority of the fruits/seeds recovered were associated with storage structures. Storage occurred in a variety of facilities with different architectural features and atmospheric conditions, either aboveground or underground structures. In pits, stone and wattle and daub structures, hulled wheats and broomcorn millet were predominant (Figueiral, 2008; Tereso, 2012; Tereso et al., 2013b; Figueiral et al., 2017; Leite et al., 2018; Seabra et al., 2018; Teira-Brión, 2019). In a pit at S. João de Rei (Póvoa de Lanhoso, Northern Portugal), grains of broomcorn millet and wheat (*Triticum* sp.) were recurrent (Dopazo Martínez, 1996; Bettencourt, 1999; Oliveira, 2000), whilst in the *horrea* of Quinta de Crestelos (Mogadouro, Northern Portugal), naked wheat was dominant alongside broomcorn millet (Tereso et al., 2018a). Finally, hulled barley was common in all storage facilities, but grains were usually in reduced amounts.

It is difficult to characterize the whole archaeobotanical data from the Roman period in Northwest Iberia since evidence from sites established during Early Imperial times is reduced. In fact, most fruits/seeds assemblages came from hillforts with a previous indigenous occupation, being cereals clearly dominant, and changes regarding the Iron Age assemblages almost unrecognizable (Queiroga, 1992; López-Merino et al., 2010; Tereso, 2012; Tereso et al., 2013a; Vaz et al., 2016c; Figueiral et al., 2017; Tereso et al., 2018a, 2018b; Peña-Chocarro et al., 2019b; Teira-Brión, 2019). This may represent a biased view of the Early Roman agriculture in Northwest Iberia, considering the lack of samples from Roman founded sites and the concentration of studies in indigenous-type settlements. Zooarchaeological investigation in Northwest Iberia already showed that there were different patterns of meat consumption in Roman cities when compared with Roman levels from hillforts of the same region (Fernández-Rodríguez, 2010).

A different scenario was observed in Late Roman times. There were more rich assemblages, particularly from two waterlogged contexts (O Areal (Pontevedra, Galicia) and *Aquae Flaviae* (Chaves, Northern Portugal)) which revealed a diverse set and unprecedented assemblages of fruits/seeds, allowing a better understanding of the Roman impact in the economy and agriculture of Northwest Iberia (Teira-Brión, 2010b; Tereso et al., 2013a; Vaz et al., 2016a; Teira-Brión, 2019). In the saltworks of O Areal, broomcorn millet was the major crop, but a vast array of plant remains likely associated with different agricultural spaces emerged, such as celery (*Apium graveolens*), melon (*Cucumis melo*), fig (*Ficus carica*), chestnut (*Castanea sativa*) or several Rosaceae species (Teira-Brión, 2010b; Teira-Brión, 2019). At the healing spa of *Aquae Flaviae* remains correspond only to fruits, which may be a consequence of the recovery method applied. This assemblage showed similarities, but it was less diverse than that of O Areal. Still, it stands out the recovery of several entire pine cones (*Pinus pinea* and *Pinus pinaster*), walnut shells (*Juglans regia*) as well as a galbulus of cypress tree (*Cupressus sempervirens*), the latest probably originated from ornamental trees (Vaz et al., 2016a).

Unsurprisingly, charred assemblages showed a preponderance of cereals, while pulses and fruits were scarce. There are not many Late Roman assemblages, still, most cereals found in earlier phases were present at this time, being naked wheat, broomcorn millet, and foxtail millet more frequent (Tereso, 2012; Teira-Brión et al., 2012; Tereso et al., 2013a, 2013c; Vaz et al., 2017; Peña-Chocarro et al., 2019b; Teira-Brión, 2019). On the other hand, contrary to previous periods, remains of hulled wheats were in less amounts (Tereso, 2007, 2009; Teira-Brión, 2019). Grains of hulled barley were sporadic. A significant amount of remains of rye was found at Monte Mozinho (Penafiel, northern

Portugal), which together with its presence in other Iberian sites suggests in Late Roman times it was definitely a crop (Alonso, 2005; Tereso, 2012; Tereso et al., 2013a, 2013c; Vaz et al., 2017; Colominas et al., 2019; Peña-Chocarro et al., 2019b).

The plant remains of the Iron age and Roman hillfort of Terronha de Pinhovelo (Macedo de Cavaleiros, Northern Portugal) were an important set of Late Roman crops at the time of their recovery. A large concentration of fruits/seeds was found, mostly from two hearths in a single compartment (Tereso, 2007, 2009). The record of multiple cereals and faba beans within those structures pointed to their use in several moments. Still, a new and still unpublished radiocarbon date point to a much earlier chronology (see Chapter 10).

Data from Late Antiquity was more sporadic making it difficult to address agriculture and plant consumption (Antolín and Alonso, 2009; Carrión Marco et al., 2015; Vaz et al., 2017; Tereso et al., 2018c; Peña-Chocarro et al., 2019a, 2019b). The lack of information was also observed in Early Medieval contexts. Fruits/seeds were recovered in some Galician sites, but they always displayed small assemblages (Antolín and Alonso, 2009; Teira-Brión et al., 2012; Teira-Brión, 2013, 2015). In Northern Portugal, just Quinta de Crestelos showed a few remains, being more coherent data only available from the Mondego valley and southwards in Portuguese territory (e.g. Queiroz and Ruas, 2001, Queiroz and van Leeuwaarden, 2003, 2004; Queiroz, 2009a, 2009b; Oliveira et al., 2017; Peña-Chocarro et al., 2019b).

## 1.2. Goals

This thesis aims at characterizing crops and agriculture in Northwest Iberia from the Iron Age to Early Medieval times, in a long-term approach that will facilitate the understanding of its feedbacks with social and environmental trends.

Although there are plenty of archaeobotanical studies in Northwestern Iberian sites, at the beginning of this thesis´s work there were geographic and chronological discrepancies in the data available, which needed to be tackled. Moreover, the debate regarding the chronology and domesticated character of some species – oat and rye – was in need of dedicated approaches, which could only be conducted adding new data. In such a scenario, to fulfil the abovementioned purpose, this thesis intends to increase archaeobotanical data for areas and periods that are still underrepresented. For instance, coastal and eastern areas of Northern Portugal remain badly known and

analyses of post-Roman contexts are scarce, either in the Northwest or other Iberian regions (see synthesis of Peña-Chocarro et al. (2019b)). Besides, it is also our aim to strengthen information on the Iron Age, mainly later phases (Late Iron Age), and the Roman period, in Northern Portugal.

Thus, a multifaceted approach was carried out through new fruits/seeds studies, including biometric and radiocarbon analyses, covering many chronological periods and archaeological contexts, with the following specific goals:

a) Comprehend past plant-human relationships. Past societies managed a diversity of plants, whether domesticated or wild, together with spaces and structures related to their use. Through a joint analysis of the archaeobotanical assemblages and the archaeological contexts, we pretend to identify the plants selected, the respective provenience, and characterize the relation between them and the human communities in the past.

b) Characterize agricultural practices from the Iron Age until the Early Middle Ages. From the field to food transformation, past communities have produced a large set of activities, encompassing different harvesting and processing techniques, and storage practices throughout time. Our goal is to recognize them through the identification and characterization of the crops and their by-products (weeds, chaff), the storage structures associated, and the spatial distribution of the plant remains within those facilities.

c) Understand the social, political, and economic conditions during each chronological period and their impact on the agricultural systems and food consumption of ancient communities. During the time interval here addressed, the whole Iberian Peninsula went through constant and deep transformations, which would also have shaped the territory agriculturally. Agricultural production and storage strategies changed, new plants were gradually introduced and disseminated. Therefore, through the fruits/seeds and archaeological data obtained, we pretend to comprehend how these dynamics were related and their consequences.

d) Evaluate environment-agriculture relations in the long-term. Agriculture activities applied strong pressure on soil and natural ecosystems. These environmental changes in turn may have constrained human activity, demanding adaptive solutions by human communities. We aim to understand how such interaction happened over time and in what way conditioned each other.

## 1.3. Thesis' structure

In order to fulfil the previous goals, new archaeobotanical studies were carried out in many sites of Northern Portugal, and one in the Mondego valley, addressing a long time span from the Iron Age to the Early Medieval Ages. Taking into account the necessary background to discuss the results obtained, this thesis was divided into three sections and 12 chapters:

**Section A (General Introductions)**

Chapter 1 (Introduction) briefly addresses the evolution of fruits/seeds analyses in Northwest Iberia, from its beginnings till recent times, to put this thesis' work into context. It mentions the main results obtained in the region and chronologies in analysis, until the start of this thesis (2019) and presents the objectives of this work. Chapter 2 (Materials and Methods) defines and characterizes the study area, through biogeographical, ecological and chronological points of view. It also exposes a general view of the sampling strategies and laboratory procedures applied.

**Section B (Results)**

This section was separated into seven chapters, each corresponding to a study case. The presentation of the studies follows a chronological order and/or some type of connection among them. Thus, the first two analyses comprise "Casa Romana" (Roman house) of the Castro de São Domingos (Chapter 3) and Freixo/Tongobriga (Chapter 4). These sites showed diverse archaeological features and identical chronologies, spanning from the Iron Age to the Late Antiquity. The following studies correspond to Castelinho (Chapter 5) and Rei Ramiro (Chapter 6). Despite some archaeological/chronological differences between these two sites, both revealed a common storage facility: *horreum*. The fifth study corresponds to Castro S. João das Arribas (Chapter 7), where was analysed a storage context dating to the Late Antiquity. The archaeobotanical study carried out in the Early Medieval site of Senhora do Barrocal (Chapter 8) is presented as the sixth chapter. The last one shows a synthesis of rye (Chapter 9). A broad and diachronic approach that summarizes information about rye, integrating previous research and new data from Northwest Iberia.

These works were carried out in collaboration with other authors and correspond to published or submitted papers in national and international journals and one chapter published in a book (Chapter 6). Two of those were originally written in Portuguese (Chapters 3 and 6), being translated into English, in order to maintain linguistic

coherence. Supplementary material of all articles (either published or unpublished) is included in the Attachments. The PhD candidate has participated fully in each one of them.

**Section C (Discussion and Main Conclusions)**

Initially, the results and other data recently obtained are summarized (Chapter 10), following a chronological order. Then, such information is contrasted with the available fruits/seeds evidence, at a local and regional level, and with other relevant data, including the environmental and historical/archaeological contexts of the analysed sites (Chapter 11). Through a diachronic view, this chapter focus in two topics: crop diversity and storage practices. The final chapter gives the main conclusions of the thesis (Chapter 12). Besides, it also addresses some of the gaps in the archaeological/archaeobotanical research and presents brief suggestions for further work.

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# Chapter 2 - Materials and Methods

## 2.1. Study area

Spatially, this work will mainly concentrate on Northern Portugal (Fig. 2.1). Fruits/seeds analyses were developed in three Northwestern sites, placed in Porto´s district: “Casa Romana” (Roman house) of the Castro de São Domingos (Lousada), Freixo/Tongobriga (Marco de Canaveses), and Rei Ramiro (Vila Nova de Gaia); and in two Northeastern sites in the district of Bragança: Castelinho (Torre de Moncorvo), and Castro de S. João das Arribas (Miranda do Douro). These sites are spread through the Douro basin, covering the lower and middle courses of the Douro river and several tributaries.

These sites have been ascribed to chronologies ranging from the Iron Age to the Late Antiquity, being Early Medieval contexts rare in Northern Portugal. Due to the lack of samples from Early Medieval sites in the region, it was decided to expand the study area southwards, namely to the Mondego basin, in order to include Senhora do Barrocal (Sátão, district of Viseu) in this thesis. Here, some studies have been developed (e.g. Queiroz and Ruas, 2001; Queiroz and van Leeuwaarden, 2003, 2004; Queiroz, 2009a, 2009b; Tereso et al., 2016; Oliveira et al., 2017), allowing a better characterization of medieval plant assemblages in order to compare with Northwestern archaeobotanical records.

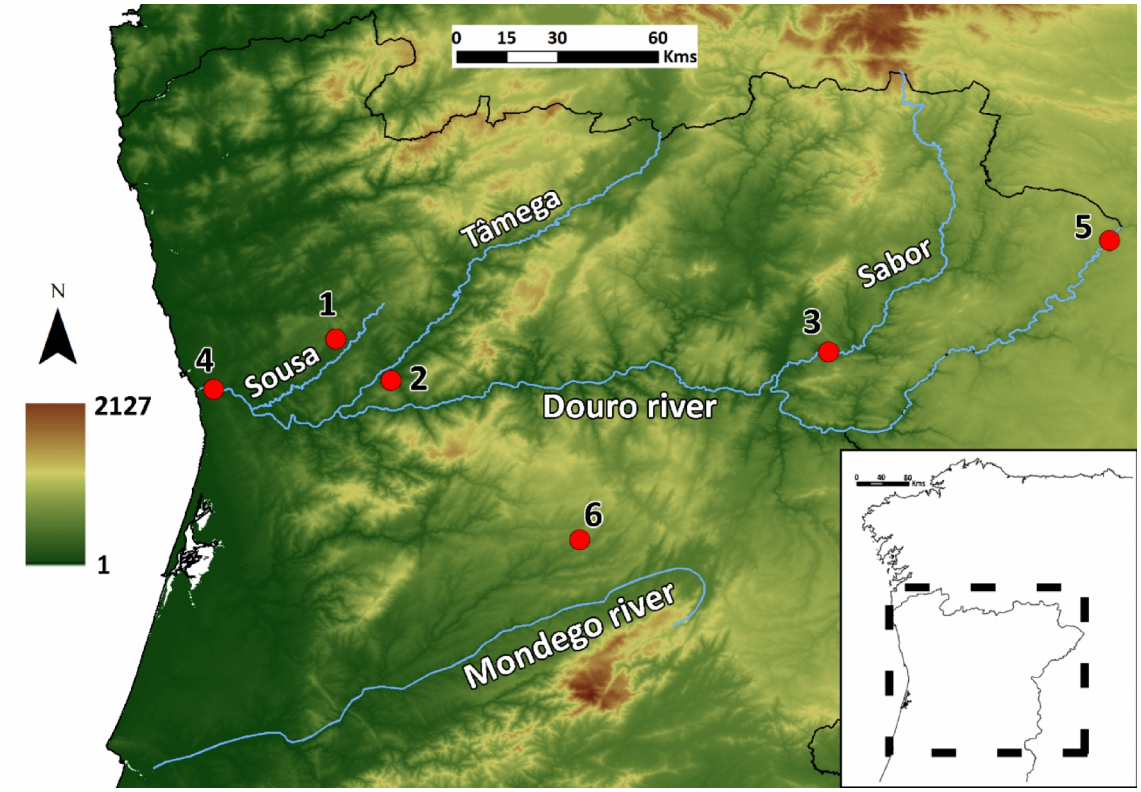


Figure 2.1 - Study area and sites analysed. Legend: 1-“Casa Romana” (Roman house) of the Castro de São Domingos; 2-Freixo/Tongobriga; 3-Castelinho; 4-Rei Ramiro; 5-Castro S. João das Arribas; 6-Senhora do Barrocal.

### 2.1.1. Biogeographical and ecological characterization

The above-mentioned sites are integrated in the Eurosiberian and Mediterranean biogeographical regions. The Northwestern sites are related to the Eurosiberian region, more precisely the Galicia and North Portugal Sector. They are placed in low-altitude areas where granitic stones prevail. The bioclimate is characterized by mesomediterranean and humid conditions. Deciduous forests of common oak (*Quercus robur*) are widespread in the region (Costa et al., 1998; Rivas-Martínez et al., 2011; Rivas-Martínez et al., 2017; Alves and Honrado, 2021; Capelo and Aguiar, 2021).

The Northeastern sites are incorporated in the Mediterranean region, but some differences are noted among them. The site of Castelinho is included in the Lusitanian Douro sector, in an area of the lower Sabor valley with less steep slopes and wider profile, geologically dominated by schist rocks. This area shows mesomediterranean and dry to sub-humid conditions, being locally known as Hot Land (“Terra Quente”). Climatophilous forests of cork oak (*Quercus suber*) are predominant in the region. Whereas Castro S. João das Arribas is located between the Lusitanian Douro and the Salamanca sectors, on a large cliff of the International Douro canyon, and its surrounded

by granitic rocks. In opposition, Castro S. João das Arribas stays in an area designated as Cold Land ("Terra Fria"), with supramediterranean and dry to sub-humid bioclimatic conditions. The cork oak is also relevant in the region, but forests of holm oak (*Quercus rotundifolia*) may predominate (Costa et al., 1998; Rivas-Martínez et al., 2011, 2017; Aguiar and Vila-Viçosa, 2017; Aguiar, 2021; Capelo and Aguiar, 2021).

The Mondego site - Senhora do Barrocal - is positioned in a transitional area between both Mediterranean and Eurosiberian regions, as well as the Divisorio Portuguese and Montemuro-Estrela Sierras sectors. It is placed in a mountain area, shaped by granitic tors. As observed in the other sites, Senhora do Barrocal presents a Mediterranean macrobioclimate, specifically with mesomediterranean and humid conditions. Forests of Pyrenean oak (*Quercus pyrenaica*) prevail, but cork oak is also frequent (Costa et al., 1998; Rivas-Martínez et al., 2011, 2017; Capelo and Aguiar, 2021; Monteiro-Henriques, 2021).

### 2.1.2. Chronological context

This work will cross several chronological periods and cultural contexts, embracing more than a millennium of history from the Iron Age to the Early Middle Ages. The chronological/cultural contexts analysed varied among the seven study cases (Fig. 2.2). Some sites provided evidence of several occupation phases within the time span analysed here, and sometimes even occupations from earlier periods (e.g. "Casa Romana" (Roman house) of the Castro de São Domingos, Freixo/Tongobriga), while in others only single phases were part of the fruits/seeds analysis (e.g. Castro S. João das Arribas). In the study about rye introduction and dissemination (Chapter 9), most the periods are involved.

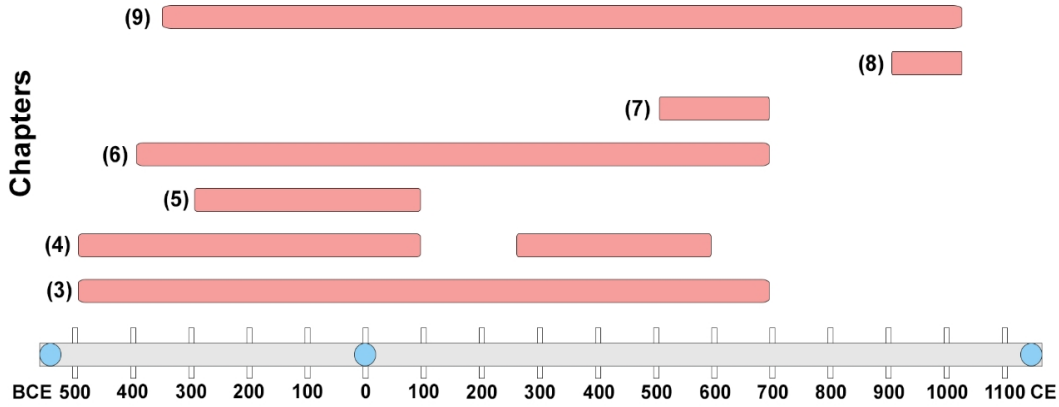


Figure 2.2 - Period of time addressed in each study case (Chapters). Legend: 3-"Casa Romana" (Roman house) of the Castro de São Domingos, 4-Freixo/Tongobriga, 5-Castelinho, 6-Rei Ramiro, 7-Castro S. João das Arribas, 8-Senhora do Barrocal, 9-Rye. For more details, see the individual chapters in the results section (B).

A fine chronology was not always achievable, nonetheless, according to the archaeological information and radiocarbon dates obtained, the earliest contexts cover a time span from around the 5th/4th centuries BCE to the 2nd century BCE. Despite different chronological boundaries and designations admitted by several scholars (e.g.; Martins, 1990; Alarcão, 1992; Bettencourt, 2005; González-Ruibal, 2006; Silva, 2007; Jordá Pardo et al., 2009), this time interval generally encompasses the Iron Age occupation of Northern Portugal.

There is a great number of contexts ascribed to a later stage, namely the 2nd century BCE - late 1st century BCE (here designated as Late Iron Age) and a transitional moment between the end of the Iron Age and the Early Roman Empire (mid-1st century BCE-1st century CE). During the Late Iron Age occurs an important territorial organization toward large fortified settlements (*oppida*) and an increasing social complexity (e.g. Martins, 1990; Alarcão, 1992; González-Ruibal, 2006; Silva, 2007; Carvalho, 2008, 2010), along with Roman military actions which are documented historiographically (e.g. Tranoy, 1981; Alarcão, 1992; Deserto and Pereira, 2016) but also archaeologically (e.g. Orejas et al., 2015, Costa-García et al., 2019). At the end of the 1st century BCE, Romans would definitely rule the Northwestern territory, establishing new centres of power (e.g. Morais, 2004; Carvalho 2008, 2010; Alarcão, 2017).

In Imperial times (late 1st century BCE - 3rd century CE), Romans applied a wide reorganization over the territory, focusing on new urban centres and an efficient road network whose growth was remarkable during the Flavian and Nerva-Antonine dynasties. On the other hand, hillforts lose relevance, being gradually abandoned (e.g.

Carvalho, 2008, 2010). Due to the imperial crisis, a new administrative configuration was observed during Late Roman times (3rd century CE - early 5th century CE). The main Northwestern cities were walled, but it did not mean a global urban decline, particularly for *Bracara Augusta* (Braga) since it was the province´s capital of *Gallaecia* (e.g. Tranoy, 1981; Morais, 2004; Carvalho, 2008).

The Roman downfall was eminent when Germanic groups settled in the early 5th century CE in the Iberian Peninsula. Initially, what is today Northern Portugal was among the territories occupied by the Suebian kingdom, but there was no stability, and conflicts were frequent. From the late 6th century CE to the first Muslims conquests in the early 8th century CE, this region was under Visigoth rule (Leguay, 1993; Mattoso, 1997).

The Muslims controlled the Iberian Peninsula rapidly but their rule over Northwestern areas was far from effective. Throughout Early Medieval times (early 8th century CE - 10th/11th centuries CE), Christians advanced to Southern areas progressively but slowly. In this work, we will focus on Central Portugal and more precisely in the Mondego valley, an area in constant dispute between Christians and Muslims, only becoming under effective control by the Christians in the middle 11th century CE (Oliveira Marques, 1993; Beirante, 1993; Barroca, 2016; Maillo Salgado, 2016; Viso, 2018; Tente, 2019).

## 2.2. Sampling strategy

The sampling strategy varied according to each fieldwork. Whenever possible, strategies were established beforehand, through straight cooperation between the field archaeologists and the archaeobotanical team. However, in most cases, sampling followed decisions and strategies made by the field teams, before or during the duration time of this thesis.

It was not possible to study all samples recovered. A massive amount of sediment was retrieved in several sites, and due to time constraints, sample selections were carried out (e.g. Freixo/Tongobriga (Chapter 4), Rei Ramiro (Chapter 6). Still, the representability of those archaeobotanical assemblages was always assured. Thus, a total of 2,167 samples from six archaeological sites were analysed (Table 2.1). Sediment sampling was prevailing, although handpicking also occurred frequently. One thousand, five hundred and eighty-eight sediment samples were studied, reflecting around 9,500 L. Five hundred and twenty-three samples from four sites correspond to handpicked remains, the vast majority from Senhora do Barrocal (Chapter 8). With the exception of

two dry-sieved samples from Castro S. João das Arribas (Chapter 7), sediment was always floated, whether through bucket flotation or using a Siraf-type machine. The sediment samples from Freixo/Tongobriga (Chapter 4) were processed with a 0.25 mm mesh, whereas in the remaining sites a 0.5 mm mesh was used.

Further details about sampling strategies and the archaeological contexts analysed are mentioned in the materials and methods of every chapter in section B. Information about Chapter 9 was not included since sampling was not developed specifically for this approach.

| Site/Chapter | Nº of samples analysed | Type of recovery | Volume analysed (L) | Processing | Mesh |
|---|---|---|---|---|---|
| "Casa Romana" (Roman house) of the Castro de São Domingos (3) | 93 | Sediment | 467.6 | Flotation | 0.5 mm |
| Freixo/Tongobriga (4) | 90 | Sediment | 995 | Flotation | 0.25 mm |
| Castelinho (5) | 1,185 | Sediment | 7024.8 | Flotation | 0.5 mm |
| | 112 | Handpicking | Not applied | Not applied | Not applied |
| | 56 | No data | No data | No data | No data |
| Rei Ramiro (6) | 141 | Sediment | 416.9 | Flotation | 0.5 mm |
| | 28 | Handpicking | Not applied | Not applied | Not applied |
| Castro S. João das Arribas (7) | 14 | Sediment | 11.8 | Flotation | 0.5 mm |
| | 2 | | 0.2 | Dry sieving | |
| | 7 | Handpicking | Not applied | Not applied | No data |
| Senhora do Barrocal (8) | 46 | Sediment | ≈ 460 | Flotation | 0.5 mm |
| | 17 | | No data | | |
| | 376 | Handpicking | Not applied | Not applied | Not applied |

Table 2.1 - Overview of the recovery/processing strategies applied in each archaeological site.

## 2.3. Laboratory work

The sorting work was carried out with a stereoscopic microscope. For the taxonomic diagnosis, morphological atlases and other reference books were used (e.g. Beijerinck, 1976; Castroviejo, 1986-2012; Hillman et al., 1996; Buxó, 1997; Jacomet, 2006; Nesbitt, 2006; Neef et al., 2012; Zohary et al., 2012), being plant remains also compared with modern material from the reference collections of the Porto Herbarium (PO) at the Natural History and Science Museum of the University of Porto (MHNC-UP) and from the Research Centre in Biodiversity and Genetic Resources (CIBIO).

At the first stage, the content of the light fractions was separated by size through a column of sieves with 2, 1, 0.5, and 0.25 mm (the latest at Freixo/Tongobriga) meshes. Volumes from the fractions deriving from smaller size meshes (1 mm and below) were

frequently too large to be fully sorted in due time. Moreover, most times plant remains were usually rare in such fractions and corresponded to unidentified fragments or fragments of taxa already identified in other meshes, leading us to include sub-sampling as a standard procedure in many situations. This process was gradually improved. Initially, the spoon method was applied in Castelinho´s study (published in 2020 (Chapter 5)), and from then onwards a riffle-box was used in the other studies. Extrapolations were only applied to rich fruits/seeds assemblages, as observed in the sites of Castelinho, Castro S. João das Arribas (Chapter 7), and Senhora do Barrocal (Chapter 8). Despite slight variations, in general, extrapolations were calculated according to the original and sorted weight of an individual mesh. At “Casa Romana” (Roman house) of the Castro de São Domingos (Chapter 3), Freixo/Tongobriga (Chapter 4), and Rei Ramiro (Chapter 6) extrapolations were not made since they showed small assemblages, and such may have led to an overrepresentation of some specific remains with a possible impact in the final results.

At each site, only units were counted and used for extrapolations (when applicable). Globally, units correspond to entire or fragmented remains with scutella or hila. Longitudinal fragments of cereals and cotyledons of pulses were counted as one unit when two remains were found. Separated scutella were always counted. Aggregations of plant remains with unit elements visible were also included in the fruits/seeds results. Regarding chaff, rachis segments and nodes, glume and spikelet bases, floret and lemma bases were considered units. Hulled grains or with husks still attached were often discriminated in the results, although for statistical purposes, at Senhora do Barrocal (Chapter 8), grains and chaff were treated separately.

A detailed diagnosis was not always achievable, particularly over some cereal remains. The designation *Avena sativa/strigosa* was adopted when domesticated floret bases of oat were observed (Van Zeist, 1968; Pasternak, 1991; Ruas and Pradat, 2001; Jacomet, 2006). Whereas grains without bases were identified at the genus level (*Avena* sp.). Naked wheat grains were designated as *Triticum aestivum/durum*, including *Triticum aestivum*, *Triticum durum*, and *Triticum turgidum* grains (Buxó, 1997). Other identifications with less detail (e.g. tribe, family, subfamily) were often used, mainly due to preservation issues.

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# Section B (Results)

# Chapter 3 - Fruits and seeds from “Casa Romana” (Roman house) of the Castro de São Domingos (Lousada, Northern Portugal)

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This article was originally written in Portuguese being translated into English for this thesis. Supplementary material is provided in Attachment 1 (not available in the original paper).

## Abstract

Excavations carried out at “Casa Romana” (Roman house) of the Castro de São Domingos (Lousada, Northern Portugal) between 2009 and 2021 included the recovery of sedimentary samples for archaeobotanical analyses. These samples came from a diverse set of contexts from between the Iron Age and the Late Antiquity. The carpological study (fruits/seeds) showed an assemblage characterized by cereal grains, mainly broomcorn millet, whereas wheat (naked and hulled wheat) and foxtail millet were less abundant. The record of other grasses, such as oat and mostly rye, raised some debate about whether they were cultivated intentionally or not.

Keywords: Northwest Iberia, Iron Age, Roman times, Late Antiquity, Archaeobotany, Carpology, Cereals.

## 3.1. The “Casa Romana” (Roman house) of the Castro de São Domingos

Castro de São Domingos is located in the union of parishes Cristelos, Boim, and Ordem, in the municipality of Lousada, district of Porto (Fig. 3.1). It is implanted near the left margin of the Mezio river (around 1km in a straight line), a tributary of the Sousa river, both in the hydrographic basin of the Douro river.

The first remarks ever written about this archaeological site consisted mainly of general considerations and the analysis of scarce archaeological remains (e.g. Peixoto, 1913; Cardozo, 1947; Alarcão, 1958; Silva, 2007). The first archaeological work was carried out between 1994 and 1998 (Nunes et al., 2007; Mendes-Pinto, 2008) and focused on the top of São Domingos hill, a place with a strategic position over the surrounding valley. Here, evidence of an Iron Age occupation was observed, of which a habitational area stands out. Besides remains from this period, materials with Roman chronology were identified, which suggested a posterior connection with the Romanization of the region (Nunes et al., 2007; Mendes-Pinto, 2008; Nunes et al., 2011, 2018; Lemos, 2018-19, 2020).

In 1996, the development of a real estate project led to archaeological work on the half-slope of the hill, exposing a set of structures and artefacts of significant relevance, covering a wide slope area, at around 314 m.a.s.l (on average). Excavations allowed, in particular, the identification of two habitational compartments with large dimensions, dated from the 1st-3rd centuries CE. This relevant finding led to the designation of the archaeological area as "Casa Romana" (Roman house, in English) (Mendes-Pinto, 2008; Nunes et al., 2007, 2011, 2018; Lemos, 2018-19; Lemos, 2020).

After a hiatus, new archaeological campaigns were carried out between 2009 and 2011. These allowed the fieldwork to proceed in the Roman compartments and contiguous spaces as well as in distant areas (Nunes et al., 2011, 2018). In general, the occupational levels and archaeological remains observed dated from the Iron Age and the Roman period. Several pits were identified in earlier stratigraphic levels but these structures were of complex comprehension and interpretation (see Discussion).

A new phase of interventions took place between 2017 and 2021, allowing a significant expansion of the excavation area (Lemos, 2018-19, 2020; Lemos et al., 2021). The fieldwork revealed spaces with distinct functionalities and chronologies, often including structures and houses from the Iron Age. These were recurrently in a poor state of preservation, and in some cases, only remained a few findings (e.g. floor, wall). This is partly explained by the overlapping occupations, in which Roman constructions often encompassed previous Iron Age structures. Besides, the above-mentioned construction works (residential building) led to strong perturbations in the archaeological contexts, including the habitational structures. In addition, the site was subjected to recent agricultural activities, namely the planting of vineyards (Nunes et al., 2011, 2018; Lemos, 2018-19, 2020). Pits similar to those found in previous campaigns were constantly recorded. In fact, pits are the most abundant structures found at "Casa Romana" (Lemos, 2018-19, 2020). Other negative structures, namely postholes, were also recurrent.

In the southern limit of the archaeological area, it was found a necropolis, so far, composed of 17 Late Antique graves (5th-7th centuries CE) structurally well-preserved. However, most were despoiled, providing few and chronologically incoherent archaeological remains (Lemos et al., 2021).

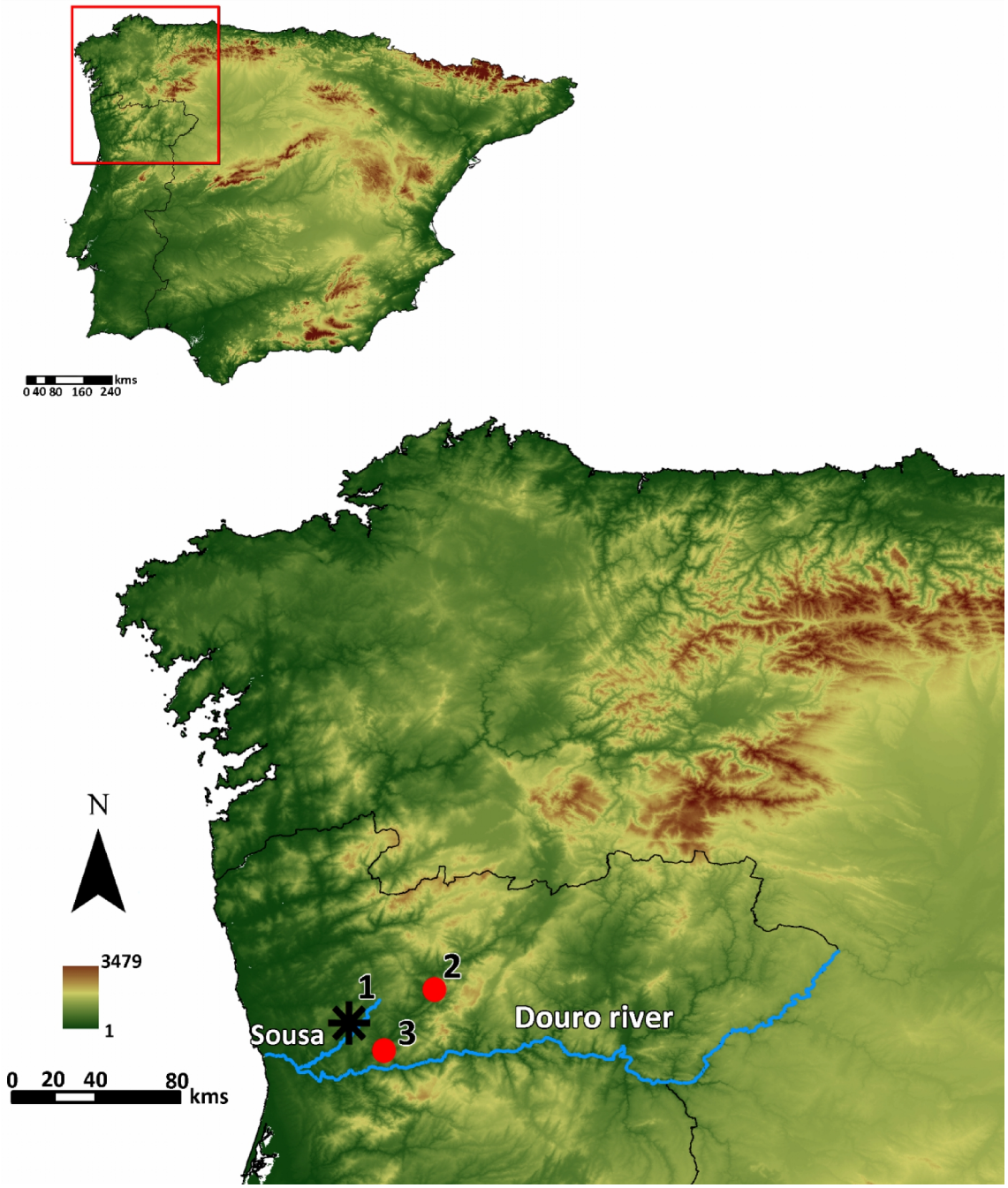


Figure 3.1 - Location of the sites mentioned in the paper (Northwest Iberia): 1-"Casa Romana" (Roman house) of the Castro de São Domingos; 2-Crastoeiro; 3-Freixo/Tongobriga.

## 3.2. Materials and Methods

### 3.2.1. Samples recovered and archaeological contexts

Ninety-three sediment samples from 74 stratigraphic units (s.u.) were recovered between 2009 and 2011, comprising a total of 467.6 L of sediment (Table 3.1). The

samples were processed by the archaeobotanical team through bucket flotation and using a 0.5 mesh.

The sampling strategy covered the whole archaeological site (Fig. 3.2). Samples recovered encompassed a wide diversity of contexts, particularly structures (e.g. pits, walls, graves) and deposits related to them (e.g. filling layers, embankments). Thus, it is noteworthy that more than two-thirds of the sampled contexts (59 s.u.) represent filling layers associated with four types of structures: pits, postholes, walls, and graves. Other contexts and structures were reduced, such as embankments (5 s.u.), abandonment/destruction levels (3 s.u.), and floors (3 s.u.). The remaining are associated with the use of fire, namely one hearth (1 s.u.), and a smelting area (2 s.u.) (Table 3.1).

Pits are the structures on which most sampling effort was made. Twenty-three deposits of 16 pits were analysed, comprising 139.4 L of sediment. These structures had some morphological variety, 9 showing rounded forms (pits 2, 27, 38, 59, 63, 51, 52, 54, 1057), and 5 oval forms (pits 3, 47, 58, 50, 30). Regarding pits 61 and 70, their morphology was not clear. Pits´ fills were regularly composed of few inorganic remains, namely ceramic. This material dates mainly from the Iron Age and the Roman period (Nunes et al., 2011, 2018; Lemos 2018-19, 2020).

Fifteen postholes integrate this archaeobotanical study. With the exception of posthole 538 where two filling deposits were analysed, in the remaining only one deposit was studied. In this way, a total of 60.2 L of sediment was analysed. Overall, the postholes revealed a circular form (n=11). Only three (postholes 779, 792, 794) show semi-circular forms and one (posthole 1130) an oval form.

Ten of the 15 postholes analysed were concentrated in a border area, to the east, mainly characterized by the presence of these types of structures (Fig. 3.2). Although it is not unequivocal, these postholes were likely part of an oval building. To the west, postholes 484 and 518 were associated with two Iron Age houses, namely houses 477 and 410/411, respectively. Regarding postholes 538, 1130, and 1160, it was not possible to establish any structural connection. In general, the postholes´ fills did not provide inorganic remains.

| Context | Chronology | S.U. | Sampled context | Samples No. | Volume (L) |
|---|---|---|---|---|---|
| Pit 2 | Iron Age | 50 | Filling layer | 3 | 3.7 |
| | | 51 | | 2 | 1.1 |
| | | 52 | | 1 | 0.5 |
| Pit 3 | | 42 | | 1 | 0.1 |
| Pits 27 e 47 | | 561 | | 1 | 8 |
| Pit 30 | | 405 | | 1 | 8 |
| | | 447 | | 1 | 8 |
| Pit 38 | | 536 | | 1 | 8 |
| Pit 50 | | 710 | | 1 | 7 |
| Pit 51 | | 711 | | 1 | 8 |
| Pit 52 | | 723 | | 1 | 8 |
| Pit 54 | | 708 | | 1 | 8 |
| | | 713 | | 1 | 8 |
| Pit 58 | | 721 | | 1 | 9 |
| | | 806 | | 2 | 9 |
| | | 813 | | 1 | 2 |
| | | 814 | | 2 | 8 |
| | | 816 | | 1 | 2 |
| Pit 59 | | 804 | | 2 | 6 |
| Pit 61 | | 818 | | 2 | 6 |
| Pit 63 | | 812 | | 2 | 8 |
| Pit 70 | | 1149 | | 1 | 8 |
| Pit 1057 | | 1037 | | 1 | 5 |
| Posthole 484 | Iron Age | 499 | Filling layer | 1 | 2.5 |
| Posthole 518 | | 517 | | 2 | 11 |
| Posthole 538 | | 540 | | 1 | 8 |
| | | 541 | | 1 | 1 |
| Posthole 769 | | 768 | | 1 | 3 |
| Posthole 773 | | 772 | | 1 | 3 |
| Posthole 775 | | 774 | | 1 | 0.1 |
| Posthole 777 | | 776 | | 1 | 2 |
| Posthole 779 | | 778 | | 1 | 5 |
| Posthole 792 | | 783 | | 1 | 1 |
| Posthole 794 | | 782 | | 1 | 1 |
| Posthole 798 | | 797 | | 1 | 2 |
| Posthole 826 | | 825 | | 2 | 5 |
| Posthole 831 | | 830 | | 1 | 0.1 |
| Posthole 1130 | | 1129 | | 1 | 7.5 |
| Posthole 1160 | | 1159 | | 1 | 8 |
| Wall 268 | Iron Age | 1118 | Filling of the foundation ditch [1119] | 1 | 7 |
| Wall 389 | | 486 | Filling of the foundation ditch [487] | 1 | 7 |
| Wall 408 | | 471 | Filling of the foundation ditch [473] | 1 | 8 |
| | | 480 | | 1 | 8 |
| Wall 1243 | | 1123 | | 1 | 7 |
| Wall 409 | | 465 | Filling of the foundation ditch [472] | 1 | 8 |
| | | 485 | | 1 | 8 |
| Wall 1205 | | 1038 | Filling of the foundation ditch [1041] | 1 | 6 |
| Wall 213 | Roman period | 80 | Filling of the foundation ditch [81] | 2 | 2.5 |
| Wall 1171 | | 1108 | Filling of the foundation ditch [1113] | 1 | 9 |
| Grave 6 | Late Antiquity | 922 | Filling layer | 2 | 14 |
| Grave 8 | | 916 | | 2 | 16 |
| Grave 9 | | 908 | | 2 | 16 |
| Grave 10 | | 909 | | 2 | 17 |
| Grave 11 | | 911 | | 3 | 24 |
| Grave 12 | | 918 | | 2 | 13 |
| | | 921 | | 1 | 8 |
| Grave 13 | | 1032 | | 1 | 8.5 |
| Grave 15 | | 1207 | Grave´s base | 1 | 9 |
| Grave 16 | | 1015 | Filling layer | 1 | 8.5 |
| Grave 17 | | 1013 | | 1 | 8.5 |
| Wall 111 | Iron Age | 116 | Embankment | 1 | 0,5 |
| Walls 408-409 | | 489 | | 1 | 6.5 |
| Wall 505 | Roman period | 406 | | 1 | 7 |
| Walls 505-566 | | 675 | | 1 | 8 |
| Quadrangular house | | 398 | | 1 | 9 |
| Circular house 477 | Iron Age | 475 | Abandonment/Destruction | 1 | 9 |
| N/A | Roman period | 77 | Destruction/Fire | 2 | 0,7 |
| | | 85 | Abandonment/Fire | 1 | 0.2 |
| Floor 1206 | Iron Age | 1142 | Deposit on the floor | 1 | 7 |
| Floor 1114 | Roman period | 1046 | Deposit on the floor | 1 | 3 |
| Floor 46 | N/A | 46 | Floor in granite and schist | 1 | 1 |
| Hearth 92 | Iron Age | 92 | Hearth | 1 | 1 |
| Pit 24 | | 170 | Smelting level | 1 | 2 |
| Pit 25 | | 191 | Destruction (Smelting) | 1 | 0.1 |

Table 3.1 - Inventory of samples, provenance and archaeological contextualization.

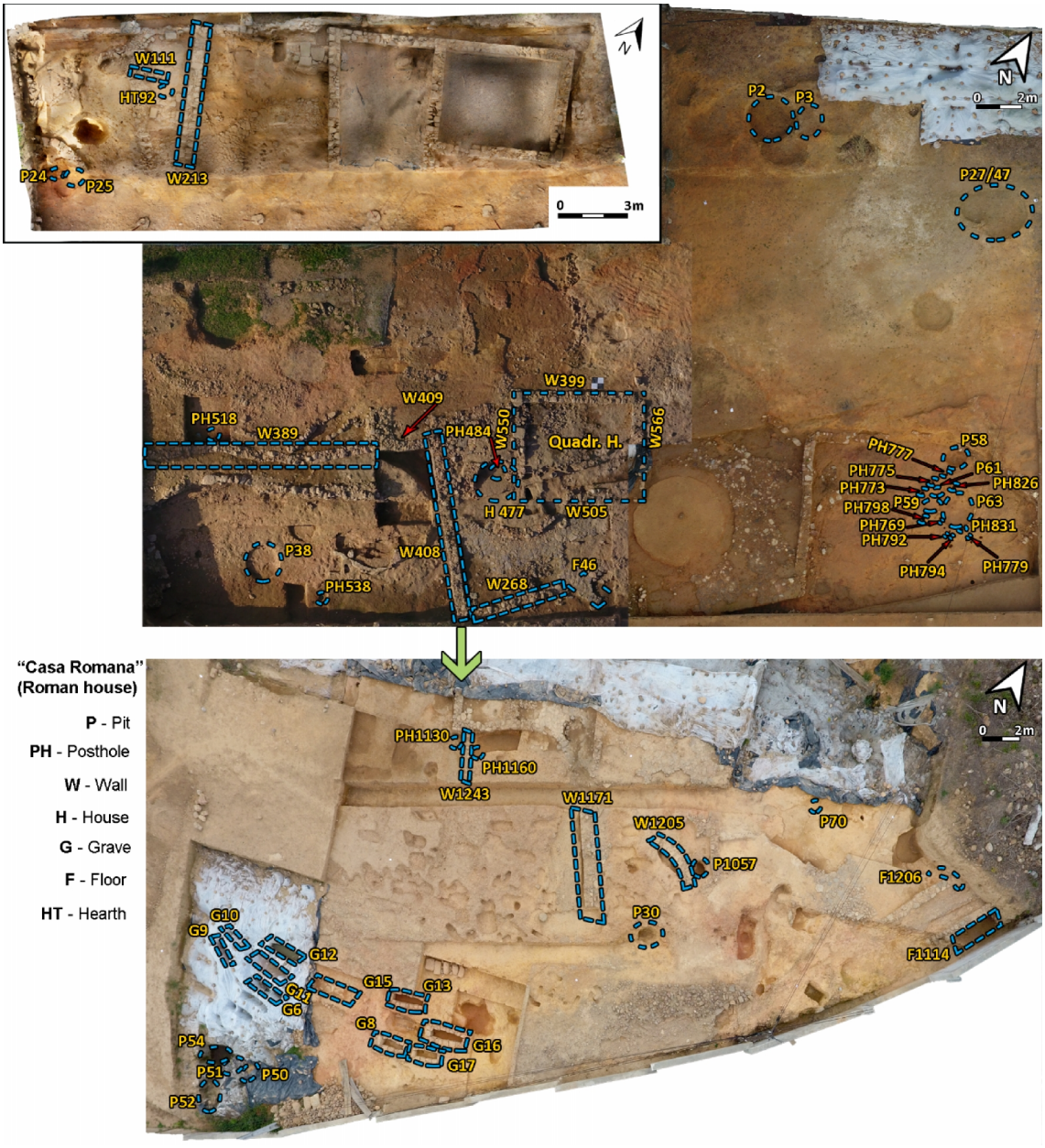


Figure 3.2 - Aerial view of the "Casa Romana" (Roman house) of the Castro de São Domingos with indication of the sampled contexts.

Ten filling layers from seven foundation ditches were sampled, corresponding to 70.5 L of sediment. Walls 268, 389, 408, and 409 were physically close to each other, and all were raised during the Iron Age. These structures were related to habitational spaces, namely houses 477 (walls 268 and 408) and 410/411 (walls 389 and 409). Wall 1243 was also built in the Iron Age. It revealed a structural and temporal connection with wall 408, corresponding to an extension of the latter (Fig. 3.2), but the disturbances that this space was subject to did not allow us to understand its function. In a nearby location was

observed a Roman habitational structure (wall 1171), whose construction overlapped an Iron Age circular house (wall 1205). To the north and next to the first habitational space identified (Roman compartments) wall 213 was found. Its construction occurred during the Roman period. Sadly, this structure was equally disturbed by the previously mentioned activities, not being possible to confirm its function.

To the south, a Late Antique necropolis stands out (Lemos et al., 2021). Samples from 10 stone graves were recovered for this carpological study, concerning 10 filling layers and one grave base (grave 15), amounting to 142.5 L of sediment. These graves show trapezoidal (graves 9 and 10) and sub-rectangular (graves 6, 8, 11, 12, 13, 15, 16, 17) morphologies. The interior of these structures often revealed few remains, and when materials were recovered (mostly ceramic), they dated from the Iron Age and the Roman period (Lemos et al., 2021).

Fewer samples and less volume of sediment was recovered in the remaining contexts (Table 3.1). Thirty-one litres were recovered from five embankments. Four of these correspond to levelling layers prior to the construction of walls. These walls, in turn, were part of habitational structures, namely the Iron Age houses 112 (wall 111) and 477 (walls 408 and 409) as well as a Roman quadrangular house (walls 505 and 566). Another embankment layer (s.u. 398) was identified inside this last house. Although its function was not clear, it is likely that this embankment was created for laying a floor.

In this study, three deposits were interpreted as abandonment/destruction contexts, where a total of 9.9 L of sediment was recovered. One of the layers corresponds to the filling and consequent abandonment of the Iron Age house 477. In a space contiguous to one of the Roman compartments, were observed two fire levels. These fires occurred during the Roman period.

Samples related to three floors were recovered at “Casa Romana”, summing up 11 L of sediment. Most corresponded to deposits found over these structures.

Two contexts associated with the use of fire are also part of this analysis. Both are present in the western limit of the archaeological area and are from the Iron Age (Fig. 3.2). One deposit comes from a possible hearth (s.u. 92), composed of several slag and charcoal fragments, from which one sample of small volume (1 L) was recovered. Spatially, this combustion structure is associated with a circular house (house 112). A smelting area delimited by an Iron Age wall was observed in a nearby space. Two deposits (s.u. 170 and 191) from pits 24 and 25 are possibly associated with metallurgical practices. A small volume of sediment (2.1 L) was equally recovered from here.

In order to obtain detailed chronological information about some of the contexts and due to the potential information of certain fruits/seeds, two radiocarbon dates were obtained (Table 3.2). One rye (*Secale cereale*) grain from pit 51 revealed an Iron Age chronology (4th-1st century BCE), while oat (*Avena* sp.) grains from inside posthole 779 showed a Roman chronology (1st century-early 3rd century CE).

| Context | S.U. | Dated Material | Lab. Ref. | Data BP | Cal. (1 σ) | Cal. (2 σ) |
|---|---|---|---|---|---|---|
| Pit 51 | 711 | Rye grain | D-AMS 044739 | 2139±20 | 338-116 BCE | 346-56 BCE |
| Posthole 779 | 778 | Oat grains | D-AMS 044738 | 1936±20 | 66-123 CE | 21-201 CE |

Table 3.2 - Radiocarbon dates obtained at "Casa Romana" (Roman house) of the Castro de São Domingos. Calibration through OxCal software (version 4.4.4), calibration curve IntCal 13 (Reimer et al., 2020).

### 3.2.2. Laboratory work

After processing the sediment, light fractions were sorted with the help of a stereoscope microscope in the facilities of the Faculty of Sciences of the University of Porto. The taxonomic diagnosis of the macroremains included, whenever necessary, reference atlases and specialized bibliography (e.g. Beijerinck, 1976; Hillman et al., 1996; Buxó 1997; Jacomet, 2006; Nesbitt, 2006; Neef et al., 2012; Zohary et al., 2012), as well as the comparison with modern material from the reference collections of the Herbarium of the Natural History Museum of the University of Porto (PO) and from CIBIO.

The weight of most light fractions was too high, so in order to optimise laboratory work 66 samples were subsampled (Table A1.1 in Attachment 1). Initially, each fraction was separated into three sets of distinct dimensions through a column of sieves (2 mm, 1 mm, and 0.5 mm). The content of larger dimensions (2 mm) was fully sorted. Subsampling was applied, on several occasions, on 1 mm meshes and mainly on 0.5 mm meshes. These rarely contained carpological material and most fruits/seeds recovered were undetermined fragments. A riffle box was used for this procedure. In most cases, samples revealed few macroremains and for that reason no extrapolations were made since these could lead to an overrepresentation of some taxa and, consequently, biasing the results.

All whole fruit/seeds or fragments with scutella/hila were counted (Table 3.3). Besides these, longitudinal fragments and cotyledons were considered, with each two

corresponding to one cereal grain and one pulse seed, respectively. Individual scutella were also understood as units[1].

Regarding chaff remains, different types and parts were counted, namely rachis segments (naked wheat and rye), spikelet and glume bases (hulled wheats), floret bases (oat) as well as rachis nodes (naked wheat). Note that each glume base represents a half spikelet. Thus, for accounting purposes, two bases (glume) were counted as one entire base (spikelet) in the graphic of Figure 3.5.

The taxonomic designations follow the checklist of Flora de Portugal (Sequeira et al., 2012), and for cultivated plants Zohary et al. (2012) was adopted. Grains of naked wheat were identified as *Triticum aestivum/durum* since these do not allow a more detailed identification (Buxó, 1997; Jacomet, 2006). Similarly, oat grains were identified at the genus level (*Avena* sp.). In this case, a distinction between wild and cultivated oat is only plausible through the presence of floret bases (e.g. Ruas and Pradat, 2001; Jacomet, 2006).

## 3.3. Results

The samples from “Casa Romana” (Roman house) of the Castro de São Domingos revealed a carpological assemblage composed of 2,679 units, corresponding to an average of around six remains per litre. Results showed a predominance of cereals, mainly grains, followed by chaff remains (Table 3.3; Figs. 3.3, 3.4, 3.5; Table A1.2 in Attachment 1). Grains of broomcorn millet (*Panicum miliaceum*) are dominant (n=713). Grains of naked wheat (*Triticum aestivum/durum*), foxtail millet (*Setaria italica*), and spelt (*Triticum spelta*) were in smaller amounts. Hulled barley was sporadic, as just two grains were identified. It should be noted that a considerable amount of millet grains (n=326) was in a poor preservation state, leading to an identification at the tribe level (Panicoideae), which reinforces the idea that millet grains predominate.

A considerable and diverse assemblage of chaff remains was recovered in this study. The presence of naked wheat stands out, particularly rachis nodes (n=217). In addition, a few rachis segments were identified, *i.e.* node and internode (n=37), nine of which as bread wheat (*Triticum aestivum*) (Fig. 3.3). Among hulled wheats, more glume bases (n=245) than spikelet bases (n=13) were recovered, which is an outcome of their bad

[1] The full carpological results, including units and fragments per sample, are available in this thesis in Table A1.2 in Attachment 1 (the inclusion of supplementary material in the original paper was not possible).

state of preservation. For the same reason, most glume bases were identified as *Triticum* sp. (n=222). Just 23 glume bases were characterized as spelt.

Twenty-eight grains of oat and two floret bases of domesticated oat (*Avena sativa/strigosa*) were recovered. Rye, on the contrary, was mainly found through rachis segments (n=50), being recovered only 10 grains.

The carpological assemblage of "Casa Romana" showed only one seed of domesticated pulses, namely from faba bean (*Vicia faba*). A few seeds were designated as *Vicia/Lathyrus/Pisum*, but due to their state of preservation, we cannot confirm that they correspond to crops. The remaining pulses (e.g. Fabaceae - *Genista* type, Fabaceae – *Melilotus* type) were recovered in reduced numbers and correspond to remains of wild plants.

Three fruits were identified, namely grape (*Vitis vinifera*), blackberry/raspberry (*Rubus* sp.), and acorn (*Quercus* sp.). Grape was found in higher numbers - 34 pips and 62 pedicels. Despite this, the assemblage of pips identified is not enough for morphometric approaches (e.g. Bouby et al., 2013; Pagnoux et al., 2015; Valamoti et al., 2020), that could help distinguishing between remains of wild and cultivated plants. Blackberry/raspberry seeds were recovered in smaller amounts (n=26) and may correspond to wild and/or cultivated plants. Regarding acorns, only one cupule was recovered, being this a wild plant.

The remaining assemblage is essentially composed of remains from wild elements. Some diversity was observed, but almost all taxa appear in reduced numbers. Nevertheless, we must stress the significant record of some remains, such as cypselae of Asteraceae *Coleostephus* type, siliquae of wild radish (*Raphanus raphanistrum*), achenes of *Rumex* sp., or seeds of *Chenopodium* sp.

Figure 3.3 - Main carpological remains identified at “Casa Romana” (Roman house). Legend: 1-Grape (pedicel); 2-Rye (rachis segment); 3-Spelt (glume base); 4-Oat (floret base); 5-Naked wheat (rachis segment); 6-Grape (pip); 7-Rye (grain); 8-Spelt (grain); 9-Oat (grain); 10-Naked wheat (grain); 11-Faba bean (seed); 12-Hulled barley (grain); 13-Broomcorn millet (grain); 14- Foxtail millet (grain); 15- Bread wheat (rachis segment).

Most archaeological deposits studied (e.g. filling layers, embankments, abandonment/destruction layers) have characterisitics that turn their formation processes and chronology difficult to comprehend. Independently of the radiocarbon dates obtained (Table 3.2), and the chronology attributed to the construction of the structures (Table 3.1), these would have been filled/prepared with sediments from distinct places and chronological periods. The remains recorded, mainly ceramic, confirm this idea since materials of different chronologies (Iron Age/Roman period) were found together in several deposits.

| **Chronology** | Iron Age | Iron Age | Iron Age | R. P. | L. Antiquity | Ir. A. | R. P. | Ir. A. | R. P. | Ir. A. | R. P. | N/A | Iron Age | Iron Age | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Context** | Pits | Postholes | Foundation ditches | of walls | Graves | Embankments | | Abandonment/ Destruction | | Floor | | | Hearth | Smelting | **Total** |
| **Volume (L)** | 139.4 | 60.2 | 59 | 11.5 | 142.5 | 7 | 24 | 9 | 0.9 | 7 | 3 | 1 | 1 | 2.1 | |
| **Cereals (grains)** | | | | | | | | | | | | | | | |
| *Hordeum vulgare* | 2 | | | | | | | | | | | | | | **2** |
| *Panicum miliaceum* | 258 | 27 | 224 | 11 | 103 | 66 | 16 | | 1 | 7 | | | | | **713** |
| *Setaria italica* | 25 | 10 | 20 | | 17 | 6 | 2 | 3 | | 1 | | | | 2 | **86** |
| Panicoideae | 146 | 22 | 67 | 6 | 43 | 29 | 7 | 4 | 1 | | | 1 | | | **326** |
| *Triticum aestivum/durum* | 38 | 10 | 29 | 3 | 6 | 8 | 8 | 1 | | | 1 | 3 | | | **107** |
| *Triticum spelta* | 2 | | 2 | 1 | 4 | 2 | | | 1 | | | | | | **12** |
| *Triticum* sp. | 51 | 1 | 12 | 1 | 11 | 5 | 8 | | | 1 | | 2 | | | **92** |
| Triticeae | 37 | 3 | 7 | 1 | 11 | | 2 | 1 | | 1 | | 1 | | | **64** |
| **Cereals (chaff)** | | | | | | | | | | | | | | | |
| *Avena sativa/strigosa* (floret base) | | 2 | | | | | | | | | | | | | **2** |
| *Triticum aestivum* (rachis segment w/1 node) | 6 | | 1 | | 1 | | | | | | | | | | **8** |
| *Triticum aestivum* (rachis segment w/2 nodes) | 1 | | | | | | | | | | | | | | **1** |
| *Triticum aestivum/durum* (rachis segment w/1 nodes) | 14 | 7 | 2 | 1 | | 2 | | | | 1 | | | | | **27** |
| *Triticum aestivum/durum* (rachis segment w/3 nodes) | | 1 | | | | | | | | | | | | | **1** |
| *Triticum aestivum/durum* (rachis node) | 95 | 24 | 58 | | 14 | 19 | 4 | | | | | 3 | | | **217** |
| *Triticum spelta* (spikelet base) | | | | | | | | | | 1 | | | | | **1** |
| *Triticum spelta* (glume base) | 13 | | 7 | 1 | | 1 | 1 | | | | | | | | **23** |
| *Triticum* sp. (spikelet base) | 6 | 2 | 3 | | | | | | | | | 1 | | | **12** |
| *Triticum* sp. (glume base) | 105 | 24 | 42 | 1 | 16 | 3 | 12 | 3 | 1 | 12 | | 2 | 1 | | **222** |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | |
| *Avena* sp. | 7 | 11 | 8 | | | | 1 | | | 1 | | | | | **28** |
| *Digitaria* sp. | 2 | 1 | | | | | | | | | | | | | **3** |
| *Poa* sp. | 16 | 8 | 4 | | 3 | | | | | | | | | | **31** |
| *Secale cereale* | 6 | | | | 3 | | | | | | | 1 | | | **10** |
| Poaceae | 26 | 2 | | 2 | 1 | | | | | | | 1 | | | **32** |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | |
| *Secale cereale* (rachis segment w/1 node) | 6 | | 1 | | 42 | | | | | | | | | | **49** |
| *Secale cereale* (rachis segment w/2 nodes) | | | | | 1 | | | | | | | | | | **1** |
| **Fabaceae** | | | | | | | | | | | | | | | |
| *Vicia faba* (seed) | 1 | | | | | | | | | | | | | | **1** |
| Fabaceae - *Genista* type (seed) | 12 | 5 | 3 | | 2 | | | | | | | | | | **22** |
| Fabaceae - *Medicago* type (seed) | | 1 | | | | | | | | | | | | | **1** |
| Fabaceae - *Melilotus* type (seed) | | | 1 | | | | | | | | | | | | **1** |
| Fabaceae - *Trifolium* type (seed) | | | | 1 | | | | | | | | | | | **1** |
| *Ornithopus* sp. (loment segment) | | | | 1 | | | | | | | | | | | **1** |
| *Ornithopus* sp. (seed) | 1 | | | | | | 1 | | | | | | | | **2** |
| *Vicia/Lathyrus* (seed) | 1 | 16 | 2 | | | | | | | 1 | | | | | **20** |
| *Vicia/Lathyrus/Pisum* (seed) | 1 | 3 | | | | | | | | | | | | | **4** |
| Fabaceae (seed) | 5 | 18 | 1 | | 6 | 2 | | 2 | | | | | | | **34** |

Table 3.3 - Carpological results (units and per type of archaeological context) from “Casa Romana” (Roman house) of the Castro de São Domingos.

| **Chronology** / **Context** | Iron Age Pits | Iron Age Postholes | Iron Age Foundation ditches | R. P. of walls | L. Antiquity Graves | Ir. A. Embankments | R. P. | Ir. A. Abandonment/ Destruction | R.P. Destruction | Ir. A. Floor | R. P. Floor | N/A Floor | Iron Age Hearth | Iron Age Smelting | **Total** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Fruits** | | | | | | | | | | | | | | | |
| *Quercus* sp. (cupule) | 1 | | | | | | | | | | | | | | **1** |
| *Rubus* sp. (seed) | 10 | 4 | 7 | | 4 | 1 | | | | | | | | | **26** |
| *Vitis vinifera* (seed) | 9 | 1 | 12 | | | | 2 | 1 | | 1 | 1 | 7 | | | **34** |
| *Vitis vinifera* (pedicel) | 15 | 2 | 30 | 5 | 2 | | 2 | 3 | | | 1 | 2 | | | **62** |
| **Others** | | | | | | | | | | | | | | | |
| Asteraceae (cypsela) | 2 | | | | 5 | | | | | | | | 1 | | **8** |
| Asteraceae - *Coleostephus* type (cypsela) | 111 | 52 | 13 | 1 | 7 | 1 | 3 | | | | | 6 | | 1 | **195** |
| Caryophyllaceae (seed) | 1 | 1 | | | 2 | | | | | | | | | | **4** |
| *Carex* sp. (achene) | 4 | 1 | | | | | | | | | | | | | **5** |
| *Chenopodium* sp. (seed) | 14 | 6 | 2 | | 5 | 1 | | | | | | | | | **28** |
| *Corrigiola litoralis* (achene) | 1 | 1 | | | | | | | | | | | | 1 | **3** |
| *Euphorbia* sp. (seed) | | | | | 1 | | | | | | | | | | **1** |
| *Galium aparine* (mericarp) | 1 | | | | 1 | | | | | | | | | | **2** |
| *Galium* sp. (mericarp) | | | | | 2 | | | | | | | | | | **2** |
| Lamiaceae (nutlet) | 1 | | | | 1 | | | | | | | | | | **2** |
| *Malva* sp. (seed) | 1 | | | | | | | | | | | | | | **1** |
| *Plantago* sp. (seed) | 6 | | | | | | 1 | | | | | | | | **7** |
| *Polygonum aviculare* (achene) | 2 | 1 | 3 | | | | | | | | | | | | **6** |
| *Polygonum lapathifolium* (achene) | 4 | | | | | | | | | | | | | | **4** |
| *Polygonum* sp. (achene) | 3 | | 2 | | | | | | | | | | | | **5** |
| Polygonaceae (achene) | 4 | 1 | | | 2 | | | | | | | 1 | | | **8** |
| *Portulaca oleraceae* (seed) | | | 1 | | | | | | | | | | | | **1** |
| *Raphanus raphanistrum* (siliqua segment) | 15 | 2 | 2 | | 2 | | | | | | 1 | | | | **22** |
| *Rumex acetosa* (achene) | | 1 | | | 1 | | | | | | | | | | **2** |
| *Rumex bucephalophorus* (achene) | 1 | 1 | | | | | | | | | | | | | **2** |
| *Rumex* sp. (achene) | 8 | 3 | 4 | | 2 | 1 | 1 | | | 1 | | 7 | | | **27** |
| *Sambucus* sp. (stone) | 1 | | | | | | | | | | | | | | **1** |
| *Sherardia arvensis* (mericarp) | 2 | | | | | | | | | | | | | | **2** |
| *Silene gallica* (seed) | | | 1 | | | | | | | | | | | | **1** |
| *Solanum* sp. (seed) | 5 | 2 | | 1 | 1 | | | | | | | | | | **9** |
| *Spergula arvensis* (seed) | | 1 | 1 | | | | | | | | | | | | **2** |
| *Stellaria/Cerastium* (seed) | 6 | 2 | 1 | | 1 | 1 | | | 1 | | | | | | **12** |
| *Urtica* sp. (achene) | 1 | | | | 1 | | | | | | | | | | **2** |
| *Veronica* sp. (seed) | 1 | 1 | | | | | | | | | | | | | **2** |
| *Viola* sp. (seed) | 1 | | | | | | | | | | | | | | **1** |
| Undetermined (fruit/seed) | 10 | 4 | 6 | | 9 | 1 | 2 | | | | | | | | **32** |
| **Total** | **1,124** | **285** | **579** | **37** | **333** | **147** | **75** | **16** | **7** | **28** | **4** | **38** | **2** | **4** | **2,679** |

Table 3.3 - (continued).

Despite the unreliability of any diachronic analysis, some considerations may be pointed out (Table 3.3; Figs. 3.4, 3.5). It is noted that 88% (n=2,358) of the carpological remains came from fillings of four types of structure: pits, postholes, foundation ditches of walls, and graves. However, this result is not surprising since sampling effort was mostly centred in these archaeological contexts.

Within this group, around half of the remains (47.7%) came from pits. Besides the larger amounts of remains recovered, these contexts also show more diversity of wild and cultivated plants. Different pits show similar results, independently of their chronology.

In contrast, postholes revealed few carpological remains (n=285). Nonetheless, most taxa found in the whole site could be found there. The results of the posthole 779 were noteworthy, due to the significant number of fruits/seeds recovered inside (s.u. 778). Here, the largest concentration of oat grains (n=11) was found as well as the only floret bases (n=2) of this study. Being a secondary/tertiary refuse, or maybe the result of natural processes, the chronology of its deposition is unknown. Still, the radiocarbon date date obtained on oat grains suggests a Roman chronology for these specific macroremains (Table 3.2).

The fillings from foundation ditches of walls showed considerable amounts of carpological remains (n=616). When compared with the pits, these contexts provided less remains, but the predominant taxa are essentially the same. Within cereals, results are also similar (Fig. 3.4).

Despite the considerable volume of sediment (142.5 L) recovered in graves, few carpological remains were collected (n=333). Nonetheless, the situation observed is similar to the other contexts since the main taxa recovered throughout the site are also present here. Particular to the graves is the concentration of rye remains, mostly rachis segments.

The remaining archaeological contexts generally revealed few fruits/seeds. Hearth 92 and the Smelting area are good examples and here carpological remains were practically residual. Regarding these and other contexts, it must be noted that the volumes of sediment recovered (55 L) and the number of deposits analysed (14 S.U.) are low. Still, the situation observed is again consistent with the other contexts, as the remains that are predominant in the site are also recorded here.

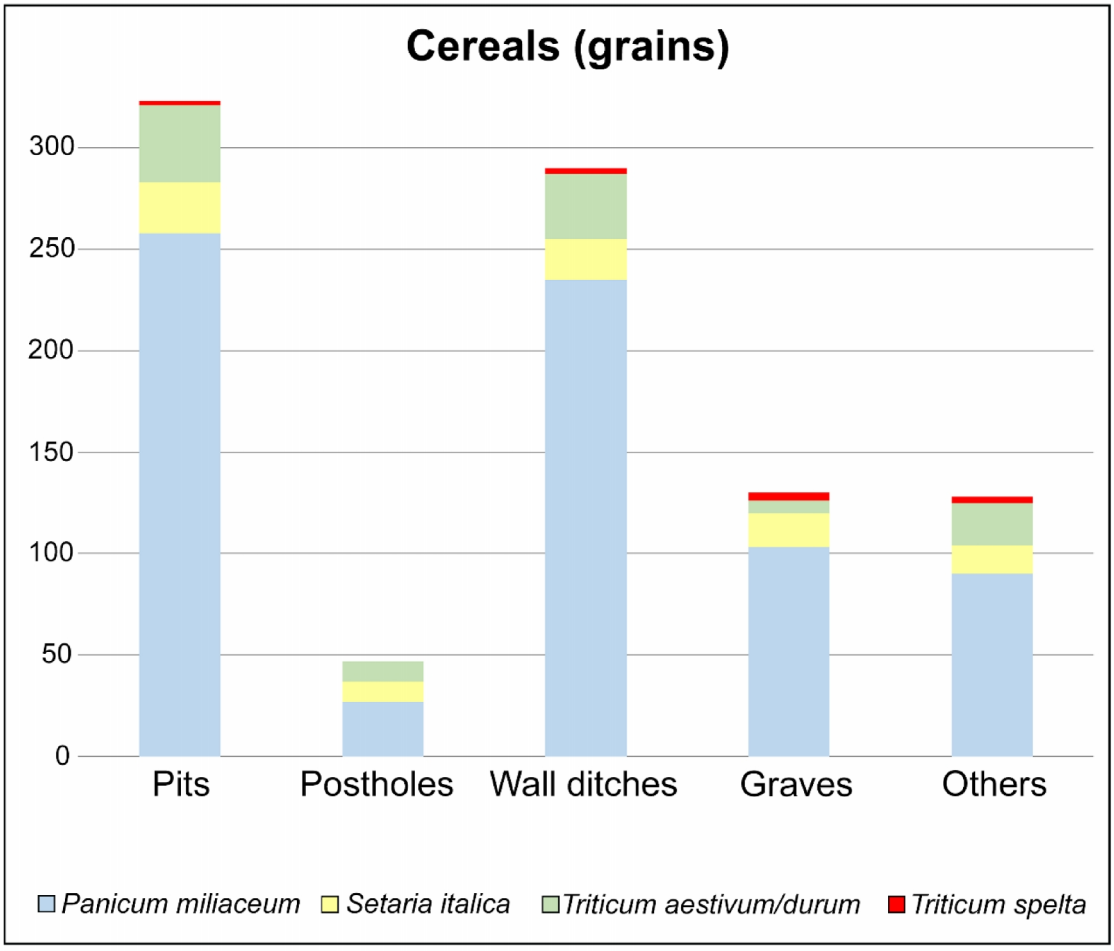


Figure 3.4 - Main cereals (grains) identified at “Casa Romana” (Roman house) per archaeological context.

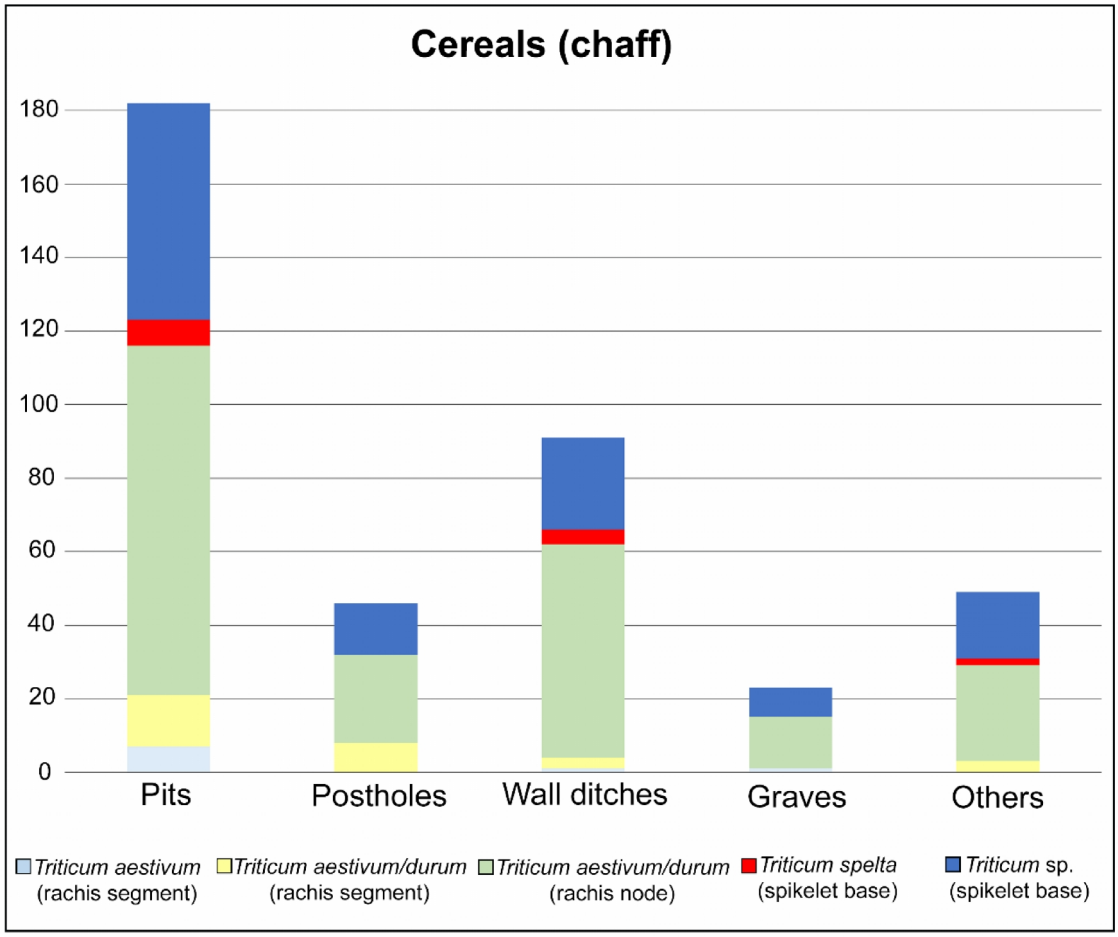


Figure 3.5 - Main cereals (chaff) identified at “Casa Romana” (Roman house) per archaeological context.

## 3.4. Discussion

### 3.4.1. Archaeological contexts and the interpretation of the plant macrorremains

The interpretation of the archaeobotanical remains recovered at “Casa Romana” is complex and requires caution. Notwithstanding the two radiocarbon dates, the macroremains generally came from deposits that likely correspond to secondary or tertiary refuse (*apud* Schiffer, 1996; La Motta and Schiffer, 1999), whose interpretation may be problematic (e.g. Fuller et al., 2014; Vaz et al., 2016). Despite the fine line between them, part of the studied contexts possibly corresponds to tertiary depositions (e.g. embankments, foundations ditches), since these certainly involved the remobilization of sediments for the renovation/construction of structures, being their provenience unknown.

The presence of remains of distinct chronologies in the fillings of several structures, including pits and graves, reinforces the idea that their filling would have been carried out with sediment remobilised from different places of the archaeological site. Due to the long-term occupation observed at “Casa Romana”, the latest remains work, in each structure, as the *terminus post quem* of its filling, but the chronological inconsistency of the remains prevents the establishment of a chronology for the archaeobotanical content. On the other hand, the rising of buildings during the Roman period, graves in Late Antiquity, and negative structures in different phases must have involved frequent intrusions in layers of previous periods, thus the use of its remains to establish a *terminus post quem* shall also be made with precautions.

Most of the sediment analysed in this study (60.3%) came from pits and graves, and these are likely the most paradigmatic examples of this complex reality. Pits are the most frequent structures at “Casa Romana” and in this carpological study (Nunes et al., 2011; Lemos, 2018-19, 2020). Stratigraphically, these structures seem to have been dug prior to most other occupation levels, however, their deposits regularly contain remains chronologically incoherent with this (Iron Age/Roman period). Pits identified during the 2009-11 campaigns already originated a debate about their primitive function (see Nunes et al., 2011, 2018).

The possibility of pits being used as storage structures was admitted. However, their poor preservation state, variability in morphology and dimension, and the fact that several of those structures intersect each other limited the interpretation of the assemblage (Nunes et al., 2011, 2018; Lemos, 2020). In order to obtain more information about these negative structures, a geological study was conducted, employing the analysis of clay fraction from several pits as well as walls and floors of the “Casa Romana”, which were compared with samples recovered from the rivers Mezio and Sousa (Nunes et al., 2011, 2018). Fundamentally, the main goal was to understand if the pits had been used to extract clay and if there was a connection between the clay found in the pits and the clay from the remaining structures. This study did not provide concrete answers, but the results point, at least regarding the construction of some structures, to the use of materials of both the pits and the river Mezio (Nunes et al., 2011, 2018).

The presence of carpological remains inside pits does not allow, by itself, to state their use for storage (e.g. Tereso et al., 2016; Jesus et al., 2020). The pits from “Casa Romana” revealed small carpological assemblages, similar to the other contexts analysed. In a region where archaeobotanical remains are mainly preserved through

charring, storage of plant-food in pits is mostly traceable when the plant remains got in contact with fire. This could happen intentionally, usually when fire was used to clean the structures, or by accident, as a result of fires that lead to crop loss. Just in the last case is expected to recover large amounts of cereals, and only if the structure is not cleaned afterwards to be used again, as could have happened in the Iron Age pits of Crastoeiro (Mondim de Basto) (Seabra et al., 2018). With the exception of eventual ritual contexts, intentional fire likely leads to loose few remains stored, residually present in the bottom of the pit. This was observed in a Bronze Age pit at Freixo/Tongobriga (Marco de Canaveses), where a small number of grains seems to have been charred and stuck in the clay coating of the pit (Tereso et al., 2016; López-Dóriga, 2020). This case illustrates well the issue addressed at “Casa Romana”, since radiocarbon dates were obtained on grains from the walls of the pit and its filling. Against expectations, the grains stuck in the clay provided a later date, showing the pit was filled by sediment with botanical remains older than the use of the pit itself.

Adversities in the understanding of the archaeological contexts and in the respective chronological framework were equally observed in the Late Antique graves. The field work revealed that most graves were opened, and their deposits showed few ceramics dating to previous periods (Iron Age/Roman period). Besides, once again carpological results did not display clear differences regarding the preceding phases. Rye was in higher number and more frequent in the graves than in other contexts, but not to the point of clearly attesting a change in the pattern.

On the other hand, similarities between carpological assemblages obtained in structures with different chronologies could give an idea of continuity of plant production and consumption at “Casa Romana”. However, as shown in several situations, the carpological remains identified here came mainly from remobilized deposits of unknown origin and with ambiguous chronology, being the establishment of diachronic interpretations unrealistic. In fact, these remobilizations, implying the movement and mixing of material of different chronologies, might even contribute to the homogenization of their contents.

### 3.4.2. Crops

Results suggest a diverse set of cereals was quite relevant at “Casa Romana”. The recurrence of millets, particularly broomcorn millet, is noteworthy. It is a common cereal

in the archaeobotanical record, being frequently identified in sites of Northwest Iberia and in any of the chronological periods addressed here (e.g. Tereso et al., 2013a; Moreno-Larrazabal et al., 2015; Peña-Chocarro et al., 2019; Teira-Brión, 2019; Tereso et al., 2020; Seabra et al., 2022). Foxtail millet in turn was recovered in numbers clearly smaller. Nonetheless, it is equally common in the region and chronologies here analysed (e.g. Tereso et al., 2013b; Peña-Chocarro et al., 2019; Teira-Brión, 2019; Seabra et al., 2022). The presence of both strengthens the importance of millets in this archaeological site. These cereals show similar characteristics, leading well with different environmental conditions, and are commonly grown in the spring (Tereso, 2012; Moreno-Larrazabal et al., 2015).

Wheats (naked wheat and spelt) would also have been crucial crops at “Casa Romana” despite being recovered in fewer amounts. Some differences are observed among them. Naked wheat is more frequent than spelt, whether through grains or chaff. However, these differences should not be overvalued since several macrorremains were only identified at the genus level (*Triticum*) due to their poor preservation state. This was particularly obvious in the chaff remains, namely the spikelet and glume bases. Once spelt was the only hulled wheat clearly identified, it is likely that several of those glume bases correspond to spelt remains.

Spelt is often found in Iron Age sites in Northwest Iberia, being dominant in some cases (e.g. Tereso et al., 2013a; Seabra et al., 2018). Hulled wheats are not demanding in terms of edaphic and climatic conditions, even though they do not tolerate well drought conditions, however, their processing is time-consuming (e.g. Hillman, 1981; Peña-Chocarro, 1999; Peña-Chocarro et al., 2009; Fuller et al., 2014). On the other hand, naked wheat demands more fertile soils, but its spikes are more easily processed in order to free the grain (e.g. Hillman, 1981). This last cereal is common in Northwest Iberia and is transversal to several periods, including the chronologies analysed at “Casa Romana” (e.g. Tereso, 2012; Teira-Brión, 2019; Tereso et al., 2020; Seabra et al., 2022).

The record of oat and rye raise some doubts about whether these cereals were intentionally cultivated or not. Regarding oat, the presence of remains from domesticated plants was confirmed through two floret bases. A higher number of grains (n=28) was recovered, but their identification, as mentioned before, does not allow a designation beyond the genus level, being impossible to distinguish between wild and domesticated species. Despite this difference, there is evidence of a possible connection between both types of remains, at least in part of this assemblage, since the same deposit where the bases were found (s.u. 778) revealed 11 grains of oat. Thus, and considering the date

obtained on oat grains (1st-2nd centuries CE), it is admissible that some of those gains, if not all, correspond to cultivated remains. It is more difficult to assume this interpretation for the remaining oat remains, but it should not be excluded, especially considering oat would have been cultivated, in Northwest Iberia, at least since the Iron Age (Dopazo Martínez, 1996; Tereso et al., 2013a; Teira-Brión, 2019).

Whereas regarding oat, either to a greater or lesser extent, its cultivation was attested, the same cannot be mentioned about rye. Although traditionally considered a crop, particularly in Roman and post-Roman chronologies, its presence in earlier contexts is more problematic. Rye seems to have been disseminated in pre-historic and proto-historic times from the centre and east of Europe as a weed of other cereals. Still, it is not possible to distinguish between remains intentionally cultivated and weeds through the grains since both may present similar dimensions and characteristics (Behre, 1992). This is particularly relevant in the case of Pit 51 from “Casa Romana”, where one radiocarbon date over a rye grain revealed a Late Iron Age chronology (4th-1st centuries BCE).

Other sites in Northwest Iberia provided rye grains with a similar chronology to that of “Casa Romana”, which allowed a new perspective on the introduction of rye in the Iberian Peninsula (Chapter 9). Joining radiocarbon determinations, carpological and biometric analyses of assemblages from different sites, where the evidence of Pit 51 from “Casa Romana” was included, it was possible to suggest that the remains of this phase should correspond to weeds. As for the other macroremains of rye in this site, we cannot assume the same interpretation since it was not possible to obtain a clear chronological framework.

The record of other crops was rare. Only faba bean was identified at “Casa Romana”. Several of the wild species identified in this site may eventually be associated with the agricultural fields as weeds. A diverse assemblage was identified but of small dimensions, which did not allow the establishment of a clear connection with the crops identified. To this must be added the ecological amplitude of several of these remains, which are equally common in other anthropogenic environments (Aguiar, 2000).

## 3.5 Conclusions

A carpological assemblage composed mainly of cereals (grains and chaff) was recovered at “Casa Romana” (Roman house) of the Castro de São Domingos. In

quantitative terms, broomcorn millet grains are present in higher numbers, while wheats (naked wheat and spelt) and foxtail millet are more reduced. Grains of hulled barley were occasional. Chaff remains are present in smaller amounts, however, it is relevant the predominance of rachis nodes of naked wheat, some identified as bread wheat, followed by glume bases of hulled wheats, which possibly correspond to spelt.

The record of oat and rye in small numbers generated doubts about if they correspond or not to domesticated plants. In the case of oat, its cultivation was attested by floret bases. Regarding rye, its interpretation was more complex. The dated grain revealed a Late Iron Age chronology, and considering the panorama recently observed in Northwest Iberia (Chapter 9), it is likely a weed. Other remains of rye, for now, do not allow detailed considerations.

Through the comparison between the different archaeological contexts, it was noted that most carpological remains were inside four structure types: pits, postholes, foundation ditches, and graves. Around half of those remains came from pits. These structures are frequently associated with storage activities, but in this specific case, the evidence does not support such function. The Late Antique graves are another paradigmatic case of this study. Most were disturbed and provided few carpological remains. These assemblages were similar to those found in other archaeological contexts.

The majority of the fruits/seeds from “Casa Romana” are related to a variety of archaeological structures with different functions and architectures. The chronology of these structures suggests a wide occupation of this archaeological area, at least between the Iron Age and the Late Antiquity. However, the deposits of these contexts were of difficult comprehension and characterization, being consistently composed of remobilized sediments, where a combination of ceramic material generally dated from the Iron Age and the Roman period was recurrent. Recent disturbances related to vineyards and construction work surely contributed to this situation. Therefore, the establishment of chronological phases or even the application of a diachronic analysis to the archaeological deposits and plant macroremains here analysed would likely be unviable.

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# Chapter 4 - Over the centuries: Long-term crop selection and diversity at Freixo/Tongobriga (Northwest Iberia)

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## Abstract

Freixo/Tongobriga (Marco de Canaveses, Northwest Portugal) is an archaeological site placed on a vast hill, close to the Tâmega and Douro rivers. It was an important Roman city, well-known for its monumental buildings (e.g. Forum, Baths). Nonetheless, excavations have shown that the area was occupied for a longer time span. In this paper, archaeobotanical results from two areas will be addressed - Wall and Housing Complex I – comprising three contexts – Wall South Section, *Impluvium* house and Round hut. These encompass a wide time period ranging from the Iron Age to the Late Antiquity. Results from the fruits and seeds analyses showed an assemblage dominated by cereals. The grains of broomcorn millet (*Panicum miliaceum*), and foxtail millet (*Setaria italica*) were predominant, followed by spelt (*Triticum spelta*). Hulled barley (*Hordeum vulgare*), naked wheat (*Triticum aestivum/durum*), rye (*Secale cereale*) and oat (*Avena* sp.) were scarce. A diverse set of fruits was collected, although in small amounts. The analysis of new and previous archaeobotanical assemblages in connection with other archaeological information and several radiocarbon determinations provided crucial information about crop selection and diversity at Freixo/Tongobriga through time.

Keywords: Fruits/Seeds, Cereals, Northwest Iberia, Iron Age, Late Antiquity

## 4.1. Introduction

Freixo/Tongobriga (Northwest of Portugal) is an archaeological site located in the village of Freixo, municipality of Marco de Canaveses, district of Porto, around 3 km east of the Tâmega river, which downstream merges into the Douro river (Fig. 4.1). It was implanted on a vast hill, at around 300 m a.s.l. The site is integrated within the Eurosiberian biogeographical region, namely the Galicia and North Portugal Sector, and more precisely the Porto and Low Douro district. A Mediterranean pluviseasonal oceanic bioclimate is observed, characterized by lower mesomediterranean and lower to upper humid conditions (Costa et al., 1998; Rivas-Martínez et al., 2011, 2017; Alves and Honrado, 2021; Capelo and Aguiar, 2021).

References to Freixo/Tongobriga are widely observed in historical documentation, although these only mention general considerations such as the presence of a religious building or ancient ruins (e.g. Aguiar, 1758; Azevedo, 1845; Azevedo, 1940; David, 1947; Craesbeeck, 1992). In the late 18$^{th}$ century, and mainly in the 19$^{th}$ century, house-building and farming caused deep transformations in the archaeological area. On the other hand,

those activities uncovered material and structures, grabbing the attention of pioneer researchers (e.g. Hübner, 1869; Vasconcelos, 1899-1900; Sarmento, 1901a, 1901b, 1901c; Vasconcelos, 1914, 1916; Lima, 2020a).

The archaeological interventions started in 1980 and have been recurrent since then till 2015. The Roman finds are of particular note, being identified several public and private buildings, such as the Forum, Baths or *Domus*. The presence of other typical Roman structures (Theatre, Circus, and Amphitheatre) has also been pointed out, requiring confirmation through excavation (Dias, 1997; Rocha et al., 2014; Lima, 2020a; Silva, 2020). Those facilities were part of the city of *Tongobriga*, which was probably established between the late 1st century and the early 2nd century CE (e.g. Dias, 1997, 2013, 2018, 2020). It was a city with an important role at a regional level, likely a civitas within the *conventus Bracaraugustanus* (e.g. Dias, 1997, 2013, 2018, 2020).

The Roman structures were often built over Iron Age levels or in nearby spaces, sometimes maintaining the same function: the Roman baths were built next to an Iron Age sauna (Dias, 1997, 2020); the construction of *Domus* in the central platform followed the destruction of previous Iron Age houses, despite both types may have coexisted in an initial stage (Dias, 1997, 2020); Roman and Iron Age houses were found next to each other in a southern area. These last structures were badly preserved making difficult the comprehension of this area, still, a similar pattern was observed (Winkes, 2020).

Human occupation at Freixo/Tongobriga surpassed the Iron Age and Roman periods, although it became less significant. The archaeological data suggest that from Late Roman times onwards few new constructions occurred, and only minor changes were applied to roman *domus* (Dias, 1997; Lima, 2016, 2017a). Gradually, the site´s occupation focused in the central area and its surroundings, where an important building was raised somewhere between the 5th and 6th centuries CE, according to the architectural features and polychromatic mosaics observed, as well as available written documentation (Lima, 2016, 2017a). However, the old roman baths were still in use in the 6th century, probably with different purposes, eventually as a Christian temple (Lima, 2020b). The ancient roman *forum pecuarium* – a large enclosed space to store and trade goods - kept being used as an important regional market till the 16th century (Lima, 2017b).

The relevance and diversity of contexts found led to several multidisciplinary approaches, including anthropological analyses over a Late Roman necropolis (Santos and Silva, 2020; James et al., 2022); considerations about the urban planning of the

Roman city and its buildings (Rocha et al., 2014); or proposals for the site´s requalification and the nearby landscape (Medeiros and Fernandes, 2016). Following this interdisciplinarity, recent excavations (2014-15) in three areas (Housing Complex I, Forum, and Wall), coordinated by one of the authors (A. Lima), also included sediment recovery for archaeobotanical analysis (López-Dóriga, 2020).

In the Forum, several Bronze Age pits showed a rich fruits/seeds assemblage, including evidence of storage (Tereso et al., 2016; Lima et al., 2020; López-Dóriga, 2020). In the remaining areas, partial analyses were already carried out (Lima et al., 2020; López-Dóriga, 2020), but the study of all contexts and deposits is not complete yet. Therefore, in this approach, we will present the full fruits/seeds results in coordination with the characterization of the respective archaeological deposits. These contexts reflect more than one millennium of history from the Iron Age to Late Antiquity, being relevant to understand the agricultural decisions of past communities during such a long period.

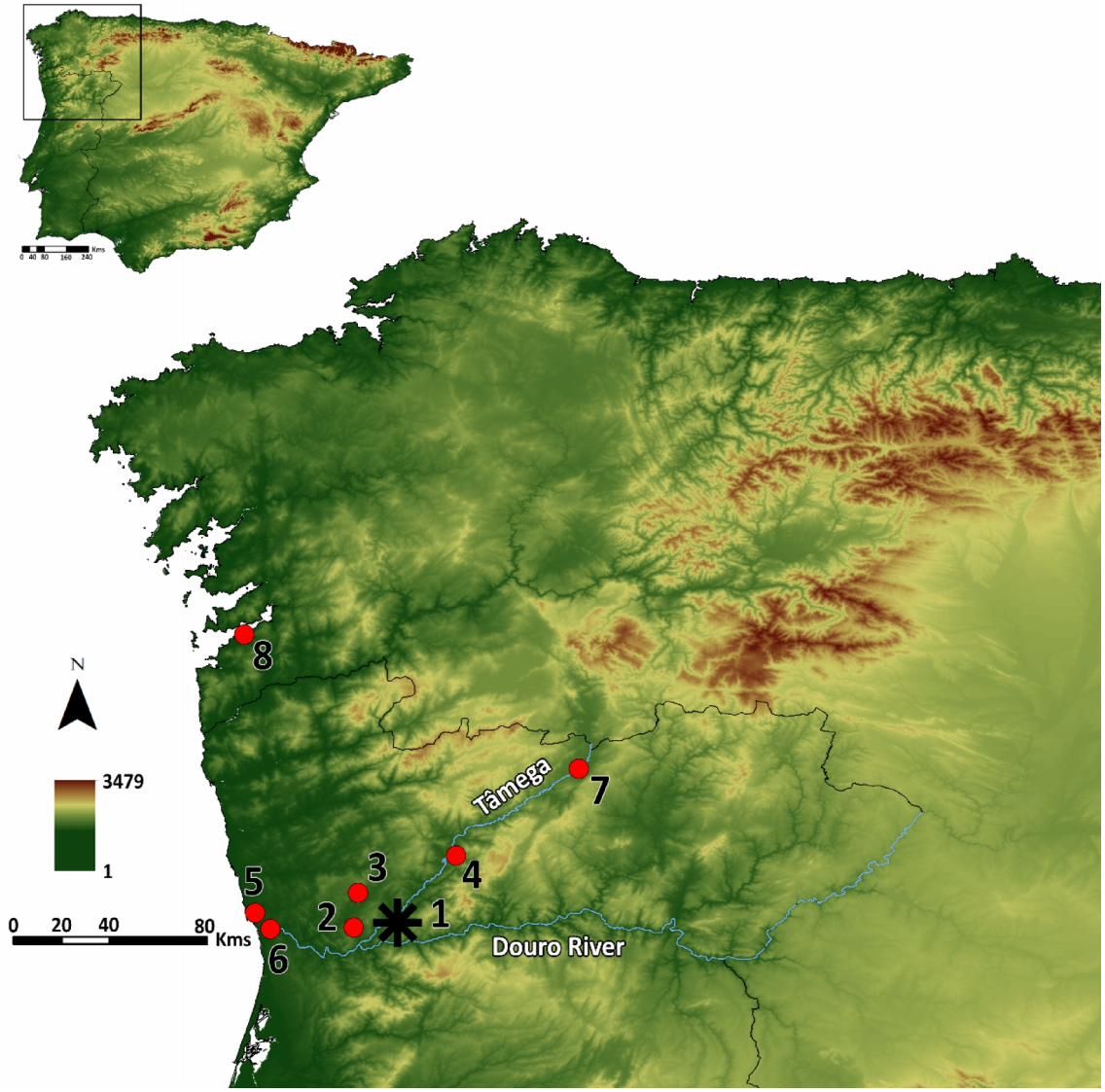


Figure 4.1 - Location of the sites mentioned in the article: 1-Freixo/Tongobriga; 2-Monte Mozinho; 3-"Casa Romana" (Roman house) of the Castro de São Domingos; 4-Crastoeiro; 5-Castro de Guifões; 6-Rei Ramiro; 7-*Aquae Flaviae*; 8–O Areal.

## 4.2. Materials e Methods

### 4.2.1. Sampling and analysed contexts

Three contexts associated with two areas are included in this study: Wall (South Section), the *Impluvium* house and a Round hut (Housing Complex I) (Fig. 4.2). In two years of excavations (2014-2015) were collected 333 sediment samples from 51 stratigraphic units (s.u.), corresponding to 3,815 L (Table A2.1 in Attachment 2). The samples were processed through a Siraf-type flotation machine, using a 0.25 mm mesh. The large amount and volumes of the samples, as well as time constraints, led us to

carry out a selection of samples to be studied. Assuring the representativeness of the assemblage, at least one sample per s.u. was studied, corresponding to 85 samples and 995 L of sediment. Despite some variations, the number of samples analysed per s.u. often varied between one and two.

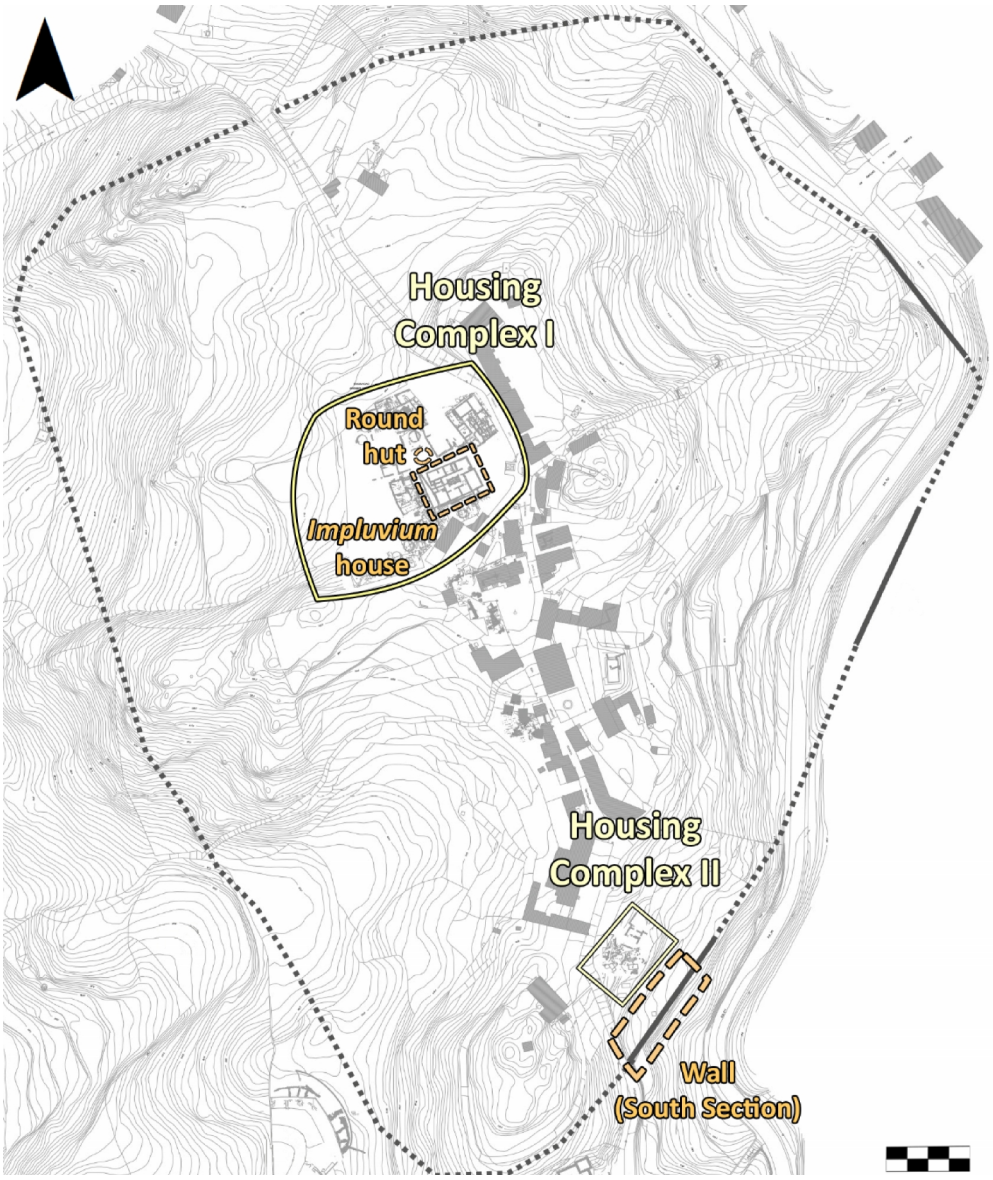


Figure 4.2 - Location of the habitational areas (yellow) and studied contexts (orange). Adapted from Lima et al., 2020 (Proposal of the Wall´s perimeter by António Lima, drawn by António Freitas). Scale 400 meters.

In order to better understand the chronology of those three contexts and deposits, several fruits/seeds were dated (Table 4.1). The radiocarbon results showed chronologies spanning from the Iron Age (earliest date is from the 5$^{th}$ -3$^{rd}$ centuries BCE) to the Late Antiquity (5$^{th}$-6$^{th}$ centuries CE).

| Area | Context | S.U. | Material | Lab. Ref. | 14C age (yr BP) | Calibrated age BCE-CE (68.3%) | Calibrated age BCE-CE (95.4%) | References |
|---|---|---|---|---|---|---|---|---|
| South Section | Wall | 4.1 | *Secale cereale* (grain) | D-AMS 042655 | 2062 ± 22 | 105-5 BCE | 155 BCE-10 CE | Chapter 9 |
| | | 5 | *Panicum miliaceum* (grains) | D-AMS 011938 | 2314 ± 34 | 410-360 BCE | 470-200 BCE | López-Dóriga, 2020 |
| | | 6 | *Triticum spelta* (grain) | D-AMS 009827 | 2102 ± 27 | 160-50 BCE | 200-40 BCE | |
| | | 6 | *Setaria italica* (grains) | D-AMS 011939 | 2141 ± 43 | 350-50 BCE | 360-40 BCE | |
| | | M4 | *Triticum spelta* (grain) | D-AMS 011940 | 2237 ± 29 | 380-200 BCE | 390-200 BCE | |
| Housing Complex I | Round hut | 11 | *Secale cereale* (grain) | D-AMS 047814 | 2158 ± 21 | 350-160 BCE | 355-105 BCE | Chapter 9 |
| | *Impluvium* house | 3 | *Castanea sativa* (fruit) | D-AMS 009828 | 1560 ± 30 | 430-570 CE | 420-580 CE | López-Dóriga, 2020 |
| | | 8 | *Secale cereale* (grain) | D-AMS 009829 | 1692 ± 27 | 260-410 CE | 250-420 CE | |
| | | 12 | *Setaria italica* (grains) | D-AMS 009830 | 2083 ± 26 | 150-40 BCE | 180 BCE-10 CE | |

Table 4.1 - Radiocarbon dates obtained at Freixo/Tongobriga. Calibration OxCal 4.4.4 software (Bronk Ramsey, 2001), IntCal 20 calibration curve (Reimer et al., 2020). The calibrated ages were rounded to the nearest five (uncertainties below 25) and 10 (uncertainties above 25) years, following Bayliss and Marshall (2022).

#### 4.2.1.1. South Section - Wall

Written sources mention that Freixo/Tongobriga was walled (Aguiar, 1758; Vasconcelos, 1914). Even so, only in 2005 was discovered a southern section of the Wall (Lima et al., 2020; Winkes, 2020). Its excavation was expanded in the 2014/15 campaigns (Fig. 4.3), allowing the comprehension of the Wall´s characteristics and phases of construction. Initially, this structure corresponded to a rudimentary construction, being reinforced in a second moment. The sloped terrain and the structural instability of the Wall led to the application of preventive measures afterward (Lima et al., 2020).

Twenty-six samples (482 L) from 14 s.u. were analysed. The majority correspond to deposits accumulated next to the Wall throughout time (Table A2.1 in Attachment 2). These deposits are possibly related to a habitational area located a few metres above (Housing Complex II-Fig. 4.2), where two badly preserved Iron Age houses have been recorded (Winkes, 2020). The similarity between the material culture of both contexts and the steepness of the terrain suggest that remains found next to the Wall are, at least partially, the result of remobilizations from the upper area where the habitational area is (Lima et al., 2020). Sediment between the wall´s stones was also recovered and associated with the two construction phases observed whenever possible. Other structures were badly preserved and difficult to interpret (Lima et al., 2020; López-Dóriga, 2020).

The radiocarbon dates obtained in the Wall context revealed results covering the last five centuries before the turn of the Era, *i.e.* most of the Iron Age until the first contacts with the Romans. Still, the complex stratigraphy, with the abovementioned secondary or tertiary context does not allow a detailed phasing. The charred plant remains essentially came from deposits integrating sediment from different places and moments. The long time-span reflected in the radiocarbon dates and the analysis of ceramic material also attest this idea (Lima et al., 2020; López-Dóriga, 2020).

Figure 4.3 - Excavation of [5], next to the Iron Age wall. Scale 50cm.

#### 4.2.1.2. Housing Complex I

Two habitational structures from Housing Complex I (Fig. 4.2) will be examined: an Iron Age Round hut (Fig. 4.4), and the Late Antique *Impluvium* house (Fig. 4.5).

The Iron Age Round hut from the Housing Complex I was partially intervened in previous campaigns (Dias, 1997), but no archaeobotanical sampling was carried out. Only the excavation of its eastern limits (around 4 $m^2$), which occurred in 2015, included a specialist in archaeobotany. A diversity of deposits was identified, either associated or not with structures (e.g. pit, posthole, deposits related to abandonment/destruction or fire events). However, not only the results from a radiocarbon date and the chronology of the artefacts recovered do not always match, but also, the first levels showed evidence of

perturbations, this time by a modern pit [4]. Deposits with Iron Age chronology (s.u. [34], [35], [36], [37]) correspond to parts of combustion structure [38] and a masonry Wall [13], and a radiocarbon date obtained from a fire layer [11] points out to a period within the 4th-2nd centuries BCE, thus confirming this chronology (Table 4.1). Still, Late Roman material was predominant in most layers, suggesting a later use of the area, but demanding caution in the interpretation of this assemblage (see above discussion). Fruits/seeds from 41 sediment samples (329 L) were analysed, coming from 28 s.u., most of them from inside the house (Table A2.1 in Attachment 2).

Figure 4.4 - Round hut (blue) and excavated area in 2015 (orange). Scale 1m.

The *Impluvium* house has approximately 325 m$^2$ and was raised in the late 1st century CE-early 2nd century CE, in the initial moments of the Roman city (Dias, 1997; Rocha et al., 2014). A stone drainage system was found in the lower levels of the house with two layers associated, namely a preparation level [12] and the deposit [11] that filled the structure. A radiocarbon date on foxtail millet grains from the preparation level provided a Late Iron Age chronology (Table 4.1), *i.e.*, slightly earlier than the house itself, which suggests the construction of this structure involved the remobilization of sediment from previous occupations. Still, the analysed deposits derive mostly from the Late Antiquity, and radiocarbon dates point to two consecutive phases within this period, one from the 3rd-5th centuries CE and the other from the 5th-6th centuries CE (Table 4.1). Eighteen samples (184 L) from 9 s.u. were studied (Table A2.1 in Attachment 2). These include a

fire level (s.u. 3), deposits associated with the abandonment of the structure, and a wooden floor (s.u. 8 and 9).

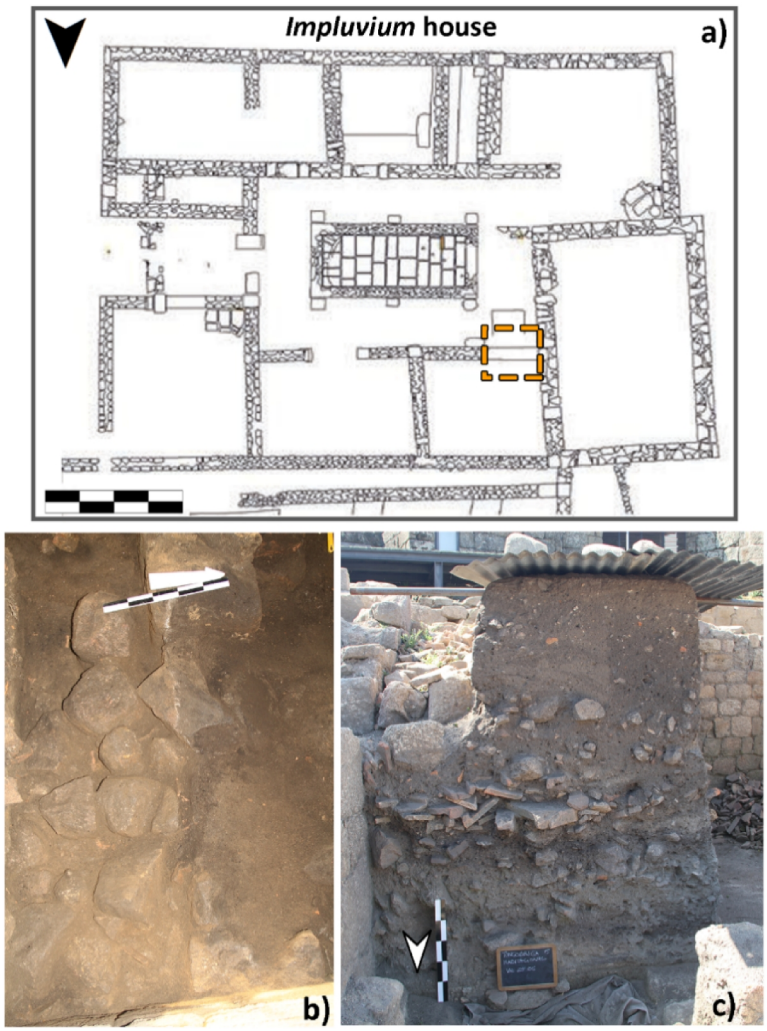


Figure 4.5 - Above: a) *Impluvium* house (adapted from Rocha et al., 2014) and excavated area (orange). Scale 4m. Below: b) Drainage system covered by stones [10]; c) Stratigraphic section (after the excavation). Scales 0.50 cm.

### 4.2.2. Laboratory work

Light fractions were sorted under a stereoscopic microscope by two authors (Inés López-Dóriga and Luís Seabra) in the facilities of the Faculty of Sciences of the University of Porto and the Archaeological Station of Freixo. Specialized bibliography guided the taxonomic identification (e.g. Beijerinck, 1976; Castroviejo, 1986-2012; Hillman et al., 1996; Buxó, 1997; Jacomet, 2006; Nesbitt, 2006; Neef et al., 2012; Zohary et al., 2012). Whenever necessary, fruits/seeds were compared with modern material from the reference collections of the University Porto Herbarium (PO) at the Natural History and Science Museum of the University of Porto (MHNC-UP) and from CIBIO.

Each sample was separated through a column of sieves (2 mm, 1 mm, 0.5 mm and 0.25 meshes). The content of 2 mm meshes was always sorted, being subsampling restricted to the remaining meshes. Subsampling was carried out through a riffle box, and mainly to 0.5 mm meshes from the Wall and Round hut contexts (Table A2.2 in Attachment 2). The majority of the 0.25 meshes was not studied. Each sample often displayed few fruits/seeds, normally below 10 and never exceeding 20 units (Table A2.3 in Attachment 2). For this reason, results from subsamples were not extrapolated to estimate the number of remains present in the samples.

Entire fruits/seeds and fragments with scutella or hila were counted as units. Longitudinal fragments (cereals) and cotyledons (legumes) were counted as one unit when two remains were recovered. Regarding chaff, rachis segments and nodes, as well as glume and spikelet bases were considered units. Hulled grains or with husks still attached were referred separately. Units and results per context are expressed in Table 4.2, while results with both units and fragments per sample and s.u. are represented in Table A2.3 in Attachment 2.

Taxonomic designations follow the checklist for Portuguese flora (Sequeira et al., 2011) and, for cultivated plants, Zohary et al. (2012). Oat grains were identified at the genus level (*Avena* sp.) since they were always present without floret bases, being those crucial for a detailed diagnosis (e.g. Ruas and Pradat, 2001; Jacomet, 2006). Naked wheat grains were designated as *Triticum aestivum/durum*, a morphological type that includes *Triticum aestivum*, *Triticum durum*, and *Triticum turgidum* grains (Buxó, 1997). Other identifications with less detail (e.g. tribe, family, subfamily) were often applied, mainly due to the poor preservation of the plant remains.

## 4.3. Fruits/Seeds Results

### 4.3.1. Overall Results

The results show a substantial assemblage of fruits and seeds (n=2,713), mostly composed of cereal remains (79%) (Table 4.2, Table A2.3 in Attachment 2). Millet grains are predominant (n=1,549), including broomcorn millet (*Panicum miliaceum*) (n=484), foxtail millet (*Setaria italica*) (n=324), and badly preserved grains identified as Panicoideae (n=737). These are probably either from *P. miliaceum* or *S. italica*, since no other wild or cultivated millet has been recorded. Spelt (*Triticum spelta*) grains are significant (n=145) and other cereal grains are sporadic, namely of hulled barley

(*Hordeum vulgare*), rye (*Secale cereale*), naked wheat (*Triticum aestivum/durum*), and oat (*Avena* sp.).

Chaff remains are fewer. Most of them correspond to glume bases of hulled wheats, namely *Triticum* (n=148), and spelt (n=138). A few whole spikelets of those cereals were also collected. Rachises of hulled barley, spelt, naked wheat, and rye were rare. Some millet grains are fully hulled or with husks still attached.

A small set of wild pulses (5%) was collected, including Genistae, *Ornithopus* sp., Fabaceae – *Trifolium* type, among others. *Vicia/Lathyrus* seeds are recurrent, but although it is unclear if they corresponded to domesticated or wild remains, the latter is more likely considering the small size of the seeds. A diverse set of fruits remains was recovered. The most frequent are pips and pedicels of grape (*Vitis vinifera*), seeds of blackberry/raspberry (*Rubus* sp.) and fig (*Ficus carica*), whereas other fruits were more sporadic, such as acorn remains (*Quercus* sp.), chestnut fruits (*Castanea sativa*), stones of elderberry (*Sambucus* sp.) or a bract of pine (*Pinus* sp.).

The other plant remains are essentially grasses, such as *Poa* sp. or *Lolium/Festuca,* and other wild remains. They were often scarce, even so, some diversity was observed. For instance, significant amounts of *Solanum* seeds, *Rumex* sp. achenes, or *Malva* sp. seeds were collected. These remains may correspond to weeds or ruderal plants, since they have a wide ecological range (Castroviejo, 1986-2010; Aguiar, 2000).

| **Context** | **Wall** | ***Impluvium* House** | **Round Hut** | | |
|---|---|---|---|---|---|
| **Cronology** | **Iron Age** | **Late Antiquity** | **Late Roman** | **Iron Age** | |
| **Volume (L)** | **482** | **184** | **309** | **20** | |
| **Cereal (grains)** | | | | | **Total** |
| *Avena* sp. | 3 | 1 | 5 | 3 | **12** |
| *Hordeum vulgare* | 7 | 6 | 3 | | **16** |
| *Panicum miliaceum* | 396 | | 76 | 2 | **474** |
| *Setaria italica* | 175 | 118 | 30 | | **323** |
| cf. *Setaria italica* | | 4 | | | **4** |
| Panicoideae | 665 | 27 | 43 | 1 | **736** |
| *Secale cereale* | 2 | 11 | | 2 | **15** |
| cf. *Secale cereale* | 1 | 4 | | | **5** |
| *Triticum aestivum/durum* | 5 | | 2 | | **7** |
| *Triticum spelta* | 137 | | 7 | | **144** |
| *Triticum* sp. | 26 | 1 | 9 | 1 | **37** |
| Triticeae (with scutellum) | 12 | 7 | 4 | | **23** |
| **Cereal (chaff)** | | | | | |
| *Hordeum vulgare* (rachis segment with 1 node) | 1 | | 4 | | **5** |
| *Panicum miliaceum* (hulled grain) | 2 | | 1 | | **3** |
| *Panicum miliaceum* (grain with husks) | 7 | | | | **7** |
| *Setaria italica* (hulled grain) | 1 | | | | **1** |
| Panicoideae (grain with husks) | 1 | | | | **1** |
| *Triticum aestivum/durum* (rachis node) | | | 2 | | **2** |
| *Triticum spelta* (grain with husks) | 1 | | | | **1** |
| *Triticum spelta* (rachis segment) | 3 | | | | **3** |
| *Triticum spelta* (spikelet base) | 15 | | 1 | | **16** |
| *Triticum spelta* (glume base) | 115 | | 16 | 7 | **138** |
| *Triticum* sp. (spikelet base) | 10 | | 5 | | **15** |
| *Triticum* sp. (glume base) | 61 | 1 | 65 | 21 | **148** |
| **Other Poaceae (grains)** | | | | | |
| *Lolium/Festuca* | | | 1 | | **1** |
| *Poa* sp. | | 1 | 2 | 2 | **5** |
| Poaceae | 12 | 11 | 14 | 2 | **39** |
| **Fabaceae** | | | | | |
| Genisteae (seed) | 26 | 1 | 19 | 2 | **48** |
| *Ornithopus* sp. (seed) | 1 | | 1 | | **2** |
| *Vicia/Lathyrus* (seed) | 30 | 13 | 20 | 1 | **64** |
| Fabaceae - *Trifolium* type (seed) | | | 2 | | **2** |
| Fabaceae (seed) | 11 | 1 | 10 | | **22** |
| **Fruits** | | | | | |
| *Castanea sativa* (fruit) | | 3 | | | **3** |
| *Ficus carica* (seed) | | | 17 | | **17** |
| *Pinus* sp. (bract) | | | 1 | | **1** |
| *Quercus* sp. (cotyledon) | 5 | | | | **5** |
| *Quercus* sp. (cupule) | 2 | | | | **2** |
| *Rubus* sp. (seed) | 1 | 16 | 8 | | **25** |
| *Sambucus* sp. (stone) | | | 3 | | **3** |
| *Vitis vinifera* (seed) | | 1 | 22 | | **23** |
| *Vitis vinifera* (pedicel) | | | 19 | | **19** |
| Rosaceae (seed) | 1 | | | | **1** |
| **Others** | | | | | |
| *Asterolinon linum-stellatum* (seed) | 1 | | | | **1** |
| Apiaceae (achene) | | | 2 | | **2** |
| Asteraceae (cypsela) | 1 | 1 | 1 | | **3** |
| Caryophyllaceae (seed) | 2 | | 1 | | **3** |
| *Carex* sp. (achene) | 1 | | | | **1** |
| Chenopodiaceae (seed) | | 1 | | | **1** |
| Cyperaceae (achene) | | 2 | | | **2** |
| cf. Cyperaceae (achene) | 1 | | | | **1** |
| *Corrigiola litoralis/telephiifolia* (achene) | | | 1 | | **1** |
| *Dianthus* sp. (seed) | 1 | | | | **1** |
| *Galium/Asperula* (mericarp) | 5 | 1 | 2 | | **8** |
| Lamiaceae (nutlet) | 1 | | 1 | | **2** |
| *Linum* sp. (seed) | | 1 | | | **1** |
| *Malva* sp. (seed) | 2 | | 17 | | **19** |
| *Montia fontana* (seed) | | | 26 | | **26** |
| *Plantago* sp. (seed) | | | 1 | | **1** |
| *Portulaca oleracea* (seed) | | 1 | | | **1** |
| *Polygonum aviculare* (achene) | | | 3 | | **3** |
| *Polygonum* - lenticular type (achene) | | | 2 | | **2** |
| *Polygonum* sp. (achene) | | | 4 | | **4** |
| Polygonaceae (achene) | | | 2 | | **2** |
| *Raphanus raphanistrum* (siliqua segment) | 1 | 1 | 2 | | **4** |
| *Rumex acetosa/longifolius* (achene) | 1 | | | | **1** |
| *Rumex acetosella* (achene) | 2 | | | | **2** |
| *Rumex* sp. (achene) | | | 23 | | **23** |
| *Sherardia arvensis* (mericarp) | | | 1 | | **1** |
| *Silene gallica* (seed) | | | 1 | | **1** |
| *Spergula arvensis* (seed) | | | 1 | | **1** |
| *Spergula* sp. (seed) | 3 | 1 | | | **4** |
| *Solanum* sp. (seed) | 2 | | 40 | | **42** |
| *Stellaria/Cerastium* (seed) | 1 | | 3 | | **4** |
| *Verbena officinalis* (mericarp) | | | 6 | | **6** |
| *Veronica* sp. (seed) | | | 1 | | **1** |
| *Viola* sp. (seed) | | 1 | | | **1** |
| Undetermined (pedicel) | 1 | | | | **1** |
| Undetermined (tuber) | 1 | | | | **1** |
| Undetermined (fruit/seed) | 49 | 8 | 55 | 5 | **117** |
| **Total** | **1,811** | **245** | **608** | **49** | **2,713** |

Table 4.2 - Fruits/Seeds Results per Context, at Freixo/Tongobriga.

### 4.3.2. Results per Context

The three contexts (Wall, *Impluvium* house and Round hut) displayed fruits/seeds assemblages with different dimensions and characteristics (Table 4.2, Fig. 4.6, Table A2.3 in Attachment 2):

1- Most of the fruits/seeds collected at Freixo/Tongobriga came from the Iron Age levels of the Wall area (67%), but it should be mentioned this was the area from which more sediment was analysed (482 L). This context revealed most of the cereal remains found (1,646 out of 2,136). Millet grains were preponderant, mainly broomcorn millet. Grains and chaff of spelt were found in significant numbers, whereas hulled barley, naked wheat, rye, and oat were scarce. It is noteworthy that all acorns, both cotyledons and cupules, were found here. Other wild remains were rare.

2- The Round hut is the second context with more fruits/seeds (n=657), most coming from the Late Roman levels, and only a few from the Iron Age (n=49). Although remains of fruits and seeds were less abundant than in the Wall area, a smaller volume of sediment was studied (329 L). The cereal remains were again dominant, although less obviously. Millet grains identified at the tribe level (Panicoideae) and broomcorn millet were prevailing, followed by foxtail millet. The grains and chaff of spelt were reduced, but the significant record of glume bases of *Triticum* suggests that hulled wheats were also relevant in the Round hut. Hulled barley and naked wheat grains were rare. This cereal record is somehow identical to that from the Wall area (see Discussion). In the same way, rye and oat were also found in few numbers. On other hand, some differences were observed concerning fruits and other plant remains. In the Round hut were recovered substantial concentrations of fig seeds, pips and pedicels of grape, as well as a few blackberry/raspberry seeds, elderberry stones, and a pine bract. Other wild remains were more abundant and diverse here than in any other area.

3- The *Impluvium* house provided few fruits/seeds (n=245), but the volume of sediment analysed was the lowest (184 L). Foxtail millet grains were dominant. Oat, hulled barley and rye grains were recovered in small amounts. No broomcorn millet grain was clearly identified. It was identified a single chaff remain, namely a *Triticum* glume base. The compartment studied revealed the

only chestnut fruits of the site. Blackberry/raspberry seeds and a grape pip were other fruits recovered.

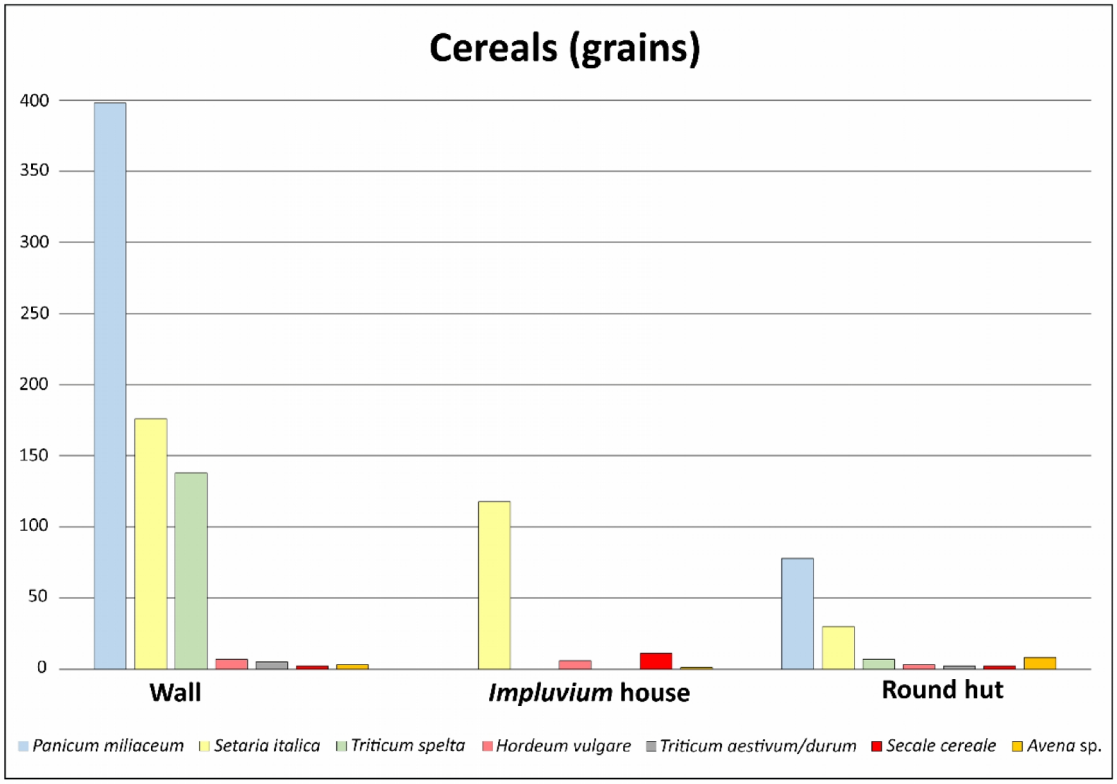


Figure 4.6 - Main cereal grains in the Wall, *Impluvium* house and Round hut, at Freixo/Tongobriga.

## 4.4. Discussion

### 4.4.1. Archaeological contexts, plant remains, and radiocarbon dates: how they complement each other

Decades of excavations at Freixo/Tongobriga revealed a long-term occupation that started at least in the Bronze Age and lasted until today. Several Iron Age contexts were heavily disturbed during Roman times, causing difficulties in the interpretation of this occupation. Beyond that, recent construction and agricultural activities caused deep transformations in the whole archaeological site (Dias, 1997; Lima et al., 2020).

The Wall area is the context with more robust Iron Age data. Essentially, deposits correspond to sediment accumulated next to or within the Wall through time. As such, fruits/seeds remains likely derive from secondary or tertiary refuse deposits (*apud* Schiffer, 1996; La Motta and Schiffer, 1999), or even from natural depositions resulting from different post-depositional processes. The interpretation of such contexts may be

challenging, and their chronology may raise some doubts. They are more likely product from long-term dynamics, being less prone to the contingencies of primary contexts (e.g. Fuller et al., 2014; Vaz et al., 2016b). Nonetheless, and regardless of the varied radiocarbon results, all evidence points to an Iron Age chronology (Table 4.1).

Other Iron Age plant remains were recovered in the Round hut from Housing Complex I but these were rare. Most remains from this complex date to the Late Roman period. There were fewer plant remains, but cereals, and more particularly millets were predominant in both contexts (Table 4.2, Table A2.3 in Attachment 2). Hulled wheats were also relevant in the two contexts. Grains and chaff of spelt were in higher amounts in the Wall, whereas glume bases of *Triticum* sp. were more significant in the Round hut. Since spelt was the only hulled wheat clearly identified at Freixo/Tongobriga, it is possible that those remains also correspond to spelt. The main difference in comparison with the Wall area concerns the higher number and diversity of wild remains and fruits in the Round hut, particularly the record of plants with high economic value in Roman times, such as fig or grape. The archaeological and archaeobotanical records demand caution regarding the chronology of the fruits/seeds remains from this house. Still, and considering the result of the radiocarbon date obtained (4$^{th}$-2$^{nd}$ centuries BCE) in an allegedly Late Roman level [11], and some of the similarities observed in the fruits/seeds record, we cannot exclude an Iron Age chronology for several of those plant remains. Further radiocarbon dates may eventually clarify this matter in the future.

A Pit (s.u. [28]) was identified in the Round hut. It showed coated walls and plant remains were found inside (s.u. [29]), namely grains of broomcorn millet and spelt, as well as some chaff of hulled wheats (*Triticum* sp. and *Triticum spelta*) and rachises nodes of naked wheat. However, these remains were present in small amounts and the archaeological data did not point to a primary storage context.

Most of the deposits studied in the *Impluvium* house provided a Late Antique chronology. A radiocarbon date from a lower level (s.u. [12]) showed a Late Iron Age chronology, previous to the house construction, and Iron Age evidence is widespread in Housing Complex I, including near the *Impluvium* house. Thus, the area is likely disturbed and at least the levels related to the drainage system may contain archaeological and archaeobotanical material from more than one period. The fruits/seeds results do not clarify this matter. A small assemblage was collected, being foxtail millet predominant in layers with different chronologies (Table A2.3 in Attachment 2). The only exception concerns the absence of rye in layer [12], but this consideration should not be overemphasised due to the low number of fruits/seeds remains.

As observed, the analysed contexts require a careful approach. Most of the fruits and seeds recovered at Freixo/Tongobriga came from secondary and tertiary deposits of difficult interpretation and chronological detail. Nonetheless, overall data pointed out an Iron Age chronology for the macroremains recovered in the Wall area, and some of those from the Round hut, while the chronology of the fruits/seeds collected in the Late Roman levels is dubious and cannot be properly established without more direct radiocarbon dating. The plant remains recovered in the *Impluvium* house likely date to the Late Antiquity, except those from the layer [12], which may include fruits/seeds from different periods.

### 4.4.2. Crops

The archaeobotanical assemblage with the help of archaeological data and radiocarbon dates provided relevant information regarding crop choices for two particular periods: the Iron Age and the Late Antiquity. The lack of evidence from High Imperial times prevents considerations about this period at Freixo/Tongobriga.

The fruits/seeds results displayed a diversity of crops, mainly cereals. In number, millets (broomcorn and foxtail millets) were dominant, but it should be taken into account the relatively small dimension of the assemblage. Clear domesticated millet remains were not identified in the Middle Bronze pits of Freixo/Tongobriga (Tereso et al., 2016; López-Dóriga, 2020). It seems that millets only gain importance in Iberia in the Late Bronze Age and its relevance further increased in the Iron Age (Tereso et al., 2016; González-Rabanal et al., 2022). Broomcorn millet was a major crop during this last period (e.g. Figueiral, 2008; Rey Castiñeira et al., 2011; Tereso, 2012; Tereso et al., 2013b; Figueiral et al., 2017; Martín-Seijo et al., 2019; Teira-Brión, 2019). Broomcorn and foxtail millets were also common in other Late Antique contexts in Iberia (Tereso et al., 2013a; Peña-Chocarro et al., 2019; Teira-Brión, 2019; Seabra et al., 2022).

The record of spelt was significant in Iron Age and supposedly Late Roman levels. Spelt is another staple Iron Age crop, being often dominant in Northwestern sites and the Tâmega valley is not an exception, as observed at the site of Crastoeiro (Mondim de Basto) (Tereso, 2012; Tereso et al., 2013b; Seabra et al., 2018; Teira-Brión, 2019). On the contrary, in Late Roman contexts, spelt is almost residual and the actual age of the remains found in these deposits of the Round hut must be questioned. Other hulled wheats, einkorn and emmer (*Triticum monococcum* and *Triticum dicoccum*), were

recovered at Freixo/Tongobriga, but only in the Middle Bronze Age pits (Tereso et al., 2016; López-Dóriga, 2020), suggesting that they lost relevance after this period.

Naked wheat and hulled barley were frequently recorded in the Iron Age levels at Freixo/Tongobriga but usually in small amounts. Naked barley (*Hordeum vulgare* var. *nudum*) is absent in the Iron Age levels, as in most sites from Northwest Iberia. This contrasts with data from the earlier Middle Bronze Age pits of Freixo/Tongobriga, where naked wheat and naked barley were the most abundant cereals (Tereso et al., 2016; López-Dóriga, 2020), reflecting a change in crop selection.

The interpretation of oat and rye is more complex. Only a few oat grains were collected from the three contexts, and without floret bases it is impossible to distinguish between domesticated and wild remains (e.g. Ruas and Pradat, 2001; Jacomet, 2006). The cultivation of oat likely started during the Iron Age in Northwest Iberia (Tereso, 2012; Tereso et al., 2013b), but at Freixo/Tongobriga, it was not possible to confirm or dismiss this idea.

A few rye grains were collected from the three analysed contexts and dated. A grain from the Wall showed a Late Iron Age/Early Roman age, sometime between the 2nd century BCE to the early 1st century CE (Table 4.1). An even older result from the 4th century BCE to the late 2nd century BCE was obtained on a grain from the Round hut. The presence of rye in two different moments but continuous in time, suggests it was frequent in the surrounding fields of Freixo/Tongobriga. These sparse early results are similar to others in Northwest Iberia, including nearby sites, such as Crastoeiro and “Casa Romana” (Roman house) of the Castro de São Domingos (Lousada), in the Sousa valley, and suggest that all rye remains may correspond to weeds in other cereal fields, probably spelt (Chapter 9).

On the other hand, a rye grain from the *Impluvium* house provided a Late Roman chronology (3rd century – early 5th century CE). At that moment, rye was already a staple crop, according to evidence from nearby sites, namely Monte Mozinho (Penafiel) in the right margin of the Tâmega river, and other Iberian sites as well (Alonso, 2005; Colominas et al., 2019; Peña-Chocarro et al., 2019). Still, only a small number of grains was recovered, being difficult to describe to evaluate the role of rye as a crop in the agricultural systems at Freixo/Tongobriga.

A varied set of fruits was observed. The acorns collected are wild remains, whereas regarding blackberry/raspberry, grape and fig may correspond to wild or domesticated plants. Grape is an important economic fruit and frequent in the archaeobotanical record

but remains are few at Freixo/Tongobriga and almost all came from the Round hut, which demands a careful look in terms of chronology. Only one pip was identified in the *Impluvium* house. Identical considerations could be pointed to the small number of fig remains recovered, also from the Round hut. Fig is more uncommon in the fruits/seeds record of northwest Iberia, and besides Freixo/Tongobriga, it was recovered in the Late Roman site of O Areal (Vigo) (Teira-Brión, 2010; Teira-Brión, 2019; Teira-Brión, 2022), and more recently in the Iron Age levels of Rei Ramiro (Vila Nova de Gaia) (Seabra et al., 2023).

Considering the large dimension of the chestnut fruits found, the archaeological context where they were found (*Impluvium* house) and chronology revealed by one of them (5$^{th}$-6$^{th}$ centuries CE), these fruits likely correspond to domesticated remains. There is an increasing frequency of chestnut in the fruits/seeds record from Late Roman times onwards, in NW Iberia, being found in several other sites in northern Portugal such as Monte Mozinho, Castro de Guifões (Matosinhos), and *Aquae Flaviae* (Chaves), as well as in the Galician site of O Areal, suggesting its expansion occurred during this period of time (Teira-Brión, 2010; Vaz et al., 2016a, 2017; Teira-Brión, 2019; Seabra et al., 2020; Teira-Brión, 2022).

## 4.5. Final Remarks

Freixo/Tongobriga had a long-lasting human occupation and a crucial role during several historical periods at a regional and perhaps supraregional scale, benefiting from its strategic location between important river and land routes. The economic relevance of the navigability of the Douro and Tâmega rivers, nearby Freixo/Tongobriga, has already been recognized since Roman times (Lima and Menchón I Bes, 2018). It is also known the importance of a Roman road that passed in *Tongobriga*, and eventually connected two provincial capitals (*Bracara Augusta* and *Emerita Augusta*). Its relevance is also demonstrated through the archaeobotanical record, being observed a diverse assemblage, resulting from the exploitation of different taxa through time.

Most of the crops found correspond to cereals. The millets, namely broomcorn millet and foxtail millet, followed by spelt would have been the most relevant crops in the Iron Age, whereas hulled barley, and naked wheat were secondary. The status (domesticated/wild) of oat is uncertain. Comparison with the results from the Middle Bronze Age pits showed that other crops were preferred at that time. Naked wheat and

naked barley were likely more relevant, different hulled wheats (emmer and einkorn) were cultivated, and millets were not yet documented.

Given the doubts pointed for the Round hut, and the small fruits/seeds assemblage collected in the *Impluvium* house, it was not easy to perceive concrete changes in crop choices from the Iron Age to the Late Antiquity.

The above-mentioned Iron Age crops appear in the Round hut and in presumed Roman levels, but several indicators suggest that the age of the fruits/seeds from these contexts is problematic. More radiocarbon dates are necessary to understand if broomcorn millet, naked and hulled wheats were relevant crops after the Iron Age. Foxtail millet is the only crop recurrent in all contexts and periods at Freixo/Tongobriga. Hulled barley was barely found in Iron Age and Late Antique levels.

Rye also appears in the three contexts but likely in different forms, as a weed (in the Iron Age) and a crop, at a later phase of the Roman Empire (Chapter 9) and since then it became increasingly relevant in the agricultural strategies of several Iberian regions, including the Northwest, but also in other European areas (e.g. Behre, 1992; McCormick, 2013; Bakels, 2014; Squatriti, 2019).

Despite some difficulties in tracing crop choices at Freixo/Tongobriga, it was observed that past human communities selected a diversity of crops over a broad period. The information obtained did not allow secure considerations about the causes of such agricultural changes, but these may have been proportioned by several factors such as changing environmental conditions, political, cultural or economic reasons. Besides, the large *forum pecuarium* established in Roman times, without parallels at that time in Portugal, would have involved a periodic but great influx of people, including travelers and traders, which were perhaps responsible for the dissemination of several plants at this site. These ended up being distributed and consumed locally, entering into the diet of its inhabitants. A space that maintained its function for more than one millennium, being the market transferred to the centre of the village in the end of the 16$^{th}$ century, and used until the 20$^{th}$ century (Lima, 2017b). Thus, only through the continuity of the archaeobotanical studies at Freixo/Tongobriga as in other areas of Northwest Iberia, and integrating historical sources will be possible a better understanding of how those dynamics and events eventually conditioned the agricultural decisions and plant consumption in the past.

Authors' contributions

—Conception and design: LS, ILD, AL, JPT.

—Data analysis and interpretation, drafting and critical re-vision, final article approval: LS, ILD, AL, MMS, RA, JPT.

—Data collection LS, ILD.

—Funding Acquisition: JPT.

—Laboratory analysis: LS, ILD.

—Principal Investigator: JPT.

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# Chapter 5 - Crops behind closed walls: Fortified storage at Castelinho in the Late Iron Age of NW Iberia

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Supplementary material is provided in Attachment 3 (also available at: https://www.sciencedirect.com/science/article/pii/S2352409X1930505X#s0095).

## Abstract

The site of Castelinho (Torre de Moncorvo, northeast of Portugal) is a fortification strategically placed on a small elevation, near the river Sabor, built in the Late Iron Age and occupied until the Early Roman period. It is characterized by impressive defensive features, including large walls with turrets, ditches and complex entrances, inside of which no clear evidences of domestic areas were found. On the contrary, this monumental defensive apparatus seems to have served mostly to protect several storage facilities, mainly elevated granaries, in which abundant archaeobotanical remains were recovered.

The excavation of Castelinho comprised the systematic sampling of sediment in a wide diversity of contexts, ultimately leading to the recovery of large amounts of charcoal, fruits and seeds. Most came from secondary or tertiary refuse deposits but some seem to have been actually related to the destruction of granaries by fire.

Carpological results show the predominance of naked wheat (*Triticum aestivum/durum*) while hulled barley (*Hordeum vulgare*) and broomcorn millet (*Panicum miliaceum*) were found in smaller amounts. These crops were stored fully processed, taking into account the almost absence of chaff and the scarce presence of weeds. Charcoal analysis suggest *Pinus pinaster* and *Quercus* evergreen provided most of the wood used in the construction of the granaries.

In this study, this data will be presented, discussed and compared with archaeobotanical and archaeological information from other sites excavated in the Sabor Valley and in the surrounding region. The size and monumentality of Castelinho, combined with the fact that it provided few evidences of other activities besides storage, suggests this site had a relevant role for local communities. This will be discussed together with other evidence of the social relevance of storage for Late Iron Age communities in the region.

Keywords: Charcoal analysis, Carpology, Late Iron Age, Northwest Iberia, Storage, *Horrea*

## 5.1. Introduction

Storage strategies, together with the diversification of food sources, were crucial to assure the resilience of past agricultural and even preagricultural communities (Adger, 2000; Tereso, 2012). Besides helping to prevent famine, storage played a relevant role

in the establishment of power relations at different levels, within and between communities (Hendon, 2000; Kuijt, 2009; Parcero Oubiña and Ayán Vila, 2009). As such, storage should be addressed on multiple levels focusing the stored goods, the facilities, the social behaviours associated with them, the sites and their regional context. Some approaches have been made on Iron Age and Roman archaeological contexts in NW Iberia, particularly focusing the storage of crops in its technical and social dimensions, whether including (e.g. Parcero Oubiña and Ayán Vila, 2009; Rey Castiñeira et al., 2011) or not (e.g. Fernández-Posse and Sánchez-Palencia, 1998; Álvarez González and López González, 2000) archaeobotanical information.

Considering the relevance of plants in human diet, multiple types of storage facilities specifically used to store seeds and fruits, mostly cereals, have been identified in several cultural and chronological contexts, making archaeobotanical studies a crucial tool to address this subject. Besides the identification of what was stored, these approaches can give precious information regarding the way the storage of food was conducted, namely space organization (Ruas et al., 2005), prestorage processing of crops (e.g. Tereso et al., 2013; Leite et al., 2018; Seabra et al., 2018), materials used to build the structures (Carrión Marco, 2003), among others. In the Late Iron Age and Early Roman Period, storage of grain and other products took place in underground structures (pits), aboveground structures (stone and wattle and daub structures, elevated granaries) and vessels of different types and sizes, *i.e.* both in facilities with confined and renewed atmosphere.

In most of these structures, spelt (*Triticum aestivum* subsp. *spelta*) was the main crop and was usually stored in spikelets. Other crops frequently found are broomcorn millet (*Panicum miliaceum*), hulled barley (*Hordeum vulgare*), naked wheat (*Triticum aestivum/durum*), oat (*Avena* sp.) and faba bean (*Vicia faba*) (Rey Castiñeira et al., 2011; Tereso et al., 2013; Figueiral et al., 2017; Leite et al., 2018; Seabra et al., 2018). Other plant remains occur but are usually rare. Only at Quinta de Crestelos, where storage facilities are elevated granaries, we find a predominance of naked wheat (*Triticum aestivum/durum)* while hulled wheat is completely absent (Tereso et al., 2018). However, it remains unknown whether there is a direct relation between distinct crops, different storage practices and specific facilities.

The integration of storage in the social and territorial organization of past communities in the Northwest has been matter of debate, leading some authors to suggest that storage beyond household levels may have occurred at least since the Iron Age and that goods could have been controlled by a part of the community (González-Ruibal, 2003, 2006;

Parcero Oubiña and Ayán Vila, 2009; Tereso et al., 2013; Teira-Brión et al., 2016; Teira-Brión, 2019). The hillfort of As Laias/O Castelo (Cenlle, Spain) has been crucial to address this matter. Its upper platform seems to have been used mostly as a storage area by means of rectangular wattle and daub structures, from the 7th-5th century BCE to the turn of the Era. In its final stages, it was protected by a stone wall and earth embankments (Álvarez González and López González, 2000). As Laias and other sites such as Castrovite (A Estrada, NW Spain) have been considered evidence of the dissemination of controlled storage and surplus accumulation throughout the region (González-Ruibal, 2006; Parcero Oubiña and Ayán Vila, 2009; Teira-Brión et al., 2016; Teira-Brión, 2019), but this scenario is far from clear and, due to its complexity, difficult to apprehend.

The presence of a diverse set of storage facilities sometimes concentrated in specific areas suggests Iron Age was a challenging period from social and economic points of view in NW Iberia in which crop protection was a very important issue. Therefore, a site that seems to be of the utmost relevance to address the scale and social context of storage is Castelinho (Fig. 5.1). During its excavation, several storage structures, mostly elevated granaries, were found surrounded by massive defensive walls, ditches and turrets, while clear domestic contexts were nearly absent both from inside and outside the fortification's perimeter making this a unique site in all NW Iberia (Santos et al., 2012, 2013; Santos, 2015; Santos and Ladra, 2016; Santos et al., 2016, Dinis et al., 2018). During the field work, an ambitious sampling strategy led to the recovery of a great amount of archaeobotanical material that remains unpublished. Here the results of the carpological and charcoal analyses will be presented and will be put in the context of the site and regional dynamics.

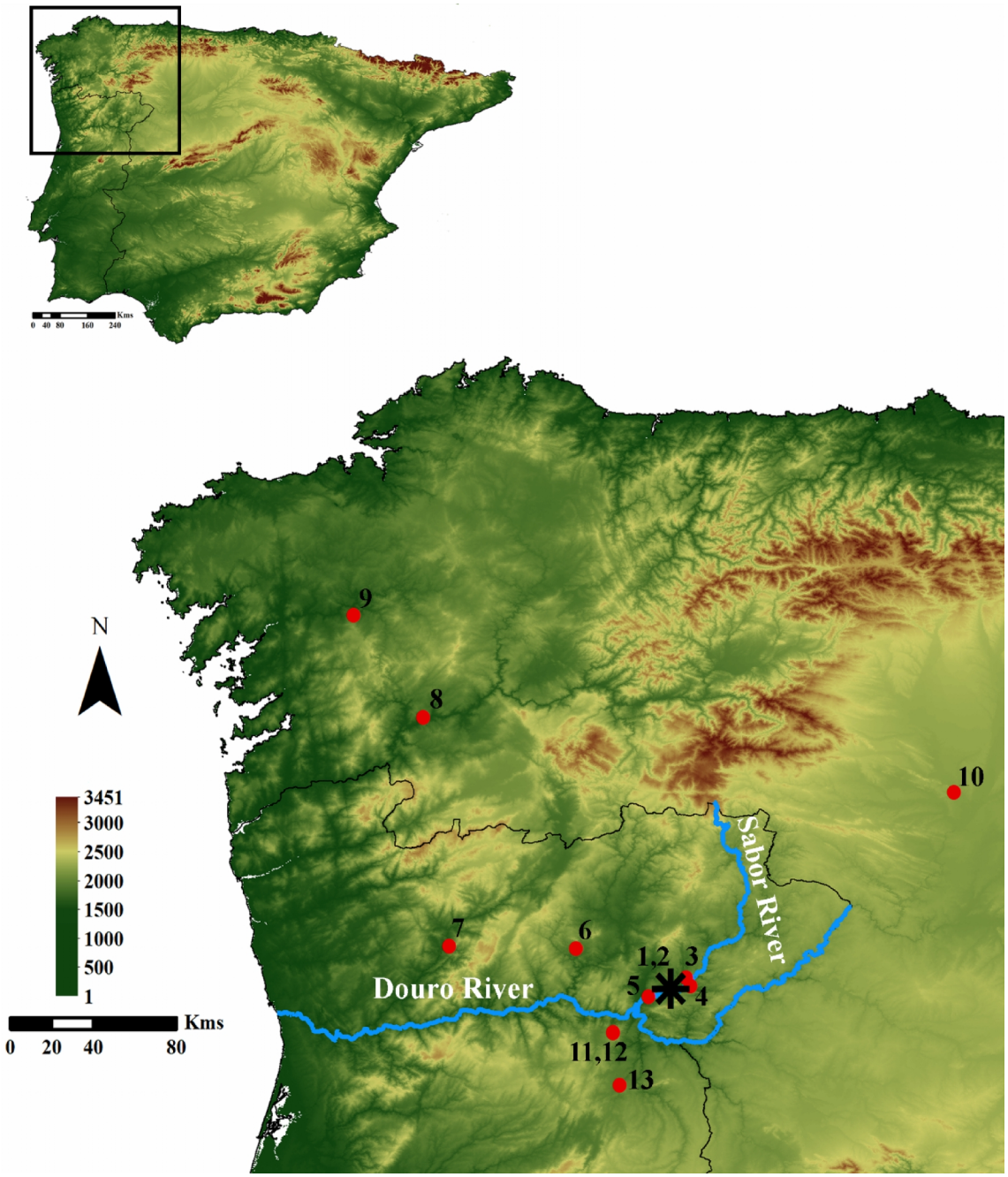


Figure 5.1 - Location of the sites mentioned in the article (NW Iberia): 1-Castelinho; 2-Cemitério dos Mouros; 3-Chã; 4-Quinta de Crestelos; 5-Terraço das Laranjeiras; 6-Crasto de Palheiros; 7-Crastoeiro; 8-As Laias; 9-Castrovite; 10-La Corona /El Pesadero; 11-Quintal da Casa Grande; 12-Casa do Nelo; 13-Vale do Mouro.

## 5.2. The site: Castelinho

Castelinho (Torre de Moncorvo, Northeast Portugal) is placed on a small spur (6.970034 W/41.24193 N), at 212,5 m high, in the right bank of the Sabor river, a tributary of the Douro river. The valley is characterized by its entrenched morphology in most of its course but Castelinho has a great visual control over one of the few areas where the

valley widens significantly and extensive river terraces are found (Fig. 5.2). Excavations in the site occurred from 2011 to 2013 during the execution of a heritage protection plan related to the construction of a hydroelectric dam that ended up flooding a major area, including this entire archaeological site.

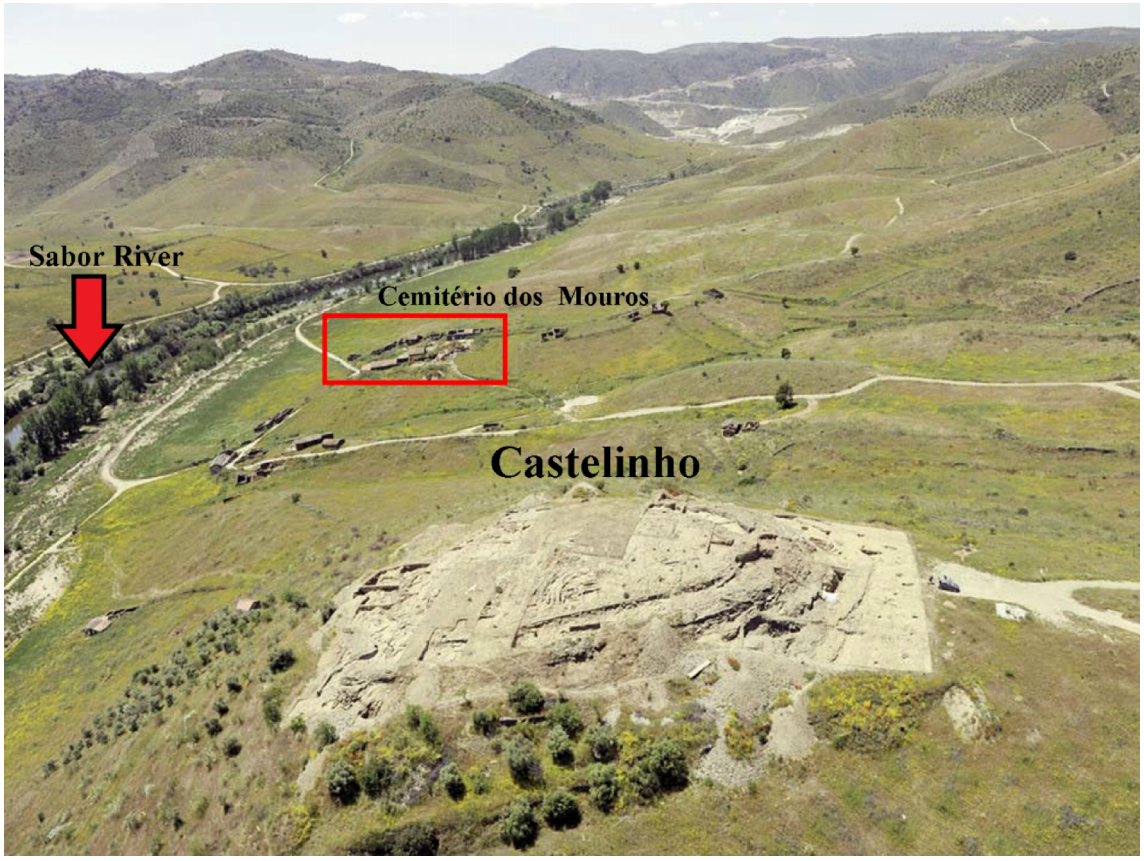


Figure 5.2 - Castelinho location and its proximity with Cemitério dos Mouros and the Sabor River (Adapted from Santos and Ladra, 2016).

Previously characterized as an Iron Age hillfort (Lemos, 1993), Castelinho is now perceived as a complex fortified site with an oval perimeter of c. 100 m length and 60 m width, mostly related to storage and other activities, providing little evidence of any domestic area (Fig. 5.3) (Santos et al., 2012, 2013; Santos, 2015; Santos and Ladra, 2016; Santos et al., 2016; Dinis et al., 2018).

Some artefacts suggest a prehistoric phase from the 3$^{rd}$-2$^{nd}$ millennia BCE (Phase I), but no structural elements could be ascribed to it. The major occupation dates from the Late Iron Age and lasted until the Early Roman Empire (for full description see Santos et al., 2012, 2013; Santos, 2015; Santos and Ladra, 2016; Santos et al., 2016; Dinis et al., 2018).

The construction of the earlier defensive stone wall occurred somewhere between the 3rd and the early 2th centuries BCE. The monumental apparatus from this Phase II included three entrances and a ditch (Ditch III). Abundant engraved plaques were found both in the condemnation of that ditch and reused in the stone structures from later phases (Santos and Ladra, 2016; Santos et al., 2016; Dinis et al., 2018). However, some caution is necessary regarding a clear relation between the plaques and phase II (see discussion below). Hearths and ovens from this early date were found inside the enclosure.

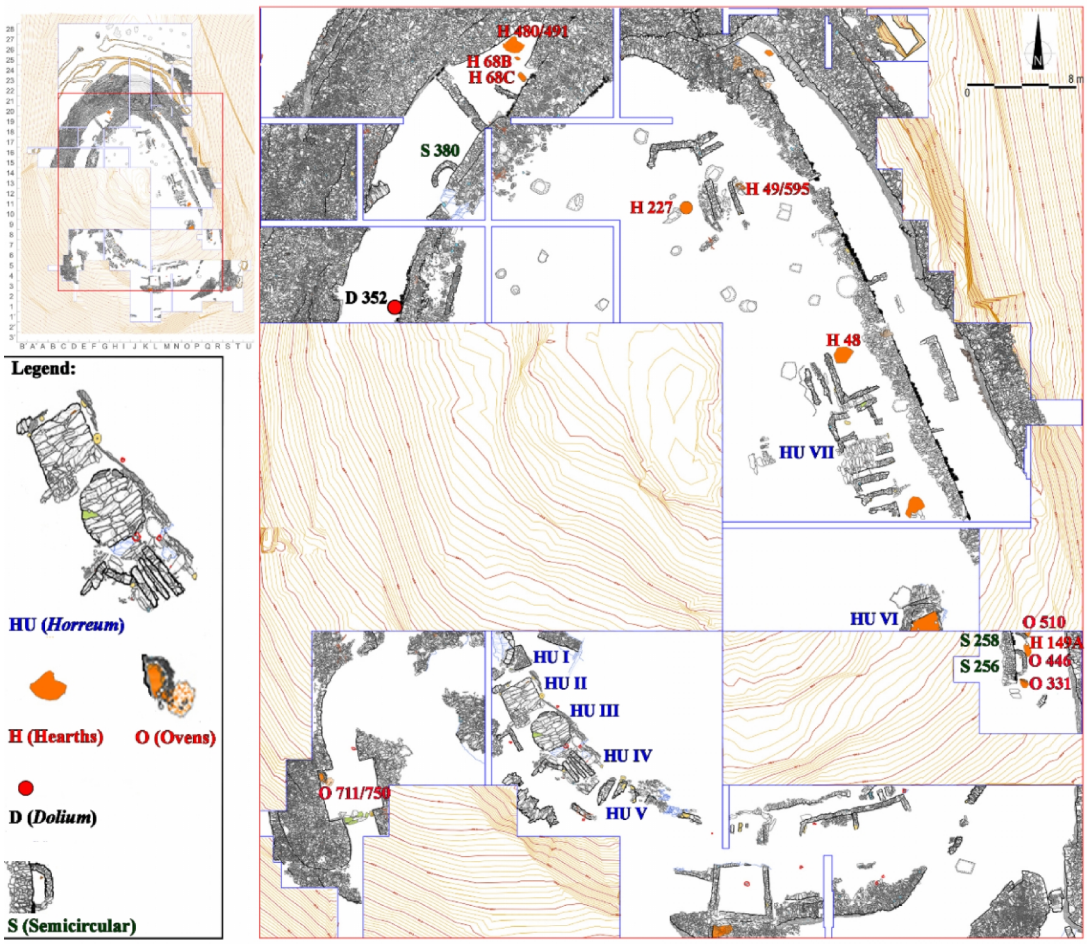


Figure 5.3 - Castelinho overview plan.

In the following phases, covering the 2nd century BCE and the first half of the 1st century BCE (Phases III and IV), the site went through several changes. At first, the wall was reinforced and a semicircular turret was built in the most easily accessible area (North). Circulation areas inside the enclosure were modified and two entrances were closed, coinciding with the earlier storage facilities recorded. These were semicircular structures attached to previous walls and to rock outcrops (Santos and Ladra, 2016).

During Phase IV, the site reaches its greatest dimension and monumentalization. The wall and turret were strengthened, ditch III was restructured and a new ditch (Ditch II) and turret (in the southeast flank) were erected. A new entrance was created and several storage facilities were built, namely circular and rectangular elevated granaries (*horrea*). Overall, other structures related to daily life activities are rare and include hearths and ovens (Santos et al., 2012, 2013; Santos, 2015; Santos and Ladra, 2016; Santos et al., 2016). A diverse set of artefacts was recovered and also evidence of small scale metallurgy, namely iron slags found in some layers (Table A3.1 in Attachment 3).

The transition towards the Roman Phase – Phase V, possibly dating from the second half of the 1st century BCE and the 1st century CE – was not abrupt, as the site initially maintained its structure and possibly its function – *horrea* and the *dolium* were still used for storage. Meanwhile, the place ceases to be a fortification and was likely abandoned. The frail signs of Roman occupation do not seem to persist beyond the 2nd century CE (Santos and Ladra, 2016). In a lower platform near the river, c.300 m away, in what is today known as Cemitério dos Mouros, evidences of an occupation dating back to the Iron Age-Roman transition and lasting throughout Medieval and post-Medieval times demonstrates not only that both sites coexisted but also that the nearby area was kept inhabited after the abandonment of Castelinho (Rosselló Mesquida et al., 2016; Santos and Ladra, 2016).

Phases 3 to 5 – Late Iron Age to the Early Roman Empire (2nd century BCE-1st century CE) – represent a short and complex period in the occupation of Castelinho, in which construction and use of structures are sometimes difficult to ascribe to specific a phase (see Table A3.1 in Attachment 3). The radiocarbon dates obtained in these structures also support this idea (Table 5.1). Moreover, the major changes in space organization that occurred in phases 2–5, in Castelinho, including the construction of new structures and their eventual renovation during the site's occupation, implied the creation and restoration of several earthworks. These led to great and perhaps frequent remobilization of sediments that incorporated archaeological and archaeobotanical material. As such, material from these contexts must be analysed with due care, as they may incorporate artefacts and biological remains from different periods.

| Sample | Structure | Sampled context | Material | Lab. Reference | 14C age (yr B.P.) | Calibrated age BCE - CE (1 σ) | Calibrated age BCE-CE (2 σ) |
|---|---|---|---|---|---|---|---|
| 531 | *Horreum* II | 653A | *Triticum aestivum/durum* (grains) | Beta-387554 | 2150±30 | 350 - 117 BCE | 356 - 61 BCE |
| 538 | | 653C | *Triticum aestivum/durum* (grains) | Beta-387553 | 2120±30 | 196 - 106 BCE | 345 - 50 BCE |
| 550 | *Horreum* III | 654B | *Hordeum vulgare* (grains) | Beta-387552 | 2040±30 | 92 BCE - 3 CE | 162 BCE - 46 CE |
| 546 | | 654C | *Triticum aestivum/durum* (grains) | Beta-387551 | 2060±30 | 153 -39 BCE | 170 BCE - 4 CE |
| 626 | *Horreum* VI | 728 | *Hordeum vulgare* (grains) | Beta-387559 | 2040±30 | 92 BCE - 3 CE | 162 BCE - 46 CE |
| 656 | | 730B | *Triticum aestivum/durum* (grains) | Beta-38550 | 2050±30 | 103 - 1 BCE | 166 BCE - 20 CE |
| 8 | | 3 | *Quercus* evergreen (charcoals) | GrA-54994 | 2055±30 | 150 - 2 BCE | 168 BCE - 16 CE |
| 282 | *Horreum* VII | 397 | *Triticum aestivum/durum* (grains) | Beta-387555 | 2090±30 | 163 - 56 BCE | 195 - 42 BCE |
| 267 | | 397A | *Triticum aestivum/durum* (grains) | Beta-387556 | 2120±30 | 196 - 106 BCE | 345 - 50 BCE |
| 510 | Semicircular structure 256 | 257 | *Hordeum vulgare* (grains) | Beta-387574 | 2040±30 | 92 BCE - 3 CE | 162 BCE - 46 CE |
| 1168 | Semicircular structure 258 | 259 | *Hordeum vulgare* (grains) | Beta-387578 | 2070±30 | 155 - 45 BCE | 174 - 1 BCE |
| 976 | | 415 | *Hordeum vulgare* (grains) | Beta-387572 | 2060±30 | 153 - 39 BCE | 170 BCE - 4 CE |
| 230 | Semicircular structure 380 | 288 | *Triticum aestivum/durum* (grains) | Beta-387581 | 2110±30 | 181 - 92 BCE | 204 - 46 BCE |
| 328 | | 348 | *Triticum aestivum/durum* (grains) | Beta-387583 | 2120±30 | 196 - 106 BCE | 345 - 50 BCE |
| 323 | | 359 | *Triticum aestivum/durum* (grains) | Beta-387582 | 2100±30 | 170 - 61 BCE | 198 - 47 BCE |
| 1200 | | 371 | *Triticum aestivum/durum* (grains) | Beta-387579 | 2080±30 | 157 - 51 BCE | 191 - 3 BCE |
| 89 | *Dolium* 352 | 350 | *Triticum aestivum/durum* (grains) | Beta-387584 | 2070±30 | 155 - 45 BCE | 174 - 1 BCE |

Table 5.1 - Radiocarbon dates from the storage facilities at Castelinho. Calibration OxCal 4.3 software, IntCal 13 calibration curve (Reimer et al., 2013).

## 5.3. Material and methods

### 5.3.1. Sampling strategy and archaeological contexts

Fieldwork at Castelinho included a great sampling effort, with no parallels at that time in Portugal. 1,353 samples were recovered from 226 stratigraphic units (s.u.), including sediment samples and a few handpicked remains. The volume of sediment recovered from each s.u. varied substantially between 0,1 L and 314,8 L, which is unsurprising, considering the great diversity of contexts that were sampled. Volume was not recorded in all samples (for full information see Table A3.1 in Attachment 3). Samples were

processes through bucket flotation by the archaeological team, using a column of sieves with 2 mm, 1 mm and 0.5 mm meshes.

Judgment sampling was combined with the full recovery of sediment from specific contexts, namely those connected with some storage facilities and hearths. In some cases, judgment sampling seems to have been directed to contexts where plant remains were visible during the field work. However, the variety and number of s.u. sampled covered the diversity of contexts identified in the excavation, its spatial distribution through the site and the site's chronology.

As mentioned before, the chronology of some remains is problematic, in two different ways. First, the cycles of construction, use and abandonment of some structures (i.e. granaries), happened in a short time span, maybe even overlapped periods, making the archaeological phases 3 to 5 difficult to distinguish from a radiometric point of view (see the chronology of storage facilities in Table 5.1). These different phases were identified both in the stratigraphy and in the construction sequence, although difficulties occurred even in this field. On the other hand, the construction of abundant earthworks (mostly embankments) was done by mobilizing pre-existent sediment in the site and possibly also from outside, making the interpretation of the archaeobotanical remains from these palimpsests particularly problematic. Every embankment may include plant remains from the phase when they were built and used as well as from all previous phases in the site.

Considering these limitations, archaeobotanical results are analysed first at the level of the type of context and chronological considerations are made whenever possible. For that, all 226 contexts were given a code according to its general typological and functional characteristics (see Table A3.1 in Attachment 3). A two-level typology of contexts stands in the base of all interpretations (Table 5.2).

| Typology | Context |
|---|---|
| **A** | **Fire structure** |
| A1 | Hearth |
| A2 | Oven |
| **B** | **Storage structure** |
| B1 | *Horreum* |
| B2 | Semicircular structure |
| B3 | *Dolium* |
| **C** | **Refuse deposit** |
| C1 | Floor |
| C2 | Abandonment/Destruction |
| C3 | Embankment |
| **D** | **Filling deposit** |
| D1 | Posthole |
| D2 | Ditch |
| D4 | Wall |
| **E** | **Other Concentrated deposit** |

Table 5.2 - Typology of contexts.

A) Fire structures

Despite having architectural similarities, two types of combustion structures, hearths (A1) and ovens (A2) were identified in Castelinho (examples in Fig. 5.4) and analysed in the scope of this paper.

Figure 5.4 - Two fire structures identified at Castelinho: Left – Hearth 480; Right – Oven 750. Photo Credit: Filipe Santos.

Nine Hearths were found in Castelinho (Fig. 5.3). These structures consist of an irregular red clay base, generally bigger than the ones found in ovens (hearths ranged from 30 cm to 80 cm wide and 30 cm length), and were associated with charcoal and ash

deposits. Given the structural similarities with clay bases found in the ovens, it is not possible to rule out the possibility that these structures could also be ovens from which only this evidence was preserved.

In the hearths, samples were recovered in the s.u. directly above the clay base and in layers associated with the structures. A total of 53 soil samples (226.4 L) were processed from these contexts. A sample composed of handpicked material was collected from the construction layer of Hearth 595.

The five Ovens (Fig. 5.3) identified bear roughly the same characteristics even if in different preservation states. Despite none of them was fully preserved, it was possible to understand their structural architecture and construction method. With a round or elliptic shape, these structures were composed of a levelling base made of small stones covered by a thick layer of even clay (sometimes 10 cm thick) which made the chamber floor of the oven. This clay displayed a bright red, sometimes orangish, coloration as result of becoming in contact with fire and heat. Considering the dimensions of the clay platform in the cases where it is complete – ranging from 30 cm to 60 cm wide – the size of the ovens would have been relatively small. Originally, these structures would have had side and end clay walls and eventually a roof structure similar to a dome, as can be perceived by the remains of its walls still preserved in some cases.

In the case of ovens, the sampling methodology put in practice was the same as in hearths. Thus, a total of 32 samples (152 L) were recovered in the five ovens analysed. In the Oven 331 two different s.u. related to the clay base and with the destruction layer of the wall/dome were sampled. Similarly, the 18 samples collected in Oven 750 refer to its destruction layer, clay base and a charcoal layer beside the mouth of the oven. The samples originated from the three remaining ovens were recovered directly above the clay of their respective ovens. Sample size varied according with soil availability.

All the analysed structures were built directly above the circulation layer in several areas of the site (Fig. 5.4), and refer to 3 continuous occupation phases of the site, between the 2$^{nd}$ century BCE until the 1$^{st}$ century CE. Both these types of fire structures are also very similar in size and characteristics to the ones found in the nearby site of Quinta de Crestelos (Vaz et al., 2017b).

B) Storage facilities

Three types of facilities were defined: Elevated granaries or *Horrea* (B1); Semicircular structures (B2) and a *dolium* (B3) (Fig. 5.5). A great part of the sampling effort was concentrated in these contexts.

Six *horrea* (B1) were included in this study. They were characterized by the typical parallel support walls made in schist, on top of which large schist slabs made up the floor (*tabulatum*). The number of support walls varied according to the structures' dimensions. The outside walls and ceiling were likely built with perishable materials, namely wood and clay, as in the nearby site of Quinta de Crestelos (Tereso et al., 2018). Postholes were found in association with the *horrea*.

Figure 5.5 - Storage facilities found at Castelinho. Above: Left – *Horreum* III; Right – *Horreum* II. Below: Left – Semicircular structure 380; Right – *Dolium* 352. Photo Credit: Filipe Santos

The elevated granaries were found in two main areas (Fig. 5.3): *Horrea* I, II, III, IV and V were aligned in a middle platform in the southwest area of the site (Fig. 5.6), while *Horrea* VI and VII were in the upper/central platform in the eastern part of the site. These structures displayed quadrangular or circular formats. No samples were retrieved in *Horreum* V.

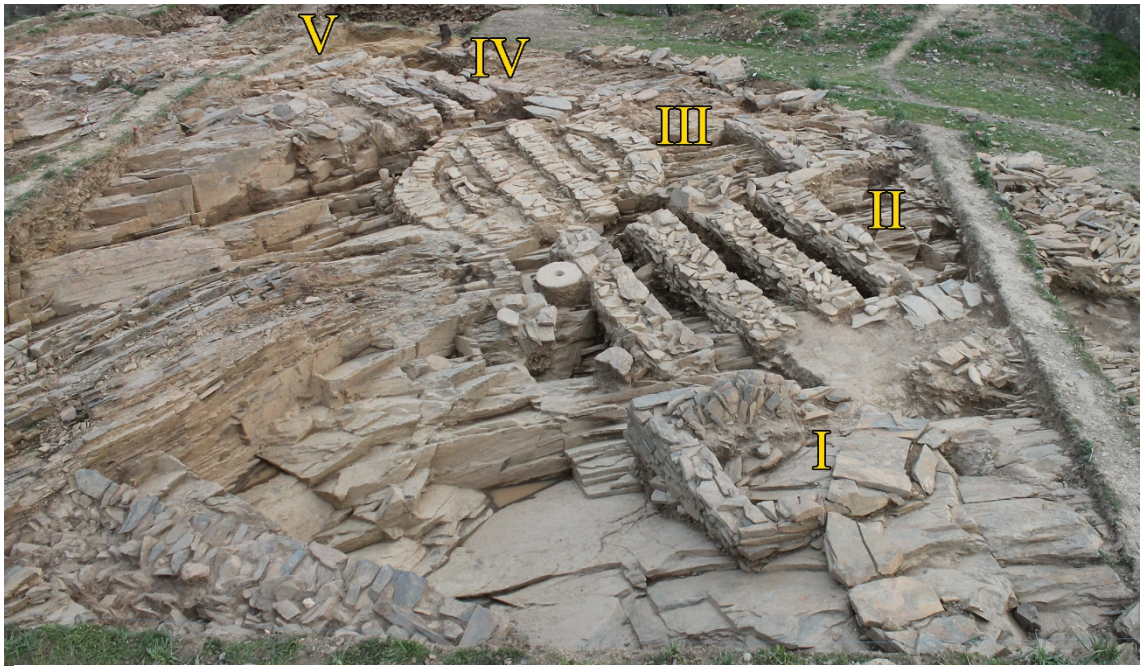


Figure 5.6 - *Horrea* in the southwest area. Photo Credit: Filipe Santos.

*Horrea* II, IV, VI and VII had quadrangular plans. *Horrea* II and IV, showed four support walls and a schist floor with a usable area of c. 7,3 $m^2$ and 6,3 $m^2$ respectively. *Horreum* VI was not fully excavated and *Horreum* VII, although being clear it had more than one construction phase, was badly preserved. As such the true dimension of these structures is unknown. Three of these *horrea* (II, IV and VI) had a single posthole placed near the granary. Baked clay was recovered in the floors of *Horrea* II and VI. *Horrea* II and VI showed a set of fixed slabs surrounding the structure, which should work as safety measure, eventually to divert water from the building.

*Horrea* I and III had circular plans. *Horreum* I was too poorly preserved to allow a proper characterization but *Horreum* III had a usable area of c. 7,6 $m^2$, delimited by schist slabs and associated with three postholes, which were also identified around this granary. For structures of such dimensions few postholes were found, however these should also be evidences of supporting systems.

In *Horrea* II and IV and VII granite millstones were reused as construction material and in *Horreum* VI one slab in the floor was engraved, also suggesting it was reused material.

In the granaries, sediment samples were recovered from the deposits between the parallel walls of their foundations and between these and the delimitation slabs of some *horrea*. In *Horreum* I a quadrangular structure attached to a curved wall was sampled.

Additionally, in *Horreum* VII samples were also collected in the preparation layers (i.e., embankments) and abandonment levels covering the structure.

Three semicircular structures (B2), attached to preexistent walls, were interpreted as storage facilities (Santos and Ladra, 2016). These are clearly smaller than the *horrea*. The well-preserved semicircular structure 256 (in the East corridor) had an usable area of 1,75 $m^2$. Structure 380 (Fig. 5.5), although incomplete, had an usable area of 1,40 $m^2$ and structure 258 was too badly preserved to allow an accounting. Sediment samples were collected inside each structure and probably derive from their use and/or abandonment (see discussion below). A deposit with abundant plant remains was sampled in a circulation area in the vicinities of structure 380 and, although defined as a scattered deposit (type C context), may be related to the storage structure (*vide infra*).

One *dolium* (B3) was found *in situ* in the West corridor (Fig. 5.5). Four soil samples were retrieved inside.

C) Refuse and D) Filling deposits

Scattered deposits (C) and filling deposits (D), both usually secondary or tertiary refuse (*apud* Schiffer, 1996, La Motta and Schiffer, 1999), are frequently heterogeneous contexts characterized by the accumulation of remains from distinct fire events and activities, thus providing relevant information regarding the long-term use and charring of plants (Hubbard and Clapham, 1992; Figueiral, 1994; Chabal et al., 1999; Asouti and Austin, 2005; Goldberg and Macphail, 2006; van der Veen and Jones, 2006; van der Veen, 2007; Tereso, 2007; Théry-Parisot et al., 2010; Fuller et al., 2014; Vaz et al., 2017a, 2017b). Overall, scattered and filling deposits were sampled throughout all the site.

Plant remains have been recovered from structures such as floors (C1) and embankments (C3) as well as dispersed in several areas of the site (C2). Considering several platforms were built and reshaped throughout the occupation of the site, the number of samples from different floors and embankments must be stressed (Table A3.1 in Attachment 3). The difficulties in their chronological interpretation has already been addressed (*vide supra*).

Filling deposits (D) were collected in diverse types of structures: postholes (D1), ditches (D2) and two small cavities in the walls (D3). Three depressions in the bedrock, of man-made or natural origin, have been sampled, but considering the difficulties in their

interpretation, were not ascribed to any specific type of structure, being thus considered an undetermined fill deposit, *i.e.* a D) type context.

E) Other concentrated deposits

Concentrated deposits other than fire structures and storage facilities have been found throughout the site, although some are difficult to interpret. These include plant remains concentrated in circulation areas, niches, small areas between walls and layers with residues of metallurgical activities (Table A3.1 in Attachment 3).

### 5.3.2. Methods

#### 5.3.2.1. Carpological analysis

The sorting of the light fractions and identification of carpological remains were performed using a stereoscopic microscope. Generally, samples were fully sorted. Only in few cases were the light fractions subsampled due to their large volume (see Table A3.2 in Attachment 3). Due to technical limitations at the time, a variation of the spoon method was applied: the light fractions were kept in bags that were gently mixed to diminish vertical distribution of remains according to size; several portions were taken with a spoon and put in containers; each container had several portions from different vertical levels of the bag. The containers that were studied were chosen randomly.

Taxonomic diagnose was carried out by comparison with modern material of the reference collections of University of Porto Herbarium (PO) and CIBIO and the help of morphological atlases and specialized bibliography (e.g. Beijerinck, 1976; Hillman et al., 1996; Buxó, 1997; Jacomet, 2006; Nesbitt, 2006; Neef et al., 2012; Zohary et al., 2012).

Whole or fragmented remains with scutellum or hilum were considered units. Longitudinal fragments of cereals were often found and in Table 5.3 each two longitudinal fragments were counted as a unit. Original data is discriminated in Table A3.3 in Attachment 3. Separated embryos and scutella were also counted. Regarding chaff fragments, rachis nodes, spikelet bases and glume bases were considered in this approach. When grains were found within the spikelet, they were discriminated. Full results can be observed in supplementary material (Table A3.3 in Attachment 3). The latter includes a calculation of the concentration of seeds and fruits per litre. This included

only units and for this purpose each pair of longitudinal fragments of cereal grains were considered a unit.

#### 5.3.2.2. Charcoal analysis

The charcoal fragments retrieved in the 2 mm sieve were sectioned manually to obtain the three diagnostic sections (cross, tangential and radial) and examined under a stereomicroscope and reflected light microscope following the standard methodology (e.g. Schweingruber, 1990; Marston et al., 2014). Taxa identification was based on several wood anatomy atlases (Schweingruber, 1990; Hather, 2000) but in the case of the genus *Erica*, the criteria described by Queiroz and van der Burgh (1989), adapted by Tereso (2007), were followed. Whenever charcoal preservation did not allow the retrieval of enough anatomical information, the identification remained as Dicotyledon, Gymnosperm or as Undetermined in the worst preservation cases. A minimum number of 100 charcoal per stratigraphic unit was analysed. Every time a new taxon was identified in the last 50 charcoal analysed in a sample, additional 50 fragments were identified. This process could be repeated multiple times per sample.

## 5.4. Results

### 5.4.1. Carpology

Grains of domesticated cereals are by far the most abundant carpological remains found in Castelinho (Table 5.3 and Table A3.3 in Attachment 3). Results are consistent throughout all the types of contexts that were studied and showed a predominance of naked wheat (*Triticum aestivum/durum*). Other cereal crops, namely hulled barley (*Hordeum vulgare*) and broomcorn millet (*Panicum miliaceum*) were also found but are much less abundant (Fig. 5.7). Highly fragmented grains were identified at the tribe level – Triticeae or Panicoideae.

| Type of context | B1 - *Horreum* | | | | | | | B2 - Semicircular structure | | | | B3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | H1 | H1/2 | H2 | H3 | H4 | H6 | H7 | SS 256 | SS 256/258 | S258 | S380 | *Dolium* 352 |
| **Cereal (grains)** | | | | | | | | | | | | |
| *Hordeum vulgare* | 11 | 13 | 14 | 34 | 63 | 46 | 19 | 9 | | 32 | 47 | 2 |
| *Panicum miliaceum* | | | | 1 | 13 | 4 | 25 | | 1 | 5 | 1,066 | 1 |
| Panicoideae | | | | | 2 | | | | | | 46 | |
| *Triticum aestivum/durum* | 17 | 5 | 843 | 181 | 340 | 267 | 784 | 9 | 1 | 34 | 2,279 | 93 |
| *Triticum* sp. | | | 1 | | 1 | | 4 | | | | 5 | |
| Triticeae | 1 | | 31 | 9 | 55 | 35 | 81 | | 1 | 9 | 252 | 8 |
| **Cereal (chaff)** | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | | | | | 1 | | | | | | 1 | |
| **Other Poaceae (grains)** | | | | | | | | | | | | |
| *Avena* sp. | | | | | | | | | | 1 | | |
| *Lolium* sp. | 1 | 1 | 17 | 5 | 15 | 22 | 51 | | 2 | 6 | 315 | 19 |
| Poaceae | | | | 4 | 24 | 12 | 9 | 1 | 3 | 5 | 50 | 8 |
| **Other Poaceae (chaff)** | | | | | | | | | | | | |
| *Lolium* sp. (spikelet with grain) | | | 1 | | | | | | | | 1 | |
| **Fabaceae** | | | | | | | | | | | | |
| *Vicia/Lathyrus* (seed) | | | | | | | 1 | 1 | | | 2 | |
| Fabaceae - *Medicago* type (seed) | | | | | | | | | | | 1 | |
| **Fruits** | | | | | | | | | | | | |
| *Vitis vinifera* (seed) | 1 | | | | | 41 | 3 | 3 | 1 | 4 | 3 | |
| **Other remains** | | | | | | | | | | | | |
| Asteraceae (cypsela) | | | | | | | | | | | 4 | |
| Asteraceae - *Chrysanthemum* type (cypsela) | | | | | | | | | | | 1 | |
| *Asterolinon linum-stellatum* (seed) | | | | | | | | | | | 1 | |
| Cyperaceae (achene) | | | | | 1 | | | | | | | |
| *Galium aparine* (mericarp) | | | | | | | 1 | | | | 3 | |
| *Malva* sp. (seed) | | | | | | | 1 | | | | 8 | |
| *Raphanus raphanistrum* (siliqua segment) | | | | | | | | | | | 1 | |
| *Rumex* sp. (achene) | | | | | | 1 | | | | | 1 | |
| *Rumex conglomeratus/crispus* (achene) | | | | | | | | | | | 5 | |
| *Sherardia arvensis* (mericarp) | | | | | | | | | | | 2 | |
| Undetermined (seed/fruit) | | | 1 | | | | 2 | | | | 4 | |

Table 5.3 - Carpology: results per storage facility (units only, for data including fragments see Table A3.3 in Attachment 3).

Figure 5.7 - Main crops at Castelinho: *Triticum aestivum/durum* (1), *Hordeum vulgare* (2), *Panicum miliaceum* (3). Scale (1 mm).

Chaff is almost absent in the entire site. Only few rachis nodes of naked wheat, a single glume base of *Triticum dicoccum/spelta* and one lemma base (with grain attached) from hulled barley were identified, not allowing much considerations. It is relevant, though, the presence of hulled wheat, of which no grains were recovered. It is possible that some Triticeae or *Triticum* sp. include grains of hulled wheat.

A single grain of *Avena* sp. appeared, as well as few awns. However, without floret bases it is impossible to know whether these remains belong to domesticated or wild plants (Ruas and Pradat, 2001; Ruas, 2005; Jacomet, 2006).

Faba bean (*Vicia faba*) is the only cultivated legume identified and only three fragments were found in semicircular storage structure 380.

Close to the *horrea* and semicircular storage structures, some grape pips (*Vitis vinifera*) were also found. They are too few to allow biometric or morphometric analyses (e.g. Bouby et al., 2013) to discriminate between wild and cultivated varieties.

Weeds were not very abundant. Wild grasses are dominant, mostly *Lolium* sp., the most frequent weed in Castelinho, recovered in 40.7% of the s.u. sampled. They are particularly rare in A1, A2, D1 and D2 contexts, the only exception is Oven 750 where

41 caryopses of *Lolium* sp. were found together with abundant grains of wheat (see above).

Due to preservation issues or simple overlapping morphologies, identification of several remains was not precise enough to allow a proper interpretation of the wild taxa (e.g. Apiaceae, Asteraceae, Cyperaceae, Polygonaceae, *Trifolium* type, *Medicago* type). These are likely to include mostly weeds and ruderal taxa. Among the possible weeds, we stress *Galium aparine*; *Polygonum aviculare*; *Raphanus raphanistrum*; *Sherardia arvensis*; *Silene gallica*, although these taxa can also be found today in other ecologies (Castroviejo, 1986-2010; Aguiar, 2000). They are generally rare and do not allow detailed considerations but some are likely weeds from winter crops.

Surprisingly, the context with more seeds/fruits from wild taxa is s.u. 79 from Ditch 2, the layer that provided abundant engraved schist slabs (Santos, 2015; Santos and Ladra, 2016). Here, more than 300 carpological remains from wild taxa have been found, including more than two hundred achenes of Apiaceae and also *Sherardia arvensis*, *Raphanus raphanistrum*, *Ornithopus* sp. (seeds and lomenta), *Malva* sp., capsule fragments of *Malva nicaeensis*, among others. Cereal grains are restricted to three fragments of Triticeae but some chaff (awns of *Avena* sp. and wheat rachis) has also been found, suggesting this assemblage could be a residue from post-harvest processing. The relation with the rock art, if any exists, is unknown.

The predominance of naked wheat is clear also at the ubiquity level. It is present in 68.6% of the studied s.u., while barley was found in 50.9% and broomcorn millet in 30.1%.

Comparison between different contexts must take into consideration eventual biases related to sampling strategy. Number of remains per litre is usually low in all type of contexts (Table A3.3 in Attachment 3) and contexts where more volume of sediment was collected were frequently those where more carpological remains were recovered. Still, there are several exceptions, suggesting a more complex scenario.

Sediments associated with storage facilities, mostly *horrea* (B1) and semicircular structures (B2), are usually those with more abundant grains, but some of these provided very few remains (Table 5.3). In the case of the *horrea*, sediments from between the supporting walls were those that provided more cereals. Again, there was a dominance of naked wheat over a residual presence of barley and broomcorn millet. In the semicircular structures, naked wheat is also predominant but in one of these structures – semicircular structure 380 - millet grains are much more frequent than in the rest of the storage facilities. In *dolium* 352 remains are less abundant and are almost all naked

wheat grains. However, the concentration of fruits and seeds (units per litre) in the storage facilities is very low (Table A3.3 in Attachment 3) and their abundancy is partially related to a greater sampling effort in those contexts. Still, the scenario can be quite complex. When we compare s.u. of the different *horrea* and within single *horreum*, there is no clear relation between volume of sediment and number of fruits/seeds, *i.e.* contexts that were more intensively sampled, eventually fully collected and processed, are not necessarily the ones that provided more remains. The amount of sediment recovered is also related to the preservation of each structure. When we compare B2 structures the pattern is the same: overall, there are more carpological remains from contexts where more samples were analysed but there isn't a proportional relation between litres and remains.

Carpological remains are usually rare in contexts other than the storage structures, but some exception must be pointed out. That is the case of oven 750. Although fire structures usually do not contain much fruits and seeds, almost 500 grains of cereals, mostly free-threshing wheat, have been recovered in Oven 750. The presence of *Lolium* sp. caryopsis is also noteworthy. Again, number of remains per litre is low but still higher in this oven than in all other ovens and hearths.

The scarcity of carpological remains outside the granaries seems to be only partially related to the sampling strategy. In fact, regarding C type contexts, the s.u. with more volume analysed in each category – [303] from C1, [237] from C2, [495] from C3 - provided results similar to other contexts from the same type, where much less sediment was studied. The same for the context of type E where more samples were recovered - s.u. 521. On the other hand, some contexts with greater number of remains per litre that are not storage facilities correspond to small samples (below 10 L, sometimes even below 5 L or 1 L), suggesting occasional sampling directed to visible and highly concentrated assemblages of plant remains.

Concentrations of charred grains that are not directly associated with granaries include type C, D and E contexts. Two of these deposits may represent dismantled storage structures or tertiary refuse (*sensu* La Motta and Schiffer, 1999) with abundant grains. Being of difficult interpretation, they were considered undetermined contexts with great concentration of plant remains (Type E). A small deposit located over one of the walls, deposited between construction phases, showed a concentration of around 1,200 grains, mostly naked wheat. It was associated with a great amount of ceramics and baked construction clay. Whether this corresponds to tertiary refuse, related to the construction of the walls or to a highly destroyed structure located in a peculiar place is unknown. The

same can be said about s.u. 31, found in a circulation area, associated with baked construction clay with marks of branches and c. 1,500 grains, mostly wheat.

One of the filling deposits (type D contexts) – s.u. 611 - provided the larger set of carpological remains in the whole site, if we do not sum the contents of different s.u. of semicircular storage structure 380. Deposit 611 filled a natural or man-made depression in the bedrock where over 3,000 grains were identified. Naked wheat is again predominant but this is the context with larger amount of barley in the site (139 grains).

These are peculiar contexts since carpological remains in the great majority of A, C, D and E type of contexts are very rare, as can be seen in the following numbers: a single oven out of the 14 fire structures (A type contexts) provided 83% (488 out of 591) of the grains, while the other structures showed an average of eight cereals each; six of the 110 C type contexts comprise 67% (2,131 out of 3,200) of the cereals, while the other s.u. have an average of 10 grains each; two of the 42 D type contexts provided 99% (5,751 out of 5,832) of the cereals, while the remaining 40 s.u. show an average of two grains each; two of the 12 E type contexts had 97% (2,558 out of 2,649) of all cereals and the remaining s.u. had an average of nine grains each.

As seen above, it is possible that these numbers are partially related to the sampling strategy. Field team concentrated most sampling effort in structures they suspected more remains could be retrieved (e.g. storage facilities, hearths) and other contexts where plant remains were clearly visible. The latter include multiple type of grain-rich contexts, that, as mentioned above, are sometimes difficult to interpret, with concentrations of grains per litre higher than those of the storage facilities. But these derive from small samples intending to collect visible concentrations of plant remains, since, overall, dispersed contexts show very low concentrations of carpological remains.

### 5.4.2. Charcoal analysis

A substantial number of charcoal, 28,434 in total, was found and analysed in the 208 stratigraphic units sampled in the site of Castelinho (Table A3.4 in Attachment 3). The data will be presented according to the type of structure due to the large number of contexts analysed.

Among hearths and ovens, the most recurring taxa identified were *Cistus* sp. (24.2%), *Pinus pinaster* (19.7%) and *Quercus* sp. evergreen (20.9%), comprising almost 2/3 of the 1,452 charcoal analysed and being also the most ubiquitous (Table 5.4). These were

followed by Dicotyledon (8.5%), Fabaceae (7.2%), *Arbutus unedo* (5.6%) and *Erica* sp. (4.6%). Remaining taxa were always scarce (greater than 1%), consistent with their lower recurrence per structure. The presence of capsule fragments of *Cistus ladanifer* suggests *Cistus* sp. charcoal are mostly from this species.

In the storage structures (category B), 14,416 charcoal fragments, were analysed, comprehending 26 taxa (Table A3.4 in Attachment 3). The charcoal contents among the samples recovered in the *horrea* (B1) was mostly dominated by *Pinus pinaster* and *Quercus* sp. evergreen, which depending on the structure, varied from 16.1% to 40.2% in the first taxon, and 22.4% to 43.6% in the latter (Table A3.4 in Attachment 3). Despite this trend, significant differences between each *horreum* could be perceived. Such was the case of the high taxa diversity existing in *horreum* VII and, on the contrary, the low taxa diversity in *horreum* I. These differences are surely related to discrepancies in the number and volume of the samples recovered in each context, and thus should not be over-emphasized. The presence of two taxa of *Pistacia* in the *horreum* VII deserves special mention.

B2 (semicircular) structures also provided relevant charcoal data, but the vast majority was concentrated in three s.u. of structure 380. The charcoal contents of these structures closely resemble the *horrea*: they comprised mostly *Quercus* sp. evergreen (25%), *Pinus pinaster* (16.9%) and *Cistus* sp. (10.4%), also with high percentages of Dicotyledon (15.4%) (Table A3.4 in Attachment 3). Charcoal data from the contents of the only *dolium* (B3) analysed was insufficient, with only 49 fragments analysed.

Ubiquity data shows a wide group of taxa found in eight or more of the 10 storage facilities, including: *Arbutus unedo*, *Cistus* sp., *Erica arborea/australis* and *Erica* sp., *Fraxinus* sp., Fabaceae, *Pinus pinaster*, *Quercus* spp. and Dicotyledons.

Given their similar archaeobotanical significance, the results from disperse and secondary contexts such as the sediment sampled in floors (C1), abandonment layers (C2) and earth embankments (C3) will be displayed as a whole (Table 5.4). In the site of Castelinho, 101 s.u. belonging to these contexts categories were sampled and 9,769 fragments were analysed. *Pinus pinaster* (21.5%), *Quercus* sp. evergreen (13.4%) and Dicotyledon (23.7%) were, once again, the most frequent taxa. With the exception of *Cistus* sp. (6.7%), each of the remaining 32 taxa did not surpass 3.3% of the total.

| | A (12 contexts) | | | B (10 contexts) | | | C (101 contexts) | | | D (37 contexts) | | | E (12 contexts) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | Ubi | N | % | Ubi | N | % | Ubi | N | % | Ubi | N | % | Ubi |
| *Acer* sp. | 2 | 0.14 | 1 | 54 | 0.37 | 2 | 96 | 0.98 | 4 | 2 | 0.10 | 1 | 2 | 0.23 | 1 |
| *Alnus* sp. | 8 | 0.55 | 5 | 105 | 0.73 | 7 | 65 | 0.67 | 15 | 5 | 0.26 | 4 | 3 | 0.35 | 2 |
| *Alnus/Corylus* | | | | 7 | 0.05 | 2 | 5 | 0.05 | 1 | | | | | | |
| *Arbutus unedo* | 82 | 5.65 | 6 | 275 | 1.91 | 9 | 321 | 3.29 | 34 | 65 | 3.35 | 9 | 10 | 1.17 | 3 |
| *Cistus* sp. | 352 | 24.24 | 8 | 1,112 | 7.71 | 9 | 650 | 6.65 | 61 | 158 | 8.14 | 16 | 84 | 9.82 | 10 |
| *Corylus avellana* | | | | 1 | 0.01 | 1 | 1 | 0.01 | 1 | | | | | | |
| *Erica arborea/australis* | 25 | 1.72 | 2 | 632 | 4.38 | 8 | 304 | 3.11 | 25 | 51 | 2.63 | 5 | 22 | 2.57 | 4 |
| *Erica scoparia/umbellata* | 9 | 0.62 | 1 | 40 | 0.28 | 4 | 124 | 1.27 | 11 | 10 | 0.51 | 2 | 3 | 0.35 | 2 |
| *Erica* sp. | 67 | 4.61 | 5 | 353 | 2.45 | 8 | 217 | 2.22 | 36 | 41 | 2.11 | 10 | 19 | 2.22 | 6 |
| Fabaceae | 105 | 7.23 | 9 | 379 | 2.63 | 8 | 261 | 2.67 | 44 | 14 | 0.72 | 6 | 17 | 1.99 | 5 |
| Fagaceae | | | | 1 | 0.01 | 1 | 1 | 0.01 | 1 | 80 | 4.12 | 1 | | | |
| *Ficus carica* | | | | | | | 8 | 0.08 | 1 | 3 | 0.15 | 1 | | | |
| *Fraxinus* sp. | 15 | 1.03 | 6 | 559 | 3.88 | 9 | 236 | 2.42 | 42 | 98 | 5.05 | 11 | 23 | 2.69 | 5 |
| *Hedera* sp. | 1 | 0.07 | 2 | 1 | 0.01 | 1 | | | | | | | | | |
| *Juglans regia* | | | | | | | 12 | 0.12 | 1 | | | | | | |
| *Juniperus* sp. | 8 | 0.55 | 5 | 84 | 0.58 | 7 | 185 | 1.89 | 23 | 154 | 7.93 | 8 | 10 | 1.17 | 4 |
| *Laurus nobilis* | | | | 5 | 0.03 | 1 | 33 | 0.34 | 5 | | | | | | |
| *Olea europaea* | 3 | 0.21 | 1 | 47 | 0.33 | 5 | 28 | 0.29 | 9 | 8 | 0.41 | 3 | 4 | 0.47 | 1 |
| *Pinus pinaster* | 286 | 19.70 | 9 | 2,946 | 20.44 | 9 | 2,103 | 21.53 | 77 | 457 | 23.53 | 16 | 266 | 31.11 | 9 |
| *Pinus pinea/pinaster* | 31 | 2.13 | 2 | 661 | 4.59 | 8 | 262 | 2.68 | 32 | 16 | 0.82 | 8 | 6 | 0.70 | 2 |
| *Pinus* sp. | 5 | 0.34 | 4 | 709 | 4.92 | 7 | 139 | 1.42 | 15 | 9 | 0.46 | 3 | 16 | 1.87 | 3 |
| *Pistacia lentiscus* | | | | 26 | 0.18 | 2 | | | | 2 | 0.10 | | | | |
| *Pistacia terebinthus* | | | | 26 | 0.18 | 1 | | | | | | | | | |
| *Pistacia* sp. | | | | 6 | 0.04 | 2 | 2 | 0.02 | 2 | 1 | 0.05 | 1 | | | |
| *Populus* sp. | | | | 1 | 0.01 | 1 | 36 | 0.37 | 3 | | | | | | |
| *Prunus avium/cerasus* | | | | 2 | 0.01 | 1 | 1 | 0.01 | 1 | | | | | | |
| *Prunus* sp. | | | | 36 | 0.25 | 3 | 136 | 1.39 | 13 | 1 | 0.05 | 1 | | | |
| *Quercus suber* | | | | 73 | 0.51 | 6 | 221 | 2.26 | 33 | 30 | 1.54 | 1 | 6 | 0.70 | 2 |
| *Quercus* sp. - deciduous | | | | 213 | 1.48 | 8 | 57 | 0.58 | 15 | 7 | 0.36 | 4 | 2 | 0.23 | 2 |
| *Quercus* sp. - evergreen | 304 | 20.94 | 10 | 3,372 | 23.39 | 9 | 1,305 | 13.36 | 77 | 304 | 15.65 | 19 | 241 | 28.19 | 9 |
| *Quercus* sp. | 4 | 0.28 | 3 | 323 | 2.24 | 9 | 324 | 3.32 | 41 | 15 | 0.77 | 5 | 3 | 0.35 | 2 |
| *Rhamnus/Phillyrea* | 2 | 0.14 | 2 | 2 | 0.01 | 2 | 2 | 0.02 | 1 | | | | | | |
| Rosaceae Maloideae | 1 | 0.07 | 1 | 94 | 0.65 | 4 | 13 | 0.13 | 5 | 2 | 0.10 | 1 | | | |
| *Salix* sp. | 6 | 0.41 | 1 | 20 | 0.14 | 2 | 186 | 1.90 | 14 | 4 | 0.21 | 2 | 2 | 0.23 | 1 |
| *Salix /Populus* | | | | 5 | 0.03 | 2 | 4 | 0.04 | 3 | | | | 1 | 0.12 | 1 |
| *Ulmus* sp. | | | | | | 2 | 20 | 0.20 | 3 | | | | | | |
| *Vitis vinifera* | | | | 3 | 0.02 | 1 | | | | | | | | | |
| Dycotiledon | 124 | 8.54 | 12 | 2,036 | 14.12 | 10 | 2,315 | 23.70 | 82 | 385 | 19.82 | 23 | 115 | 13.45 | 5 |
| Angiosperm | 2 | 0.14 | 1 | 3 | 0.02 | 2 | 1 | 0.01 | 1 | | | 1 | | | |
| Gymnosperm | | | | 111 | 0.77 | 7 | 56 | 0.57 | 14 | 18 | 0.93 | 5 | | | |
| Undetermined | 10 | 0.69 | 3 | 93 | 0.65 | 4 | 39 | 0.40 | 12 | 2 | 0.10 | 2 | | | |
| **Total** | 1,452 | 100% | | 14,416 | 100% | | 9,769 | 100% | | 1,942 | 100% | | 855 | 100% | |

Table 5.4 - Charcoal and taxa ubiquity per context typology (Ubi = ubiquity).

*P. pinaster* and *Quercus* sp. evergreen are the most ubiquitous and were identified in 77 of the 101 s.u. Several taxa displayed significant ubiquity values despite their low absolute number. Such were the cases of *Arbutus unedo* (comprising only 3.3% of the charcoal recovered but present in 34 out of 101 s.u.), *Cistus* sp. (6.7%−61/101), *Erica* sp. (2.2%−36/101), Fabaceae (2.7%−44/101), *Quercus suber* (2.3%−33/101).

Filling deposits such as those present in postholes (D1) and ditches (D2) also displayed similar results: *Pinus pinaster* (23.5%), *Quercus* sp. evergreen (15.6%), *Cistus* sp. (8.1%) and Dicotyledon (19.8%) comprised almost ⅔ of all the charcoal content analysed from these contexts. A similar trend is recorded in at the ubiquity level since these taxa were also, by far, the most frequent in all the 36 s.u. sampled.

It is clear, thus, that despite being recovered in a wide variety of archaeological contexts, charcoal assemblages from different contexts displayed a high degree of similarity (Table A3.4 in Attachment 3). Almost all contexts were dominated by a set of three taxa (*Pinus pinaster*, *Quercus* sp. evergreen and *Cistus* sp.) followed by a wide diversity of taxa, each rarely exceeding 5% of the total.

## 5.5. Discussion

### 5.5.1. Crops, charcoal and storage structures: how are they related

Carpological remains and wood charcoal have been recovered throughout the site, in contexts of varied typology and chronology. However, the deposits associated with the storage facilities provided different plant assemblages, characterized by a noteworthy amount of cereal grains and charcoal of *Quercus* sp. evergreen and *Pinus pinaster*.

Looking at Table 5.3 and Table A3.3 in Attachment 3, it is clear that grains of cereals are abundant in the storage facilities but also in contexts difficult to interpret such as the depression in the bedrock [611] and the concentration of charred plant remains over the wall [825], among few others. Although grains of cereals have been recovered in type C, D and E contexts, it is clear that most of these provided few remains, even considering eventual sampling bias (see Results section).

Assuming that the charring of cereals occurred accidentally, their concentration in some contexts, the abundant deposits with charred grains distributed throughout the site and the site´s stratigraphy suggests that the loss of grains occurred periodically, sometimes

in great amounts, either during the processing or after storage or as result of major fires. The rich grain assemblage found in Oven 750 is suggestive of this kind of events.

The abundancy of plant remains in some storage structures and in secondary refuse deposits suggests that massive fires might have occurred. The resulting charred plant remains could have been remobilized to assure that the structures were rebuilt, possibly originating some of the grain-rich secondary refuse deposits (type C and D) found in Castelinho. In more intense rearrangements of the site, connected to the opening/closing of entrances and the creation of new embankments to be used as circulation areas and platforms for other structures, the sediments with the charred plant remains were likely relocated and incorporated in the new earthworks as tertiary refuse (*apud* La Motta and Schiffer, 1999). This could justify the grains found in many s.u. of the embankments (Table A3.3 in Attachment 3), reinforcing the idea that much caution is necessary while considering the incorporation of these assemblages in the site´s phases.

In such scenario we would expect to find the archaeobotanical assemblages from the highly mobilized sediments to be quite similar to the ones from less remobilized accumulations of charred remains due to their similar origin. However, ovens, hearths and evidences of metallurgy demonstrate that activities involving fire took place in the site, originating charred plant remains. Their eventual incorporation in the same secondary and tertiary refuse deposits mentioned above could make their archaeobotanical assemblages more heterogeneous.

We must question whether the natural deposition of sediment during the site's occupation or the day to day occasional charring of grains as a result of processing activities explain the amount of plant remains, mostly cereal grains, in some of the storage structures. It is possible, that the presence of charred cereal grains in the sediments from the storage structures, such as the deposits accumulated between the supporting walls of the *horrea*, may actually be related to the destruction of the constructions to which they are associated.

Alternatively, they can derive from the secondary or tertiary accumulation of material from previous destruction events from that or other nearby structures, while the structure was rebuilt and reused. However, the sediment between the supporting walls of the *horrea* would jeopardize their proper functioning. Either way, despite some mixture that may have occurred throughout time, it is likely that plant remains from these contexts are not as reworked as those from the embankments and fillings of feature interfaces. The charcoal assemblage further supports this idea.

As mentioned above, charcoal assemblages from the different type of contexts in the site show great similarities, but some differences must be pointed out. The relative and absolute values of *Pinus pinaster* and *Quercus* spp. charcoal found in the *horrea* are higher than those of the hearths and ovens. In some of these storage facilities they comprise 2/3 of all charcoal identified. As such, if these sediments contain plant remains that were in fact connected to eventual fires affecting the *horrea*, the concentration of *Quercus* spp. (mostly *Quercus* sp. evergreen) and *Pinus pinaster* recorded there suggests wood from these taxa was the main construction material of these storage facilities, besides schist. This is most likely to have occurred in *Horreum* VII, given the large charcoal assemblage found among its abandonment layers, comprising 77% of all the carbonized wood remains found in all the *horrea*. These structures' walls would have been made of wood and clay, supporting a light roof structure, which could also be constructed with branches, culms, foliage and other perishable elements. Nevertheless, no *in situ* carbonized wood poles were found in the postholes associated with the *horrea*.

As happens with the carpological assemblages and as expected in this interpretive model, charcoal content of the *horrea* show similarities with those of the refuse and filling deposits although the latter are slightly more diverse. The diversity of taxa in the charcoal assemblages connected to the *horrea* could be indicating that, besides the presence of wood from the structures, these may have incorporated a mixture of plant remains from other contexts and activities carried out in their surroundings. Considering the great percentages of *Quercus* spp. and *Pinus pinaster* wood in the *horrea*, the incorporation of peripheral material probably was not significant.

There are some differences between these assemblages and those from hearths and ovens (type A contexts). As mentioned above, in the latter there is less diversity of taxa, which is common in primary refuse deposits resulting from short-term events (Figueiral, 1994; Chabal et al., 1999; Fuller et al., 2014) and *Cistus* sp. (likely *Cistus ladanifer*) is the predominant taxon. This particular pattern of fuelwood used in combustion structures such as these, consisting of branches and twigs of scrubland species (*Cistus* sp.) to ignite the fire, combined with wood from potentially arboreal species (*Pinus pinaster* and *Quercus* sp.) to maintain the combustion, has been repeatedly reported both archaeobotanically (e.g. Vaz and Tereso, 2012; Vaz et al., 2017b) and ethnographically (e.g. Carvalho, 2005).

As seen, both the carpological and charcoal assemblages suggest the sediments found in association with the storage structures are likely connected to fire events that led to

their destruction, allowing their interpretation as stored goods and construction material, respectively, although some admixture with outside material might have happened.

### 5.5.2. What and how were the crops stored

Considering what was mentioned above, it is possible that the carpological remains found in association with the storage facilities were in fact stored in those or in nearby structures and, as such, may be related to few uses of these facilities. However, assemblages from the storage facilities and the abundant and diverse contexts in the site are quite homogeneous suggesting some conservatism in terms of crops throughout the whole Late Iron Age at Castelinho. As such, the main crop stored inside the fortification was naked wheat but other cereals were recurrently kept in those structures, namely broomcorn millet and hulled barley. Other edible fruits and seeds are rare but we must stress the presence of grapevine.

Cereals seem to have been stored fully processed, considering the extreme rarity of chaff remains. While the post-harvest processing of naked wheat (Hillman, 1981) and millet (Moreno-Larrazabal et al., 2015) is able to swiftly and with little effort produce clean grain, the same cannot be said regarding hulled barley. Further dehusking activities need to be carried out after threshing to free the grain from the hull, which can be done using different techniques (Hillman, 1981; Alonso et al., 2014; Alonso, 2019). Although spikelets are fragile and much less resistant to fire than grains, the presence of a single hulled grain of barley and an absence of lemma and palea fragments in the entire site, in over 1,000 samples, can hardly be justified by differential preservation towards fire. Cereal grains seem to have been taken inside the fortification already processed, ready for consumption. Remains of weeds, mostly Poaceae, although not uncommon are far from abundant and most of these are particularly big caryopses of *Lolium* sp. that due to their size and weight could have survived several processing stages and end up stored.

The presence of several ovens in the site led Santos (2015) to suggest these structures could have been related to some processing stages prior to storage. The abovementioned Oven 750, where nearly 500 cereal grains and 41 *Lolium* sp. were found, could support this hypothesis. Carpological remains in the other ovens are very scarce but not only these could have been cleaned but also we would expect accidents leading to major loss of grain to be rare. Considering most of the assemblage is composed of free-threshing wheat, the structure was not likely used for freeing the grains

by parching and, again, chaff is almost absent in the site. The oven could have been used to roast the grain prior to storage, however, while several ovens are located near the storage structures, Oven 750, with its rich carpological assemblage, is located in the quadrangular hall of the main entrance of the site, away from the storage areas (Figure Figs. 5.3, 5.4). Ovens could be used simply to cook the grains and eventually other food for consumption by the people kept in the fortification guarding and maintaining the crops and the structures. The eventual relation of these structures to some kind of feasting is also a possibility, although again, no other archaeological data supports it.

The hearths and ovens identified in Castelinho bear strong resemblances to those found in the site of Quinta de Crestelos, just 7 km upstream in the Sabor River. Here, a concentration of ovens has been found inside a ditch, dating somewhere between the 4$^{th}$ and the 3$^{rd}$ century BCE, thus being older than those of Castelinho (Vaz et al., 2017b). Carpological remains here seem to be mostly refuse from domestic activities used as fuel. Similar hearths and ovens have been found in domestic Late Iron Age contexts throughout the lower platform of the settlement but carpological remains are almost absent (unpublished material by the authors). On the other hand, in a small compartment attached to a 2$^{nd}$-1$^{st}$ century *horreum* in the upper platform of the same site, an oven and a hearth have been registered (Tereso et al., 2018) suggesting these kind of structures may have been in fact used to process cereals stored in these structures. One must notice that this upper platform by the end of the Iron Age and transition to the Roman period seems to have used mostly or almost exclusively for storage using *horrea*, since no clear domestic structures have been found. Few cereals, mostly free-threshing wheat, have been found in this compartment of Quinta de Crestelos, but their relation with the hearth and oven is unclear and such kind of remains are found in many deposits throughout the platform (Tereso et al., 2018).

### 5.5.3. Castelinho in a regional perspective

A variety of storage facilities has been identified in Iron Age sites in Northwest Iberia and these comprise underground and aboveground structures, with or without controlled atmosphere. Still, only in few sites were crops directly associated with particular storage facilities.

That happened in the pits of Crastoeiro (Seabra et al., 2018), the wattle and daub structures of As Laias (Tereso et al., 2013) and Castrovite (Rey Castiñeira et al., 2011),

the wattle and daub and stone structures of Crasto de Palheiros (Figueiral et al., 2017; Leite et al., 2018). With the exception of Crastovite, where broomcorn millet was the dominant crop, in most of these, hulled wheat was the major crop and was stored in spikelets. It was mostly found together with naked wheat, broomcorn millet and hulled barley, usually stored as clean grain.

Elevated granaries were found at Castelinho and Quinta de Crestelos (Pereira et al., 2015; Dinis et al., 2018; Tereso et al., 2018). These are the oldest granaries of this kind in the region and were built in the 2nd century BCE, although such kind of structures have been found in other areas of Iberia at least since the 5th century BCE (Salido Domínguez, 2017). During Roman times these type of facilities became more common. They are found in several military sites and also settlements even in the western Meseta such as testified in the sites of La Corona/El Pesadero (Manganeses de la Polvorosa), dating between the 1st and the 2nd century CE (Misiego Tejeda et al., 2013) as well as Vale do Mouro (Coriscada), where elevated granaries were dated to the 1st-2nd century CE and the 3rd-4th century, and in sites such as Quintal da Casa Grande and Casa do Nelo (Freixo de Numão), in Côa valley, dating to Roman times (Coixão, 2017).

At Castelinho and Quinta de Crestelos the main stored cereal was naked wheat, followed by broomcorn millet, both stored as clean grain. Hulled wheat is absent from the granaries of Quinta de Crestelos while at Castelinho, in 1,353 samples, only two small fragments of chaff from hulled wheat were recovered. It is uncertain, however, whether this means that elevated granaries were mostly directed to store naked wheat, contrary to the other type of facilities. The two sites are located in the same valley, separated by mere 7 km, and the preference for free-threshing wheat can be related to very local environmental or cultural reasons not allowing an extrapolation to a regional level. Hulled wheats are absent from other Late Iron Age sites in the same valley such as Chã (Vaz et al., 2016) and Terraço das Laranjeiras (unpublished) but carpological remains are scarce in both making a joint interpretation for the whole valley a difficult task. Differences between hulled and naked wheat have been highlighted by several authors (e.g. Hillman, 1981, 1984; Peña-Chocarro, 1999; Peña-Chocarro and Zapata, 2003) and will not be addressed in detail here. Besides different environmental requirements (e.g. in terms of soils and humidity), there are profound differences concerning post-harvesting processing. These factors, among others, could have been taken into consideration by Iron Age communities in their agricultural strategies, but cultural factors may had been involved too. However, in the current stage of our knowledge regarding the Iron Age communities in the Sabor valley it is difficult to fully understand this issue.

Despite their proximity, Castelinho and Quinta de Crestelos had different characteristics and evolved differently. Both occupy dominant topographical positions, each in one of few open areas in the usually narrow and steep Sabor valley. The granaries are similar in both sites, being built in schist and comprising rectangular and circular plans (see above). However, at Quinta de Crestelos, the granaries were concentrated inside the settlement and by the time they were being used, its fortification apparatus was already largely abandoned. In fact, the Late Iron Age granaries were found in the summit of the site's prominent crest, while in its the lower and wide platform several Iron Age huts and Roman buildings were recorded (Pereira et al., 2015; Larrazabal, 2017; Vaz et al., 2017b; Tereso et al., 2018). The *horrea* were dated from the 2nd century BCE to the late 1st/early 2nd century CE, *i.e* they were built in the Late Iron Age but some were still used up until the Roman times. By this time, another large *horreum* was being used next to a *cella vinaria* and other buildings and functional areas in the lower platform (Tereso et al., 2018). Big storage vessels from before and after the turn of the Era are abundant in the site. Some have traces of pitch in their inner surfaces, suggesting they were used as liquid containers, probably for wine or olive oil (Báez et al., 2016), but other uses cannot be excluded.

Castelinho, on the other hand, is itself a fortification with storage facilities and scarce structural traces of other activities. The granaries were used mostly in the Late Iron Age, in the 2nd and 1st centuries BCE. Roman materials in Castelinho date from the early moments of Romanization suggesting the site was abandoned at that time. A domestic area, eventually related to the fortification, is located around 300 m away, next to the river (Fig. 5.2) and provided evidences of an apparently small-size but long-lasting occupation from the Late Iron Age to Medieval and Modern times (Rosselló Mesquida et al., 2016; Santos and Ladra, 2016).

Castelinho seems to confirm the idea, already proposed by several authors, that specialized and possibly controlled storage might have existed in the region (González-Ruibal, 2006; Parcero Oubiña and Ayán Vila, 2009; Tereso et al., 2013; Teira-Brión et al., 2016; Teira-Brión, 2019). Several contexts confirm that large-scale storage existed in Northwest Iberia during the Late Iron Age, but understanding its social context is a challenging task. Sites such as Castrovite and As Laias have been considered aggregation centres where elites centralized the storage and redistribution of goods (González-Ruibal, 2006; Parcero Oubiña and Ayán Vila, 2009; Teira-Brión et al., 2016; Teira-Brión, 2019). As such, they had more than an economic role, being places for the development and display of social status and relations of power. However, that is not the

only interpretation possible. Based on the size and capacity of the facilities, Álvarez González et al. (2009) suggested that each structure of As Laias belonged to a family. Rey et al. (2011) and Mora-González et al. (2019) suggest the same for Castrovite. This hypothesis implies a communal management of the area but a household ownership of the contents of each structure and, possibly, a less hierarchical organization of these communities (Tereso et al., 2013). As mentioned in a previous study, both hypotheses are valid although they imply opposite theoretical perspectives regarding fundamental social aspects of the Iron Age communities of NW Iberia (Tereso et al., 2013).

The case of Castelinho helps to improve our perspective on this subject. A defensive apparatus such as the one recorded in Castelinho would have demanded immense labour, both for its construction and management and, as mentioned before, the site shows extensive evidences of architectural modifications. Such efforts were probably beyond the capacity of a small community like the one that might have inhabited the nearest residential areas. This suggests Castelinho was built to protect the crops of a population wider than the one that lived in its vicinities. It could have been an aggregation place for people from different settlements, in a spatial and population scale difficult to ascertain. The abundant rock art recovered in Castelinho also points to the special character of the site.

Salido Domínguez (2017) suggested that the storage areas of Quinta de Crestelos might have been used to fulfil the requirements of the Roman armies, which gives a different perspective to the concentration of storage facilities in the region, particularly if we extend this consideration to Castelinho. In fact, traditionally, elevated granaries were built throughout the empire in association with the presence of the Roman army (Salido Domínguez, 2017). This question arises because of the doubts regarding the way and the timing of the Romanization process in the region between the late 2$^{nd}$ century BCE and the turn of the Era, in which military actions had some relevance, together with commercial and political contacts (Currás et al., 2016). Still, while we cannot exclude storage facilities and the accumulation of crops were, at some time, used or favoured by the Romans, the chronologies of As Laias (Tereso et al., 2013) and Castrovite (Rey Castiñeira et al., 2011) suggest this already happened in an indigenous context.

The concealing of the engravings in the ditch at Castelinho reinforces this idea. *Circa* 150 engraved schist slabs have been recovered in the site, most of them in the intentional filling of a ditch. Although is difficult to position the art in one of the phases of the site, the engravings are likely from the Late Iron Age. The sealing of the ditch which included the deposition of the engraved slabs is considered to have occurred in the second half

of the 1st century BCE, when the site entered a new phase with greater Roman influence (Santos et al., 2012, 2016; Santos and Ladra, 2016). At this time, several storage facilities were probably ruined. This is inferred by the fact that most radiocarbon dates point to such a chronology. These dates (Table 5.1) were obtained mostly on cereal grains recovered in association with the *horrea*, although not necessarily in a primary position. No radiocarbon date obtained over cereals points to a period later than the late 1st century BCE or the transition of the Era, which suggests that fire events involving grain, that were common in previous stages, ceased to occur. Although it is not possible to exclude changes in the way crops were processed and the structures were managed might have occurred leading to such absence, it seems more likely that the structures were in fact abandoned.

## 5.6. Conclusions

The joint interpretation of archaeological and archaeobotanical data at Castelinho proved crucial to the understanding of storage strategies in the site and its integration in the discussions regarding the social role of storage in the Late Iron Age of Northwest Iberia.

The carpological remains found in the site were abundant and some seem to have been associated with the storage facilities. They were mostly composed of cereal grains and no relevant differences among the contents of each studied *horrea* were found. There was a clear predominance of naked wheat in all structures, followed by broomcorn millet and a residual presence of hulled barley. All these cereals were being stored fully processed. These results tally those of Quinta de Crestelos and both contrast with other sites in the region with similar chronologies, where hulled wheat is recurrently found and frequently predominates. By now, it is difficult to understand the full meaning of this difference but results may reflect a local trend.

The charcoal identified throughout Castelinho was likely originated in the hearths and ovens identified in the site, but probably also from occasional fires that took place in the granaries - an hypothesis particularly probable in *Horreum* VII. These structures would have been partially constructed using perishable materials in their walls and roofs. All the samples recovered, displayed similar taxa diversity despite some differences in the predominant taxon of each context. Overall, *Pinus pinaster* and *Quercus* sp. evergreen were dominant in most contexts. Especially large assemblages of these taxa were found in the *horrea*, being most likely used as construction material in these storage structures.

It is difficult to understand the full scale of storage in Castelinho due to preservation issues, however a site such as this must be interpreted beyond the level of storage to assure a community´s subsistence. The hypothesis that Castelinho was a relevant storage site where few other activities might have also taken place, in a context past the domestic sphere, is consistent with other information available for Northwest Iberia (González-Ruibal, 2006; Parcero Oubiña and Ayán Vila, 2009; Tereso et al., 2013; Teira-Brión et al., 2016; Teira-Brión, 2019). However, a site as Castelinho enhances the scale of the efforts these communities were willing to make in this social endeavour to a level without parallels in the region.

## CRediT authorship contribution statement

Luís Seabra: Conceptualization, Methodology, Formal analysis, Investigation, Writing - original draft, Writing - review & editing.

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Filipe Costa Vaz: Conceptualization, Methodology, Formal analysis, Investigation, Methodology, Writing - original draft, Writing - review & editing.

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# Chapter 6 - Archaeobotany with Douro view: fruits and seeds from the site of Rei Ramiro (Vila Nova de Gaia, Northern Portugal)

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## Abstract

At Rei Ramiro (Vila Nova de Gaia, Norte de Portugal), just a few metres away from the Douro river a diversified set of archaeological contexts was identified, testifying for an extensive and long-term occupation. The uniqueness of some structures stands out, namely circular houses from the Iron Age, as well as a large granary (*horreum*), probably built in the beginning of the Roman occupation, in the 1st century BCE.

The carpological study (fruits/seeds) showed a diverse assemblage mainly composed of cereals. Naked wheat and common millet were predominant. On the other hand, foxtail millet, barley and hulled wheat were secondary. Other crops were identified, such as faba bean and pea. Several edible fruits and other macroremains from wild taxa were equally recovered.

Keywords: Carpology, Iron Age, Roman period, *Horreum*, Cereals, Fruits

## 6.1. Introduction

Archaeobotanical studies and particularly carpological analyses (fruits/seeds) have been substantially incremented in the current century, being these an essential tool for the development of archaeological activity in our days (e.g. Tereso, 2012; Teira-Brión, 2019). Despite this, a low incidence is still observed in some areas of Northwest Iberia, such as the Portuguese coastal areas. Few sites were subjected to the analyses of fruits and seeds until now, and most of the studied assemblages show a chronology from Late Roman times (Tereso, 2012; Seabra et al., 2020a). The development of archaeobotanical studies in coastal areas is crucial because the proximity to the sea was strategic to develop commercial exchanges in which plant-based food resources would certainly be included.

Currently, there is an unparalleled growth in archaeological interventions in urban contexts. In this context, excavations were undertaken at the site of Rei Ramiro (Fig. 6.1), placed in the archaeological area of Monte do Castelo de Gaia (hill of the Castle of Gaia, in English), and at a short distance from the mouth of the Douro river. During the

fieldwork, several concentrations of charred plant remains were observed, leading to the establishment of a sampling strategy for posterior archaeobotanical studies.

The goal of this work is not only to present the carpological results but to understand the relationship between the different carpological remains and the archaeological contexts where they were recovered in an integrative way, contributing to improve our knowledge regarding the archaeological site whenever possible. This analysis aims specifically to identify and interpret the different carpological remains, particularly the crops, as well as how they were stored at Rei Ramiro. In articulation with the study carried out at Castro de Salreu (Tereso et al., 2023), it is also intended to strengthen the information available for coastal areas in Northwest Iberia.

Figure 6.1 - Two structures identified at Rei Ramiro: storage structure (*horreum*) and one circular house (Context B). Location of the site in Northwest Iberia (at the top right corner).

## 6.2. Rei Ramiro

The site of Rei Ramiro (Fig. 6.1) is located in the current union of parishes Santa Marinha and São Pedro da Afurada, in the municipality of Vila Nova de Gaia (Northern Portugal), being implanted, more precisely, in the basis of a hill known as the Castle of Gaia, a few metres from the left margin of the Douro river.

The earliest fieldworks at Rei Ramiro were carried out back in 2008, with the aim of evaluating a hotel project. Archaeological surveys soon revealed the potential of the site. Stone structures and a diverse set of archaeological materials were identified, the latter demonstrating the long chronology of the site (e.g. Silva, 2017; Silva et al., 2017). The archaeological work was resumed in 2016 and lasted until 2018, covering a terrace of around 900 $m^2$, occupied between the Iron Age and the Contemporary period (Carvalho and Ramos, 2020; Ramos, 2020; Ramos and Carvalho, 2020). Here will only be addressed the upper platform (Sectors 1 and 2), focusing on deposits between the Iron Age ($4^{th}$-$2^{nd}$ centuries BCE) and the Late Antiquity ($3^{rd}$-$7^{th}$ centuries CE).

The Iron Age occupation is characterized by several structures, usually well preserved and with different functions. The habitational spaces stand out, namely circular houses built with perishable materials (e.g. Context D) or stone (Context B- Fig. 6.1). Other structures such as hearths and postholes were also very common, associated or not with different habitational spaces. The presence of charred macroremains was recurrent, a good example being the large concentration of charcoal found in the delimitation of a possible hut or hedge (Context F) (Ramos and Carvalho, 2020).

Later, and probably already under strong Roman influences, a storage structure (*horreum* – Fig. 6.1) was constructed at Rei Ramiro (Ramos, 2020; Ramos and Carvalho, 2020). A granary with a rectangular plan, large dimensions (projections point to around 300 $m^2$), and several parallel supporting walls (Contexts 1-6), which ensured the elevation of the structure in relation to the surroundings as well as its stability. This structure was likely built in the second half of the $1^{st}$ century BCE and abandoned during the Early Roman Empire (Ramos, 2020; Ramos and Carvalho, 2020).

The Late Antique occupation of Rei Ramiro has proved difficult to assess. Despite the abundance of archaeological material, it was not possible to interpret and contextualize in detail the structures identified (Ramos and Carvalho, 2020).

## 6.3. Materials and Methods

### 6.3.1. Sampling strategy and approach to the archaeological contexts

Two hundred and twenty-five samples from 100 stratigraphic units (s.u.) and two sectors were recovered between 2016 and 2018 at Rei Ramiro (Table 6.1, Table A4.1 in Attachment 4). Most of them (n=197) correspond to sediment samples, making a total of 636.4 L of sediment. The remaining 28 samples are handpicked remains of larger dimensions occasionally collected. Sediment was floated with a 0.5 mm mesh.

The light fractions often showed large dimensions. So in order to conclude this study in due time, a selection was carried out, mainly in s.u. with more samples and a larger volume of sediment (Table 6.1). Nevertheless, at least one sample per s.u. was analysed, and 75% of the samples collected (n=169) were sorted. For accounting purposes, only samples with fruits/seeds counting as units (n=134) were included in this study, corresponding to 75 s.u., and 403.8 L of sediment (Table 6.1).

This set of samples came from multiple archaeological contexts with different characteristics, which were linked to different functional spaces (Contexts) when possible (Table 6.1). Although doubts remain about the function of some of these spaces (e.g. Context F), they essentially reflect two types of structures: houses with circular plans (Contexts B-G), and one *horreum* (Contexts 1-6). The latter correspond to each space defined by the supporting walls of this structure. Context 0 represents a circulation level outside the *horreum*, but that would probably be related to the structure.

The majority of the s.u. analysed correspond to secondary and/or tertiary depositions such as filling of postholes or refuse deposits. A set of spatially circumscribed deposits was identified, mainly defined by well-delimited concentrations of plant macroremains. However, it is not known whether they correspond to primary or secondary depositions. In all these cases, it is difficult to understand the origin of the macroremains. On the other hand, deposits associated with combustion structures are the result of their use, corresponding to primary depositions.

The analysed deposits cover 10 occupation phases between the Iron Age and the Late Antiquity (Ramos and Carvalho, 2020). These phases will be synthesized in four big moments in this study (Table 6.1):

- A first from the Iron Age (Phases I-II), which covers the earliest occupation of Rei Ramiro, between the 4$^{th}$ and 2$^{nd}$ centuries BCE. This period is characterized by

the presence of diverse functional spaces, being identified several structures, among which houses assume particular relevance. The great archaeobotanical potential observed in the two sectors led to the study of 65 sediment samples (179.6 L) from 42 s.u.

- The second is ascribed to a transitional moment between the Iron Age and the beginning of the Roman occupation, throughout the 1st century BCE (Phases III-VII). Over the course of these phases, the spaces previously identified are less expressive, but, in contrast, the large granary was built, probably in the second half of this century. Fourteen samples from 14 s.u. were counted in two sectors, resulting in 32.1 litres of sediment.
- A third moment concerns the Early Roman period (Phases VIII-IX), throughout the 1st-2nd centuries CE. Most deposits are related to the *horreum*, essentially representing sediments deposited after the abandonment of this structure. Fifty-two samples from 16 s.u. were assessed in the two sectors, leading to a large volume of sediment (190 L).
- The last moment is associated with the Late Antique occupation, between the 3rd-7th centuries CE. The deposits from this period are few and difficult to characterize. Samples from this phase come only from Sector 2, namely three samples from three s.u. and 2.1 litres of sediment.

| Period | Phase/Century | Sector | S.U. | Samples recovered/ Samples included (No.) | Processing | Total volume/Volume included (L) | Sampled context | Context |
|---|---|---|---|---|---|---|---|---|
| Iron Age | I-II (4th-2nd centuries BCE) | 1 | 1252; 1253 | 9/8 | Floated | 33/29 | Circulation layer | Context D |
| | | | 1325; 1329; 1396 | 3/3 | Floated | 7/7 | Posthole | |
| | | | 1355 | 1/0 | Handpicked | N/A | | |
| | | | 1343; 1361 | 2/1 | Floated | 1.1/1 | Refuse deposit | |
| | | | 1364 | 1/0 | Handpicked | N/A | | |
| | | | 1431; 1440 | 2/0 | Floated | 0.3/0 | Posthole | Context G |
| | | | 1365 | 3/1 | Floated | 13/5 | Refuse deposit | |
| | | | | 1/0 | Handpicked | N/A | | |
| | | | 1370 | 1/1 | Floated | 2/2 | Hearth | |
| | | | 1311 | 1/1 | Floated | 3/3 | Combustion structure | |
| | | | 1318; 1437 | 4/2 | Floated | 14.2/4.2 | Posthole | |
| | | | 1492 | 1/1 | Floated | 0.2/0.2 | Circulation layer | N/A |
| | | | 1284 | 1/1 | Floated | 0.1/0.1 | Concentrated deposit | |
| | | | 1270; 1277; 1308; 1430; 1438 | 6/5 | Floated | 30/25 | | |
| | | | 1367 | 1/0 | Handpicked | N/A | | |
| | | | 1273 | 1/1 | Floated | 4.5/4.5 | Refuse deposit | |
| | | | 1250 | 1/0 | Handpicked | N/A | | |
| | | 2 | 2187; 2189; 2212; 2316; 2338; 2340 | 8/6 | Floated | 25.1/19.1 | Posthole | Context B |
| | | | 2183 | 1/0 | Floated | 2/0 | Circulation layer | |
| | | | 2174; 2192; 2345 | 4/3 | Floated | 11/9 | Refuse deposit | |
| | | | 2180 | 5/2 | Floated | 24/10 | | |
| | | | | 1/1 | Handpicked | N/A | | |
| | | | 2194 | 1/1 | Floated | 1.5/1.5 | Hut base | Context C |
| | | | 2193 | 1/1 | | 4/4 | Hearth | |
| | | | 2261; 2265; 2297 | 3/3 | Floated | 2/2 | Posthole | Context E |
| | | | 2255 | 1/1 | | 1/1 | Refuse deposit | |
| | | | 2355 | 1/1 | Floated | 1.5/1.5 | Posthole | Context F |
| | | | 2246 | 17/8 | Floated | 48.8/15.2 | Concentrated deposit | |
| | | | 2342 | 23/8 | Floated | 72.3/22.3 | | |
| | | | | 1/0 | Handpicked | N/A | | |
| | | | 2190 | 1/0 | Floated | 0.1/0 | Hearth | N/A |
| | | | 2227; 2229 | 2/2 | Floated | 3/3 | Combustion structure | |
| | | | 2405 | 1/1 | Floated | 3/3 | Concentrated deposit | |
| | | | 2185 | 1/0 | Handpicked | N/A | Destruction layer | |
| | | | 2221; 2402 | 4/2 | Floated | 11.5/7 | Refuse deposit | |
| | | | 2314 | 1/0 | Handpicked | N/A | | |
| Late Iron Age/Early Roman period | III-VII (1st century BCE) | 1 | 1102 | 2/1 | Floated | 13/5 | Concentrated deposit | Context 2 |
| | | | 1115 | 2/1 | Floated | 13/6 | Refuse deposit | Context 3 |
| | | | 1105 | 1/1 | Handpicked | N/A | | |
| | | | 1116 | 1/1 | Floated | 1.5/1.5 | Concentrated deposit | Context 4 |
| | | | 1237; 1238 | 2/2 | Floated | 4/4 | Hearth | |
| | | | 1243 | 1/1 | Floated | 2/2 | Combustion structure | |
| | | | 1202; 1236 | 4/2 | Floated | 11/5 | Concentrated deposit | N/A |
| | | | 1140 | 2/0 | Handpicked | N/A | | |
| | | | 1205 | 1/0 | Floated | 4/0 | Refuse deposit | |
| | | | 1234 | 1/0 | Handpicked | N/A | | |
| | | | 1160 | 1/0 | Handpicked | N/A | N/A | |
| | | 2 | 2171 | 1/1 | Floated | 0.1/0.1 | Hearth | Context B |
| | | | 2173 | 1/1 | | 1.5/1.5 | Destruction layer | |
| | | | 2136; 2238 | 2/2 | Floated | 7/7 | Concentrated deposit | |
| | | | 2153 | 1/0 | Floated | 1/0 | Refuse deposit | N/A |
| | | | | 1/0 | Handpicked | N/A | | |
| | | | 2143; 2151; 2152; 2169; 2175; 2176 | 6/1 | Handpicked | N/A | Refuse deposit | |
| Early Roman period | VIII-IX (1st-2nd centuries CE) | 1 | 1075/76 | 4/4 | Floated | 17/17 | Circulation layer | Context 0 |
| | | | | 2/0 | Handpicked | N/A | | |
| | | | 1073 | 1/0 | Handpicked | N/A | Refuse deposit | |
| | | | 1030 | 6/3 | Floated | 25/13 | Refuse deposit | Context 1 |
| | | | 1086 | 3/1 | Floated | 12/4.5 | Concentrated deposit | Context 2 |
| | | | 1080 | 7/5 | | 25/17 | Refuse deposit | |
| | | | 1059 | 3/3 | Floated | 11/11 | Refuse deposit | Context 3 |
| | | | 1081 | 6/5 | | 25/21 | | |
| | | | 1083 | 3/1 | Floated | 11/5 | Concentrated deposit | Context 4 |
| | | | 1027; 1084 | 26/19 | Floated | 89/63.5 | Refuse deposit | |
| | | | 1085 | 4/4 | Floated | 16/16 | Refuse deposit | Context 5 |
| | | | 1077 | 2/1 | Floated | 9/5 | Concentrated deposit | Context 6 |
| | | | 1049 | 1/1 | Floated | 4/4 | Hearth | N/A |
| | | 2 | 2065; 2089 | 2/2 | Floated | 3/3 | Combustion structure | N/A |
| | | | 2044 | 1/1 | | 1/1 | Stone deposit | |
| | | | 2056 | 2/2 | | 9/9 | Concentrated deposit | |
| Late Antiquity | X (3rd-7th centuries CE) | 2 | 2017; 2158 | 2/2 | Floated | 2.1/2.1 | Refuse deposit | N/A |
| | | | 2157; 2162; 2166 | 4/1 | Handpicked | N/A | | |

Table 6.1 - Synthesis of the sampled contexts at Rei Ramiro.

### 6.3.2. Laboratory procedures

The separation of the carpological remains from the light fractions and their taxonomic diagnosis was conducted using a stereoscope microscope. The identifications were carried out with the help of atlases and specialized bibliography (e.g. Hillman et al., 1996; Jacomet, 2006; Neef et al., 2012; Zohary et al., 2012), as well as by comparison with specimens from the reference collections of the Herbarium of the University of Porto (PO) at the Natural History and Science Museum of the University of Porto (MHNC-UP) and from CIBIO.

The light fractions were separated through a column of sieves with 2 mm, 1 mm, and 0.5 mm meshes. Several of those fractions showed large volumes, and for that reason, 75 samples were subsampled (Table A4.2 in Attachment 4). This procedure was conducted using a riffle box. Subsampling was mostly applied to the content of 0.5 mm meshes. Due to the reduced amount of carpological remains recovered in these samples, no extrapolation was carried out to calculate the potential amount or remains in the samples since it could create some bias in the results, eventually leading to the overrepresentation of some taxa.

In addition, this article only presents units, namely whole remains, fragments with scutella/hila, and individual scutella (Table 6.2). Only two exceptions were admitted. Pericarps of hazelnut (*Corylus avellana*), and one capsule of *Cistus* sp. were included in Table 6.2 due to the fact that they appeared only fragmented and provided identifications with some taxonomic detail. In the case of cereal chaff, nodes and rachis segments (naked wheat and hulled barley) as well as glume bases (hulled wheat) were counted. Regarding the cereal grains, other procedures were applied, being considered two longitudinal fragments as one unit. The same about pulses, in which two cotyledons were counted as one seed[1].

## 6.4. Results

Two thousand and eighty-seven carpological remains were recovered at Rei Ramiro (Table 6.2, Table A4.3 in Attachment 4). Cereal grains were in higher amounts (n=755). Quantitatively, millets are predominant (n=551), but more than half (n=290) were

[1] The full carpological results, including units and fragments per sample, are available in this thesis in Table A4.3 in Attachment 4 (the inclusion of supplementary material in the original paper was not possible).

identified at the tribe level (Panicoideae) as a result of the poor preservation state of these macroremains. When detailed identifications were possible, broomcorn millet (*Panicum miliaceum*) was predominant (n=198), whereas foxtail millet (*Setaria italica*) was recovered in smaller amounts (n=47). Naked wheat (*Triticum aestivum/durum*) is in considerable quantities (n=147), and in comparison with millets that have smaller grains, this number corresponds, inclusively, to a higher volume of grain. Grains of hulled barley (*Hordeum vulgare*) were residual (n=13).

Few cereal chaff was recovered (n=93). Naked wheat is more abundant and 66 nodes and 20 rachis segments have been recovered. One segment allowed a more detailed identification, namely as bread wheat (*Triticum aestivum*). Despite in reduced number, four glume bases of hulled wheat (*Triticum dicoccum/spelta*) were counted. Just two barley rachis segments were observed.

Oat (*Avena* sp.) is present through grains (n=19). However, the absence of floret bases does not allow us to attest if these are domesticated or wild elements (e.g. Jacomet, 2006). Other grasses were recovered in relevant proportions (Table 6.2).

It stands out the record of 197 grains of Poaceae, 117 grains of hairy finger grass (*Digitaria sanguinalis*), and 56 grains of *Poa* sp., all corresponding to remains of wild plants.

At Rei Ramiro, several pulses were found, most of them wild. Only two crops were identified, namely faba bean (*Vicia faba*) and pea (*Pisum sativum*). Faba bean was predominant (n=15), while just one pea was present.

Although fruits are in relatively small numbers (n=171), a diverse group is observed. Portuguese crowberry (*Corema album*) and blackberry/raspberry (*Rubus* sp.) are in slightly higher amounts. A significant assemblage of fig seeds (*Ficus carica*) was found, as well as pips and pedicels of grape (*Vitis vinifera*). Besides these, a few acorn remains, pericarp fragments of hazelnut, endocarps of common hawthorn (*Crataegus monogyna*), and one olive endocarp (*Olea europaea*) were recorded.

The remaining carpological remains correspond again to a heterogeneous assemblage. It is noteworthy the presence of several smartweeds such as common knotgrass (*Polygonum aviculare*) (n=63) or *Rumex* sp. (n=45) as well as *Chenopodium* sp. (n=30), *Stellaria/Cerastium* (n=21) or *Viola* sp. (n=18), among others.

The majority of the carpological remains (n=1,397) came from Iron Age deposits (1$^{st}$ chronological group), one of the periods with more sediment analysed (179.6 L).

However, the greater sampling effort is insufficient to justify the higher amount of carpological remains found there. Cereal grains are dominant (n=540), representing 72% of the total grains found in the whole site. Among these, broomcorn millet and naked wheat are dominant.

A large number of wild grasses was also recorded during this period. However, this result is conditioned by a single s.u. [2342] associated with Context F (hut/hedge), the s.u. with more carpological remains (n=587) in the whole site and where most wild grasses were found.

The Iron Age deposits also show more diversity. This was particularly due to the presence of fruits, since hazelnut, oak, fig, and olive remains are only present in this period. The same happens with peas. Despite this, in most cases these carpological remains appear in small amounts and/or in particular contexts, requiring some caution in their interpretation.

The transition between the Iron Age and the Roman period (2$^{nd}$ group) showed a small assemblage (n=289), which is unsurprising since only 32.1 litres of sediment were analysed. Even so, the pattern observed is similar to the other chronological groups. This is particularly evident in what cereals are concerned, since these were recovered in small numbers and, despite slight differences in the assemblage, the main cereals were identified here.

The 190 L of sediment analysed for the Early Roman period (3$^{rd}$ group) did not reveal an expressive number of carpological remains (n=396). Most remains came from deposits recovered in the compartments of the *horreum* (Contexts 1-6), which are related to the abandonment of the structure and even posterior moments. Regardless of the small amount of material, results were identical to the previous groups. Broomcorn millet and naked wheat are predominant but the other cereals were also recovered.

The Late Antique layers (4$^{th}$ group) revealed few carpological remains (n=5). This is the result of the limited amount of sediment analysed (2.1 L). It should be noted the record of broomcorn millet, faba bean, and Portuguese crowberry. However, the establishment of any detailed considerations about these macroremains or even comparisons with other periods is not feasible since they would inevitably be biased.

| Volume | 37 | 7 | 37 | 38.1 | 5.5 | 3 | 39 | 13 | 5 | 6 | 1.5 | 11 | 1.6 | 7 | 17 | 13 | 21.5 | 32 | 68.5 | 16 | 5 | 4 | 13 | 2.1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | | | | I-II | | | | | | III-VII | | | | | | | | | VIII-IX | | | | | X | |
| Sector | | 1 | | | | 2 | | | | 1 | | | 2 | | | | 1 | | | | | | 2 | 2 | |
| Context | D | G | N/A | B | C | E | F | N/A | 2 | 3 | 4 | N/A | B | N/A | 0 | 1 | 2 | 3 | 4 | 5 | 6 | N/A | N/A | N/A | |
| S.U. included (No.) | 6 | 2 | 11 | 9 | 2 | 4 | 3 | 5 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 2 | 3 | 1 | 1 | 1 | 4 | 3 | |
| **Cereal (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | **Total** |
| *Hordeum vulgare* | | 3 | 2 | 3 | | | 1 | | | 1 | | | | | | | 1 | | 1 | | | | 1 | | **13** |
| *Triticum aestivum/durum* | 2 | 4 | 2 | 93 | | | 2 | 4 | | 2 | | | 1 | 1 | | 2 | 14 | 10 | 3 | 2 | 1 | | 4 | | **147** |
| *Panicum miliaceum* | 2 | 4 | 40 | 31 | | 1 | 50 | 5 | | | | 15 | | 1 | 8 | 4 | 5 | 8 | 15 | 6 | | | 2 | 1 | **198** |
| *Setaria italica* | | | 10 | 10 | 3 | 1 | 4 | 2 | | | | 6 | | | 2 | 2 | 1 | | 2 | 2 | | | 2 | | **47** |
| *Panicum/Setaria* | | | 3 | 5 | 1 | | | | | | | 4 | | | | | | | 2 | | | | 1 | | **16** |
| Panicoideae | 11 | 7 | 49 | 10 | 14 | 2 | 125 | 10 | | | | 28 | | | 1 | 6 | 9 | 2 | 11 | 4 | | | 1 | | **290** |
| *Triticum* sp. | | | 1 | 15 | | | | | | 1 | 1 | 3 | | | | | 2 | | 1 | | | | | | **24** |
| Triticeae | | 2 | | 2 | | | 3 | 1 | | | | | | | 2 | | 3 | | 6 | 1 | | | | | **20** |
| **Cereal (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (segment w/ 1 node) | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | **2** |
| *Triticum aestivum* (segment w/ 2 nodes) | | | | 1 | | | | | | | | | | | | | | | | | | | | | **1** |
| *Triticum aestivum/durum* (segment w/ 1 node) | 2 | 4 | 2 | 9 | | | | | | | | 2 | | | | | | 1 | | | | | | | **20** |
| *Triticum aestivum/durum* (rachis node) | 2 | 5 | 5 | 18 | | | | 1 | | 1 | | 1 | 2 | 1 | 3 | 4 | 2 | 5 | 11 | 4 | | | 1 | | **66** |
| *Triticum dicoccum/spelta* (glume base) | | | 1 | | | | | 1 | | | | | | | | | | 1 | 1 | | | | | | **4** |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | | | 4 | 7 | | | | | | | | | 1 | | 1 | 3 | | 1 | 1 | 1 | | | | | **19** |
| *Digitaria sanguinalis* | | | 1 | | | | 116 | | | | | | | | | | | | | | | | | | **117** |
| *Lolium/Festuca* | 1 | | | | | | 1 | | | | 1 | | | | | | | | 1 | | 2 | | | | **6** |
| *Phalaris* sp. | | | | 1 | | | 2 | | | | | | | | | | | | 1 | | | | 1 | | **5** |
| *Poa* sp. | | 7 | 14 | 2 | | 1 | 20 | 1 | | | 1 | 3 | 3 | 1 | | | | 1 | 2 | | | | | | **56** |
| *Setaria* sp. | | | | | 1 | | 9 | | | | | | | | | | | | | | | | | | **10** |
| Poaceae | 1 | 2 | 9 | 12 | | | 153 | 1 | | | 1 | 3 | 2 | 2 | | | 3 | 1 | 4 | 2 | | | 1 | | **197** |
| **Fabaceae (seeds)** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* | | | | 1 | | | | | | | | | | | | | | | | | | | | | **1** |
| *Vicia faba* | | | 2 | 8 | 1 | | | | | 1 | | 1 | | 1 | | | | | | | | | | 1 | **15** |
| *Vicia/Lathyrus* | 1 | | 3 | 1 | | | 1 | | | | | | | | | 1 | 1 | 1 | 2 | | 1 | | 1 | | **13** |
| Fabaceae - *Genista* type | | 1 | 6 | 1 | | | 5 | 3 | | | | 1 | | | 1 | | 1 | 2 | 9 | 1 | | | 2 | | **33** |
| Fabaceae - *Melilotus* type | | | | | | | 1 | | | | | | | | | 1 | | | | | | | | 1 | **3** |
| Fabaceae - *Trifolium* type | | | 1 | | | | | | | | | | | | | | | 1 | 2 | 1 | | | | | **5** |
| Fabaceae | 2 | 3 | 11 | 6 | 2 | | 13 | 3 | | 2 | | 2 | 1 | | 25 | 1 | 2 | 6 | 6 | 1 | 1 | | 2 | 1 | **90** |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corema album* (seed) | | 2 | 14 | 2 | | | 1 | | | | | 2 | 2 | | 3 | 1 | 2 | 1 | 2 | 1 | | | | 1 | **34** |
| *Corylus avellana* (pericarp frag.) | | | | 8 | | | | 5 | | | | | | | | | | | | | | | | | **13** |
| *Crataegus monogyna* (endocarp) | | 2 | | 2 | | | | | | | | 1 | | | | | | | | | | | | | **5** |
| *Ficus carica* (seed) | | | | | | | 25 | | | | | | | | | | | | | | | | | | **25** |
| *Olea europaea* (endocarp and seed) | | | | 1 | | | | | | | | | | | | | | | | | | | | | **1** |
| *Quercus* sp. (acorn) | | | | | | | 2 | | | | | | | | | | | | | | | | | | **2** |
| *Quercus* sp. (cotyledon) | | | | | 1 | | | 2 | | | | | | | | | | | | | | | | | **3** |
| *Quercus* sp. (cupule) | | | 5 | | | | | | | | | | | | | | | | | | | | | | **5** |
| *Quercus* sp. (pericarp base) | | | 1 | | 6 | | | 7 | | | | | | | | | | | | | | | | | **14** |
| *Rubus* sp. (achene) | 3 | | 7 | 2 | 1 | | 17 | | | | | 1 | | | | 2 | | | 2 | 1 | | | | | **36** |
| *Vitis vinifera* (seed) | | | | 6 | | | | | | | | 3 | 1 | | 3 | | | | 2 | | | | 1 | | **16** |
| *Vitis vinifera* (pedicel) | | | | 10 | | | | | | | | 2 | | | 1 | | | 1 | 2 | | | | | | **16** |
| Rosaceae (endocarp) | | | 1 | | | | | | | | | | | | | | | | | | | | | | **1** |
| **Others** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* (seed) | | | | | | | 2 | | | | | | 1 | | | | | | | | | | | | **3** |
| Asteraceae - *Chrysanthemum* type (cypsela) | | | | | | | | 1 | | | | | 1 | | | | | 1 | | | | | | | **3** |
| Asteraceae (cypsela) | | | 1 | 1 | | 1 | | | | | | 1 | | | | 1 | | 7 | 6 | | | | | | **18** |
| *Carex* sp. (achene) | | | 1 | | | | 3 | 1 | | | | | | | | | | | | | | | | | **5** |
| Caryophyllaceae (seed) | | | 2 | | | | 2 | 1 | | | | 7 | | 1 | | | | | | | | | | | **13** |
| *Chenopodium* sp. (seed) | | 1 | 9 | 2 | | 1 | 10 | 2 | | | | | 3 | | | | 2 | | | | | | | | **30** |
| *Cistus* sp. (capsule frag.) | | | 3 | | | | | | | | | | | | | | | | | | | | | | **3** |
| *Corrigiola litoralis* (achene) | | | | | | | 1 | | | | | | 1 | | | | | | | | | | | | **2** |
| *Echium* sp. (nutlet) | | | | | | | 2 | | | | | | | | | | | | | | | | | | **2** |
| *Galium aparine* (mericarp) | | | | | | | | | | | | | | | 1 | | 1 | | 1 | | | | | | **3** |
| *Galium* sp. (mericarp) | | 1 | 2 | 1 | | | | 1 | | | | | | | 1 | | 1 | 1 | 1 | | | | 1 | | **10** |
| Lamiaceae (nutlet) | 1 | | | | 1 | | | | | | | | | | | | | | | | | | | | **2** |
| *Linum* sp. (seed) | | | | | | | 1 | | | | | | | | | | | | 1 | | | | | | **2** |
| *Malva* sp. (seed) | 1 | | 1 | | | | | | | | | 5 | | | 1 | | | | 1 | | | | | | **9** |
| *Papaver* sp. (seed) | | | | | | | | | | | | 3 | | | | | | | | | | | | | **3** |
| *Plantago lanceolata* (seed) | | | | | | | | | | 5 | | | | | | | | | | | | | | | **5** |
| *Plantago* sp. (seed) | | 1 | | | | | | | 5 | 1 | | | | | | | | | | | | | | | **7** |
| *Polygonum aviculare* (achene) | | 1 | | | | | | | | | | | 62 | | | | | | | | | | | | **63** |
| *Polygonum lapathifolium* (achene) | | | | 1 | | | 5 | | | | | | | | | | | | | | | | | | **6** |
| *Polygonum* - lenticular type (achene) | | | | | | | 9 | | | | | | | | | | | | | | | | | | **9** |
| *Polygonum* - trigonal type (achene) | | | 2 | 1 | | | 2 | | | | | 1 | | | | | | | | | | | | | **6** |
| Polygonaceae (achene) | | | 1 | | 1 | | 1 | 2 | | | 1 | | 14 | | | | 1 | 1 | 1 | | | | | | **23** |
| *Portulaca oleraceae* (seed) | | | 3 | | | | | | | | | | | | | | | | | | | | | | **3** |
| *Ranunculus* sp. (achene) | | 1 | | | | | | | | | | | | | | | | | | | | | | | **1** |
| *Raphanus raphanistrum* (siliqua segment) | | | 1 | | | | 2 | | | | | 1 | | | | | | | | | | | | | **4** |
| *Rumex acetosella* (achene) | | | | | | | | | | | 1 | | | | | | | | | | | | | | **1** |
| *Rumex conglomeratus/crispus* (achene) | | 7 | 4 | 3 | | | 1 | | | | 2 | | | | | | 1 | | | | | | | | **18** |
| *Rumex crispus/obtusifolius* (achene) | | | | | | | | | | | | | | | 1 | | | | 1 | | 1 | | 1 | | **4** |
| *Rumex* sp. (achene) | | 1 | 3 | 2 | | 1 | 6 | 2 | | 1 | 12 | 2 | | 5 | | 1 | 2 | | | | | | 7 | | **45** |
| *Sambucus* sp. (stone) | | | | | | | 9 | | | | | 1 | | | | | | | | | | | | | **10** |
| *Sherardia arvensis* (mericarp) | | | | | | | 6 | | | | | | | | | | | | | | | | | | **6** |
| *Silene gallica* (seed) | 1 | | | | | | | | | | | | | 1 | | | | | 1 | | | | | | **3** |
| *Silene* sp. (seed) | | | | | | | | | | | | | | | | | | | 1 | | | | | | **1** |
| *Solanum* sp. (seed) | | | 1 | | | | | | | | | 1 | 2 | | | | | | | | | | | | **4** |
| *Spergula arvensis* (seed) | | | | | | | 1 | | | | | | 1 | | | | | | | | | | | | **2** |
| *Stellaria/Cerastium* (seed) | | 3 | 2 | 1 | 1 | | 4 | 2 | | | | 1 | 6 | | | | | | | | | 1 | | | **21** |
| *Viola* sp. (seed) | | | | | | | 1 | | | | | 16 | | | | | | | 1 | | | | | | **18** |
| Undetermined - unit | 3 | 12 | 17 | 10 | | | 34 | | | | 1 | 12 | 1 | | | 1 | 4 | 9 | 19 | 2 | | | 5 | | **130** |
| **Total** | **34** | **74** | **248** | **289** | **33** | **8** | **653** | **58** | **5** | **15** | **21** | **129** | **105** | **14** | **54** | **30** | **58** | **61** | **123** | **29** | **6** | **1** | **34** | **5** | **2,087** |

Table 6.2 - Carpological results at Rei Ramiro (only units).

## 6.5. Discussion and Conclusions

### 6.5.1. Storage

Storage was a central and crucial part of the daily life of Northwestern communities since the establishment of an effective strategy to preserve food would make a difference in their efforts to survive variations in agricultural production. On the other hand, the surplus accumulation of food resources could be a key-factor for the establishment of intra- and inter-community relations in the context of social emulation or trade development. Several types of storage structures are recorded during the Iron Age in Northwest Iberia: underground, elevated or ground level (e.g. Tereso, 2012; Figueiral et al., 2017; Teira-Brión, 2019; Seabra et al., 2020b). The initial occupation of Rei Ramiro (4$^{th}$-2$^{nd}$ centuries BCE) did not reveal any storage structure, but this does not mean necessarily that such practices did not occur. The Iron Age occupation in hill of the Castle of Gaia extends over a broad area, which goes far beyond the site here presented, being admissible that storage spaces existed in other areas of the settlement (e.g. Carvalho, 2003; Silva, 2017).

In the beginning of the Roman occupation stands out the construction of a storage structure, namely a *horreum* of large dimensions, which could have been used for storage of multiple resources, certainly including foodstuffs (Ramos, 2020; Ramos and Carvalho, 2020). The deposits associated with this structure revealed few carpological remains, but the record of several cereal grains must be highlighted. These are mostly naked wheat, broomcorn millet, foxtail millet, and hulled barley. Such crops were also present, inclusively in larger amounts, in Iron Age contexts, showing some continuity in terms of cereal consumption. However, the results suggest slight differences, namely a smaller diversity of carpological remains, especially fruits and weeds or ruderal plants. This particularity could be explained by the preferential use of the *horreum* for cereal storage, but since most layers sampled are not directly linked to the use of this structure, this interpretation may be problematic.

The preferential use of this type of structure for storing cereal was observed in other sites with *horrea* in Northern Portugal. In the Sabor valley, archaeobotanical studies carried out at Quinta de Crestelos (Tereso et al., 2018) and Castelinho (Seabra et al., 2020b) identified large amounts of grains, particularly of naked wheat and broomcorn millet. Hulled barley was also present but in less quantity. A small assemblage was found at Rei Ramiro, but important similarities were observed: with the exception of foxtail millet,

the same cereal species were identified; the dominance of naked wheat and broomcorn millet, which is more evident at Quinta de Crestelos and Castelinho but is also recorded at Rei Ramiro.

On the other hand, the *horrea* found in the Sabor valley show some differences in terms of construction. In the sites of Quinta de Crestelos and Castelinho were observed several small *horrea* with rectangular and circular plans as well as walls and floors (*tabulata*) built in schist, whereas at Rei Ramiro a single large structure (around 300 $m^2$) with a rectangular form and walls built in granite was identified. Here, evidence of the floor (*tabulatum*) was not found, suggesting it was made of perishable materials. The same could be pointed to the external walls and roofs of all *horrea* identified in Northern Portugal so far.

In chronological and cultural terms, the panorama observed is more complex. The information obtained at Castelinho suggests the *horrea* were only used in the Late Iron Age ($2^{nd}$-$1^{st}$ centuries BCE) or at most until the $1^{st}$ century CE since this site showed scarce evidence of Roman occupation, not surpassing the Early Roman Period (Seabra et al., 2020b). Quinta de Crestelos was, in part, contemporary to Castelinho but revealed more evidently the use of *horrea* in the Roman period, namely between the $1^{st}$-$2^{nd}$ centuries CE (Tereso et al., 2018). The construction of the granary of Rei Ramiro likely occurred around the second half of the $1^{st}$ century BCE, under strong Roman influence and likely related to the Romanization process of Northwest Iberia (Ramos, 2020; Ramos and Carvalho, 2020). The same hypothesis was pointed to the *horrea* of the Sabor valley, admitting the use of this type of structure to fulfill the requirements of the Roman army (Salido Domínguez, 2017). However, these last sites did not provide data to support a clear association to this process. It is fundamental to conduct new studies on this topic in order to obtain a deeper understanding of the Romanization of Northwest Iberia.

### 6.5.2. Cereals and fruits

Overall, the results of the carpological study of Rei Ramiro are homogeneous. Cereals are constantly present in the different archaeological contexts, and above all, during the Iron Age and Roman period. Although the assemblage is small, naked and broomcorn millet are the dominant crops. The presence of foxtail millet and hulled barley is more reduced. All these cereals are frequent in Northwest Iberia and the periods highlighted here (e.g. Tereso, 2012; Teira-Brión, 2019). The scarce number of glume bases of hulled

wheat and the lack of taxonomic detail does not allow an evaluation of the role of these cereals. Regardless of this, hulled wheats are common in the region, mainly in Iron Age contexts and in inland areas, being dominant in some sites (e.g. Tereso, 2012; Seabra et al., 2018). On the coast, hulled wheats are present at Castro de Salreu (Tereso et al., 2023), and in sites of the Rías Baixas area (Galicia) (Teira-Brión, 2019).

A diverse assemblage of edible fruits was recorded at Rei Ramiro, particularly in Iron Age contexts (4$^{th}$-2$^{nd}$ centuries BCE). Remains of hazelnut, olive, fig, and acorn are only found during this early period. The common hawthorn was identified in this occupation but also in the transitional moment (1$^{st}$ century BCE). The small amounts found do not allow detailed considerations, all these probably corresponding to wild remains. The remaining, namely Portuguese crowberry, blackberry/raspberry, and grape are present in the three main chronological groups established here. The record of Portuguese crowberry is inseparable from its natural distribution in coastal environments. The increasing number of archaeobotanical studies in coastal sites is leading to an increase in the record of Portuguese crowberry seeds, whose drupes might have been consumed (López-Dóriga, 2018; Seabra et al., 2020a). Regarding blackberry/raspberry, it was not possible to assess the wild or domesticated character of those remains. The same can be mentioned for the grape pips and pedicels, but in this case, it is admissible that this fruit had a relevant economic value due to the strategic position of this site and the identification of several containers associated with the transport of wine (Carvalho and Ramos, 2020).

The great diversity of fruits, weeds, and ruderal plants verified in the Iron Age layers in comparison with the Roman layers, especially the s.u. associated with the *horreum,* may result from the different nature of both occupations, even though this hypothesis needs further investigation through in-deep studies of the artefacts and other evidences here recovered. During the Iron Age, the site would have been a habitational area where varied domestic activities occurred, several of which involving the manipulation of fire. Preservation of carpological remains by charring is frequently associated with the use of crops by-products as fuel. In settlements connected to agricultural activities this is more likely to occur in places with combustion structures and where domestic activities are conducted. In storage areas, the carpological remains will appear, among other hypotheses, as a result of destructive fires, when fire is used in cleaning activities, or through the remobilization of sediments from other areas, which might happen during the construction of slopes, ramps, or other structural elements. In this sense, the observed differences could result from the contrasting use of the site in the two phases.

At Rei Ramiro, it is difficult to extrapolate these data and obtain a broader interpretation of the two occupations beyond the excavated area. The analysis of the differences recorded should occur under a careful investigation of the archaeological site and through a perspective that integrates other areas excavated nearby. We, therefore, hope that future interventions in the hill of the Castle of Gaia proceed with this interdisciplinary strategy, integrating sampling strategies for archaeobotanical analyses.

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# Chapter 7 - Crops on the edge of a cliff: Storage at Castro S. João das Arribas (Northwest Iberia) in the Late Antiquity

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Supplementary material is provided in Attachment 5 (also available at: https://www.sciencedirect.com/science/article/pii/S2352409X22001912#s0085).

## Abstract

The site of Castro S. João das Arribas is placed on the edge of a cliff over the Douro river (Miranda do Douro, Northeast of Portugal). Archaeological interventions in its highest area uncovered a main occupation from Late Antiquity. On its western part a functional space was recorded, which included two small above-ground structures and abundant charred carpological remains. These were found inside ceramic vessels and spread throughout the area, suggesting its destruction occurred after a fire event. A radiocarbon date places such episode in some moment between the late 6$^{th}$ and the first half of the 7$^{th}$ century CE.

Carpological results revealed an assemblage dominated by cereal grains, mostly rye (*Secale cereale*). Naked wheat (*Triticum aestivum/durum*), barley (*Hordeum vulgare*), common millet (*Panicum miliaceum*) and foxtail millet (*Setaria italica*) were also found but in smaller amounts. The large amount of carpological remains in the above-mentioned contexts, suggests the space was used for storage, at least between the 6$^{th}$ and 7$^{th}$ centuries CE. Although some uncertainties remain regarding how crops were stored, evidence points that they were kept in ceramic vessels, outside and inside the small storage facilities, but also in other types of containers, eventually made of perishable materials.

At Castro S. João das Arribas, past communities chose a diversity of crops, however, most of them show undemanding features in terms of soil and climatic conditions. The agricultural choices could have been motivated by several factors, but cereals like rye were certainly well-suited to the environmental conditions around the settlement.

Keywords: Carpology, Late Antiquity, Northeast Portugal, Storage, Crop diversity, Ceramic vessel.

## 7.1. Introduction

Peasant communities were fundamental during the Late Antiquity and the early Middle Ages. This period of time in Northwest Iberia witnessed several conflicts related to the

rise and collapse of new political entities (e.g. Quirós-Castillo, 2020). In the early 5th century CE there was an influx of Germanic groups onto western European regions, which led to economic, political and cultural changes in several areas of the Iberian Peninsula, including the northwest, where they settled in 411 through an agreement with the Romans. The period that follows is one of persistent conflicts and turmoil. After a short period of Suebian domination, the Visigoths ended up establishing their rule over the remaining groups throughout the 6th century, becoming the dominant authority in Iberia until the arrival of the Muslims, in the early 8th century (Leguay, 1993; Mattoso, 1997).

This period of instability has been described as one of some ruralisation both socially and economically, although abundant small rural settlements could already be found in previous periods (e.g. Carvalho, 2009; Tente, 2010; Marques, 2011; Pereira et al., 2014; Sá Coixão, 2017; Tereso et al., 2020).

In this scenario, it is crucial to characterise peasant communities and address their productive strategies. In Northern Iberia, considering the lack of written sources, peasant economy needs to be tackled from the information retrieved by applying environmental and bioarchaeological analyses. In the specific case of grain storage, a number of archaeological features, mostly pits, have been identified in medieval contexts (e.g. Vigil-Escalera et al., 2013), but archaeobotanical analyses are still not common in the region (Peña-Chocarro et al., 2019b) making it difficult to identify the main crops from this period and characterize agricultural strategies.

Although there is a reasonable number of sites with fruits/seeds dating back to Roman times (e.g. Teira-Brión, 2010; Peña-Chocarro et al., 2019b; Tereso et al., 2020), earlier evidences from Late Antique and Early Medieval sites are considerably lower. Those are even narrower if we just consider the archaeological contexts from the 5th to the 8th centuries CE, when NW Iberia was under Suebian and Visigothic rule. A Mourela (As Pontes), Agro de Deus (Pontevedra), and Quinta de Crestelos (Mogadouro) provided small assemblages of charred plant remains, with few crops (Antolín and Alonso, 2009; Tereso et al., 2018b; Peña-Chocarro et al., 2019b). On the western edge of Asturias, at Tabacalera (Gijón), a waterlogged context revealed a substantial and diverse assemblage of wild remains, although crops were also reduced (Carrión Marco et al., 2015; Peña-Chocarro et al., 2019a). Those were collected in a well and more precisely in three filling deposits, whose chronology has been a matter of debate, with some authors suggesting a Late Antique chronology (e.g. Fernández Ochoa et al., 2015) and others proposing a later date (Vigil-Escalera, 2018).

The development of a new study at Castro S. João das Arribas (Fig. 7.1), in north-eastern Portugal is, thus, of exceptional importance. Here, a fire of unknown scale may have allowed the preservation of a large carpological assemblage, above all cereal grains, some of which inside a ceramic vessel. This work aims to present such assemblage, discuss how it was originated, its relationship with the respective archaeological contexts and its significance to understand agriculture and storage on local and regional scales.

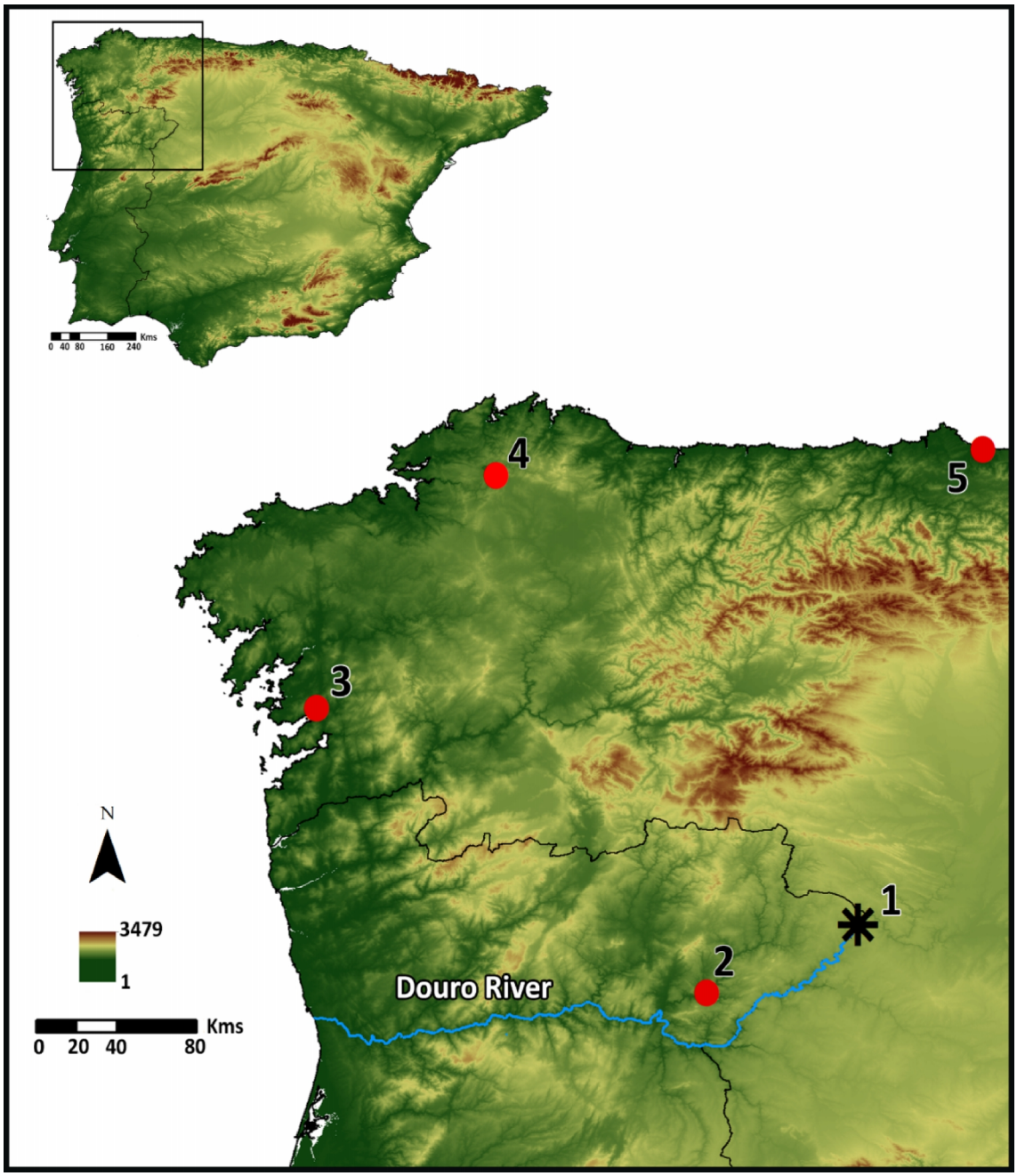


Figure 7.1 - Location of the sites mentioned in the text (NW Iberia): 1-Castro S. João das Arribas; 2-Quinta de Crestelos; 3-Agro de Deus; 4-A Mourela; 5-Tabacalera.

## 7.2. The Castro S. João das Arribas site

The site of Castro S. João das Arribas, also known as Castro de Aldeia Nova (hereinafter - CSJAMD) is located on a small spur next to the Douro river, in the village of Aldeia Nova (Miranda do Douro, Northeast Portugal). It is embedded in a high and wide plateau area, greatly defined by granitic boulders. From a biogeographic point of view, it is incorporated in the Mediterranean region, in a contact area between the Salmanticensean and Lusitanian-Duriensean Sectors. CSJAMD and its surrounding territories are mainly characterized by supramediterranean and dry to subhumid bioclimatic conditions, and are also part of a climatic area usually designed as Cold Land. Forests of evergreen oaks are prevailing, namely *Quercus suber* and above all *Quercus rotundifolia*. The latter reveals a distinctive association with *Genista hystrix*, an Iberian endemism (Costa et al., 1998; Aguiar and Vila-Viçosa, 2017; Aguiar, 2021).

Although it suffered considerable disturbances due to agricultural activities and the construction of a church, the site still displays important defensive features. It was naturally protected in the southeast side by a large cliff over the river and the remaining area was defended by two wall alignments as well as a circular turret (Lemos, 1993; Salgado and Pereira, 2018; 2018–19). The site has been quoted by several authors since the 18$^{th}$ century, providing general descriptions and mentioning isolated findings, such as funerary inscriptions or ceramic material (e.g. Cardoso, 1747; Lemos, 1993; Alves, 2000; Redentor, 2012–13). CSJAMD is usually considered an Iron Age hillfort, with a Roman occupation (Lemos, 1993). In this context, emmer grains identified by Maria Hopf are generically attributed to the Iron Age (Hopf quoted by Silva, 1988), even though there is no information regarding the archaeological context where they were recovered.

In 2015, archaeological surface surveys were conducted in nearby terrains providing evidence of agricultural activities at least, since Late Roman times. Radiocarbon dates pointed to a time span between the late 3$^{rd}$ century and the 6$^{th}$ century CE (Sánchez-Palencia et al., 2015). Excavations were conducted in the site between 2016 and 2019 (Salgado and Pereira, 2018, 2018–19, 2019). During this time, 13 test pits and excavation areas implanted all over the site led to the identification of an occupation between the Late Antiquity and the Early Middle Ages. Evidence of previous occupations consists mostly of sporadic ceramic material, without a clear correlation with archaeological contexts (Salgado and Pereira, 2018, 2018–19, 2019). High concentrations of charred plant remains were observed in Area 2, and several samples

were recovered for archaeobotanical analysis, being these as well as the respective archaeological contexts addressed here in more detail.

### 7.2.1. Area 2 and excavated features

Excavation Area 2 (Fig. 7.2) was implanted on the highest area of the spur, at an elevation of 658 m.a.s.l. Here, the archeological interventions were carried out over three excavation campaigns (2016–2018). Fieldwork has revealed thin deposits and evidence of perturbations caused by recent agricultural activities that made difficult a full understanding of some archaeological contexts. Still, and as observed in other areas of CSJAMD, the occupation of Area 2 started during Late Roman Times and lasted, at least, until the later moments of the Late Antiquity.

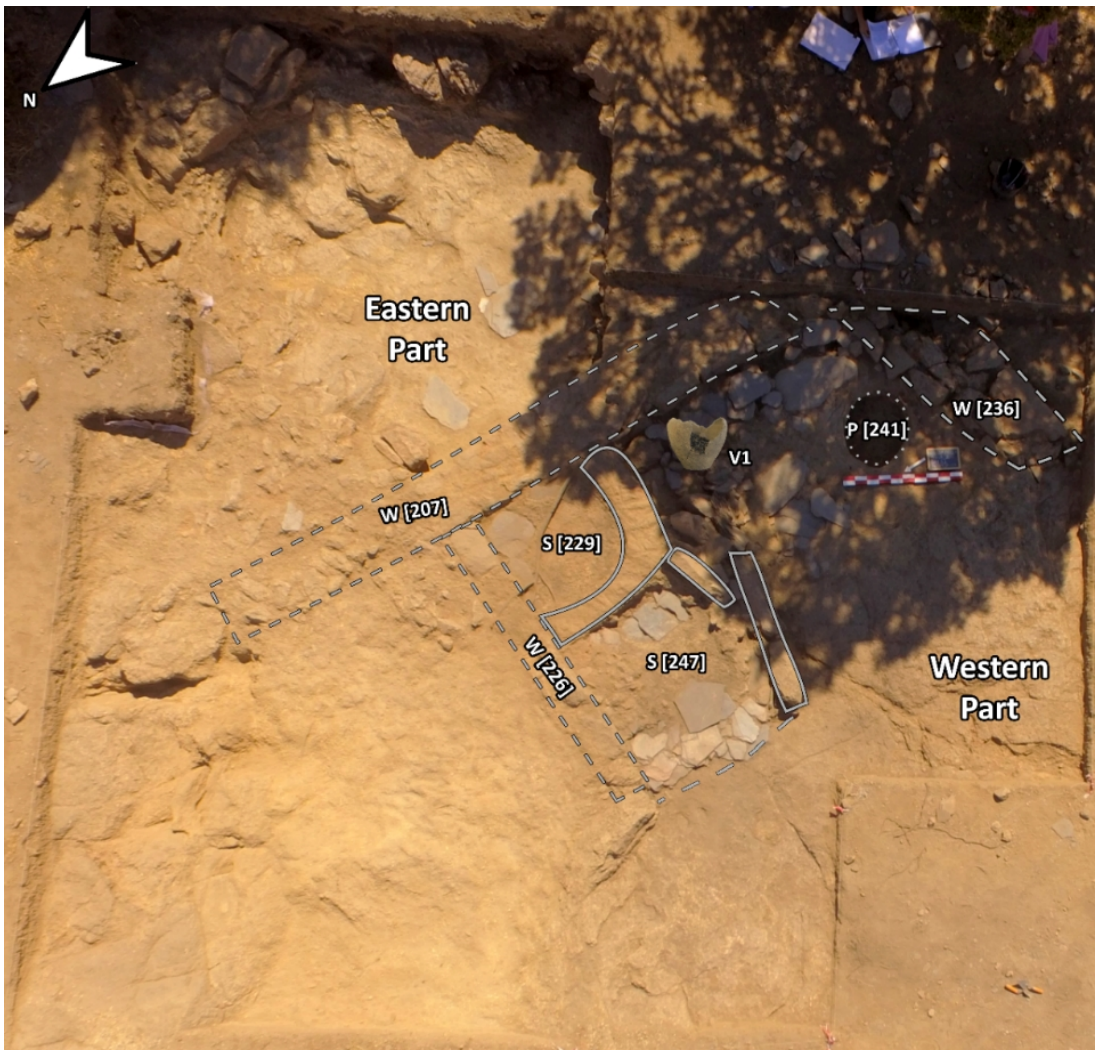


Figure 7.2 - Aerial view of Area 2. Legend: W - Wall; S - Structure; V - Vessel; P - Pit.

A granite wall [207] from the Late Roman phase might have been reused on a later phase, as a supporting structure of walls [226] and [236]. Together, they delimit three sides of a functional space, on the western part of Area 2, whose layout, size, and structural characteristics are impossible to determine due to its bad preservation (Fig. 7.2). Inside, two small structures (s.u. [229] and [247]), were found next to each other (Fig. 7.3):

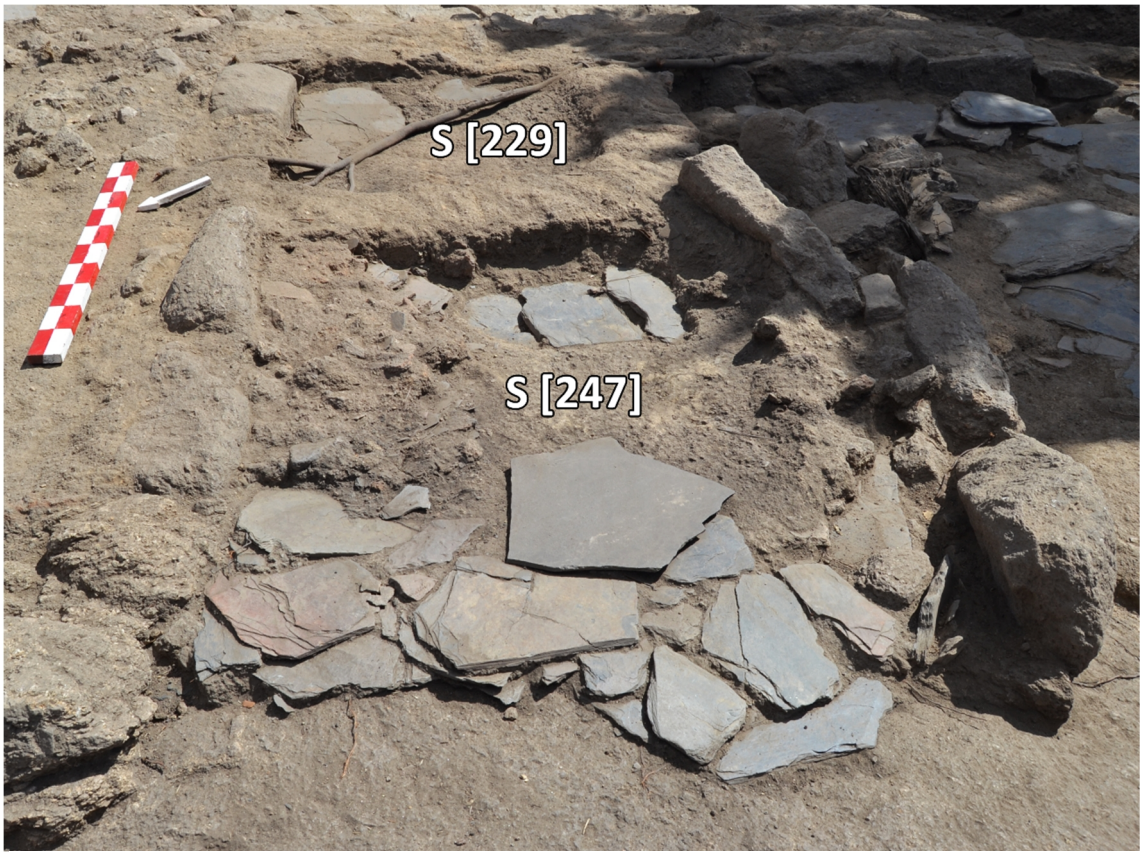


Figure 7.3 - Detailed view of Structures [229] (above) and [247] (below).

- Structure [229] had a usable area of around 1 $m^2$. It was attached to wall [207], and delimited by wall [226], on the north side. Its sub-quadrangular form is attested by the preservation of a solid mortar base level, which was also identified in the structure floor, alongside schist slabs.

- Structure [247] was badly preserved but shows similar characteristics to structure [229]. It was attached to the latter, and delimited by wall [226]. On the other hand, granitic stones were used to define its south side. Despite they were not well aligned, most likely due to preservation issues, those seem to provide a quadrangular shape to [247]. It is not certain if the schist slabs found, served as the west side edge, still, structure 247

would also have a usable area close to 1 $m^2$. It seems that as observed in [229], the floor was prepared with mortar and schist slabs.

Some meters away, and near wall [236], a pit was found. Its [241] excavation did not provide enough information to clarify its original function. In between pit [241] and structures [229] and [247], archaeobotanical remains were found in three successive layers (deposits [225], [234] and [238]). Among those, layer [225] was noteworthy, due to the presence of abundant archaeobotanical remains. In this layer, a small pottery vessel (Vessel 1) with charred cereals still inside was also recovered (Figs. 7.2, 7.5). Besides cereals, its content was composed of a few charcoals, fragmented ceramic remains of the vessel itself, and a fine sediment, some of it still stuck to the vesseĺ sinner surface. It was found next to wall [207], and at approximately 50 cm straight from structure [229]. Although fragmented, it shows the following measures: c. 8 cm high; bottom of c. 5 cm diameter; and a max-diameter of c. 10 cm. It appears to be part of a narrow and short, flared jar, though it is not possible to determine a clear typology.

Inside one of the storage facilities, namely in structure [247], cereals were found in other vessel. Sadly, it was only possible to recover and study one vessel, since most of the remaining vessels seem to have been smashed, either during the fire either through recent agricultural plantations. The vessel from [247] was found during the excavation but disappeared from the field in the context of illicit actions by an unknown perpetrator. The abundancy of charred cereals recorded in this area suggests they were burned during a fire that destroyed the storage structures and eventually also the building where they were located.

Considering the relevance of Vessel 1, cereal grains from its content were selected for radiocarbon dating (Table 7.1). The result suggests that an event involving fire should have occurred in Area 2 between the end of the 6$^{th}$ century and the first half of the 7$^{th}$ century of our era.

On the eastern part of Area 2, structural and other evidences of occupation were less clear (Fig. 7.2). Immediately next to wall 207, two deposits, namely [203] and above all [205] (destruction level) revealed some charred plant remains.

| Sample Nº | Context | Sampled context | Taxon dated | Lab. Reference | 14C age (yr B.P.) | Calibrated age B.C. - A.D. (1 σ) | Calibrated age B.C. - A.D. (2 σ) |
|---|---|---|---|---|---|---|---|
| 121 | Western area - Vessel 1 | 225 | *Secale cereale* (grains) | D-AMS 042654 | 1435±24 | 605 - 645 CE | 590 - 654 CE |

Table 7.1 - Radiocarbon date from Vessel 1 at Castro S. João das Arribas. Calibration OxCal 4.4 software (Bronk Ramsey, 2009), IntCal20 calibration curve (Reimer et al., 2020).

## 7.3. Materials and Methods

### 7.3.1. Sampling and associated contexts

During field work at CSJAMD judgment sampling was carried out, focusing mostly on contexts with visible plant macroremains. Considering wall [207] may have had a delimitation function, we use it as a benchmark, establishing a division between the western and eastern parts of Area 2 (Table 7.2, Fig. 7.2).

In the western side, the sampling strategy was focused on deposits from structures [229] and [247], as well as in a destruction layer (deposit [225]) identified next to the storage facilities. It was also collected a sediment sample in pit [241]. On the eastern side, the sediment recovered was scarce. In fact, only a small soil sample was collected in [205]. From [203], only handpicked archaebotanical remains were retrieved.

Overall, between 2016 and 2017, 23 samples from 10 stratigraphic units were recovered for archaeobotanical analysis (Table 7.2), 16 corresponding to sediment samples and seven to handpicked plant remains. The volume of the samples is usually low and amounts to just 12 L, which corresponds to a biased set, and disregards standard field sampling and recovery methods. This limitation will be taken into consideration in the interpretation of the assemblage.

From those sediment samples, 14 were processed through bucket flotation and two were gently dry sieved. These corresponded to particularly rich samples, one of them recovered in Vessel 1, in which dry sieving was carefully carried out in the laboratory in order to extract thin elements and avoid further fragmentation of plant remains. Either through flotation or sieving, a 0.5 mm mesh was used.

| S.U. | Sample | Sampled context - description | Context | Campaign | Processing | Volume (L) |
|---|---|---|---|---|---|---|
| 202 | 6 | Abandonment/Destruction layer | Western area - Structure 229 | 2016 | Floated | 0.5 |
| | 8 | | | 2016 | Floated | 0.2 |
| 228 | 4 | | | 2017 | Floated | 3 |
| | 15 | | | 2017 | Floated | 1 |
| | 21 | | | 2017 | Handpicked | N/A |
| | 22 | | | 2017 | Floated | 0.9 |
| 230 | 16 | Destruction layer | Western area -Structure 247 | 2017 | Floated | 0.5 |
| 237 | 18 | | | 2017 | Handpicked | N/A |
| | 121 | Deposit inside vessel | Western area - Vessel 1 | 2017 | Dry Sieved | 0.1 |
| 225 | 13 | Destruction layer | Western area | 2017 | Floated | 1.5 |
| | 14 | | | 2017 | Floated | 1.5 |
| | 23 | | | 2017 | Floated | 0.1 |
| | 24 | | | 2016 | Floated | 0.5 |
| | 25 | | | 2016 | Floated | 0.5 |
| | 26 | | | 2016 | Floated | 0.5 |
| | 29 | | | 2017 | Floated | 0.1 |
| 234 | 20 | Destruction layer | Western area | 2017 | Handpicked | N/A |
| 238 | 28 | Abandonment/Destruction layer | Western area | 2017 | Handpicked | N/A |
| 242 | 5 | Filling layer | Western area - Pit 241 | 2017 | Floated | 1 |
| 203 | 12 | Abandonment/Destruction layer | Eastern area | 2016 | Handpicked | N/A |
| 205 | 7 | Destruction layer | Eastern area | 2016 | Handpicked | N/A |
| | 10 | | | 2016 | Handpicked | N/A |
| | 17 | | | 2016 | Dry sieved | 0.1 |

Table 7.2 - Inventory from Area 2, at CSJAMD.

### 7.3.2. Laboratory analysis

Light fractions and handpicked samples were sorted under a stereoscopic microscope and specialized bibliography was used for the taxonomic diagnosis (e.g. Beijerinck, 1976; Castroviejo, 1986–2012; Hillman et al., 1996; Buxó, 1997; Jacomet, 2006; Nesbitt, 2006; Neef et al., 2012; Zohary et al., 2012). Whenever necessary, the carpological remains were compared with modern material from the reference collections of the University Porto Herbarium (PO) at the Natural History and Science Museum of the University of Porto (MHNC-UP) and from CIBIO.

To optimize laboratory work, 15 samples that provided larger volumes of plant remains were subsampled according to the following procedures: each light fraction was separated into different size classes, through a column of sieves with 2 mm, 1 mm and

0.5 mm meshes; the contents of the 2 mm meshes were often fully analysed; the contents of all 0.5 mm meshes and most 1 mm meshes were sub-sampled with the help of a riffle box (Table 7.3).There are short differences in the volume of the sub-samples, leading to stronger variations in the percentages studied from each samples. The decision to determine sub-samples by their volume rather than by percentages was meant to optimize the sorting, considering time limitations as well as the fact that 1 mm and 0.5 mm fractions consisted mostly of small fragments of grains.

Whenever sub-sampling was carried, results reflect extrapolations based on the original and sorted weights of each mesh. Still, extrapolations were only calculated to units, not fragments, and when a minimum number of 10 units per taxon and mesh was found.

| Mesh | | 2 mm | | | 1 mm | | | 0.5 mm | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample | S.U. | Original weight (g) | Sorted (g) | % | Original weight (g) | Sorted (g) | % | Original weight (g) | Sorted (g) | % |
| 4 | 228 | 4.16 | 4.16 | 100% | 23.75 | 2.49 | 10.5% | 40.55 | 0.58 | 1.4% |
| 6 | 202 | 25.92 | 25.92 | 100% | 19.26 | 2.75 | 14.3% | 14.81 | 0.48 | 3.2% |
| 8 | 202 | 4.81 | 4.81 | 100% | 3.51 | 3.51 | 100% | 2.51 | 0.69 | 27.5% |
| 13 | 225 | 3.90 | 3.90 | 100% | 7.13 | 1.73 | 24.3% | 8.12 | 0.45 | 5.5% |
| 14 | 225 | 1.73 | 1.73 | 100% | 3.49 | 3.49 | 100% | 6.63 | 0.78 | 11.8% |
| 15 | 228 | 147.56 | 35.6 | 24.1% | 96.89 | 2.9 | 3.0% | 72.5 | 0.41 | 0.6% |
| 16 | 230 | 77.78 | 37.12 | 47.7% | 100.5 | 3.52 | 3.5% | 65.93 | 0.32 | 0.5% |
| 17 | 205 | 26.38 | 26.38 | 100% | 10.77 | 2.89 | 26.8% | 7.02 | 0.41 | 5.8% |
| 22 | 228 | 33.24 | 33.24 | 100% | 83.73 | 2.72 | 3.2% | 94.58 | 0.42 | 0.4% |
| 23 | 225 | 14.97 | 14.97 | 100% | 8.7 | 2.28 | 26.2% | 5.73 | 0.33 | 5.8% |
| 24 | 225 | 0.64 | 0.64 | 100% | 1.31 | 1.31 | 100% | 2.22 | 0.52 | 23.4% |
| 25 | 225 | 13.45 | 13.45 | 100% | 35.14 | 1.28 | 3.6% | 56.69 | 0.4 | 0.7% |
| 26 | 225 | 3.52 | 3.52 | 100% | 3.27 | 1.47 | 45.0% | 8.56 | 0.32 | 3.7% |
| 29 | 225 | 28.03 | 28.03 | 100% | 58.61 | 3.73 | 6.4% | 14.38 | 0.47 | 3.3% |
| 121 | 225 | 67.73 | 67.73 | 100% | 24.24 | 24.24 | 100% | 17.73 | 2.05 | 11.6% |

Table 7.3 - Subsampling applied over light fractions, at CSJAMD

Whole carpological remains as well as fragments with scutella or hila were counted as units. In the case of longitudinal fragments –cereals-and whole cotyledons –legumes-, they were counted as a single unit when two fragments were identified in the same mesh/sample. Each of the aggregated remains was counted as one, when unit elements were observed. Therefore, in Table 7.4 only units of each stratigraphic unit (s.u.) are

represented, whereas in Table A5.1 in Attachment 5 the detailed results (units and fragments) of each sample are presented.

Taxonomic designations follow the checklist for Portuguese flora (Sequeira et al., 2012) and, for cultivated plants, Zohary et al. (2012). The designation *Triticum aestivum/durum* was used to name naked wheat grains following Buxó (1997). This includes *Triticum aestivum* subsp. *vulgare*, *Triticum turgidum* subsp. *durum* and *Triticum turgidum* subsp. *turgidum* grains.

## 7.4. Results

### 7.4.1. Characterization of the assemblage

Carpological results showed an assemblage dominated by cereal grains (98%). Rye (*Secale cereale*) is clearly the main crop, with almost 50,000 grains. Naked wheat (*Triticum aestivum/durum*), hulled barley (*Hordeum vulgare*), common millet (*Panicum miliaceum*) and foxtail millet (*Setaria italica*) grains are much fewer, together representing less than 1% and 1,000 units of the complete assemblage (Fig. 7.4, Table 7.4 and Table A5.1 in Attachment 5). Two grains of oat (*Avena* sp.) have also been found, but no floret bases were recovered.

However, in number, grains merely identified at the tribe level, as Triticeae, are predominant (63%), which results from the high degree of fragmentation observed. Since those Triticeae concentrations are coincident with the largest rye assemblages, they most likely correspond to the mentioned crop.

Besides cereals, other crops are scarce. One hundred and forty-one flax seeds (*Linum usitatissimum*) were found, representing just 0.1% of the total. Clear evidence of cultivated pulses was not recorded. It was only found one seed from an undetermined pulse and identified as *Vicia/ Lathyrus/Pisum*. No remains from domesticated fruit trees have been recovered at CSJAMD so far.

The remaining plant macrofossils, correspond to grasses, namely *Bromus* sp. and caryopsis identified at the family level (Poaceae), as well as few other wild plants. Despite some diversity was recorded, these remains were recovered in small amounts. Corncockle (*Agrostemma githago*) was the exception, being identified in significant amounts (1.7%). This weed was mostly represented through the seeds, but also by capsule and pedicel fragments (Fig. 7.4).

| **Volume (litres)** | 0.7 | 4.9 | 0.5 | 0.1 | 4.7 | N/A | N/A | 1 | 0.1 | N/A | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **S.U.** | 202 | 228 | 230 | 225 | 225 | 234 | 238 | 242 | 205 | 203 | | |
| **Context** | **Western area Structure 229** | **Western area Structure 229** | **Western area Structure 247** | **Western area Vessel 1** | **Western area** | **Western area** | **Western area** | **Western area Pit 241** | **Eastern area** | **Eastern area** | **Total** | % Total |
| **Cereals (grain)** | | | | | | | | | | | | |
| *Avena* sp. | | 1 | 1 | | | | | | | | **2** | 0.00% |
| *Hordeum vulgare* | | 4 | 108 | | 52 | | | | 18 | | **182** | 0.13% |
| *Panicum miliaceum* | | 135 | 6 | | 2 | | | | | | **143** | 0.10% |
| *Setaria italica* | | | | | | | | | 10 | | **10** | 0.01% |
| *Panicum/Setaria* | | | | | | | | | | 1 | **1** | 0.00% |
| Panicoideae | | 843 | 4 | | 3 | | | | | | **850** | 0.59% |
| *Secale cereale* | 3,658 | 19,855 | 11,870 | 1,569 | 11,338 | 2 | 7 | 2 | 884 | 1 | **49,186** | 33.90% |
| *Triticum aestivum/durum* | | 15 | 47 | | 61 | | 2 | | 388 | | **513** | 0.35% |
| *Triticum* sp. | | 2 | | | 2 | | | | 9 | | **13** | 0.01% |
| Triticeae (with scutellum) | 2,340 | 51,798 | 16,822 | 682 | 19357 | 2 | 1 | | 495 | | **91,497** | 63.07% |
| **Other Poaceae (grain)** | | | | | | | | | | | | |
| *Bromus* sp. | 1 | | | 6 | | | | | | | **7** | 0.00% |
| Poaceae | 1 | 5 | 1 | 1 | 2 | | | | 1 | | **11** | 0.01% |
| **Fabaceae (seed)** | | | | | | | | | | | | |
| *Vicia/Lathyrus/Pisum* | | 1 | | | | | | | | | **1** | 0.00% |
| Fabaceae | | | | 3 | | | | | | | **3** | 0.00% |
| **Fibre/Oil plant** | | | | | | | | | | | | |
| *Linum usitatissimum* (seed) | | | | | 141 | | | | | | **141** | 0.10% |
| **Other remains** | | | | | | | | | | | | |
| *Agrostemma githago* (seed) | 126 | 1,506 | 316 | 49 | 227 | | | | 252 | 1 | **2,477** | 1.71% |
| Apiaceae (achene) | | | | 2 | | | | | | | **2** | 0.00% |
| Caryophyllaceae (seed) | | 1 | | | 2 | | | | 3 | | **6** | 0.00% |
| *Galium* sp. (mericarp) | | 1 | | | 5 | | | | | | **6** | 0.00% |
| *Malva* sp. (seed) | | 1 | | | | | | | | | **1** | 0.00% |
| Polygonaceae (achene) | | | | | 1 | | | | | | **1** | 0.00% |
| *Polygonum* sp. (achene) | | | | 1 | | | | | | | **1** | 0.00% |
| *Rumex* sp. (achene) | 1 | | | | | | | | | | **1** | 0.00% |
| *Veronica* sp. (seed) | 1 | | | | | | | | | | **1** | 0.00% |
| Undetermined (seed/fruit) | | 6 | 1 | | 8 | | | | 1 | | **16** | 0.01% |
| **Total** | **6,128** | **74,174** | **29,176** | **2,313** | **31,201** | **4** | **10** | **2** | **2,061** | **3** | **Total remains 145,072** | |
| **%** | 4.22% | 51.13% | 20.11% | 1.59% | 21.51% | 0.00% | 0.01% | 0.00% | 1.42% | 0.00% | | |
| **Remains per litre** | 8,754 | 15,138 | 58,352 | 23,130 | 6,639 | N/A | N/A | 2 | 20,610 | N/A | | |

Table 7.4 - Carpological results at CSJAMD.

Figure 7.4 - Some of the fruits/seeds remains identified at CSJAMD. Grains of *Hordeum vulgare* (1), *Triticum aestivum/durum* (2), *Secale cereale* (3), *Panicum miliaceum* (4), *Setaria italica* (5). Seed (6), capsule (7), pedicel (8) of *Agrostemma githago*. Grain of *Bromus* sp. (9).

### 7.4.2. Spatial distribution

Most of the remains were found in the western part of the area (Fig. 7.2, Fig. 7.3, Table 7.4), namely in two structures ([229] and [247]), and one destruction layer [225]. Pit [241] displayed just two rye grains; [234] and [238] also showed few remains but it is necessary to take into consideration that no sediment samples have been recovered in these two contexts and all plant remains have been handpicked. In the destruction levels sampled in the eastern area, carpological remains were only abundant in a small sediment sample from [205]. As expected, scarce remains were identified in a handpicked sample from [203].

Structures [229] and [247] are particularly relevant since both revealed 75.5% of the total remains. The majority (51.1%), came from just one stratigraphic unit, namely [228] in the sub-quadrangular structure [229]. Close to those structures, in [225], a considerable assemblage comprising 23.1% of all remains was collected, being of particular notice the ceramic vessel found with remains still inside (Fig. 7.5). In this vessel around 1,500 grains of a single cereal crop (rye) have been found. Some wild remains, mostly corncockle seeds, were also retrieved from the vessel but these are likely weeds from rye fields.

Figure 7.5 – Ceramic vessel with carpological remains inside.

The enormous amount of remains per litre strengthens the idea of a large carpological assemblage (Tables 7.2 and 7.4). The highest concentrations are still in structures [229] and [247]. However, since a small volume of sediment was recovered in the whole site (12 L), and variations between contexts were significant (0.1 – 4.9 L), comparisons can be somehow misleading. Taking into consideration that sampling was directed at contexts that had visible and abundant plant remains, the large concentrations here recorded cannot be extrapolated to the rest of the site, not even to the whole extension of the s.u. that were sampled.

Independently of the archaeological context, rye was always the dominant crop. Regarding the other cereals, considerations should be careful since these were often collected in small amounts (Table 7.4, Fig. 7.6). Furthermore, due to their size, millets are likely to be underrepresented when handpicking is carried out.

While rye predominates in the site and overshadows other taxa, results show differences in the distribution of the other crops throughout the excavated area. Most of the naked wheat was found in the eastern area, namely in [205] (388 out of 513). Barley grains were more abundant on the west, in structure [247] (108 out of 182). Almost all common millet grains were recovered in structure [229] (135 out of 143). Due to the low number of remains (Table 7.4), foxtail millet and oat were not included in Fig. 7.6, however all foxtail millet grains, although scarce, have been recovered in the Eastern part of Area 2.

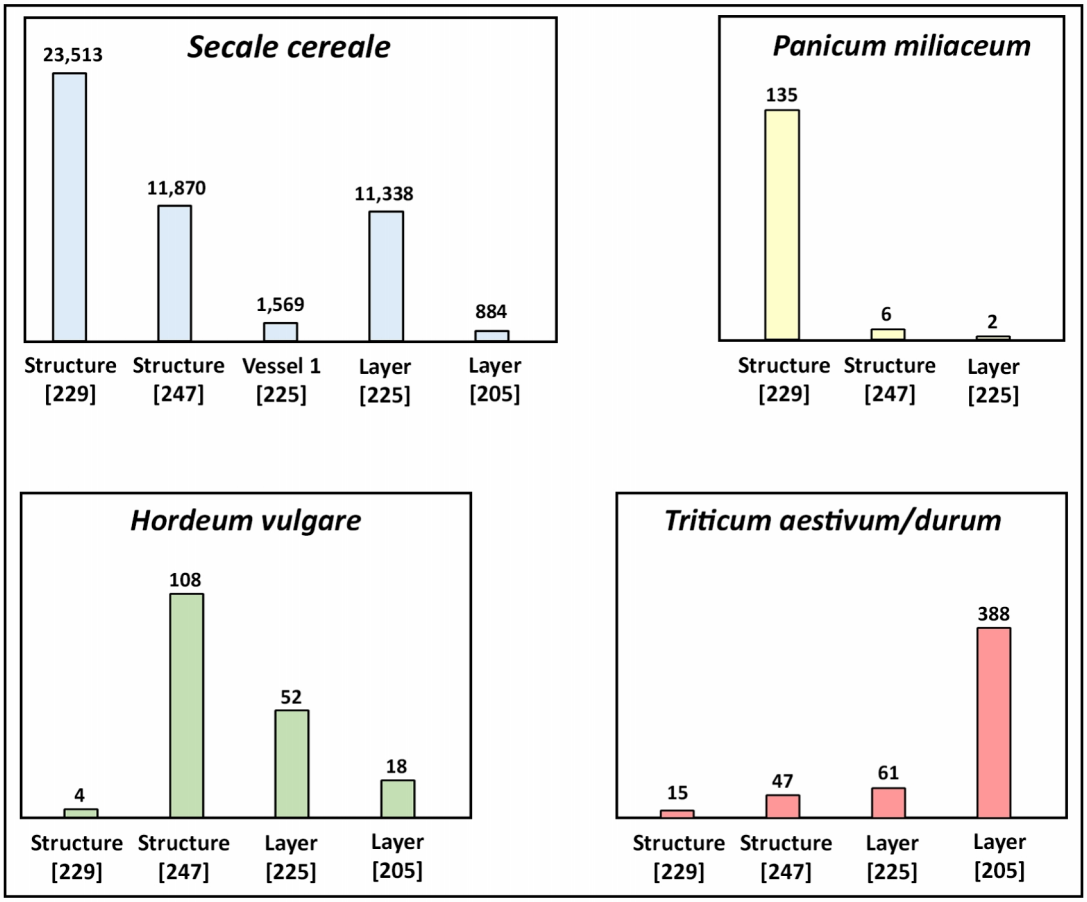


Figure 7.6 – Individual results of the main cereal crops at CSJAMD.

## 7.5. Discussion

### 7.5.1. Crops

Cereal grains are dominant in Area 2 at CSJAMD. Rye is the main crop by a large margin, having been identified almost 50,000 grains. The other crops, namely naked wheat, hulled barley, common millet, foxtail millet and flax are incomparably lesser than rye. Only two grains of oat were found, without floret bases. In this case, chaff remains are fundamental for a distinction between wild/cultivated oat (Van Zeist, 1968; Ruas and Pradat, 2001; Jacomet, 2006). Oat is often found in other sites leading several authors to suggest its cultivation in NW Iberia began in the Iron Age (Dopazo Martínez, 1996; Tereso et al., 2013a; Teira-Brión, 2019). However, it is also a frequent weed and ruderal plant in the region. As such, whether the few grains from CSJAMD belong to cultivated individuals is a hypothesis impossible to confirm due to the absence of chaff.

Spring rye has been cultivated in the region until recently (Taborda, 1932) but the recurrence of corncockle seeds alongside rye at CSJAMD, indicates rye should have been a winter crop. With the exception of the millets, which are known as spring crops, the other crops could have been sown in both seasons.

The large amount of rye suggests that this crop would have had a relevant role in this site's agricultural strategies as in other places in inland Portugal during the Late Antiquity. Older rye grains were collected at Crastoeiro (Mondim de Basto), dating to the 1st century BCE (Seabra et al., 2018). However, rye is more frequent in sites from Late Roman times onwards, either in NW Iberia (Tereso et al., 2013b; Tereso et al., 2018b; Seabra et al., 2020a) or other regions of the Iberian Peninsula (Alonso, 2005; Tente et al., 2018; Peña-Chocarro et al., 2019b). Besides CSJMAD, in Northeast Portugal rye was only found in the Sabor valley (Douro river tributary), namely at Quinta de Crestelos (Mogadouro) (Tereso et al., 2018b). Here, few rye grains were collected from levels dated from the 5th-6th century CE to the 10th-12th century CE, being absent in the Iron Age and Roman levels. More to the west, rye has been found in Late Antique levels of Monte Mozinho (Penafiel) (Tereso et al., 2013b; Vaz et al., 2017) and Freixo/Tongobriga (Marco de Canaveses) (López-Dóriga, 2020). Guifões, in the coast, also provided rye grains and chaff of this chronology (Seabra et al., 2020a). In central Portugal, grains of rye have been found in the Early Medieval levels of Senhora do Barrocal (Tente et al., 2018; Seabra et al., 2022) and S. Gens (Oliveira et al., 2017).

Naked wheat, hulled barley and millets (common/foxtail millet) are frequently found in NW Iberia, and in distinct chronological periods, including Late Antiquity (e.g. Buxó et al., 1997; Tereso et al., 2018a; Peña-Chocarro et al., 2019a, 2019b; Seabra et al., 2020b). Since a reduced number of remains from those crops was collected, it is hard to evaluate their importance at CSJAMD. Despite the small magnitude, their record demonstrates that past communities relied on a diversity of crops, with different characteristics.

Besides cereals, it was recorded one non-cereal crop: flax. It is represented since the Chalcolithic in NW Iberia (Bettencourt et al., 2007; Ramil-Rego and Aira Rodríguez, 1993; Sanches, 1997; Tereso et al., 2016). However, its record during historical times is not consistent, being rarely found in the region (Teira-Brión et al., 2012; Peña-Chocarro et al., 2019b). The small archaeobotanical assemblage found, as well as the absence of archaeological material (e.g. spindle whorls), does not allow a solid interpretation about the use of flax to obtain oil and/or fibre plant.

The scarcity of non-cereal crops may be biased. Others, such as pulses or fruits, were probably known and cultivated by the CSJAMD inhabitants, during the Late Antiquity. In fact, the assemblage studied is the result of a single destruction event, representing a single moment in the occupation of Area 2. Therefore, the information obtained is limited and unrepresentative of the whole site's occupation. Other sites with a similar chronology in NW Iberia, such as Agro de Deus and Quinta de Crestelos, also did not provide any evidence of other crops rather than cereals. However, those sites may not represent a good parallel, since they displayed small carpological assemblages (Tereso et al., 2018b; Peña-Chocarro et al., 2019b). Among the two, Quinta de Crestelos is the only one located in the same region, in Northeast Portugal, 63 km southwest from CSJAMD. It was a small rural site during the Late Antiquity and the Early Middle Ages. Contrary to CSJAMD, it benefited from a wide and probably fertile valley where, during the Iron Age and the Roman Period, naked wheat, barley and millets were widely cultivated (Tereso et al., 2018a; Tereso et al., 2020). While wheat predominates in the earlier phases, the medieval carpological assemblage is much smaller, making it difficult to evaluate the weight of each crop in the agricultural strategies. Rye is the only addition regarding previous periods (Tereso et al., 2018b).

For CSJAMD we only have data from the 6$^{th}$-7$^{th}$ century CE. Apart from naked wheat, the crops found grow well in undemanding environmental conditions, both in terms of soil fertility and sun exposure. CSJAMD was placed on the edge of a steep cliff, next to the Douro River. The area around is characterized by rugged terrains with abundant granitic rocks but close-by there is a vast plateau which during the early 20$^{th}$ century was dominated by large rye fields and restricted, more fertile areas, with wheat (Santos Júnior, 1981). The poor and acidic soils, as well as the cold winters and frequent frost, made rye the perfect crop, probably the only truly yielding in the region. Such combination of factors could have been determinant in agricultural strategies already in the Late Antiquity, although other factors, such as cultural, economic, or political, could also have had a relevant impact on the choices of past agriculture communities. The arrival of Germanic groups, and their control over Northwest Iberia, may have involved the establishment of different agricultural strategies, including crop choices. Such decisions could have been conditioned by the current economic situation in the region, or due to cultural/political reasons defined by the new rulers, since rye was already an important crop in other areas of Europe (e.g. Behre, 1992).

### 7.5.2. Storage

The large concentration of cereals in the above-ground structures [229] / [247], and in their surrounding contexts, as well as their association with some vessels suggest the area was used for the storage of grains, mostly rye. A more heterogeneous scenario would be expected in other circumstances, such as accidents involving fire (e.g. grain drying or cooking).

Although this seems to have been the case when the remains were exposed to fire, some moment within the late 6$^{th}$ century or the first half of the 7$^{th}$ CE, it is not possible to extrapolate this interpretation for the whole period the settlement was inhabited. Other crops could have been stored and the whole place could have been used for other purposes. In fact, structures similar to those recorded at CSJAMD have been found in other sites in the region and interpreted differently (e.g. as tanks related to wine or olive presses) (e.g. Pereira et al., 2014; Tereso et al., 2020). So, the facilities recorded in Area 2, could have been reused and readjusted over time, considering the needs of past communities, before their final usage for storage (Pereira, 2018; Salgado and Pereira, 2018, 2018–19, 2019).

It is unclear how the entire assemblage was stored. Inside structure [247] one ceramic vessel with cereals has been registered, but not studied. The only vessel retrieved (Vessel 1) was found in [225]. It was found outside the storage facilities but near one of them (Structure [229]) (Fig. 7.2). This demonstrates that cereals were stored in containers, outside and inside the sub-quadrangular storage facilities. The final number of vessels is unknown due to recent perturbations (agricultural activities).

However, it is unlikely that all cereals were stored in ceramic vessels. First, there was no evidence of any container in structure [229]. Second, since the single container that was possible to evaluate so far - Vessel 1 - is small and contained c. 1,500 grains of rye (out of the 142,397 that have been found). So, either a great number of small vessels were used, or fewer but larger vessels would have been required. Future studies are necessary to address this subject, but it is possible that other types of containers were also used, eventually made of perishable material. Thus, the plant remains were possibly stored in different ways, in the storage space, at CSJAMD.

On the other hand, the use of containers with such small dimensions can be the result of a daily transitional phase, between the collection of grains from the storage structures and their transformation into food (Tripković, 2011; Filipović et al., 2017). Nevertheless,

and despite some uncertainties regarding what and how storage facilities were used, it is clear that several cereals were kept in ceramic vessels, and they would have been placed next to the facilities and/or inside the above-ground structures.

The use of ceramic containers for storage is well-known in the Iberian Peninsula as in other areas of Europe, and in different chronological contexts (e.g. Bouby et al., 2005; Tripković, 2011; Pérez Jordà, 2013; Filipović et al., 2017; Seabra et al., 2020b; Tarongi et al., 2020). Nonetheless, the identification of a pottery vessel with a significant amount of cereal grains inside, in a good preservation state, is rare, thus noteworthy.

It is difficult to ascertain, in a secure way, if distinct crops were kept in different containers or spaces, either inside or outside the structures. Some differences in crops' distribution were noted which might suggest some sort of space organization (Fig. 7.6). However, apart from rye, other cereals were found in small quantities, which can produce a biased interpretation.

In Area 2, no chaff remains and rare weeds were collected. This means grains were stored fully processed. The cereals found have different characteristics and are usually associated with particular processing procedures (e.g. Hillman, 1981; Moreno-Larrazabal et al., 2015; Alonso, 2019), but essentially they are free-threshing cereals, and particularly in the case of rye the chaff's absence is unsurprising. Common millet, foxtail millet and barley have to be dehusked after threshing, still, these cereals were generally scarce, being thus of difficult evaluation. Since remains at CSJAMD show no evidence of hulls, either they did not survive the charring or dehusking was fully carried out before storage. If dehusking of grain was conducted at a daily basis, it would tally the hypothesis according to which some of the grain was in a transitional phase between storage and use (e.g. Alonso, 2019).

The small number of weeds also suggests that all post-harvesting activities would have been conducted prior to storage. The presence of several corncockle seeds may be justified by their large size. Corncockle is a non-native plant in the Iberian Peninsula, and often associated with winter cereals. It has been frequent in the archaeobotanical record, mainly in contexts from Late Antiquity onwards (Alonso, 2005; Tente et al., 2018; Colominas et al., 2019; Quirós-Castillo et al., 2020). With large dimensions, this seed is resistant to the several post-harvest processing stages (e.g. Thompson, 1973; Borojević, 2005; Fuller et al., 2014). Besides seeds, capsules and pedicels fragments (Fig. 7.4) were also found, suggesting that some seeds were still inside the capsules, when they

were harvested (on an unintentionally way). Such prevalence is common in corncockle plants (Thompson, 1973).

Until now, there is no evidence of other storage contexts with archaeobotanical remains for the period of time here addressed (6th-7th centuries CE), in Northwest Iberia. Nonetheless, some similarities concerning the storage facilities and the associated carpological remains were observed in other sites in the region, and in Central Portugal as well (Tereso et al., 2013b; Vaz et al., 2017, Tente et al., 2018; Seabra et al., 2022). In Northern Portugal, namely at Monte Mozinho, two above-ground structures with similar morphologies and dimensions were identified within two compartments dated to the Late Antiquity. Cereals were dominant and particularly significant inside the structure from Compartment 1. Here, broomcorn millet and foxtail millet were predominant, being also collected several rye grains. The same cereals, plus hulled barley and naked wheat were observed in Compartment 2, but mostly outside the storage structure. Inside, fruits and seeds were rare (Tereso et al., 2013b; Vaz et al., 2017). Further southeast, at the Early Medieval site of Senhora do Barrocal, storage structures were not found. However, a massive assemblage of archaeobotanical remains was collected, mainly in a fire level corresponding to the destruction of a building, which would have been built in perishable materials and used for storage. In comparison with CSJAMD, some differences were noted in the carpological assemblage, but the cereal crops were essentially the same. Rye was relevant, being a dominant crop alongside oat. Hulled barley, common millet, naked wheat, and foxtail millet were also recovered, and in larger proportions than in CSJAMD (Tente et al., 2018; Seabra et al., 2022).

## 7.6. Final remarks

This study provided relevant data about crop diversity and storage strategies during the Late Antiquity, in Northwest Iberia, particularly, for the time when Germanic groups settled in the region. This is a period for which there is limited carpological information, due to the small number of sites analysed and the small amount of fruits/seeds they provided. Thus, the results and considerations here presented are of utmost pertinence.

Archaeological interventions at CSJAMD, revealed contexts which are difficult to understand due to their bad preservation, in great part as a result of recent agricultural activities on the site. Nevertheless, fieldwork displayed evidence of a major occupation from the Late Antiquity, with a fire of unknown scale probably occurring somewhere

between the late 6th century and the mid-7th century CE, according with the radiocarbon date obtained. The western part of Area 2 is the most relevant, mainly due to the large amount of carpological remains found in association with two sub-quadrangular structures, ceramic vessels, and a destruction layer. These contexts were part of what seems to have been a domestic storage area where, at the moment of its destruction, rye was by far the dominant crop. Other crops, namely naked wheat, hulled barley, common millet, foxtail millet and flax have been found in much smaller amounts. All these seem to have been kept already fully threshed and dehusked both in ceramic vessels and other containers made with perishable materials.

Despite carpological results are conditioned by specific archaeological contexts, and a small volume of sediment, the great amount of rye at CSJAMD suggest that would have been an important crop at CSJAMD. Although the lack of parallels makes it difficult to have a good long-term perspective on crop choices, evidence for the relevance of rye cultivation in the Late Antique inland areas of the northwest is increasing as more analyses are conducted in sites of these chronologies (see above). Whether the growing role of rye since Late Roman times is related to environmental trends or with the political and social changes of these times is a matter of debate (Tereso, 2012; McCormick, 2013) but in the case of CSJAMD, rye would fit perfectly in the harsh environmental conditions and low fertility of the surrounding area.

CRediT authorship contribution statement

Luís Seabra: Conceptualization, Methodology, Formal analysis, Investigation, Writing – original draft, Writing – review & editing.

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María Martín-Seijo: Writing – original draft, Writing – review & editing, Supervision.

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# Chapter 8 - Crops on the Rocks: Production, Processing, and Storage at the Early Medieval Site of Senhora Do Barrocal (Municipality of Sátão, Central Portugal)

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Supplementary material is provided in Attachment 6 (also available at: https://www.mdpi.com/article/10.3390/plants11040471/s1).

## Abstract

Small rural places are largely absent from Early Medieval written sources, but they were profuse and relevant in regional settlements and economies. Only through archaeological and archaeobotanical investigation is it possible to unveil their structure and productive strategies; however, this kind of investigation is still uncommon in Iberia. Here, the assemblage of fruits/seeds, wood charcoal, and food remains from Senhora do Barrocal (SB) (Sátão, Portugal) will be presented and discussed in order to understand the crop production, processing, and storage. The site was destroyed by a fire somewhere between the 10th and the 11th centuries CE, which allowed the preservation of abundant plant remains in a storage area. Charcoal analyses suggest that the building was made with oak and chestnut timber. The massive fruits/seeds assemblage was dominated by cereals, mostly oat and rye, but also barley, millet, and naked wheat, some fully dehusked, others still hulled. Furthermore, evidence of food products has also been found, suggesting that the area was used for the storage of multiple foods and crops at different processing stages. SB is a good example of how communities adopted a diverse set of crops and multifaceted storage strategies to prevent food shortages and to endure in a harsh environment.

Keywords: fruits/seeds; charcoal analysis; food remains; Middle Ages; western Iberia

## 8.1. Introduction

The Early Middle Ages was a complex period of instability in Iberia, particularly due to the Muslim conquest and the incorporation of most of the peninsula's territory in the Umayyad Caliphate in the beginning of the 8th century CE. From the 8th to the 11th centuries, the area that is now central Portugal became a frontier between the Christians and the Muslims and subject to military campaigns and power shifts (e.g. Barroca, 2016; Tente, 2019). The definitive Christian conquest of the region only took place in the mid-11th century, following the collapse of the Cordoba Caliphate amidst internal turmoil (Barroca, 2016; Maillo, 2016; Viso, 2018; Tente, 2019).

This warring period and the inherent political instability permeated throughout this area and its communities. However, such conditions allowed them to shape and define their own territories, configuring a fragmented and unstructured landscape, as they could freely explore local resources and establish their own internal and external relations (Tente, 2019, 2020). During these turbulent times, rural communities kept the daily and

seasonal activities which their survival depended on, where the exploitation of natural resources assumed a great relevance.

The considerations regarding Early Medieval agriculture in Western Iberia are still scarce and usually rely on written sources from later periods (Oliveira Marques, 1978; Gonçalves, 2012). Moreover, those historical documents are mostly property transactional contracts, donations, wills, and foral charters, which reflect the direct or indirect interests of the elite and are not representative of the daily life of much of the rural communities of that time. References regarding the use of other resources are virtually absent from the written sources. Wood, for instance, was a crucial raw material for medieval communities, being the preferred construction material for housing and other facilities, as well as the main fuel for everyday activities. Thus, its gathering strategies and multiple uses had important economic and social roles for medieval societies.

In Central Portugal, the earliest written sources that mention agricultural activities/ products are from the 12$^{th}$–13$^{th}$ centuries CE; earlier references are scarce. At the municipality of Sátão (Viseu), two foral charters, dated from 1126 (Ferreira de Aves) and 1149 (Sátão), mention some goods that were used for tax payments to the central authority, such as wheat, millet, and barley, but also wine, flax, honey, and faba beans (Oliveira Marques, 1978). Despite their value in characterizing the relationship between the rural communities and the dominant power, these charters do not reveal the full extent of the agricultural practices and food consumption of these communities as they only focus on taxable goods.

Archaeological and archaeobotanical data help decisively to bridge the gap between the written documentation and the everyday activities of these communities. These approaches become even more relevant in regions and historical periods where written accounts are rare, as is the case for this region. In fact, the archaeobotanical analyses are fundamental to understanding the agricultural practices and storage strategies as well as the use of wood for multiple purposes. This has been tried and tested for other areas of the Iberian Peninsula as well as of Western Europe (e.g. Ruas, 2005; Zapata and Ruiz-Alonso, 2013; Alonso et al., 2014; McClatchie et al., 2015; Haneca and Deforce, 2020). However, archaeobotanical investigation in medieval Iberia is recent and spatially heterogeneous, which contrasts with other chronological periods (Oliveira et al., 2017; Peña-Chocarro et al., 2019).

In Western Iberia, some studies have been carried out on isolated sites or in relation with regional archaeological projects (e.g. Bugalhão and Queiroz, 2005; Teira-Brión, 2015;

Coradeschi et al., 2017; Peña-Chocarro et al., 2019). In Central Portugal, namely the Mondego basin, plant remains were recorded in few Medieval rural sites (Figure 8.1). Archaeobotanical studies have been conducted at Soida (Celorico da Beira) (Queiroz, 2009b), Penedo dos Mouros (Gouveia) (Queiroz and Ruas 2001; Queiroz and Leeuwaarden, 2003; Queiroz, 2009a), São Gens (Celorico da Beira) (Queiroz, 2009c; Oliveira et al., 2017), and Quinta da Torrinha (Goís) (Queiroz and van Leeuwaarden, 2004), but most of them provided few remains. Thus, the development of more analyses is fundamental.

Recent archaeological campaigns carried out at Senhora do Barrocal (SB) (Figure 8.1) revealed one of the largest assemblages of charred plant remains from the Middle Ages in Portugal, preserved by a fire that destroyed a domestic structure. Previous and preliminary archaeobotanical analysis of a part of the assemblage has already confirmed the potential of the site (Tereso et al., 2016; Tente et al., 2018a). This paper will present the full results of the fruits/seeds and charcoal analyses, as well as the identification of the food remains, and integrate them into the site archaeological record. It will focus on its space organization and construction, the storage practices, and the role of crops and wild plants in this community's economy. The results will also be interpreted together with other archaeological and historical data to evaluate the agricultural choices and the use of plant resources at SB, in the context of the political, cultural, and landscape history of Western Iberia.

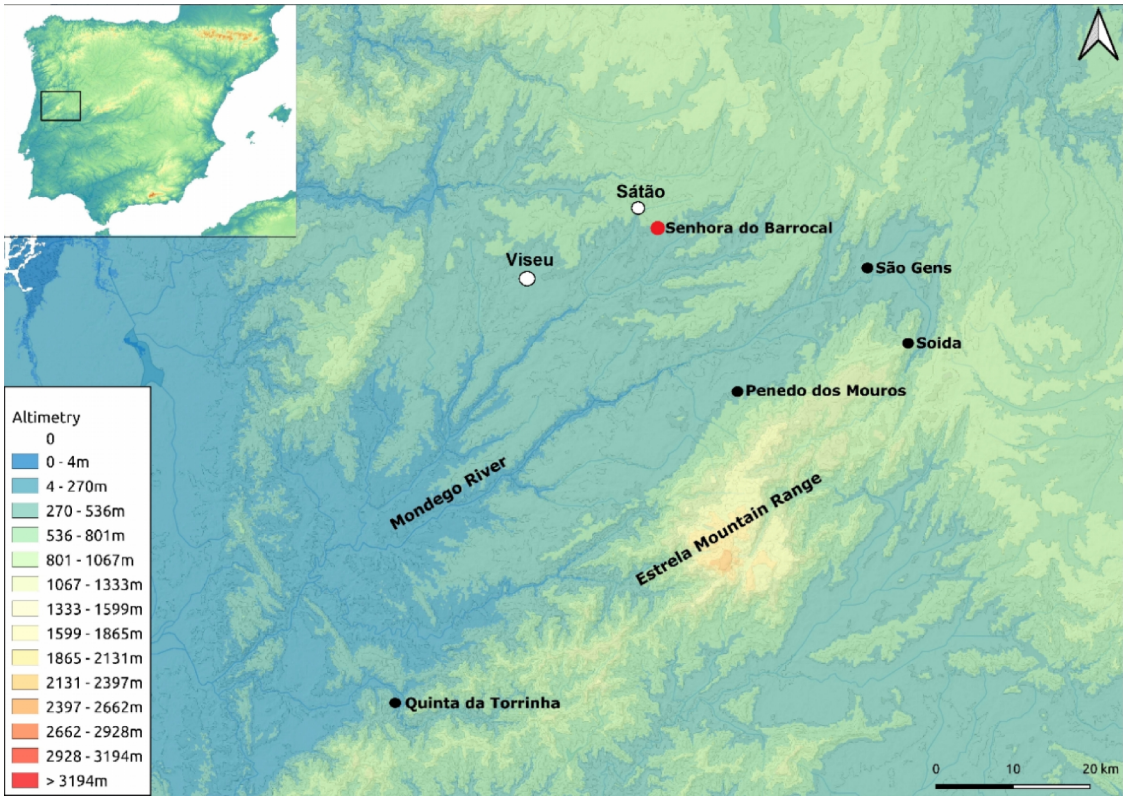


Figure 8.1 - Location of Senhora do Barrocal (SB) and other sites in Central Portugal with fruits/seeds.

## 8.2. The Medieval site

The archaeological site of SB (40°44′17.80″ N/7°38′32.64″ W) is located in the Portuguese municipality of Sátão in the district of Viseu (central Portugal). It was implanted on the top of a prominent granitic tor (Figs. 8.1 and 8.2A), at 598 m a.s.l., near the fertile valley of the Côja stream (located at approximately 1.5 km), a tributary of the Dão river, both being part of the Mondego river basin. The site's location provides visual control over the valley while remaining relatively unnoticed on this hilly granite landscape.

Figure 8.2 - Sector 1 implantation (**A**); Sector 1 overview (**B**); wall 112 dismantling (**C**).

Here, three archaeological campaigns were developed between 2014 and 2016, in two sectors. In Sector 1, two occupation phases were identified, separated by a large layer of ash and charcoal resulting from a fire which destroyed most of the standing structures. In Sector 2, a single level of occupation was observed, showing few archaeological and archaeobotanical remains. For that reason, this sector is not addressed in this study. Each occupation phase of Sector 1 was subdivided into different moments (Figure 8.3, Table A6.1 in Attachment 6), which are described as follows:

Phase 1- The first moment of occupation is characterized by a level of circulation (stratigraphic units (s.u.) 115 and 116) inside the domestic structure 09, built with perishable materials. Here, it was only possible to recover some domestic goods. A fire (second moment) destroyed this structure, marking the end of the first phase at SB. Associated with this destructive event are several s.u. (Fig. 8.3, Table A6.1 in Attachment 6), which revealed debris from the building and its fillings, including several artefacts (e.g. metals, pottery, and beads). Nonetheless, the fire allowed the preservation of a massive assemblage of archaeobotanical remains.

Phase 2- This corresponds to the occupation that followed the fire, during which the site suffered some changes. At first, and corresponding to the site's third moment, the stone wall 112 (Figure 8.2B) was built/rebuilt over the ashy layer from the previous phase's fire. This stratigraphic relation was testified after dismantling a part of the wall (Figure 8.2C). Larger stones were used to define the wall facings (inner and outer), whereas its core was filled (fourth moment) with varied materials, such as small stones, gravel, or even debris from the fire. Several layers are related to the latest moment, including broken ceramic vessels (s.u. 124) and sediments with archaeobotanical material (s.u. 125, 125A, 127, 130, 131, 134). Wall 112 showed two construction stages, likely separated by a short period of time and corresponding to the use of different techniques (Tente et al., 2018). Remains of the fire are found beneath both.

| | | Structure/Context | S.U. |
|---|---|---|---|
| Phase 1 | 1st Moment | Habitation structure 09: Occupation/Use | 115; 116 |
| | 2nd Moment | Habitation structure 09: Destruction by a fire | 106; 107; 108; 109; 128; 137 |
| Phase 2 | 3rd Moment | Wall 112: Construction | 136; 139; 140 |
| | 4th Moment | Wall 112: Filling reusing fire debris | 124; 125; 125A; 129; 130; 131; 134; 138 |
| | 5th Moment | Occupation of the area: Hearths and a millstone | 126; 132; 133 |
| | 6th Moment | Abandonment of Sector 1 and related structures | 104; 104A; 104B; 118; 102; 103; 120; 121 |

Figure 8.3 - Relation between the archaeological contexts, structures, and site phasing.

Other stone structures were scarce. Leaning against wall 112, the stone structure 123 (Figure 8.2B) (fifth moment) was an exception, but its functionality was not fully understood. This structure was perhaps part of a house, which could have been delimited by the wall. Associated with the site's fifth moment were also two hearths (s.u. 126 and

132), as well as a broken granite millstone (s.u. 133) (Figure 8.2B), which was taken from a previous stage and reused during this moment. The sixth and last moment corresponds to the abandonment of the structures from Phase 2 and consequently of the site (Figure 8.3, Table A6.1 in Attachment 6).

Despite the effort applied to constructing the wall, the second occupation of SB probably did not last long. In fact, both of the occupation phases can be dated between the 10$^{th}$ and 11$^{th}$ century CE (Tente et al., 2018a; Tente, 2019). The establishment of this chronology included archaeological artefacts, radiocarbon dates, and an inscription. Moreover, the SB occupation could be related to other archaeological sites in the region, which revealed similar chronologies (Tente, 2019). Two of the three radiocarbon dates (Table 8.1) are related to the fire that led to the collapse of the Phase 1 building, namely the faba bean (*Vicia faba*) from destruction layer s.u. 107 and the grain of rye (*Secale cereale*) from s.u. 125, a sediment with abundant plant remains which was remobilized and used to fill wall 112 afterwards. The third radiocarbon date was obtained from a tree heath charcoal (*Erica arborea*) recovered in a clay layer (s.u. 132) from Hearth 2. It is stratigraphically associated with the second phase of occupation (fifth moment), after the fire.

| S.U. | Description | Context | Material | Lab. Reference | 14C age (yr B.P.) | Calibrated age CE (2 σ) |
|---|---|---|---|---|---|---|
| **107** | Destruction layer | Habitation structure 09 | *Vicia faba* (seed) | Wk-40079 | 1040±21 | 987-1032 (95.4%) |
| **125** | Filling layer | Debris within Wall 112 | *Secale cereale* (grain) | Beta - 46513 | 1170±30 | 772-901 (73.9%)<br>916-974 (21.6%) |
| **132** | Clay layer | Hearth 2 | *Erica arborea* (charcoal) | Beta - 46512 | 1070±30 | 893-929 (23.6%)<br>944-1026 (71.8%) |

Table 8.1 - Radiocarbon dates obtained from Sector 1 at SB. Calibration OxCal 4.4.2 software (Bronk Ramsey, 2009), IntCal 20 calibration curve (Reimer et al., 2020).

The radiocarbon analysis results, however, do not point to clear differences between the two phases, especially those from s.u. 107, and 132, which are probabilistically similar and non-discernible. In fact, these dates strengthen the idea that after the fire (Phase 1), the occupation at SB did not last long. An inscription from 971 CE should also be considered. It was found inside a modern church, which was probably built in the same place of a former building and just a few meters away from the site. Its location and date suggest that both SB and the ancient church were related (Estefânio, 2009; Tente et al.,

2018a; Tente, 2019). Despite it not being possible to exclude other chronologies, considering the long time span revealed by the *Secale cereale* date (772–974 cal. CE), the church was likely built before the fire, suggesting that the destruction occurred between the last quarter of the 10th century and the first two decades of the 11th century CE (Tereso et al., 2016; Tente et al., 2018a; Tente, 2019).

Moreover, the data from SB, although with their own peculiarities, fit well with the dynamics recorded in other rural sites in the Mondego region, namely Soida, Penedo dos Mouros, and São Gens. Besides some structural similarities, these were all destroyed by fires around the 10th century CE, as suggested by the radiocarbon dates (Tente and Carvalho, 2011; Tente, 2019). In contrast with SB, these sites were not reoccupied. There is, thus, a regional trend, likely connected with the new political order that was emerging at that time (see above).

The archaeological data from SB show that its inhabitants had diverse contacts, at a local sphere and beyond. The presence of exogenous pottery, uncommon in the region, demonstrates that SB would have been regionally relevant (Tente et al., 2018a; Tente, 2019). Still, it is quite challenging to evaluate the level of engagement of this community in the regional and wider conflicts of the time and how these constrained them. Instead of a complete integration of Christian or Muslim rules, the archaeological data from SB, as well as the panorama identified in the region by the end of the 10th century, suggest some level of local engagement by prominent elites, who took advantage of the conflict and tried to control the region (Tente, 2019).

## 8.3. Materials and Methods

### 8.3.1. Sampling Strategy

Sampling and recovery strategies varied throughout the three archaeological campaigns at SB (2014–2016) (Table 8.2 and detailed information in Table A6.1 in Attachment 6). In 2014, plant remains were handpicked and recovered through dry sieving. A single sediment sample was floated with a 0.5 mm mesh. Although this resulted in a recovery bias, neglecting the small plant remains, considerable concentrations of charred remains were recovered. The fieldwork was restricted to a small area and the deposits related to the major fire were identified but practically not excavated.

| | Collected | Studied | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Moment | | Collected | | | Studied | | No. of S.U. | No. of Squares |
| Phase 1 | 278 | 198 | 1st | 15 | Handpicked | 15 | 15 | Handpicked | 15 | 2 | 8 |
| | | | 2nd | 263 | Handpicked | 155 | 183 | Handpicked | 155 | 6 | 49 |
| | | | | | Sediment | 108 | | Sediment | 28 | | |
| Phase 2 | 268 | 241 | 3rd | 7 | Handpicked | 1 | 7 | Handpicked | 1 | 3 | 4 |
| | | | | | Sediment | 6 | | Sediment | 6 | | |
| | | | 4th | 125 | Handpicked | 81 | 99 | Handpicked | 81 | 8 | 24 |
| | | | | | Sediment | 44 | | Sediment | 18 | | |
| | | | 5th | 8 | Handpicked | 4 | 7 | Handpicked | 4 | 3 | 5 |
| | | | | | Sediment | 4 | | Sediment | 3 | | |
| | | | 6th | 128 | Handpicked | 120 | 128 | Handpicked | 120 | 8 | 64 |
| | | | | | Sediment | 8 | | Sediment | 8 | | |

Table 8.2 - Overview of the sampling and recovery strategies applied by phase and moment (detailed data in Table A6.1 in Attachment 6).

In the following campaigns, the sampling, recovery, and processing strategies were gradually adjusted to the current practices. Sediment samples were processed through bucket flotation (2015) or with a Siraf-type flotation machine (2016), using 0.5 mm meshes, in combination with handpicking. Volume was not always recorded but, in 2016, each sediment sample associated with the fire level (second moment), the wall construction (third to fourth moments), and the abandonment (sixth moment) corresponded to c. 10 litres (a full bucket) (see Table A6.1 in Attachment 6). Using a flotation machine allowed the processing of more sediment and, consequently, the recovery of a higher amount of archaeobotanical remains.

Due to this large number and the volume of samples processed in the 2016 campaign, it was not possible to study the entire assemblage. Five hundred and forty-six samples were recovered from 30 s.u., 439 (80%) of which were analysed, including samples from all the stratigraphic units and 92 squares (1 $m^2$ each) in Sector 1 (Table A6.1 in Attachment 6). Selection was carried out using the Microsoft Excel (Microsoft Corporation, Redmond, WA, USA) random number generator, assuring that at least one sample per each of the possible s.u./square combinations was studied. As the decision for adopting this procedure occurred only when some sediment samples from 2016 were already analysed, there are minor discrepancies in the amount of samples studied per s.u./square combination.

Eight contexts from Phase 1 were sampled. The first moment is represented by 15 sets of handpicked remains from s.u. 115 and 116. From the second moment of occupation,

between the handpicked remains and sediment samples, 263 samples were recovered in six s.u. Most samples (207) were recovered in s.u. 107, where large concentrations of plant remains were visible, resulting from the fire that led to the destruction of the building. The samples from this s.u. were recovered in 34 different squares, this being the most extensive layer in the whole site.

The sampled contexts from the third and fourth moments belong to Phase 2. These are associated with the building (preparation/construction) and filling of wall 112, but most of the remains associated with this phase are the result of the remobilization of sediments from the fire of the previous phase. Related to these two events are 132 samples, mostly from a filling layer (s.u. 125) of wall 112 (Table A6.1 in Attachment 6).

The fifth moment is represented by two hearths and a granite millstone where four sediment samples and an equal number of handpicked remains were recovered.

From the final abandonment levels of Sector 1 and the related structures (sixth moment), eight stratigraphic units were sampled. However, most of the samples (120 out of 128) correspond to sets of handpicked remains. All the samples from this moment were analysed Tables 8.2 and Table A6.1 in Attachment 6).

### 8.3.2. Laboratory analysis

#### 8.3.2.1. Fruits/Seeds

The flotation fractions were sorted using a stereoscopic microscope, during which the fruits/seeds were identified by comparison with morphological atlases and other specialized bibliographies (e.g. Beijerinck, 1976; Castroviejo, 1986-2012; Hillman et al., 1996; Buxó, 1997; Jacomet, 2006; Nesbitt, 2006; Neef et al., 2012; Zohary et al., 2012) and with modern material from the reference collections of the Porto Herbarium (PO) at the Natural History and Science Museum of the University of Porto (MHNC-UP) and from the Research Centre in Biodiversity and Genetic Resources (CIBIO).

To facilitate the sorting, the flotation fractions were separated using a column of sieves with 2 mm, 1 mm, and 0.5 mm meshes. Due to their large volume, the contents of some of the meshes from 50 samples were subsampled with a riffle box (Table A6.2 in Attachment 6). In such cases, the results presented here are extrapolations that take into consideration the percentage of the flotation fraction that was analysed. Extrapolation was only applied to the units.

In this paper, whole fruits/seeds and fragments with scutella or hila were counted as units. In the case of the longitudinal fragments (cereals) and cotyledons (pulses), two remains were counted as one unit. The results including units only are displayed in Table A6.3 in Attachment 6, while the full fruits/seeds results (both units and fragments) per sample and square/s.u. are presented in Tables A6.4 and A6.5, respectively. Regarding chaff, although inherently fragmentary, the spikelet bases, floret bases, lemma bases, and rachis segments as well as rachis nodes were considered as units. When grains were found attached to the lemma bases (hulled grain) or with husks, but without the base, they were discriminated in the full results (see Tables A6.4 and A6.5 in Attachment 6), whereas in Tables A6.3 and A6.6, as in Figure 8.4 and Figure 8.6, the chaff and grains were always treated separately, even when they were found attached. A similar procedure was applied to the aggregated cereals.

Taxonomic nomenclature follows the International Plant Name Index (IPNI, 2022), but due to space limitations, shorter designations, excluding author names, will be used in Table 8.3 and throughout the text. For a complete nomenclature see Tables A6.3–A6.6 in Attachment 6. The designation *Avena sativa/strigosa* was applied whenever the floret bases were present, according to Jacomet (2006), Van Zeist (1968), Pasternak (1991), and Ruas and Pradat (2001). The distinction between both oats is often difficult, and in this study was not achieved unequivocally. Despite this, the features observed may allow some approximation (see crop diversity). The grains without floret bases, whether naked or with fragmented husk remains, were identified at the genus level (*Avena* sp.). For naked wheat, the designation *Triticum aestivum/durum* was adopted, following Buxó (1997), which includes *Triticum aestivum*, *Triticum durum*, and *Triticum turgidum* grains.

#### 8.3.2.2. Charcoal analysis

In SB, the charcoal analysed was recovered in handpicked samples and in the 2 mm sieve of the floated samples. The charcoal fragments were sectioned manually in order to obtain the cross, tangential, and radial diagnostic sections. Their anatomical characteristics were examined using a reflected light microscope and compared with several anatomical atlases (e.g. Schweingruber, 1990; Hather, 2000), with PO and from the CIBIO reference collection. As indicated for the fruits/seeds analysis, the taxonomic nomenclature followed the International Plant Name Index (IPNI, 2022). Complete designations are included in Tables A6.7–A6.9 in Attachment 6, whereas, in Table 8.4, the designations do not include the author names. In the case of the genus *Erica*, the

criteria described by Queiroz and van der Burgh (1989) and adapted by Tereso (2007) was followed instead.

A minimum of 100 charcoal fragments analysed per sample was initially set for this study, taking into account the type of context and sampling strategy devised, with multiple samples recovered from the same s.u. However, when a new taxon was identified in the last 50 analysed charcoals in the sample, an additional 50 fragments underwent analysis. This was performed successively until no new taxa were identified, sometimes resulting in a number of fragments identified per sample higher than the referred 100 charcoal fragments.

Dendrological characteristics and anatomical alterations were recorded for each charcoal fragment in order to obtain taphonomic and palaeoethnobotanical data, including, among others, tree-ring curvature (Marguerie and Hunot, 2007), the presence of vitrification (McParland et al., 2010), radial cracks (Théry-Parisot and Henry, 2012), and biodegradation (Moskal-del Hoyo et al., 2010).

While performing the spatial analysis only the results obtained from the floated samples with the minimum threshold of 100 charcoal fragments identified were used, in order to assure comparability of the data.

#### 8.3.2.3. Analysis of Food Remains

Several fragments of amorphous charred matter were identified during the sorting of the archaeobotanical material as potential fragments of cooked food, specifically cereal products, such as bread or porridge-like foodstuffs. Studies concerning these kinds of remains have been thoroughly conducted in the last ten years, following different methods and over the remains of several chronologies (e.g. Heiss et al., 2015, 2017).

In order to confirm the initial identification, six charred fragments were analysed using a range of microscopic techniques. As a first step, the selected fragments were examined under a Leica EZ4 binocular microscope at magnifications of 8 x/ 40 x. Photographs of the fragments surfaces were captured using a Leica S6D microscope and a Leica EZ3 camera (Leica Microsystems, Solms, Germany) in order to keep a record of the fragments' macromorphology and external physical characteristics. Consequently, the amorphous charred fragments were analysed under a Scanning Electron Microscope (SEM) with the purpose of observing their internal microstructures as well as identifying any potential components or particles embedded. Samples were cleaned from the soil

and concretion and prepared following standard procedures for SEM observation. Once prepared and mounted in aluminium stubs, the samples were examined using a Hitachi S–3700N SEM (Hitachi Ltd., Chiyoda, Tokyo, Japan) at the Scientific Research Department at the British Museum. The SEM study of the selected fragments followed the methods outlined in González Carretero et al. (2017) and González Carretero (2020) for the high-resolution analysis of the fragments' microstructures and the detailed examination of the porosity and visible particles.

## 8.4. Results

### 8.4.1. Fruits/Seeds

The results show an overwhelming assemblage of fruits/seeds, mostly cereal grains (90.6%) (Figures 8.4 and 8.5, Table 8.3 and Tables A6.3–A.6.5 in Attachment 6). Among these, grains of oat (*Avena* sp. and *Avena sativa/strigosa*) and rye (*Secale cereale*) were predominant. They were identified in similar quantities, but the volume of rye is higher due to the larger size of the grains. Both represent 64% of all the fruits/seeds collected. Grains of hulled barley (*Hordeum vulgare*), broomcorn millet (*Panicum miliaceum*), and naked wheat (*Triticum aestivum/durum)* were found in smaller amounts. A few grains of foxtail millet (*Setaria italica*) were also identified.

Chaff comprises only 2.6% of all the plant remains, but rye rachis segments, oat floret bases, and barley lemma bases were found in several layers, particularly where the grains were more common. Other remains, such as rachises from naked wheat and barley, as well as millet grains with lemma/palea, were also collected, but in fewer amounts and in less layers (Table 8.3 and Tables A6.3–A6.5 in Attachment 6).

Besides cereals, cultivated pulses were also found, namely seeds from pea (*Pisum sativum*), faba bean (*Vicia faba*), grass/red pea (*Lathyrus cicera/sativus*), and lentils (*Lens culinaris*). Pea and faba bean were slightly more abundant than grass/red pea and lentils (Figure 8.5). Despite its poor preservation, *Vicia/Lathyrus* and *Vicia/Lathyrus/Pisum* seeds may also correspond to cultivated legumes. It is relevant that some diversity of pulses was identified, although both cultivated and wild legumes amounted to just 1.6% of the fruits/seeds assemblage.

Fruits were almost absent (0.1% of the assemblage). Nevertheless, some diversity was recorded. Pips, pedicels, and two whole berries of *Vitis vinifera* (Figure 8.5) were found. Chestnut fruits (*Castanea sativa*) (Figure 8.5), sweet/sour cherry endocarps (*Prunus avium/cerasus*), bract fragments of cluster/stone pine (*Pinus pinea/pinaster*), a possible pear seed (*Pyrus* sp.), and fragments of *Quercus* sp. acorns were collected but always in small amounts. The interpretation of some of those remains as cultivated or wild should be carefully addressed (see below).

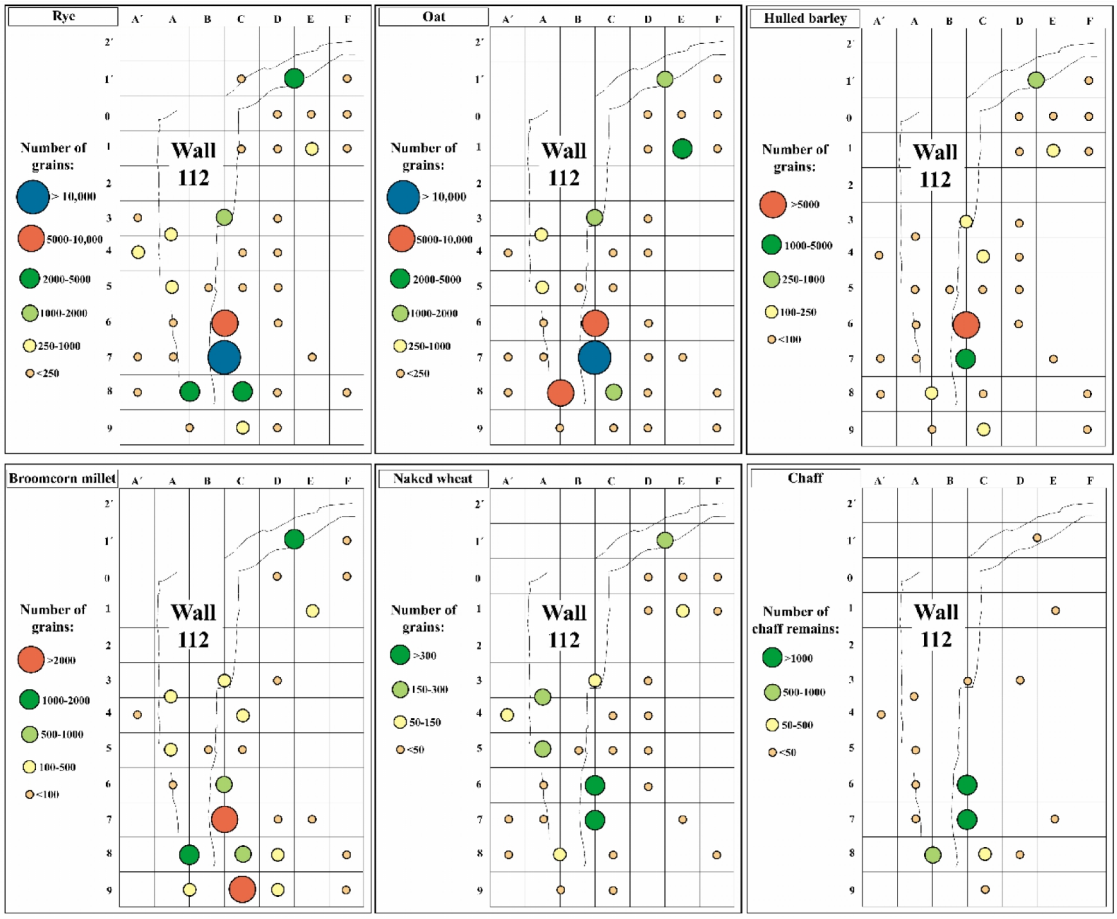


Figure 8.4 - Individual results of the main cereal grains and chaff per square in Sector 1 (total results); only units. Foxtail millet grains were scarce, and for that reason are not graphically represented. Results from the first moment as well from row G onwards revealed few remains and for that reason are not included.

The results provided a single oil/fibre taxon. Six agglomerates of flax (*Linum* sp.) seeds were identified in s.u. 107. Their state of preservation did not allow a more precise identification; still, they likely correspond to cultivated flax, namely to *Linum usitatissimum*.

Wild Poaceae, including *Festuca/Lolium*, among others, were frequent, comprising 3.6%. Other wild plants, such as cornockle (*Agrostemma githago*), scarlet pimpernel (*Anagallis arvensis*), cleavers (*Galium aparine*), ribwort plantain (*Plantago lanceolata*), wild radish (*Raphanus raphanistrum*), field madder (*Sherardia arvensis*), common catchfly (*Silene gallica*), or corn spurrey (*Spergula arvensis*), accounted for only 1.5% of the fruits/seeds assemblage. Those remains are common weeds, although they can also be found in other ruderal contexts (Castroviejo, 1986-2012; Aguiar, 2000).

Figure 8.5 - Some of the fruits/seeds found at SB: 1—rye grain; 2— Hulled grain of oat; 3—barley grain with husk remains still attached; 4—naked wheat grain; 5—broomcorn millet grain; 6—faba bean seed; 7- lentil seed; 8—berry and pip of grape; 9—chestnut fruit. With the exception of chestnut (5 mm scale), all remains show a 1 mm scale.

| Occupation | Phase 1 | | | | | | | Phase 2 | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Moment | 1st | | 2nd | | | | | 3rd | | | 4th | | | | | 5th | | | 6th | | | | | |
| Structure | HS9 | | HS9 | | | | | W112 | | | W112 | | | | | H1 | H2 | GM | W112 | | | SS123 | PHS | |
| S.U. | 115 | 116 | 106 | 107 | 108 | 109 | 137 | 136 | 139 | 140 | 124 | 125 | 130 | 131 | 134 | 126 | 132 | 133 | 104 | 104A | 104B | 118 | 102 | 121 |
| **Cereal (grain)** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | 42 | 1 | 9 | 36,609 | 16 | | 130 | 946 | 833 | 215 | 165 | 5166 | 3948 | 309 | 1 | 20 | 1 | 1 | 1050 | 1076 | 143 | | 143 | 1 |
| *Hordeum vulgare* | 22 | 2 | 48 | 7248 | 9 | | 5 | 13 | 99 | 17 | 43 | 666 | 506 | 40 | | 9 | 5 | | 324 | 221 | 284 | | 134 | |
| *Panicum miliaceum* | | | 8 | 8345 | | | 44 | 299 | 210 | 60 | 71 | 978 | 487 | 74 | | 11 | 7 | 2 | 1490 | 128 | | | 3 | 20 |
| *Setaria italica* | | | | 123 | | | | | 6 | | 4 | 19 | | 6 | | | | | | | | | | |
| *Setaria* sp. | | | | 9 | | | | | | | | | | | | | | | | | | | | |
| Panicoideae | | | | 1128 | | | | 17 | 30 | | 29 | 299 | 171 | 29 | | 2 | 1 | | 179 | 42 | 2 | | | 5 |
| *Secale cereale* | 84 | 6 | 204 | 34,204 | 25 | | 61 | 776 | 649 | 136 | 130 | 4471 | 3679 | 436 | 1 | 10 | 4 | 1 | 1989 | 439 | 565 | 1 | 362 | 4 |
| *Triticum aestivum/durum* | 12 | 1 | 27 | 965 | 6 | | 4 | 22 | 25 | 6 | 9 | 498 | 38 | 107 | | 2 | 1 | | 67 | 21 | 26 | 1 | 14 | 3 |
| *Triticum* sp. | | | | 4 | | | | | | | | 5 | | | | | | | | | | | | |
| Triticeae | | 2 | 3 | 10,424 | | | 18 | 234 | 210 | 44 | 233 | 1338 | 1346 | 132 | | 8 | 2 | | 745 | 416 | 58 | 1 | 91 | 1 |
| **Cereal (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa/strigosa* (floret base) | | | | 842 | | | 11 | 10 | 40 | | 4 | 127 | 173 | 25 | | | | | | 54 | 10 | | 2 | |
| *Hordeum vulgare* (lemma base) | | | | 689 | | | | 31 | 3 | | | 96 | | 2 | | | | | | 19 | 17 | | 4 | |
| *Hordeum vulgare* (rachis segment with 1 node) | | | | 48 | | | | | | | | | | | | | | | | 4 | | | | |
| *Panicum miliaceum* (lemma/palea) | | | | 32 | | | | | 8 | | | | | | | | | | | | | | | |
| *Setaria italica* (lemma/palea) | | | | | | | | | 3 | | | | | 2 | | | | | | | | | | |
| *Secale cereale* (rachis segment with 1 node) | | | | 741 | | | | 131 | 48 | 13 | 19 | 213 | 406 | 5 | | 2 | | 1 | 16 | 76 | 1 | | | 1 |
| *Secale cereale* (rachis segment with 2 nodes) | | | | 18 | | | | 19 | | | 2 | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | | | | 122 | | | | | | | | | | | | | | | | 4 | | | | |
| **Fabaceae** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lathyrus cicera/sativus* (seed) | | | | 71 | 1 | | | | | 2 | | 14 | | 1 | | | | | | | | | | |
| *Lens culinaris* (seed) | | | | 18 | | | | | | | | | | | | | | | | 1 | | | | |
| *Pisum sativum* (seed) | 1 | | 1 | 412 | 1 | | | | | | | 8 | | 2 | | | | | | 1 | 3 | | 2 | |
| *Vicia faba* (seed) | 10 | | 1 | 238 | | | | | | | 1 | 18 | | 1 | | | | | | 1 | 7 | | 9 | |
| *Vicia/Lathyrus* (seed) | | | 1 | 250 | | | | 8 | 9 | | | 39 | | 4 | | | 2 | | 12 | 4 | 2 | | 1 | |
| *Vicia/Lathyrus/Pisum* (seed) | | | 1 | 272 | 1 | 1 | | | | | 1 | 58 | 4 | 8 | | 1 | | | | 4 | 1 | | 3 | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* (fruit) | | | | 2 | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium/cerasus* (endocarp) | | | | 2 | | | | | | | | | | | | | | | | | | | 1 | |
| *Vitis vinifera* (seed) | 1 | | | 101 | | | | 24 | | | | | 8 | | | | | | 4 | | 1 | | | |
| *Vitis vinifera* (pedicel) | | | | 7 | | | | 7 | 3 | | | | 17 | | | | | | | 1 | | | | |
| *Vitis vinifera* (drupe with seed) | | | | | | | | | | | | | | | 2 | | | | | | | | | |
| **Oil/Fiber plants** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* sp. (seeds agglomerated) | | | | 6 | | | | | | | | | | | | | | | | | | | | |

Table 8.3 - Fruits/Seeds of crops and likely cultivated species.

The fruits/seeds assemblage varied between the two phases and, above all, within the six moments of occupation (Table 8.3 and Table A6.3–A6.5 in Attachment 6 and Figure 8.6). The first moment in Phase 1 (s.u. 115 and 116) revealed few fruits/seeds (n= 184), but it is necessary to take into consideration that all the samples from these layers were handpicked. This small assemblage does not allow a proper analysis and integration in the site results.

The second moment, corresponding to the great fire that destroyed building 09, is particularly relevant to this study as most of the remains found came from this event. Six layers were studied, but s.u. 107 comprised 99.2% of the remains from this phase and 70.2% of the remains collected in the whole site. A closer analysis of s.u. 107 shows that 85.1% of its fruits/seeds were recovered within 7 $m^2$, in squares B6-C6-B7-C7-B8-C8-C9 (Figure 8.6A, Tables A6.4 and A6.5 in Attachment 6). It is noteworthy that around half of those remains were collected in just two squares–B7 and C7.

The concentration of fruits/seeds in such a confined space is particularly relevant, but s.u. 107 also concentrated most of the sampling effort. In 2016, the use of the flotation machine allowed the recovery of more sediment samples, mainly in this layer and in square C7 (27 sediment samples). Laboratory work also gave particular emphasis to this s.u./square combination. However, despite the discrepancies in the number of samples analysed in each s.u. and square, the data regarding the units per Litre (units/L) suggest there really was a higher concentration of fruits/seeds in s.u. 107, square C7. In fact, considering that each sample recovered in 2016 comprised around 10 L of sediment (see Materials and Methods and Table A6.1 in Attachment 6), the results show that the five samples (≈50 L) from square C7 comprise around 919 units/L. However, we must emphasize that just one sample (185) has revealed 2,400 units/L, which is more than double that of any other sample. The same s.u. 107 provided smaller concentration of remains in other squares, such as B8 (661 units/L) and C9 (430 units/L). Outside the area where most of the remains were retrieved, a few other squares also revealed relevant concentrations, such as E1 (513 units/L) or E1’ (331 units/L) (see details in Table A6.6 in Attachment 6).

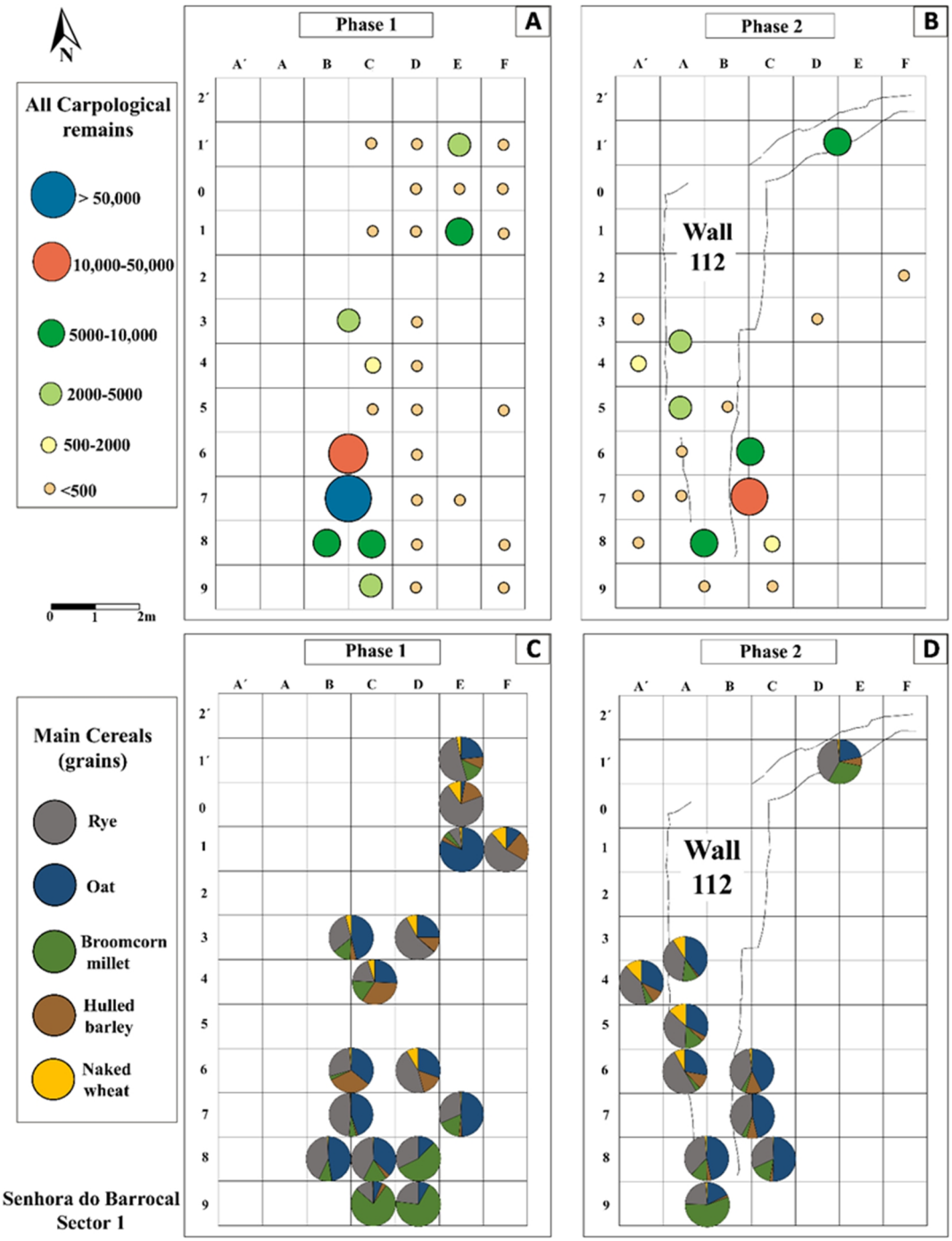


Figure 8.6 - Square analysis per phase. All fruits/seeds (**A, B**); main cereal grains (**C, D**); only units. Results from the first moment as well from row G onwards revealed few remains and for that reason are not included.

More patterns in s.u. 107 were identified (Table A6.4 and A6.5 in Attachment 6 and Figure 8.6C): grains of oat (19,714 out of 36,609) and rye (21,032 out of 34,204) were more abundant in squares B7/C7; broomcorn millet was mostly concentrated in squares C9 (2,673 out of 8,345) and B7 (1,374 out of 8,345); but grains could be found all over the area. There were great concentrations of grains from the hulled barley in B6/C6

(5,511 out of 7,248), where we also found almost all the barley chaff found in the settlement so far (733 out of 913); flax agglomerates were found in squares F1' and F0, where other fruits/seeds were scarce. However, some caution is required as the samples from these two squares correspond only to the handpicked remains (Tables A6.1, A6.4 and A6.5 in Attachment 6). In the other fire levels, the fruits/seeds were scarce, which is not surprising as most of those samples correspond to the handpicked materials.

After the fire, Sector 1 suffered some changes. Compared with the previous phase, the amount of fruits/seeds was much smaller (n= 45,266) in Phase 2 (Tables A6.3–A6.5 in Attachment 6 and Figure 8.6B). However, there was a significant amount of fruits/seeds in some layers, associated with the fourth moment, namely in s.u. 125 (n= 14,587) and 130 (n= 11,677), which are the filling deposits of wall 112. The same happened with s.u. 104 (n= 6661), from the sixth moment, which is also related to wall 112, but in this case to its abandonment (Tables A6.3–A6.5 in Attachment 6). The structures associated with the fifth moment revealed few remains, and no differences were observed in the fruits/seeds assemblage.

As in the earlier phase, Phase 2 was also dominated by grains, mostly rye and oat. Together, these represent more than half (n= 27,671) of the remains found. Considerable concentrations of fruits/seeds came from some of the squares already mentioned (B6-C6-B7-C7), or next to them (e.g. A8/B8, D1'-E1').

The estimated volume also attests to the observed trend, being the amount of units/L smaller than in Phase 1 (Tables A6.6 in Attachment 6). Despite this, exceptions were observed in some of the abovementioned squares and layers. One sediment sample (358) in B7 from s.u. 130 showed a really high concentration of remains (869 units/L) and again from square B7, but in s.u. 125, another sample (348) revealed a considerable concentration (338 units/L) of fruits/seeds (Table A6.6 in Attachment 6). In D1'-E1' from s.u. 104, two sediment samples also showed a significant concentration (333 units/L), taking into account an estimated volume of 20 litres. These samples strengthen the importance of some squares with regard to the space organization of Sector 1.

Besides the smaller amount of fruits/seeds recovered in the Phase 2 contexts, substantial differences between this and the previous phase were not perceived (Tables A6.3–6.5 in Attachment 6 and Figure 8.6), which may reflect the use of sediment with charred plant remains from the fire that occurred at the end of Phase 1 in the filling of the walls built in Phase 2.

### 8.4.2. Charcoal Analysis

A total of 18,601 charcoal fragments were identified at SB. Phase 1 provided a diverse set of taxa (Table 8.4). *Castanea sativa* was the most frequent with 34.2% of the total, followed by *Quercus* sp. deciduous (16.1%) and *Castanea/Quercus* (11.4%). All the Fagaceae combined sum up to 64% of the charcoal analysed. A second group was also relevant, which included *Erica australis/arborea* (5.9%), *Arbutus unedo* (6%), *Erica* sp. (4.2%), and *Prunus* sp. (3.7%). The remaining 16 taxa comprised just 7.3%. Undetermined and dicotyledon fragments accounted for almost 11%. Despite 85.9% of all the samples from Phase 1 being handpicked, the results from the floated samples confirm the diversity and distribution of the taxa observed.

The results from Phase 2 displayed similar results to those of Phase 1, which is not surprising considering that their origin is most likely the same. Among the 8765 charcoal fragments identified, *Castanea sativa* was still, by far, the most frequent, with more than 1/3 of the total (35.8%), followed by *Quercus* sp. deciduous (22.7%). As before, a second group of taxa also displayed a reasonable percentage, such as *Arbutus unedo* and *Erica australis/arborea* (4.5% and 4.9, respectively), *Prunus* sp. (4%), *Erica* sp. (3%), and Fabaceae (2.2%). All remaining taxa only accounted for 5.2%, with the exception of *Castanea/Quercus* (6.8%) and dicotyledons which had the same percentage as in Phase 1 (c. 10.7%).

Regarding the tree-ring curvature, the shrubs displayed higher percentages of moderate and strong ring curvatures: *Arbutus unedo* (57%), *Cistus* sp. (32%), *Erica* spp. (from 56% to 67% according to taxon), and Fabaceae (84%). On other hand, the arboreal taxa displayed weak tree ring curvatures: *Alnus* sp. (87%) and *Fraxinus* sp. (76%), but especially *Castanea sativa* (80%) and *Quercus* spp. (from 68% to 70%).

Vitrification was mostly concentrated in dicotyledons (68% of the fragments from this taxon) and undetermined charcoal (89%), which in most cases explains such undetailed identification. The remaining taxa, with the exception of *Quercus* sp. and *Erica* spp., displayed less than 10% of the vitrified fragments. In contrast, radial cracks were recorded in dicotyledons (35% of the fragments from this taxon), *Erica* spp. (from 14% to 31%), Fabaceae (30%), *Quercus* spp. (from 13% to 27%), and *Cistus* sp. (19%).

| Phase | 1 | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Moment | 1st | | 2nd | | | | | | Total | | 3rd | | | 4th | | | | | | | | 5th | | | 6th | | | | | | | | Total | |
| S.U. | 115 | 116 | 106 | 107 | 108 | 109 | 128 | 137 | N | % | 136 | 139 | 140 | 124 | 125 | 125A | 129 | 130 | 131 | 134 | 138 | 126 | 132 | 133 | 102 | 103 | 104 | 118 | 120 | 121 | 104A | 104B | N | % |
| *Acer* sp. | | | | 2 | | | | | 2 | 0.02 | | | | | | | | 1 | | | | | | | | | | | | | | | 1 | 0.01 |
| *Alnus* sp. | | | | 67 | | | | | 67 | 0.68 | | | | 1 | 36 | | | 10 | | | | | | | 1 | | | | | 2 | 2 | | 52 | 0.59 |
| *Arbutus unedo* | | 4 | 56 | 460 | 58 | | | 15 | 593 | 6.03 | 55 | 18 | 6 | | 105 | | | 11 | 2 | 13 | 2 | 16 | 13 | | 32 | 20 | 27 | 2 | 2 | 32 | 23 | 12 | 391 | 4.46 |
| *Castanea sativa* | 15 | 60 | 25 | 2,893 | 195 | 119 | 4 | 55 | 3,366 | 34.22 | 228 | 109 | 33 | 62 | 1,173 | 4 | | 154 | 163 | 133 | 1 | 19 | 13 | | 112 | 15 | 60 | 78 | 40 | 163 | 445 | 134 | 3,139 | 35.81 |
| *Castanea/Quercus* | 4 | 18 | 27 | 1017 | 51 | 6 | | | 1,123 | 11.42 | | | | 29 | 194 | 2 | | 14 | 13 | | | 20 | 22 | | 103 | 13 | 11 | 9 | 5 | 66 | 73 | 20 | 594 | 6.78 |
| *Cistus* sp. | | | 1 | 22 | | | | 8 | 31 | 0.32 | 17 | 27 | 17 | | 4 | | | 5 | | 2 | | | | | 3 | | 31 | | | | 1 | | 107 | 1.22 |
| *Erica australis/arborea* | 5 | 21 | 27 | 409 | 105 | 10 | | | 577 | 5.87 | 19 | 1 | | 7 | 98 | 4 | 1 | 13 | | 6 | | 26 | 20 | | 75 | 8 | 15 | 30 | 3 | 51 | 46 | 9 | 432 | 4.93 |
| *Erica scoparia/umbellata* | | | 2 | 25 | | | | | 27 | 0.27 | 2 | | | | 6 | | | | | | | | | | | 2 | 5 | 1 | | | 1 | | 17 | 0.19 |
| *Erica* sp. | | 5 | 19 | 329 | 46 | 3 | | 12 | 414 | 4.21 | 17 | 10 | | 3 | 49 | | | 20 | 2 | | | 23 | 19 | 5 | 43 | 4 | 5 | 3 | | 28 | 33 | 6 | 270 | 3.08 |
| Fabaceae | | 3 | 2 | 126 | 20 | | | 1 | 152 | 1.55 | 9 | | 1 | 5 | 56 | | | 17 | 3 | 2 | | | 5 | 2 | 52 | 3 | 18 | 2 | 1 | 4 | 11 | 2 | 193 | 2.20 |
| *Frangula alnus* | | | | 2 | | | | | 2 | 0.02 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Fraxinus* sp. | | 1 | | 14 | 4 | | | | 19 | 0.19 | 1 | 1 | 1 | | 12 | | | 2 | | | | | | 1 | | | 2 | | | 4 | 2 | | 26 | 0.30 |
| *Olea europaea* | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | 1 | 0.01 |
| *Pistacia* sp. | | | | 3 | | | | | 3 | 0.03 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus* sp. | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | 1 | 0.01 |
| *Prunus avium/cerasus* | | | | 44 | | | | | 44 | 0.45 | 3 | 22 | | | 8 | | | 2 | 5 | 3 | 9 | | | | | | | | | 20 | 5 | | 77 | 0.88 |
| *Prunus* sp. | 12 | 53 | 1 | 163 | 120 | 15 | 1 | | 365 | 3.71 | 3 | 16 | | 23 | 64 | | | | 1 | | | 2 | 1 | | 70 | | 7 | 42 | 8 | 60 | 42 | 18 | 357 | 4.07 |
| *Quercus* sp. | 1 | 3 | 11 | 148 | 2 | | | | 165 | 1.68 | | | | 4 | 24 | | | 1 | 1 | | | 3 | 6 | | 8 | 5 | | 1 | | 16 | 6 | | 75 | 0.86 |
| *Quercus* sp. deciduous | 8 | 29 | 192 | 1,145 | 133 | 26 | 1 | 48 | 1,582 | 16.08 | 167 | 93 | 51 | 15 | 297 | 53 | 2 | 56 | 1 | 36 | 2 | 35 | 7 | 6 | 286 | 55 | 111 | 135 | 44 | 308 | 208 | 20 | 1,988 | 22.68 |
| *Quercus* sp. evergreen | | 3 | 10 | 100 | 15 | 1 | | 3 | 132 | 1.34 | | 3 | | 2 | 8 | | | 2 | | | | | 1 | | 7 | 2 | 2 | 2 | | 10 | 4 | 7 | 50 | 0.57 |
| *Rhamnus/Phillyrea* | | | 1 | 3 | 3 | | | | 7 | 0.07 | 2 | | | | 2 | | | 1 | | 1 | | 1 | | | | | 1 | | | | | | 8 | 0.09 |
| Rosaceae Maloideae | | | | 7 | | | | | 7 | 0.07 | | 2 | | | 1 | | | | | | | | | | | | | | | 3 | | | 6 | 0.07 |
| *Salix* sp. | | | | 2 | 6 | | | | 8 | 0.08 | | | | | | | | 1 | | 1 | | | | | 2 | | | | | | | | 4 | 0.05 |
| *Salix/Populus* | | | | 1 | | | | | 1 | 0.01 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Taxus baccata* | | | | 52 | | | | | 52 | 0.53 | | | | | 1 | | | | | | | | | | | | | | | | 2 | 12 | 15 | 0.17 |
| Undetermined | | 2 | | 30 | | | | | 32 | 0.33 | | | | 3 | 4 | | | | | | | 1 | | | 3 | | | 2 | | 2 | | | 15 | 0.17 |
| Dicotyledon | 1 | 23 | 54 | 852 | 88 | 20 | | 8 | 1,046 | 10.63 | 27 | 22 | 7 | 26 | 353 | | | 28 | 21 | 2 | 1 | 28 | 44 | 5 | 86 | 18 | 46 | 18 | 3 | 119 | 82 | 7 | 943 | 10.76 |
| Monocotyledon | | | | 1 | 2 | | | | 3 | 0.03 | | | | | 3 | | | | | | | | | | | | | | | | | | 3 | 0.03 |
| Bark | | | | 16 | | | | | 16 | 0.16 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Total** | 46 | 225 | 428 | 7,933 | 848 | 200 | 6 | 150 | 9,836 | 100 | 550 | 325 | 116 | 180 | 2,499 | 63 | 3 | 338 | 212 | 199 | 15 | 174 | 151 | 19 | 883 | 145 | 341 | 325 | 106 | 885 | 989 | 247 | 8,765 | 100 |

Table 8.4 - Charcoal results from SB.

As previously stated, the spatial analysis of these results only took into account the floated samples from Phase 1, with a minimum of 100 charcoal fragments identified. This exercise revealed an even distribution of *Castanea sativa* and *Quercus* sp., along with most other taxa, throughout the excavated area. The exception to this trend was a small concentration of *Prunus* spp. charcoal identified in squares D9 and F9 in the western part of the area. The full anthracological results are available in Tables A6.7–A6.9 in Attachment 6.

### 8.4.3. Food Remains

The six amorphous charred fragments ranged from 1 cm to 4.2 cm in size and their degree of charring varied from partially charred to fully charred. Macroscopically, these remains were preliminarily identified as potential fragments of cooked food, such as bread-like or porridge-like products, due to their amorphous, porous, and homogeneous appearance as well as their starchy internal structure (Table A6.10 in Attachment 6).

Microscopic observation under low-powered binocular microscope revealed that five of the six selected fragments were indeed the remains of charred food products, as evidenced by their uniform, porous, and homogeneous microstructure as well as the identification of small, visible plant particles on the surface of the fragments. Further study under SEM allowed for the positive identification of these plant particles as cell tissues, the majority of which were from cereal kernels (grains), pulses, and other non identified plant species (Figure 8.7).

In general, the analysed food remains were seen to have a porous and homogeneous internal microstructure. The porosity percentage ranged from 14% to 35%, depending on the fragment; however, the majority of them showed an average of 15% of their surface covered by voids. The voids (air bubbles) were consistent throughout the analysis, with the majority of them being categorised as channel voids, which are normally associated with cooking techniques such as boiling or steaming rather than baking or roasting, which encourage the creation of great amounts of closed voids (González et al., 2017; González, 2020).

Two fragments from s.u. 130 and one sample from s.u. 107 presented porous and semiporous microstructures, respectively, which were formed by a relatively large amount of channel voids (holes). In combination with this, the particles seen in these three fragments were relatively large fragments of cereal grains and pulses (>500 μm on

average), suggesting the use of coarse flour for their preparation. In contrast, the fragments from s.u. 104B and 125 differed from the rest in the abundant presence of closed voids ranging in size between 100 µm and 250 µm, which is typical of baked foodstuff such as bread-like products. In addition, the particles seen in these two fragments were of smaller size (<500 µm on average), which suggests the use of finer flour.

Due to the disparity in preservation among the analysed food fragments, the identification to the genus level of the visible particles was only possible in a limited number of samples. The quantity of particles identified within the food microstructures also varied from fragment to fragment, most likely due to the differences in preparation and cooking techniques used. The average number of particles identified per 50 x magnification SEM capture from each food fragment was 2.8, which is relatively consistent with the average number of particles identified for experimental and archaeological bread-like products (González Carretero, 2020). This said, there were marked differences in the number of particles identified in the samples from s.u. 104B and 125, with only 1 or 2 particles identified, and the samples from s.u. 107 and 130, in which between 3 and 6 particles were identified on average.

The totality of particles identified in the food fragment microstructures were of plant origin and mainly derived from cereal grains and occasionally from pulses. Amongst the identified plant particles, the fragments of cereal grains and the patches of epidermal layers from the cereal kernel (bran and aleurone layers) were the most abundant.

The food fragments from s.u. 107 and 130 contained the most plant particles, with a variety of cereal and pulse tissues identified within their food matrix. Fragments of cereal grains with visible epidermis and endosperm cell layers were the most predominantly identified during the microscopic analysis of the recovered food remains (Figure 8.7). These ranged in size between 300 and 1000 µm and had visible layers of bran epidermis (transverse and longitudinal cells) as well as aleurone cell layers and endosperm cell tissues. Slight differences in the shape, arrangement, and size of the transverse, longitudinal, and aleurone cells suggest the presence of a variety of cereal types, especially for the two fragments analysed from s.u. 130, where at least three cereal types were identified: barley, wheat, and potentially rye/oats. This was particularly evident from the differences in the shape and arrangement of the aleurone cells in combination with the shape and length of the transverse and longitudinal bran cells. While barley species have distinct multiple-celled aleurone layers, the aleurone layers of wheat, rye, and oat species are formed by a single row of cells. Furthermore, wheat species tend to have

rounder and smaller cells, while those of rye/oats tend to be more rectangular and elongated in shape (Winton and Winton, 1932) (Figure 8.7). Additionally, while the measurements are very similar, the transverse cells from wheat species differ from those of rye and oats in their elongated shape and prolonged, pointy ends (Winton and Winton, 1932; College, 1988; Holden, 1990) (Figure 8.7).

Fragments of pulses were also identified in a food fragment from s.u. 130. These were fragmented as a result of pounding or grinding and mixed in with cereals prior to cooking. The breakage angle of the seeds allowed for the positive identification of the different cell layers in the legume seed coat or *testa*, with especially well-preserved palisade and hourglass cell layers, which measured to approximately 40–50 µm in thickness. Following the identification criteria established by Butler (1990) and Winton and Winton (1932), fragments of seed coat with palisade layers and hourglass cells whose thickness measures range from 20–70 µm are likely to be derived from small pulses such as lentil (*Lens culinaris*) or vetch (*Vicia sativa*) (Figure 8.7).

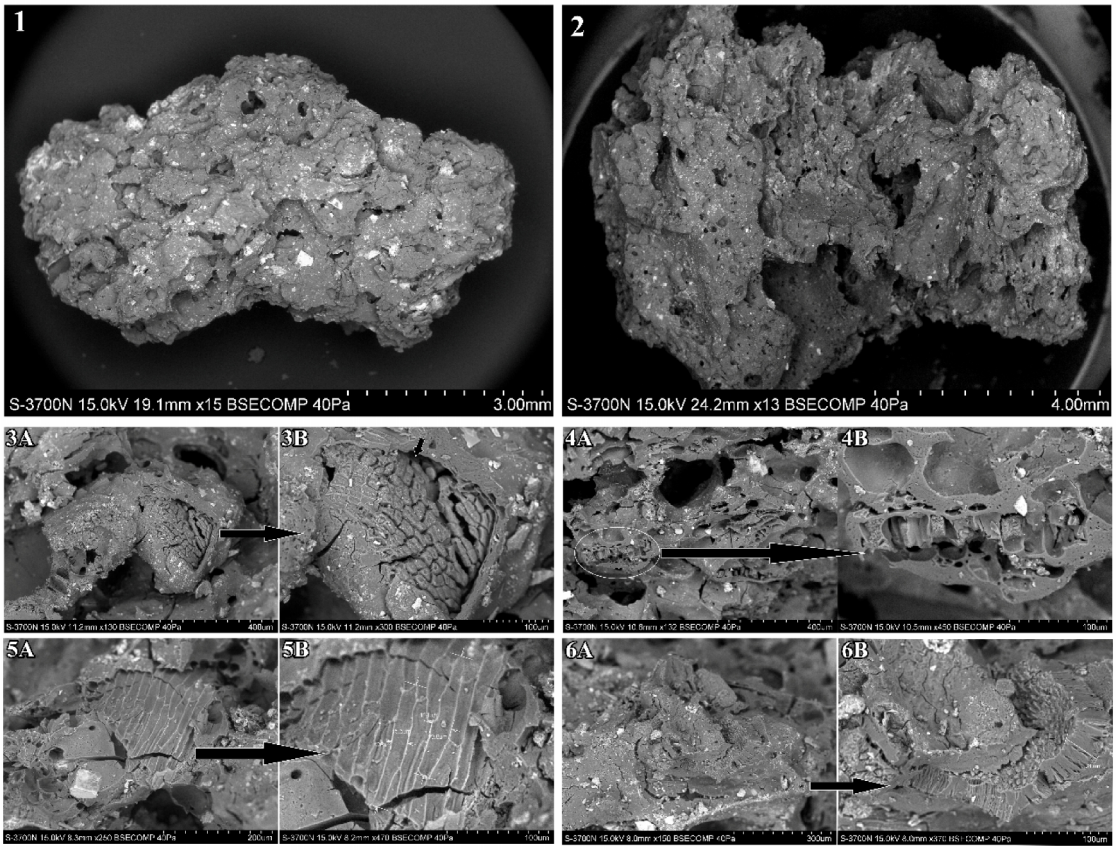


Figure 8.7 - Several SEM micrographs of food fragments from SB: (**1**) porridge-like fragment from s.u. 130 made with coarse plant flour; (**2**) bread-like fragment from s.u. 125 made with fine plant flour; (**3A**) SEM micrograph showing fragment of cereal grain embedded in the food matrix; (**3B**) detail of cereal fragment with visible cross-section of epidermis layers (bran and aleurone layers); (**4A**) SEM micrograph showing fragments of aleurone layers embedded in the food matrix; (**4B**) detail of aleurone layer fragment showing the typical rectangular and elongated shape and arrangement of rye/oats aleurone cells; (**5A**) SEM micrograph showing a fragment of cereal bran embedded in the food matrix; (**5B**) detail of bran fragment with visible wheat transverse cells, which differ from those of rye and oats in their elongated shape and prolonged, pointy ends; (**6A**) SEM micrograph showing fragment of legume seed embedded in the food matrix; (**6B**) detail of legume seed with visible hourglass and palisade layer, which measured approximately 30–50 µm in thickness. This is consistent with measurements ranging from 20–70 µm for small pulses such as lentil (*Lens culinaris*) or vetch (*Vicia sativa*).

## 8.5. Discussion

### 8.5.1. Storage

With or without archaeobotanical data, several studies have identified different type of storage facilities in Early Medieval sites in Iberia (e.g. Alonso, 2005; Teira-Brión et al., 2010; Quirós Castillo, 2013; Resino, 2013; Quirós Castillo, 2014; Vigil-Escalera et al., 2014; Pérez-Díaz et al., 2015). Storage pits were common both in the Christian areas in the north or in the south, under Islamic rule, and the use of *horrea* is also mentioned in written sources from Northern Iberia (Quirós Castillo, 2013).

No such facilities were recorded at SB. Here, storage took place in a building which was destroyed by a fire at the end of the 10th century or in the early 11th century. It was likely constructed mostly on perishable materials which makes it particularly difficult to interpret. Although no structural evidence has been found, the assumption that this building was used for storage is supported by the great amount of grain found in the level where most of the fire remnants were recorded. In the contexts from Phase 2, fruits/seeds continued to be abundant, particularly in the filling of defensive wall 112, and the assemblages were similar to the previous phase, suggesting that debris from the collapse of Phase 1 building, including abundant plant elements, were incorporated in the new construction. As such, the remains from both phases can be interpreted jointly, assuming that most, if not all, were in fact from the fire at the end of Phase 1. The exceptions are the s.u. from the fifth and sixth moments of occupation, which revealed poorer assemblages.

To better understand the storage strategies at the site, it is necessary to address what was stored and where and how was it kept.

In both phases, the assemblages are largely dominated by cereals, mostly rye and oat, and their spatial distribution suggests they were kept in two main areas (Figures 8.4 and 8.6). As mentioned before, a strong concentration of fruits/seeds was found in a reduced number of squares. A total of 80.8% of all the fruits/seeds identified were concentrated within 8 $m^2$, with particular emphasis in B7-C7 (Tables A6.3–A6.5 in Attachment 6 and Figure 8.6A, B). Other concentrations were observed but with less remains. These data suggest that cereals were kept in the eastern area of Sector 1, where some space organization seems to have existed as differences in crops distribution have been recorded. Grains of broomcorn millet were identified more to the east, oat and rye grains in the centre, and hulled barley grains slightly further west (Figures 8.4 and 8.6C, D).

Five meters away, namely in square E1, a large concentration of fruits/seeds (n= 5,127) was identified in s.u. 107, the main fire level, suggesting the presence of another storage space. This hypothesis is strengthened by the occurrence of the only flax seeds in the site, found in nearby squares (F1' and F0). Although adjacent squares D1'/E1' from s.u. 104 also revealed a considerable concentration of fruits and seeds (n= 6,661), this deposit is associated with the last moment of occupation and is likely the result of the remobilization of the sediments.

The fruits/seeds assemblage demonstrates that not all the cereals were stored fully dehusked and ready for consumption. Furthermore, the analyses demonstrate that processed food was kept in the same area as the grains.

Whether the crops were stored partially or fully processed can sometimes be deduced from the amount of weeds and chaff found, but weeds are scarce at SB and provide little information. Corncockle is the most common and is usually a weed from winter cereals. Still, considering that distinct crops are found in the same samples, it is not possible to determine which weeds correspond to which crops. In contrast, the chaff was recorded in significant amounts. However, any analyses on the proportion between the grains and the chaff must take into consideration that inflorescences are less resistant to fire than grains and tend to be underrepresented (e.g. Hillman, 1981; Boardman and Jones, 1990; Van der Veen, 2007), the degree to which depends on several factors, such as temperature and time of exposure, which are difficult to assess. Nonetheless, the differential presence of chaff gives us the indication that distinct species were kept in different processing stages (Tables A6.3–A6.5 in Attachment 6).

Chaff from free-threshing cereals, such as rye and naked wheat, was scarce considering the amount of grains that were found. It is not surprising as grains are easily released through threshing, which is frequently carried out outside the settlement (e.g. Hillman, 1981, 1984; Peña-Chocarro, 1999; Alonso et al., 2014; Alonso, 2019). Even considering the differential preservation of chaff and grains, it is likely that both cereals were stored fully processed.

In contrast, after threshing, oat, barley, and millet need further processing in order to free the grains (Hillman, 1981, 1984), and at SB many grains of these species were found partially husked. Regarding barley and broomcorn millet, fully hulled grains and grains with the remains of husks still attached are dominant over the clean grains: 5,676 vs. 4,019 in the case of barley, and 6,339 vs. 5,898 for millet. These data suggest that both crops were stored hulled.

The case of oat is more complex. The amount of fully hulled grains and grains with some husk remains attached (n=9,751) comprises 19.2% of the grains found. Plus, 615 floret bases without grains were found. The percentage of hulled grains is far lower than those of barley and broomcorn millet, raising doubts about whether the oat grains were preferably stored hulled or if hulled and fully dehusked grains were kept in the same area.

At the settlement of Chadalais (Maisonnais-sur-Tardoire, Haute-Vienne, France), abundant oat grains were found inside an 11th–12th century pit, and although less than 10% were found with husks, the assemblage was still interpreted, even if with reservations, as evidence of the storage of hulled grains (Ruas, 2011). This may have been the case at SB. Any possible preservation bias of barley, broomcorn millet, and oat chaff should be addressed with experimental work in the future.

Such partial processing of cereals is the most effective way to preserve the grain in storage (Alonso et al., 2014), but it is also possible that the barley, broomcorn millet, and oat were being kept hulled to be sown later. The rarity of foxtail millet grains does not allow proper considerations regarding this crop.

The possibility that these cereals were going to be used as fodder must be considered as it would render dehusking unnecessary. The use of barley, oat, and millet as fodder is mentioned in historical documentation from different periods as well as in ethnographic studies (Oliveira Marques, 1978; Hallam, 1981; El Viejo, 1999; Moreno-Larrazabal et al., 2015). Some archaeobotanical work, such as the one conducted at the medieval site of Zornoztegui in northern Spain, expresses this hypothesis, although not without doubts, regarding barley and oat (Quirós Castillo et al., 2020). However, these crops were likely consumed by humans on a regular basis and the food remains from SB support this assumption. Although the use of oat in these food preparations is not conclusive, and millet has not been detected yet, barley, wheat, pulses, and a third cereal (oat or rye) have been detected.

As such, barley and broomcorn millet, and probably also oat, were very likely stored hulled. If they were going to be used for human consumption, their processing would have occurred on a daily basis. In contrast, naked wheat and rye seem to have been stored as clean grain. These different strategies may be connected with morphological differences in these species, which demand distinct processing procedures in order to free the grain. Some can demand a great deal of time and effort, or even labour, which could have been also a determinant factor when deciding how to store cereals (Fuller et al., 2014). Such decisions could also be determined by the use given to such crops (e.g. for sowing or human or animal consumption), although the ethnographic data suggest that is not always the case (Jones, 1998). In Sector 1, evidence was found of domesticated animals, namely an ox molar (*Bos Taurus*) and an iron spur (suggesting horse presence) (Tente et al., 2018a).

The presence of made/cooked food products demonstrates how versatile storage areas can be. The distinct combination of two types of particles (coarse and fine) with two kinds of air bubbles or voids which are linked to two very different cooking processes (channel voids for boiling vs. closed voids for baking) suggest that the analysed food fragments belong to two categories of cereal products: a porridge-like product or gruel and a bread-like product. This was clearly exemplified in the samples from s.u. 125 and 130 (see above), with the former being the remains of a bread-like product and the latter that of some type of porridge or gruel or even a soup. It is likely that the remains of bread are those of some type of flat bread rather than leavened or fermented bread, as evidenced by the relatively low porosity percentage (between 10 and 20%) of the microstructure. Porosity percentages higher than 30% have been associated with leavening or the addition of yeast, which promotes the creation and multiplication of gas pockets or air bubbles in the dough during the fermentation and baking process (Autio, 1997; González Carretero, 2020).

Food remains were recovered from three contiguous squares (B7-C6-C7), including levels from the fire and sediments remobilized and reused in the wall, where we find abundant fruits/seeds. Thus, the remains of two different types of ready-to-use foods are found together with fully processed (rye and wheat) and partially processed (oat, barley, and broomcorn millet) grains, as well as a few pulses and fruits. These distinct elements must have been kept separately in some way, either horizontally, in the house floor, vertically, using shelves or hanging bags in the ceiling, or in a combination of both solutions. This is also suggested also by some differences in the distribution of the taxa (Figures 8.4 and 8.6). Although there is no direct evidence of containers, barriers, or furniture, these were likely made of perishable materials. We cannot exclude the possibility that some of the charcoal identified came from such elements, as in the 11$^{th}$-century granary of La Gravette (L'Isle-Jourdain, Gers, France) (Ruas et al., 2005). However, at SB, that was not perceived in the spatial distribution of charcoal, and most of the remains came from trunks or other large pieces of oak and chestnut trees, likely used in the building itself.

Still, the grain was not likely to have been stored loose, and the use of textile or wood containers seems reasonable. This type of storage has been recurrently mentioned in several chronological/cultural contexts (e.g. di Lernia et al., 2012; Morales et al., 2015; Filipović et al., 2018). At the medieval site of Tremona Castello (Switzerland), braided plant fibres were identified in a storage context, suggesting perishable containers were used to keep crops and protect them against the high humidity of the region (Peña-

Chocarro et al., 2006). Although no such evidence has been found at SB, a bronze hoop was found in association with the fruits/seeds. It is possible that it was used to hang some container from the ceiling (Tente et al., 2018a).

### 8.5.2. Crop diversity

SB provided an outstanding archaeobotanical assemblage, including fruits/seeds, wood, and food remains. However, the cereals clearly stand out (Figure 8.5). Oat and rye are predominant, while hulled barley, broomcorn millet, naked wheat, and foxtail millet are less common. Although it is impossible to distinguish wild and cultivated oat based solely on grain morphology, the presence of floret bases testifies for the presence of cultivated taxa, *Avena sativa*, or *Avena strigosa*. Distinguishing the floret bases of these two taxa is sometimes possible; however, the morphological characteristics of both species frequently overlap, which is aggravated by differences between the first and second florets (van Zeist, 1968; Pasternak, 1991; Ruas and Pradat, 2001; Jacomet, 2006). Some floret bases from SB revealed characteristics consistent with *A. strigosa*, such as small and pointed ends, as well as some distance between the lemma base and the scar. Still, these were recorded only in a few better preserved remains, and even then, some variability was observed, and doubts remain, because of which a cautious designations of *A. sativa/strigosa* was adopted. The dominance of oat alongside rye suggests it was not a weed (e.g. Grabowski, 2011; Zohary et al., 2012). SB thus represents a good example of the important dietary role cereals and cereal preparations such as bread and porridge played in the Medieval period in the Iberian Peninsula, and specifically during the 10$^{th}$ and 11$^{th}$ centuries CE. Ethnoarchaeological and historical sources corroborate this with mentions of porridge-like products, which included a variety of gruels and soups, as the main cereal product consumed during this period (Díaz García, 1985; García Sánchez, 1988; Gutiérrez Lloret, 1996). Bread, and in particular flat breads, despite being commonly consumed during this time, especially amongst the Al-Andalus populations (Gutiérrez Lloret, 1989), did not seem to be the primary cereal product until approximately the 15$^{th}$ century CE (García Sánchez, 1988; Gutiérrez Lloret, 1996).

Considering that most of the remains from SB were originated by a single destructive event, it is impossible to determine whether this assemblage is representative of the siteoccupation in the longue durée; nonetheless, this study reveals that the people who lived at SB relied on a diversity of cereals, together with some pulses and fruits, which they used to obtain different food products. Coincidentally, the pottery assemblage

shows the record of pans for boiling food or cooking porridge and soups, as well as a dish for cooking flatbread.

SB is located amidst granite tors in a rugged mountainous terrain with only a few even areas with abundant soil. Unsurprisingly, the most common cereals recovered are undemanding crops that can thrive in thin and acidic soils, namely oat and rye. So, whether representative or not, their abundant presence makes sense when taking into account the location of the site. Barley also fits well in this strategy. Wheat and, eventually, millet and flax were more easily cultivated near the stream located only around 1.5 km away, where soils and water were more abundant. Pulses and flax were likely cultivated in small garden plots where lack of soil and water could be compensated with human labour, only possible in short cultivation areas, considering that the community inhabiting SB was likely small.

The role of fruits is difficult to assess. They are sporadic at the site, but there is possibly a preservation bias. These are frequently underrepresented in the archaeobotanical record, being more frequent in waterlogged contexts (Peña-Chocarro et al., 2019). Besides, they could have been kept in different area within the site. Grapevine, sweet cherries, and chestnuts are native to Western Iberia. Despite it being impossible to determine whether the remains found at SB came from wild or cultivated plants, as the few remains are insufficient to conduct morphometric studies, they were likely cultivated given the chronology of the site.

The diversity of crops recorded in a context of environmental constraints to agricultural activities may be related to a strategy to build resilience (Tereso, 2012). Despite evidence of extraregional contacts, considering the general scenario of instability and insecurity, these communities were likely largely self-sufficient. Having several winter and spring crops suitable for distinct plots would be crucial to take full advantage of the surrounding land, particularly when suitable fields are scarce, to prevent food shortage.

All the crops identified are common in Medieval sites in Iberia, although their relative proportions vary within regions and sites (Peña-Chocarro et al., 2019). They are also found in western Iberia, usually in small amounts, probably due to the small number of systematic studies. These include wild or cultivated oats as well as rye, which are recorded in several Medieval sites, usually in very small numbers (Queiroz and Ruas, 2001; Queiroz and van Leeuwaarden, 2004; Teira-Brión, 2015; Peña-Chocarro et al., 2019). Still, the increasing relevance of rye in Medieval times argued for many in European regions (Behre, 1992; Ruas et al., 2005) surely also occurred in the northern

and central mountain areas of Portugal, according to the few archaeobotanical and written data (Oliveira Marques, 1978; Gonçalves, 2012; Tereso, 2012; Tereso et al., 2016).

Most of the crops have already been recovered in the Mondego region, although only at SB is there a clear predominance of rye and oat. At São Gens (Celorico da Beira), broomcorn millet is dominant, followed by rye. Barley and naked wheat are rare; a single grain of wild or domesticated oat has been recorded and no domesticated pulses or fruits were found. However, here too, the data come from a single building that collapsed after a fire, being its representativeness unknown (Oliveira et al., 2017; Tente et al., 2018b). A single endocarp of sweet cherry has been identified in another sector of the site (Queiroz, 2009c). At Penedo dos Mouros (Gouveia), a large concentration of faba bean has been recorded, as well as some grains of free-threshing wheat (Queiroz and van Leeuwaarden, 2003). Again, these remains come from a sole context connected with a destructive event. Thus, although remains are fairly abundant in the three sites, none of which is as abundant as SB, the data from each site are highly determined by specific contexts and are spatially and chronologically restricted. Moreover, the sampling effort was far higher at SB. As such, the absence or rarity of oat in the other sites, contrasting with its abundance at SB must not be overrated, as is the case with the exclusive presence of foxtail millet, lentils, peas, and grass/red peas, as well as grapevine and chestnut. The two fruits have been registered in other chronologies in the region. Pips were recorded at Vila do Touro (Sabugal) (Tereso et al., 2020b) and Torre dos Namorados (Fundão) (unpublished) dating to the Iron Age and the Roman period, respectively. As for chestnut, pollen analyses document its presence in the Mondego region at least since the Roman period (van der Knaap and van Leeuwen, 1995). At SB, the wood identified in the charcoal analysis testifies for the presence of chestnut and cherry trees in the surroundings. Even though vine was not identified in the charcoal analysis it cannot be ruled out that vines were locally cultivated. The absence of wood in sites with pips is common in several chronologies, even where facilities and vessels related to wine production and storage were identified (e.g. Tereso et al., 2020a).

Written sources in Central Portugal mention that taxes were mostly paid with wheat, without specifying which species (Oliveira Marques, 1978). Oat and rye were probably less valued, but at SB, they seem to have been particularly relevant. Still, the written sources are a few centuries more recent, and political and social reality in the region at the 10$^{th}$–11$^{th}$ century was very different. Moreover, we do not know the role of SB in the local settlement.

## 8.6. Conclusions

Archaeological investigation is the best way to obtain information regarding small rural communities away from the main centres of power, otherwise they are almost undetectable in the historical records. In this context, the development of archaeobotanical analysis is fundamental to address matters such as agriculture choices or storage strategies and thus obtain information which is crucial to understanding food production and consumption beyond the restricted information recorded in the written documentation.

The results from SB contributed to closing a gap regarding Early Medieval agriculture and consumption of plant-based products in Western Iberia. Most of the available written sources are displaced in time and refer to a specific relationship between central authority and their vassals, providing little information suitable to the understanding of small settlements such as SB, particularly in the context of the instability originated by the frequent conflicts between Muslims and Christians. Even though the archaeological data suggest that the people from SB and the other sites in the region contacted with both sides, it is difficult to understand their involvement in those dynamics. In fact, the panorama observed in Central Portugal points to some level of local engagement, where past communities could have shaped their surroundings and freely chosen the crops to sow (Tente, 2019, 2020).

SB provided an assemblage without parallels in the region, due to its dimension and diversity. The amount of cereals found and their distribution suggest the area that was studied was used for storage until it was destroyed by a fire somewhere between the 10$^{th}$ and the 11$^{th}$ centuries CE. The type of storage facilities is unknown but likely made use of perishable containers.

Stored goods were diverse and included cereals, pulses and food products. Grains of oat and rye predominate but other cereals were recurrent, namely hulled barley, broomcorn millet, naked wheat, and some foxtail millet. Fruits and pulses were rarer. Cereals were probably kept in different processing stages: rye and naked wheat would have been stored as clean grain whereas hulled barley, broomcorn millet, and perhaps oat, were likely stored hulled. The identified food products from SB are the first evidence of this type of material for Medieval archaeology in Western Iberia.

Considering that the assemblage, though large, was originated in a single destructive event, in a particular storage area, it is not possible to determine how representative it is

of the agriculture and food choices of the community who inhabited SB. Nonetheless, the study that was conducted showed they relied on a diversity of crops, mostly cereals, that were used to obtain different food products. The priority given to oat and rye, instead of more demanding cereals such as naked wheat, is likely an adaptation to the environmental constraints of the region, namely the rough conditions and lack of deep and fertile soils in the surroundings. Moreover, the diversity of crops identified would assure that this community had the possibility to fully take advantage of its territory in a productive way, in order to prevent food shortage and to guarantee its self-sufficiency in uncertain times.

## Authors contributions

Luís Seabra: Conceptualization, Methodology, Formal analysis, Investigation, Writing – original draft, Writing – review & editing.

Catarina Tente: Conceptualization, Methodology, Writing – original draft, Writing – review & editing.

Filipe Costa Vaz: Methodology, Writing – original draft, Writing – review & editing.

Cláudia Oliveira: Methodology, Writing – original draft, Writing – review & editing.

Lara González Carretero: Methodology, Writing – original draft, Writing – review & editing.

João Pedro Tereso: Conceptualization, Methodology, Writing – original draft, Writing – review & editing, Supervision.

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# Chapter 9 - The introduction and spread of rye in the Iberian Peninsula

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## Abstract

Some of the earliest Western European macroremains of rye (*Secale cereale*) have been recently recovered in Northwest Iberia. However, the chronological and cultural contexts of these remains have not been yet exhaustively analysed. To address this gap of research, previous and unpublished assemblages have been reviewed and analysed through an analytical set of methods: biometry, radiocarbon dates and integrating the remains of rye in the broad archaeobotanical record of the region.

Results show the earliest macroremains of rye in the Iberian Peninsula date to a period between the 3rd century and the first half of the 1st century BCE. Rye was usually found in assemblages dominated by spelt and other cereals, in whose fields it was likely acting as a weed. There is no record of rye for about the two following centuries, after which it is probably reintroduced, now as a crop. It is found in several sites from the 3rd-4th centuries CE onwards, suggesting it is a staple crop as in other regions in Europe. Significant differences in grain size are only recorded in a 10th-11th century settlement, suggesting few changes in grain morphometry before Medieval times.

Keywords: Rye, Iron Age, Roman, Medieval, Late Antiquity, Radiocarbon dating, Biometry, Iberia, Archaeobotany

## 9.1. Introduction

Rye (*Secale cereale*) did not travel as part of the agricultural crop package that spread from Southwest Asia to the Atlantic during the Neolithic (Behre, 1992; Zohary et al., 2012; Abbo et al., 2013). Conversely, its history in the European continent is more complex than other major cereals such as wheat or barley. Rye encompasses different primary and secondary domestications and a diversity of expansion/constrain events (Behre, 1992; Zohary et al., 2012; Abbo et al., 2013), which results in a biography still poorly known, but at the same time, an intricate and exciting challenge yet to be deciphered holistically.

The cross-pollination of the genus *Secale* favoured wide genetic diversity and frequent hybridization, originating a long-lasting dispute about rye taxonomy and some uncertainty concerning the ancestry of the domesticated species (e.g. Sencer and Hawkes, 1980; Frederiksen and Petersen, 1998). Still, up-to-date genomic analyses suggest *Secale cereale* subsp. *vavilovii* was its wild ancestor and it is naturally distributed

through Southwest Asia, where the earliest macroremains of rye have been found (e.g. Zohary et al., 2012; Hagenblad et al., 2016; Sun et al., 2022).

From an archaeobotanical point of view, distinguishing wild einkorn and wild rye grains is often difficult (Willcox and Fornite, 1999; Savard et al., 2003; Willcox et al., 2008) and the differentiation of wild and cultivated rye in absence of chaff is problematic (Hillman et al., 2001; Colledge and Conolly, 2010; Nesbitt, 2022). Furthermore, the weedy/cultivated character of early findings has been a matter of debate (e.g. Hillman, 1978; Behre, 1992; Zohary et al., 2012). As such, even when remains of rye were found outside the natural range of its wild populations, it was unclear if the species was in fact being deliberately cultivated.

The systematization carried out by Behre (1992) is a landmark in the subject and is still the main reference regarding the history of rye cultivation in Europe. From Southwest Asia, rye would have migrated into Europe through the Balkans, as suggested by the several Neolithic findings in south-eastern sites (Zohary et al., 2012; Gyulai, 2014; de Vareilles et al., 2022). Still, macroremains of rye are rare in Neolithic contexts in Europe and even during the Bronze Age, as such, they are usually interpreted as weeds (Behre, 1992; Kreuz, 2010; Zohary et al., 2012; Gyulai, 2014). Based on its increasing presence in Iron Age contexts and regional agricultural changes, some authors suggest the cultivation of rye began during this period in Central and Eastern Europe (Behre, 1992; Gyulai, 2014). Although, in the Baltics, it likely occurred only in the 2$^{nd}$–3$^{rd}$ centuries CE (Grikpėdis and Matuzevičiūtė, 2016). Still, the timing and social context of rye´s introduction and expansion in western Europe remain poorly known. In the British Isles, rye was recovered in reduced amounts in Late Iron Age and Roman contexts and its intentional cultivation was not certain, although it could have been a minor crop during the last period (Lodwick, 2017). As far as the Iberian Peninsula is concerned, almost no information is available for the Pre-Roman and Early Roman times.

## 9.2. Rye in Iberia

The early history of rye cultivation in the Iberian Peninsula has not been addressed in a systematic way, though since long, it has been identified in several Late Antique and Medieval sites (Table A7.1 in Attachment 7). The earliest macrobotanical findings of rye from Northeast Iberia were recorded in Late Antique contexts from sites such as Carrer dels Bafart (Lleida) and Vilauba (Girona) (Buxó, 1999; Alonso, 2005; Colominas et al.,

2019), and in the surrounding areas, such as Andorra or Aragon. Still, in most sites rye was scarce (Cubero, 1994; Alonso, 2005; Buxó, 2005; Alonso, 2008; Cubero et al., 2008; Alonso et al., 2010, 2014; Colominas et al., 2019; Peña-Chocarro et al., 2019; Ros, 2020; Treasure, 2020). In other Northern areas as well as in Central and Southern Iberia, rye was seldom found. Around 150 grains were collected in Medieval contexts (10th–12th centuries CE) at Gasteiz (Álava) (Pérez-Díaz et al., 2015) and at the Visigothic (6th–8th centuries CE) occupation of Gózquez (Madrid) even fewer grains were recovered (Vigil-Escalera, 2014). Rye has also been recorded in Islamic contexts (9th–13th centuries CE) at Melque (Toledo), Albalat (Cáceres) (Caballero Zoreda et al., 1999; Ros, 2018) and Castelo de Silves (Faro) (Pais, 1996).

Until a few years ago, the scenario was similar for Northwestern and Western regions. At Monte Mozinho (Porto, Northern Portugal), grains and chaff of rye were recovered from a Late Roman deposit (3rd–4th centuries CE), in agreement with the Catalonian sites (Tereso et al., 2013). The northernmost remains, from Galicia, dated from Medieval times (13th–15th centuries CE) (Teira-Brión, 2013; López-Costas and Teira-Brión, 2014; Teira-Brión et al., 2023). All changed after the archaeobotanical study carried out at Crastoeiro (Vila Real, Northern Portugal). Grains and chaff of rye were identified, and the $^{14}C$ dates obtained pointed out a chronology around the 1st century BCE (Seabra et al., 2018). At the time, these were the earliest securely dated macroremains of rye in the whole Iberia.

Since then, several archaeobotanical approaches have been developed, addressing sites with different characteristics and chronologies, and remains of rye, both grains and chaff, were recovered more frequently (Fig. 9.1). This study will explore recent and unpublished data in order to: 1) determine the chronology of rye introduction and dissemination, focusing on Northwest Iberia; 2) discuss the domesticated/wild status of the recorded remains; 3) document eventual changes in grain size through time, and 4) assess the social and environmental context of rye farming until the Medieval Period.

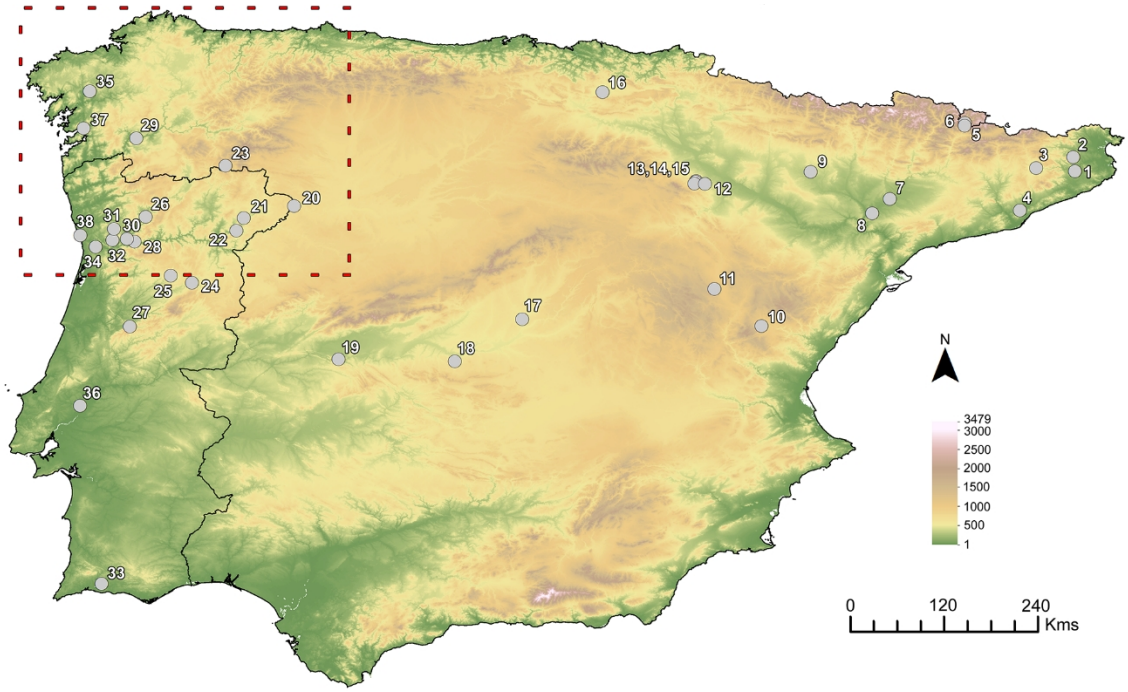


Figure 9.1 - Iberian sites with macroremains of rye until the Late Medieval period (15th century CE) (see more details in Table A7.1 in Attachment 7). Legend: 1-Can Gelats, 2-Vilauba, 3- l´Esquerda, 4-Els Mallols, 5-Camp Vermell, 6-Roc d´Enclar, 7-Carrer dels Bafart, 8-Bovalar, 9-Las Sillas, 10-El Quemao, 11-Cabezo de la Cisterna, 12-Los Pozos de Bureta, 13-La Mora Encantada, 14-Palacio de Bulbuente, 15-Casa Conventual de Ambel, 16-Gasteiz, 17-Gózquez, 18-Melque, 19-Albalat, 20-Castro S. João das Arribas, 21-Cabeço da Grincha, 22-Quinta de Crestelos, 23-Castelo Pequeno de Santigoso, 24-São Gens, 25-Senhora do Barrocal, 26-Crastoeiro, 27-Quinta da Torrinha, 28-Cruito, 29-Castro de Astariz, 30-Freixo/Tongobriga, 31-"Casa Romana" (Roman house) of the Castro de São Domingos, 32-Monte Mozinho, 33-Castelo de Silves, 34-Castelo de Crestuma, 35-A Rocha Forte, 36-Convento de S. Francisco de Santarém, 37-Ponte do Burgo, 38-Castro de Guifões.

## 9.3. Materials and Methods

### 9.3.1. Selection of sites

The study focused on rye macroremains recovered from pre-Medieval and Medieval sites. Although written documentation points to a widespread cultivation of rye in Medieval times (Oliveira Marques, 1978; Gonçalves, 2012), concrete information on its introduction and its early expansion is lacking. An extensive research was carried out to obtain an updated overview of rye cultivation. As a result, 15 sites with remains of rye dating from the Iron Age to the Medieval period were encompassed in the framework of this study, namely: "Casa Romana" (Roman house) of the Castro de São Domingos (CDCR), Castelo Pequeno de Santigoso (CPS), Crastoeiro (CRT), Cruito (CRUI), Freixo/Tongobriga (TONG), Castro de Guifões (GUIF), Cabeço da Grincha (CDG), Castro de Astariz (AST), Monte Mozinho (MOZ), Crestuma (CRES), Castro S. João das

Arribas (CSJAMD), Quinta de Crestelos (QCREST), Senhora do Barrocal (SB), Ponte do Burgo (PDB), A Rocha Forte (ARF). Fruits/seeds assemblages with rye were analysed to identify whether rye was a dominant or secondary cereal (see Table A7.2 in Attachment 7). Quantification of remains only took into consideration whole or fragmented grains with embryo cavity and rachis segments (nodes and internodes).

Remains of rye were recorded in other sites in Northwestern Iberia but they were not taken into consideration in this study for a series of reasons. At Cortegada (Silleda, Northwest Spain), Arnanz and Chamorro (Arnanz and Chamorro, 1990) allegedly identified rye in a preliminary report from an Iron Age hillfort, but there were no pictures of the remains or detailed reference to the archaeological contexts where they were retrieved (Tereso, 2012). The existence of rye at Castro de Vilela (Taboada, Northwest Spain) has been mentioned by the team who excavated the site (Álvarez González et al., 2006), without mentioning any archaeobotanical work or radiocarbon dates. At Alto do Coto da Pena (Caminha, Northwest Portugal), grains of rye identified by A.R. Pinto da Silva (Pinto da Silva, 1988) were mistakenly attributed to the Bronze Age (Bettencourt, 1999). A careful look at the original labels that accompany the remains demonstrated us that the grains were recovered in C1 (layer 1). According to the chief archaeologist (Silva, 2007, and personal communication) layer 1 is a top level dating to the Medieval period. The findings from A Franqueira (A Cañiza, Northwest Spain) (López-Cuevillas, 1953) were considered unreliable in previous investigations (Dopazo Martínez, 1996). Lastly, the several grains found inside Iron Age vessels at Alcáçova de Santarém (Santarém, Central Portugal), identified as rye by Queiroz et al. (2001) have now been determined as barley grains after a careful look at the photos provided in the publication and a new laboratory assessment.

### 9.3.2. Chronology

The chronology attributed to the macroremains of rye in the referred publications was recorded but whenever possible it was confirmed with direct $^{14}C$ dates. Radiocarbon dates were obtained on 18 grains of rye from 10 of the 15 reviewed sites: CDCR (n=1), CRT (n=2), CPS (n=1), TONG (n=3), CRUI (n=1), CDG (n=1), MOZ (n=2), CRES (n=5), CSJAMD (n=1), SB (n=1). General information about these latter sites and the analysed archaeological contexts, as well as other data concerning the composition of the fruits/seeds assemblages, radiocarbon dates, and measured grains, are individually exposed in supporting information (Text A7.1 in Attachment 7).

A Bayesian analysis including Kernel Density Plots (KDE_Plot) was carried out to obtain a more detailed chronological framework about the chronology of rye, particularly concerning its earliest appearance and presence through time in Northwest Iberia. For such, the OxCal software v.4.4.4 (Bronk Ramsey, 2001) was used, applying one sequential model with two phases (here replaced by the OxCal KDE_Plot command with the same function), following Bronk Ramsey (Bronk Ramsey, 2009a; Bronk Ramsey, 2017). Adding the KDE_Plot function allows an overview of the temporal distribution of the dates in each phase (Bronk Ramsey, 2017).

The separation of the $^{14}C$ dates into two groups was due to the time interval observed between the Iron Age/Early Roman and Roman calibrated dates. In order to confirm and detail this alleged gap, the OxCal Interval command was applied in the model (Bronk Ramsey, 2009a). The lack of coherent stratigraphic data and the complexity of dealing with multiple sites led us to include the $^{14}C$ dates within each group according to their relative chronological order. This process was conducted previously to the model creation, using the OxCal Order command (Bronk Ramsey, 2009a). Uniform boundaries were applied due to this uncertainty about the order of the dates (Bronk Ramsey, 2009a). The full OxCal code (CQL2) inserted is available in supporting information (Text A7.2 in Attachment 7).

### 9.3.3. Biometry

Only well-preserved grains of rye were characterized, thus permitting the measurement of length, width, and thickness. The biometric characterization was conducted on a minimum of 50 individuals per site and up to 100 individuals whenever possible. Grains were measured using a digital calliper with an accuracy of ± 0.02 mm (Table 9.1). Biometric variables and ratios were compared across sites using one-way ANOVA. Association between relevant pairs of variables was assessed using correlation analysis. A level of significance of 0.05 was used in both analyses. A Principal Component Analysis (PCA) was conducted to extract the main gradients of the morphological profile of the samples. All analyses were carried out in R (R Core Team, 2022) using the IDE RStudio (RStudio Team, 2022). Data visualization was also performed in R and figures were built with plots produced using packages “ggplot2” (Wickham, 2016), “ggord” (Beck, 2022), “envalysis” (Steinmetz, 2022), and “ggpubr” (Kassambara, 2020) (A7.1 Figs. in Attachment 7).

| Site | Stratigraphic unit (S.U.) | Context | Period | Measured grains (Nº) |
|---|---|---|---|---|
| CRT | 18c | Pit 18 | Iron Age/Early Roman | 3 |
| | 18d | | | 3 |
| | 18.1a | Pit 18.1 | | 5 |
| | 18.2 | Pit 18.2 | | 45 |
| | 18.5 | Pit 18.5 | | 1 |
| CPS | 204 | Utilization layer | Iron Age | 100 |
| MOZ | 6 | Quad. structure | Late Roman | 14 |
| | 78 | Destruction layer | Late Antiquity | 59 |
| | 204 | Oven | | 27 |
| CSJAMD | 225 | Destruction layer | Late Antiquity | 100 |
| SB | 107 | Fire level | Medieval | 100 |

Table 9.1 - Rye grains measured (provenance and amounts).

## 9.4. Results

### 9.4.1. Rye in the archaeobotanical record

Rye was found in 14 sites in Northwestern Iberia, most of them located in the Douro basin (see Figs. 9.2 and 9.3, Table A7.2 in Attachment 7). Senhora do Barrocal (SB), although located further south (Fig. 9.3), will also be referred since it is the latest Medieval site with $^{14}C$ dates and enough grains to allow a biometric characterization.

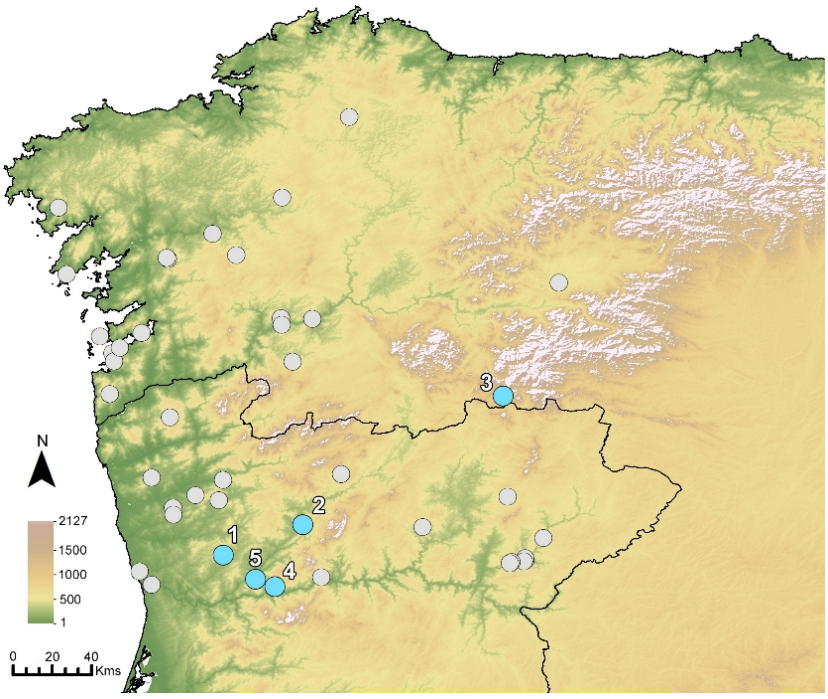


Figure 9.2 - Fruits/seeds assemblages with (blue dots) and without (grey dots) rye from Iron Age and Early Roman contexts (4th century BCE-1st century CE) in Northwest Iberia. Legend of sites with rye: 1-CDCR, 2-CRT, 3-CPS, 4-CRUI, 5-TONG.

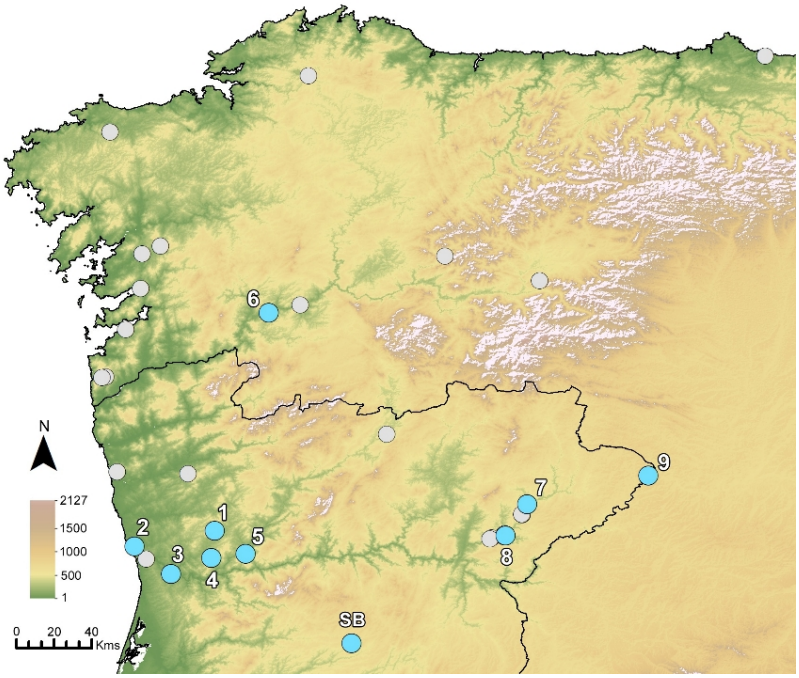


Figure 9.3 - Fruits/seeds assemblages with (blue dots) and without (grey dots) rye from Roman and Late Antique contexts (2nd century CE-7th century CE) in Northwest Iberia. Legend of sites with rye: 1-CDCR, 2-GUIF, 3-CRES, 4-MOZ, 5-TONG, 6-AST, 7-CDG, 8-QCREST, 9-CSJAMD. The only medieval site with a 14C date of rye (SB) was also included in this figure.

In total, over 100,000 remains of rye were collected (Table 9.2, Table A7.2 in Attachment 7). The majority of the remains comprised grains, whereas chaff was usually scarce. The macroremains were always preserved by charring, except four waterlogged internodes from Ponte do Burgo (PDB) (Teira-Brión et al., 2023). The Roman/Late Antique and Medieval contexts display higher amounts of rye, but these are overrepresented by data from CSJAMD (96.4% of all Roman/Late Antique remains) and SB results (almost all Medieval remains). Still, a significant quantity of remains was recovered from Iron Age/Early Roman deposits. Cereals were often dominant in the fruits/seeds assemblages. The frequency of rye in the assemblages and archaeological contexts varied significantly, being either dominant or secondary (Table A7.2 in Attachment 7), and scarcely or widely represented in the deposits (Table 9.2).

| Period | Sites | Rye | | Total Fruits/Seeds | Rye % | Rye ubiquity per S.U. | % |
|---|---|---|---|---|---|---|---|
| | | Grains | Chaff | | | | |
| Iron Age/Early Roman | CPS | 2,555 | 513 | 5,591 | 54.9 | 1/1 | 100 |
| | CRT | 624 | 7 | 91,812 | 0.7 | 5/10 | 50 |
| | CDCR | 6 | 6 | 2,183 | 0.5 | 6/51 | 11.8 |
| | CRUI | 13 | 0 | ≈170 | ≈7.6 | No information | N/A |
| | TONG | 4 | 0 | 1,860 | 0.2 | 3/20 | 15 |
| Roman/Late Antiquity | CSJAMD | 49,186 | 0 | 145,072 | 33.9 | 9/9 | 100 |
| | MOZ | 552 | 1,171 | 17,307 | 10 | 19/31 | 61.3 |
| | CDCR | 3 | 43 | 333 | 13.8 | 9/11 | 81.8 |
| | GUIF | 28 | 14 | 285 | 14.7 | 6/9 | 66.7 |
| | CRES | 11 | 0 | 35 | 31.4 | 5/10 | 50 |
| | TONG | 11 | 0 | 245 | 4.5 | 6/8 | 75 |
| | QCREST | 6 | 0 | 52 | 11.5 | 3/12 | 25 |
| | AST | 1 | 0 | 36 | 2.8 | 1/1 | 100 |
| | CDG | 1 | 0 | 1 | 100 | 1/1 | 100 |
| Medieval | SB | 48,237 | 1,712 | 154,846 | 32.3 | 23/24 | 95.8 |
| | ARF | 5 | 0 | 269 | 1.9 | 3/5 | 60 |
| | PDB | 0 | 4 | 1,014 | 0.4 | 1/2 | 50 |
| | QCREST | 1 | 0 | 40 | 2.5 | 1/9 | 11.1 |

Table 9.2 - Rye record per site and period. For more details, see Table A7.2 in Attachment 7.

### 9.4.2. Radiocarbon dating, Bayesian and Kernel Density analysis

Eighteen radiocarbon dates were obtained on grains of rye from 10 sites (Table 9.3). A combination of Bayesian and Kernel Density analysis was conducted (Fig 9.4), with dates added to an individual sequence with two phases (Iron Age/Early Roman and Roman/Late Antiquity). SB was excluded from this analysis because it was the only site with a Medieval $^{14}C$ date. The multiphase model (sequential) revealed positive results (see Table A7.3 in Attachment 7), showing strong agreement indices (*Amodel=86.7%*, *Aoverall=82.2%*), well above reference values (Bronk Ramsey, 2009b).

| Abbreviation | Context | Period | Lab. Ref. | 14C age (yr BP) | Calibrated age BCE-CE (68.3%) | Calibrated age BCE-CE (95.4%) | References |
|---|---|---|---|---|---|---|---|
| CDCR | Pit 51 | Iron Age | D-AMS 044739 | 2139 ± 20 | 340-115 BCE | 350-55 BCE | Seabra et al., 2023 |
| CRT | Pit 18.1 | Iron Age | D-AMS 016318 | 2132 ± 31 | 340-100 BCE | 350-40 BCE | Seabra et al., 2018 |
| | Pit 18.2 | Late Iron Age/Early Roman | D-AMS 011304 | 2027 ± 25 | 50 BCE-20 CE | 100 BCE-70 CE | |
| CPS | Utilization layer | Iron Age | Beta-596126 | 2120 ± 30 | 180-50 BCE | 350-40 BCE | this chapter |
| TONG | Round hut | Iron Age | D-AMS 047814 | 2158 ± 21 | 350-160 BCE | 355-105 BCE | this chapter |
| | Wall | Late Iron Age/Early Roman | D-AMS 042655 | 2062 ± 22 | 105 BCE-5 CE | 155 BCE-10 CE | this chapter |
| | *Impluvium* house | Late Roman | D-AMS 009829 | 1692 ± 27 | 260-410 CE | 250-420 CE | López-Dóriga, 2020 |
| CRUI | Floor | Late Iron Age/Early Roman | Beta - 349645 | 2050 ± 30 | 100 BCE-10 CE | 160 BCE-30 CE | this chapter |
| CDG | Oven | Roman | D-AMS 044740 | 1819 ± 23 | 210-310 CE | 130-325 CE | this chapter |
| MOZ | Quad. structure | Late Roman | Beta-309441 | 1770 ± 30 | 240-340 CE | 220-380 CE | Tereso et al., 2013 |
| | Oven | Late Antiquity | Beta-349646 | 1640 ± 30 | 400-540 CE | 360-540 CE | Vaz et al., 2017a; 2017b |
| CRES | A1-1003 | Late Antiquity | D-MAS 9672 | 1607 ± 26 | 420-540 CE | 410-540 CE | this chapter |
| | A1-469 | | D-MAS 8868 | 1557 ± 24 | 435-565 CE | 430-570 CE | |
| | A1-1010 | | D-MAS 8871 | 1538 ± 24 | 440-580 CE | 435-600 CE | |
| | E-728 | | D-MAS 8877 | 1501 ± 24 | 555-600 CE | 540-640 CE | |
| | E-734 | | D-MAS 8879 | 1471 ± 28 | 570-640 CE | 560-650 CE | |
| CSJAMD | Vessel 1 | Late Antiquity | D-AMS 042654 | 1435 ± 24 | 605-645 CE | 585-655 CE | Seabra et al., 2022a |
| SB | Wall filling | Medieval | Beta - 46513 | 1170 ± 30 | 770-950 CE | 770-980 CE | Seabra et al., 2022b |

Table 9.3 - Rye $^{14}C$ dates. Calibration OxCal 4.4.4 software (Bronk Ramsey, 2001), IntCal20 calibration curve (Reimer et al., 2020). The calibrated ages were rounded to the nearest five ($^{14}C$ dates with uncertainties below 25) and 10 ($^{14}C$ dates with uncertainties equal to or above 25) years, following Bayliss and Marshall (2022)).

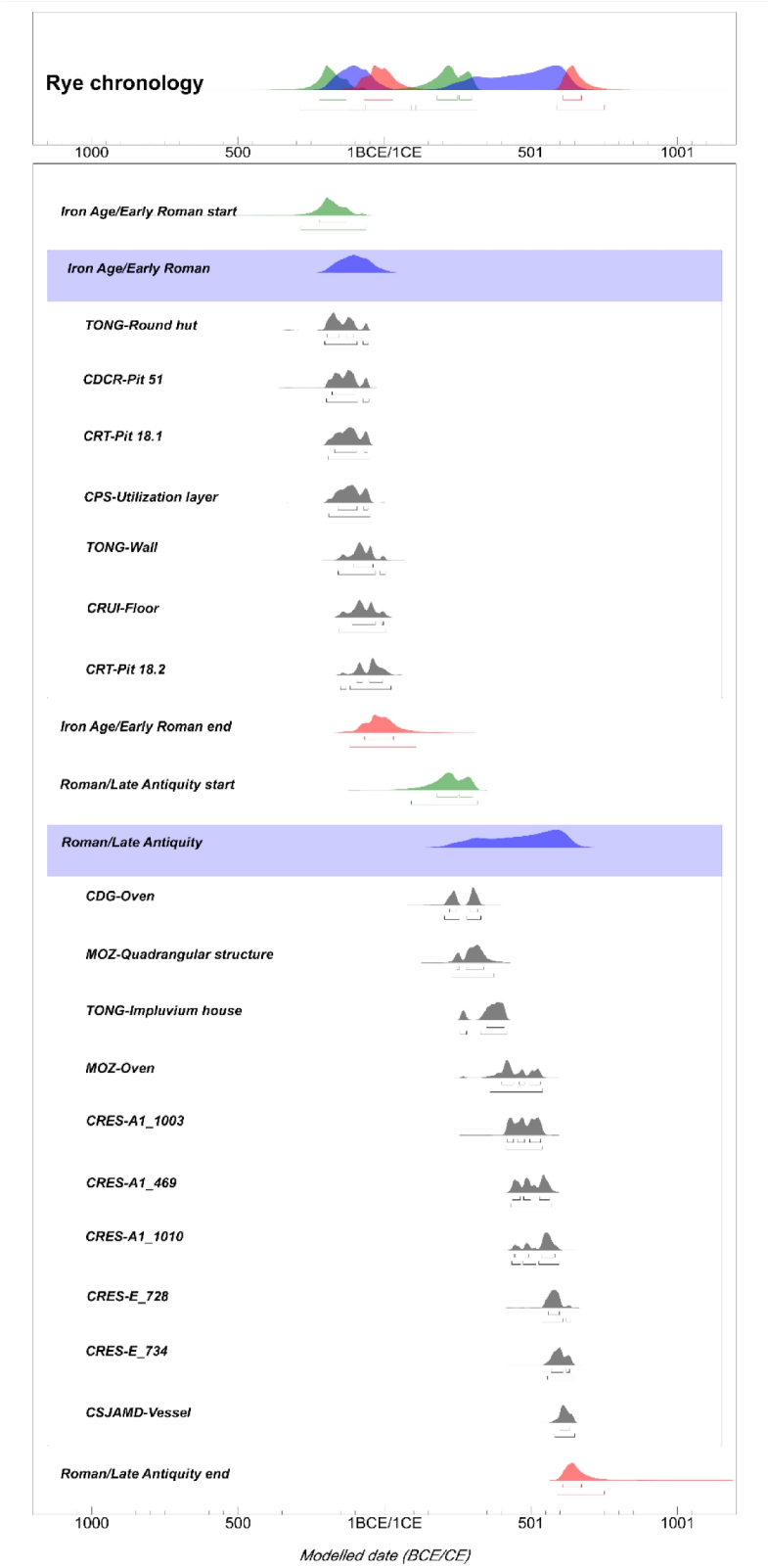


Figure 9.4 - OxCal plots of the Bayesian and KDE analysis. Above: Stacked plot with start (green) and end (red) boundaries as well as the KDE_Plots of each group (blue). Below: Multiple plot including the two sequential phases and the respective boundaries as well as the modelled data (dark grey) of each radiocarbon date. Model carried out through OxCal 4.4.4 software (Bronk Ramsey, 2001), IntCal20 calibration curve (Reimer et al., 2020). All modelled ages were rounded to the nearest five years, following Bayliss and Marshall (2020).

Seven $^{14}$C dates provided calibrated ranges between the Iron Age (4$^{th}$ century BCE) and the Early Roman period (1$^{st}$ century BCE/1$^{st}$ century CE). The oldest dates from TONG (Round hut), CDCR, CRT (Pit 18.1), and CPS showed similar calibrated results with long intervals (355–40 BCE at 95.4% probability). There is only a difference of around half a century concerning the date from TONG (Round hut), which shows a shorter interval (355–105 BCE). The other $^{14}$C dates from TONG (Wall), CRUIT, and CRT (Pit 18.2) fell within a more recent period, between the 2$^{nd}$-1$^{st}$ centuries BCE and the 1$^{st}$ century CE.

The modelling data point to a shorter time frame, suggesting rye appeared in Northwest Iberia between *290–60 BCE* (95.4%) with the *68.3%* range showing a date range between *225–130 BCE* (Table A7.3 in Attachment 7). Following the results, rye should have persisted in the region until *120 BCE–110 CE* (95.4%), while the *68.3%* confidence interval mentions a date range between *70 BCE–35 CE*. The probability distribution of the Iron Age/Early Roman KDE Plot reveals a higher concentration of dates starting around the late 3$^{rd}$ century BCE and reaching its peak approximately at the end of the 2$^{nd}$ century BCE, followed by a small drop and a progressive fall from around the mid-1$^{st}$ century BCE to the early 1$^{st}$ century CE (Fig. 9.4).

Ten $^{14}$C dates provided Roman and Late Antique chronologies. The calibrated results indicate a Roman chronology for three dates from CDG, MOZ (Quad. structure), and TONG (*Impluvium* house), which span from the 2$^{nd}$ century CE to the early 5$^{th}$ century (130–420 CE). Despite the broad time span, the majority of the data point to chronologies between the 3$^{rd}$ century and the early 5$^{th}$ century CE. Only the $^{14}$C date from CDG shows a 95.4% range (130–325 CE) outside this period. The other indicators, including from CDG suggest a chronology posterior to the 2$^{nd}$ century CE. The remaining seven Late Antique dates fall between the second half of the 4$^{th}$ century and the 7$^{th}$ century CE (360–655 CE) with almost all probabilities pointing to chronologies between the 5$^{th}$ century and the 7$^{th}$ century CE.

The Bayesian model displays a slight overlap between the two phases, namely between the *95.4%* confidence intervals for the end of the Iron Age/Early Roman (*120 BCE–110 CE*) and start of the Roman/Late Antiquity (*90–320 CE*). Nonetheless, the rest of the modelled data point to a separate moment. The *68.3%* range suggests that rye appears again between *180–300 CE*. The Interval function in OxCal displays gaps between the two phases from *55* to *380* years (*95.4%*), and from *160* to *320* years (68.3%) (Table A7.3 in Attachment 7). These results strongly support a gap between the two phases, at least of around two centuries. The distribution of the Roman/Late Antique KDE_Plot also strengthens this idea, showing the first concentration increasing only in the late 2$^{nd}$

century with a peak around the early 4th century CE. It shows a second and higher peak at ca. 600 CE. However, this last result is highly determined by the several dates obtained in a single site, namely CRES, where rye seems to have been present in consecutive settlement phases.

### 9.4.3. Biometric approach

Measurements varied considerably among the 457 analysed grains: length (3.66–6.99 mm); width (1.43–3.19 mm); and thickness (1.35–3.15 mm). There are differences between distinct chronologies, but there is no linear chronological pattern (Table 9.4).

| Sites | Length (mm) | | | | Width (mm) | | | | Thickness (mm) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Min. | Max. | Mean | SD | Min. | Max. | Mean | SD | Min. | Max. | Mean | SD |
| CRT | 5.07 | 6.54 | 5.75 | 0.39 | 1.62 | 2.81 | 2.14 | 0.24 | 1.54 | 2.78 | 2.08 | 0.24 |
| CPS | 4.34 | 6.32 | 5.26 | 0.41 | 1.51 | 2.2 | 1.86 | 0.16 | 1.42 | 2.17 | 1.79 | 0.15 |
| MOZ | 3.66 | 6.88 | 5.21 | 0.63 | 1.43 | 2.86 | 2.2 | 0.32 | 1.35 | 2.85 | 2.08 | 0.3 |
| CSJAMD | 4.72 | 6.99 | 5.63 | 0.46 | 1.63 | 2.57 | 2.08 | 0.17 | 1.63 | 2.52 | 2.03 | 0.16 |
| SB | 4.53 | 6.59 | 5.64 | 0.48 | 2.07 | 3.19 | 2.49 | 0.24 | 1.93 | 3.15 | 2.41 | 0.26 |

Table 9.4 - General results of the biometric study. Minimum (Min.), maximum (Max.), mean, and standard deviation (SD) values of each measurement point (length, width, thickness).

In terms of length, grains from MOZ and CPS are shorter (means of 5.21 mm and 5.26 mm, respectively) (Table 9.4). Those of MOZ show a large variation, with values ranging from 3.66 mm to 6.88 mm (SD of 0.63). Still, the majority show values between 4 mm and 6 mm. Results in CPS are more homogeneous (SD of 0.41), with grain length frequently between 5 mm and 6 mm. CSJAMD, SB, and CRT revealed identical results. Although grains in CRT grains are, on average, slightly longer (5.75 mm), measurements were only conducted on 57 units.

In every site, grains display higher width than thickness, but differences are small. CPS grains are narrower and thinner (means of 1.86 mm and 1.79 mm, respectively) while the remaining assemblages show average values above 2 mm regarding both width and thickness. Among these, CSJAMD, MOZ, and CRT showed similar measurements. Grains from CSJAMD are narrower (mean of 2.08 mm) than CRT (2.14 mm) and MOZ (2.2 mm) grains, but differences are negligible, and limitations may be pointed again for CRT (limited number of grains) and MOZ (high standard deviation). Measurements of thickness provided similar results. CSJAMD grains are slightly thinner (2.03 mm), but

those of MOZ and CRT grains are not very different (2.08 mm). At SB, the most recent site, grains are plumper. This site provided the highest mean values both in terms of width (2.49 mm) and thickness (2.41 mm), and in each case almost all grains had more than 2 mm, some even surpassed the 3 mm.

Most ratios did not reveal clear insights (Fig. 9.5, Figs. A7.1 in Attachment 7). Two contrasting cases were observed, namely CPS and SB. CPS shows high L/W and L/T ratios, as well as low W/L*100, whereas SB presents the opposite. These results suggest that CPS grains had a more elongated and slender form than SB grains which were more compact and fatter. MOZ provided results closer to those from SB, showing similar L/W and L/T ratios. CRT and CSJAMD grains revealed almost indistinguishable ratios, and a more proximity to CPS results.

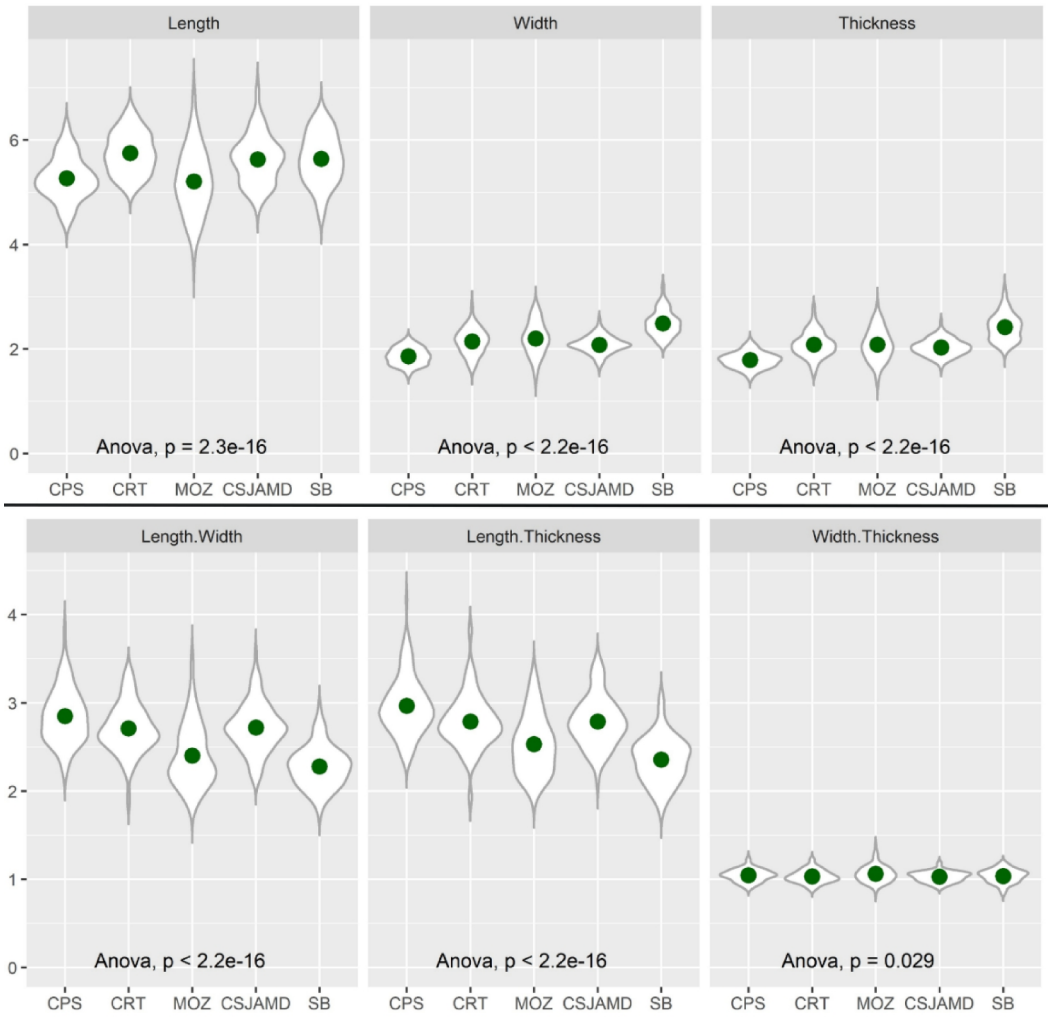


Figure 9.5 - Graphical representation of the measurements and some of the ratios obtained (see full details in A7.1 Figs. in Attachment 7). Sites are arranged chronologically from left (earlier) to right (later).

## 9.5. Discussion

### 9.5.1. Rye in the Iron Age and Early Roman periods: crop or weed?

Macroremains of rye were found in five Iron Age/Early Roman sites in the Northwest in multiple archaeological contexts and integrated in archaeobotanical assemblages with different characteristics (Tables 9.2 and 9.3, Table A7.2 in Attachment 7). The dated Iron Age/Early Roman grains correspond to the oldest secure evidence of rye in the Iberian Peninsula. The Bayesian modelling suggests its introduction occurred between the 3rd century and the first half of the 1st century BCE (95.4%), most probably between the 3rd and 2nd centuries BCE (68.3%). The strong distribution of the Iron Age/Early Roman KDE_Plot within this last period of time also supports this chronology.

Rye is usually scarce in the study area and is only dominant in CPS. This site shows the largest concentration of chaff and grains of rye, whereas hulled wheats are secondary in number. However, the rye grains are mostly compressed inwards, a characteristic that could be associated with the charring of the still green kernels. This suggests that rye, although the most numerous species in the samples, may have been a secondary cereal that was gathered as part of an already ripe hulled wheat harvest.

A different scenario was observed at CRT. Abundant rye grains were found together with few chaff remains, including grains within the spikelets. Those were collected from inside storage pits where spelt was largely dominant (Seabra et al., 2018). In the remaining sites, namely CDCR, CRUI, and TONG, only a few remains of rye were collected and other cereals were more common, such as millets, hulled or naked wheats (Pinto da Silva, 1990; López-Dóriga, 2020; Seabra et al., 2023).

Considerations about the domesticated/weedy character of rye during the Iron Age and Early Roman times are problematic. Despite the robust chronological framework, the characterization of the archaeobotanical assemblages and the biometric data did not provide straightforward conclusions about this issue. Nonetheless, some data suggest rye might have been considered a weed at this time.

If abundance and predominance are the main criteria to identify problematic taxa as crops, the remains of CPS would promptly be considered as cultivated. However, the interpretation of the archaeological context where the remains were found must not be disregarded. In this case, plant remains were found in a small concentration, in a context whose interpretation was rather difficult. It was probably the result of a short-term event and the representativeness of this assemblage in the occupation of the site was

impossible to assess. In addition, despite grains of rye are easily freed in the early stages of processing, they were found in association with large amounts of chaff and some were still within the spikelets. While such easy and early dehusking often leads to an underrepresentation of chaff from free-threshing cereals, like rye, in the archaeobotanical record (e.g. Boardam and Jones, 1990; van der Veen, 2007), the presence of unprocessed rye could support its weedy character, being rye eventually tolerated and processed with other cereals, such as hulled wheats. The record of naked wheat grains at CPS was restricted but the absence of any chaff also seems to support this interpretation. Besides, biometric data revealed that grains from CPS are, on average, thinner and less thick than most. Considering all this, we cannot reject the possibility that grains were immature when charred, as aforementioned. In the future, experimental work must be conducted in order to test this hypothesis. Nonetheless, the amount of remains recovered in CPS is noteworthy.

On the other hand, at CRT spelt was largely dominant. Rye, comprising around 1% of the assemblage, may have been one of its weeds. Such kind of interpretations were proposed for analogous assemblages found in Iron Age sites from Central Europe (e.g. Schmidl et al., 2007; Kohler-Schneider et al., 2015). However, grains from CRT showed larger dimensions than those from CPS, being closer to those from the Late Antiquity (MOZ, and CSJAMD) regarding width and thickness. The different $^{14}C$ dates (Pits 18.1 and 18.2) showed that rye was present in two or more moments at CRT, perhaps in a recurrent way. It is possible that the frequent seeding of rye, deliberate or not, together with other cereals, led to an increase in grain size.

CRT is not a single case in the region. Rye has been consistently found in association with hulled wheats, and mainly with spelt (Pinto da Silva, 1990; López-Dóriga, 2020; Seabra et al., 2023). It is true that spelt was one of the main crops in the Iron Age. It was found in many sites together with other domesticated cereals, such as millets, barley and free-threshing wheat. Therefore, this association alone cannot be used to support the weedy character of Iron Age rye. However, when spelt almost disappears from the archaeobotanical record in the first centuries CE, rye also ceases to be found, only to appear again as a crop in a later moment of the Roman Empire (see below). This suggests rye may have been a weed in the fields of spelt in the Iron Age. Despite the number of sites from the 1$^{st}$–2$^{nd}$ centuries CE that have been studied is still low (Tereso, 2012; Peña-Chocarro et al., 2019; Teira-Brión, 2019), this hypothesis seems plausible.

Either way, the identification of rye in several archaeological sites and different occupation phases suggest rye was often part (consciously or not) of the agricultural

fields from the Iron Age to the Early Roman Empire, in some areas of Northwest Iberia. The similar dimensions of grains from CRT and Late Antique deposits indicate they did not develop much between the two periods. The large grains of CRT may eventually be the result of the undeliberate selection of grain and its frequent seeding, but more extensive work, extended to other regions, is needed to shed some light on this matter.

Interestingly, Iron Age/Early Roman sites where macroremains of rye have been found so far are located in a small area, mostly in the Sousa and Tâmega rivers basins (subsidiaries of the Douro river) as their vicinities. In this early chronology, rye is absent from the westernmost sites, near the Atlantic, where it is found only in Late Antique sites (Figs. 9.2 and 9.3). This is hardly the result of any investigation bias, considering the amount of sites studied in the region. Only future research will confirm or dismiss this pattern. Rye is absent elsewhere in Iberia during this period, although it is recorded in the French Pyrennes, namely at La Chance (Villefranche-de-Conflent), in a Neolithic context (Marinval, 2009) and at Llo-Lo Lladre (Llo) in Late Bronze Age deposits (Ruas et al., 2009). In both cases, few grains were recovered and likely correspond to weedy remains.

The introduction of rye in such early times in this area is difficult to explain. The late 2$^{nd}$ century BCE is a period of changes in Northwest Iberia, characterized by population concentrations in large fortified settlements, the *oppida*. It is also the time of the first Roman incursions. These started in 138-137 BCE and throughout the 1$^{st}$ century BCE the region went under Roman influence (e.g. Alarcão, 1992; Carvalho, 2008; Martins et al., 2012), even though indigenous communities likely maintained their way of living. Small and temporary military sites were found (e.g. Orejas et al., 2015; Costa-García et al., 2019) but the three administrative capitals in Northwest Iberia (*Bracara Augusta*, *Asturica Augusta* and *Lucus Augusti*) were founded by the end of the 1$^{st}$ century BCE, after which the Roman control of the region became more effective. The introduction of rye is close to the early stages of this change but it is unclear how it relates to it. If it was a crop, it could have been introduced by Roman influence, but rye was not a staple anywhere in the Empire at the time. If it was a weed in the fields of spelt, as suspected, is strange why it was not found in association with spelt in earlier periods. Another possible scenario is the arrival of new spelt varieties and their corresponding weeds including rye (e.g. via trade contacts or as a result of population displacement), but it is unclear why rye has been only found in a small area and not in wider regions of the Iberian Peninsula despite the efforts in sampling for archaeobotanical analysis in recent decades (Peña-Chocarro and Pérez-Jordá, 2018). A better understanding of this

phenomenon demands a more thorough review of old collections and, mostly, new archaeobotanical work. Since rye is usually rare in the assemblages, ambitious sampling strategies are needed to increase the chances of finding remains.

### 9.5.2. The (re)introduction of rye

After a gap of around two centuries, rye is again found in Roman times (Tables 9.2 and 9.3, Table A7.2 in Attachment 7). Due to the large date ranges of several of the $^{14}$C dates as well as some of the modelling data (see above), rye most likely reappeared in Northwest Iberia between the late 2$^{nd}$ century CE and the turn to the 4$^{th}$ century CE (68.3%). This last chronology is close to that from other sites in Northeast Iberia (Buxó, 1999; Alonso, 2005), suggesting rye was cultivated in more areas of the peninsula during a later period of the Roman Empire. Late Antique deposits in Northwest Iberia, as well as several $^{14}$C dates, suggest rye continued to expand in the 5$^{th}$–7$^{th}$ centuries CE (Tables 9.2 and 9.3, Tables A7.2 and A7.3 in Attachment 7).

Overall, rye was found in nine Northwestern sites with Roman and Late Antique occupations. Still, only two sites provided significant amounts of remains. At MOZ rye was recovered in features from two consecutive phases, the 3$^{rd}$–4$^{th}$ centuries CE and the 4$^{th}$–6$^{th}$ centuries CE, including a storage structure, and an oven and a debris area. In the later period it was even dominant (Tereso et al., 2013; Vaz et al., 2017a, 2017b). At CSJAMD, rye was the dominant crop in a storage context destroyed by fire in the 6$^{th}$–7$^{th}$ centuries CE, where almost 50,000 grains were found in above-ground stone storage facilities and their surroundings. Several of them were inside ceramic vessels (Seabra et al., 2022a). It is clear rye was then a crop. Nonetheless, biometry data do not show substantial differences between grains from MOZ and CSJAMD, or between these and those from CRT dating to the Iron Age/Early Roman period. In other Northwestern Roman and Late Antique contexts rye is rare (CDG, CDCR, TONG, CRES, GUIF, QCREST, AST), and, overall, these provided small fruits/seeds assemblages (Tereso et al., 2018; López-Dóriga, 2020; Seabra et al., 2020; Tereso et al., 2020; Seabra et al., 2023). It was also recorded in several sites from Northeast Iberia, and also in the Visigothic village of Gózquez in Central Spain, dating to the 6$^{th}$–8$^{th}$ centuries CE (Alonso, 2005; Buxó, 2005; Alonso et al., 2010; Vigil-Escalera et a., 2014; Colominas et al., 2019; Treasure, 2020).

It has been suggested that the spread of rye in some European regions during Late Antiquity was due to environmental reasons (e.g. McCormick, 2013). After ca. three centuries of relatively stable and favorable (i.e., warm and humid) conditions, a period of climatic instability, generally colder and drier, began in the 3rd century CE. Despite climatic amelioration in the 4th century, as wetter and warmer conditions prevailed, in the 5th and 6th centuries there was growing climatic instability, with warming and cooling periods being recorded (McCormick et al., 2012). The suitability of rye for these conditions is undisputable, but environmental factors alone are insufficient to explain the expansion of rye cultivation (Squatriti, 2019).

Germanic influence throughout the imperial areas increased significantly from the 3rd century onwards, culminating in 411 with a treaty in which Rome delivered control of Northwest Iberia to the Suebi, hence starting the Suebian Kingdom with its capital at Braga (Fontes, 2015). Considering that rye was a relevant crop in Central Europe since earlier periods, it is possible that these increasing contacts and migration led to the dissemination of this crop in the westernmost areas of the Roman Empire. Other structural issues might have helped. Throughout Late Antiquity, as subsistence farming expanded in the context of some ruralisation, rye was a relevant choice as it increased the resilience of agrosystems (Squatriti, 2019). Furthermore, after the great agricultural development and subsequent soil degradation of the Iron Age and Roman period in Northwest Iberia, rye would allow the use of less favourable soils (Tereso, 2012).

Still, as Squatriti (2019) refers, rye was not the only crop that expanded in the Late Antiquity. The hypothetic reintroduction of rye could be comprehended as part of the larger environmental, economic, cultural and population dynamics that characterize the end of the Western Roman Empire and the beginning of the Medieval period. In Northwest Iberia, as in other regions, sweet chestnut (*Castanea sativa*) became more frequent in archaeobotanical assemblages dating to this period (e.g. Vaz et al., 2017a, 2017b; Teira-Brión, 2019; López-Dóriga, 2020; Seabra et al., 2020), suggesting this tree, although autochthonous in the region, was cultivated at the time (Aguiar and Tereso, 2021). Rye could have replaced the role fulfilled by hulled wheats, which are more resistant to pests and adverse weather conditions than naked wheats, and more adaptable to a winter growing season. The higher green fodder productivity of rye, in addition to their better growth on poor soils, could have meant an advantage over emmer and spelt in the cropping cycles.

### 9.5.3. The spread of rye in Medieval times

The key role of rye during Medieval times is supported by archaeobotanical evidence and written sources (e.g. Oliveira Marques, 1978; Behre, 1992; Ruas, 1992; Gonçalves, 2012; Bakels, 2014; Jacomet, 2014; Mingote Calderón, 2014), showing rye disseminated across Iberian regions with different cultural backgrounds (Tables A7.1 and A7.2 in Attachment 7). Nearly all medieval rye macroremains from this study came from SB, in Central Portugal. Here, a large and diverse fruits/seeds assemblage was recovered, rye and oat being the main crops (Seabra et al., 2022b). The biometric results revealed that SB rye grains were broader and thicker than the other older measured grains (Fig. 9.6). It is possible thus that rye grain increased in size during Medieval times, but additional grain-rich assemblages are needed to confirm this hypothesis.

Figure 9.6 - Rye grains (dorsal, lateral, and ventral views) from all analysed periods. Legend: a) CRT (Iron Age/Early Roman), b) MOZ (Late Antiquity), c) CSJAMD (Late Antiquity); d) SB (Medieval). Scale 1mm.

At SB, other cereals were abundant, such as hulled barley or broomcorn millet, while foxtail millet and naked wheat were less represented. In other sites (Table 9.2, Table A7.2 in Attachment 7), fewer fruits/seeds were collected, and rye remains were always rare (Teira-Brión, 2013; López-Costas and Teira-Brión, 2014; Tereso et al., 2018; Teira-Brión et al., 2023). Still, rye was found in other sites in Western Iberia (Table A7.1 in Attachment 7), south from the Douro river, such as São Gens (Oliveira et al., 2017), Convento de São Francisco de Santarém (Queiroz, 2001) and Quinta da Torrinha (Queiroz and Leeuwaarden, 2004).

Rye was commonly mentioned in Medieval written documentation from Northwest Iberia, suggesting its cultivation was widespread, particularly, but not exclusively in areas with harsh climates and poor agricultural soils (e.g. Oliveira Marques, 1978; Gonçalves, 2012). Such sources became frequent from the 13$^{th}$ centuries onwards but, as noticed before, archaeobotanical data from our study area suggest such dissemination occurred much earlier.

## 9.6. Final Remarks

This research addressed the introduction and dissemination of rye through archaeobotanical, biometric, and radiocarbon analyses. As a result, it is suggested that rye first appeared in Northwest Iberia, during the Iron Age, probably as a weed. The $^{14}$C and modelling results suggest its introduction occurred between the 3$^{rd}$ century and the first half of the 1$^{st}$ century, probably between the 3$^{rd}$ century and the 2$^{nd}$ century BCE. Rye must have prevailed in the agricultural fields of the region until the turn of the Era, likely associated with spelt. Although rye is dominant in one site and biometric data do not suggest grains increased in size from the Iron Age to the Late Antiquity, it is more frequently a secondary, sometimes rare cereal in the earlier phase. The development of morphometric analyses may clarify this matter in the future.

So far, the chronology of rye´s arrival is coincident with changes in the local settlement and the first Roman incursions, but the short geographic area of the earlier findings, the absence of rye in the assemblages with spelt outside this small area, and doubts regarding how the introduction of rye is related to those dynamics make the interpretation rather difficult. Besides, we are missing macrobotanical data from the rest of the Iberian Peninsula. The nearest clear Pre-Roman macroremains of rye were found in the French Pyrenees and in small amounts. Thus, more archaeobotanical studies are needed, both

in Northwest Iberia and in other Iberian regions, to better understand the context of rye introduction and expansion. The same could be mentioned for other European areas. Isolated findings and small concentrations of rye likely need a reassessment and a wider integration to understand its introduction, dissemination, and transformation from weed to crop within the continent.

After a gap of about two centuries, rye was introduced as a crop at a later time during the Roman Empire in Northwest Iberia and in other Iberian regions. Throughout Late Antiquity, rye was increasingly recurrent and abundant in the archaeobotanical record of Iberia, as well as of other European areas (Behre, 1992; McCormick et al., 2013; Bakels, 2014; Squatriti, 2019). Its dissemination may be due to a combination of cultural and environmental factors. Rye´s adaptability to harsh environments and poor soils was surely a relevant factor, but the population and political dynamics of the epoch were likely as crucial. Increasing migration from Central Europe, where rye was cultivated before, and the dissemination of small and self-sufficient rural settlements probably helped giving rye a further weight in the agricultural strategies of less favourable areas. The full spread of rye was already clear in the Medieval period. It was identified in archaeobotanical assemblages from nearly all Iberian regions, either in Islamic or Christian archaeological contexts.

Authors contributions

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João Pedro Tereso: Conceptualization, Methodology, Investigation, Writing – original draft, Writing – review & editing, Funding Acquisition, Project Administration, Supervision

María Martín-Seijo: Writing – original draft, Writing – review & editing, Supervision

Rubim Almeida: Writing – original draft, Writing – review & editing, Supervision

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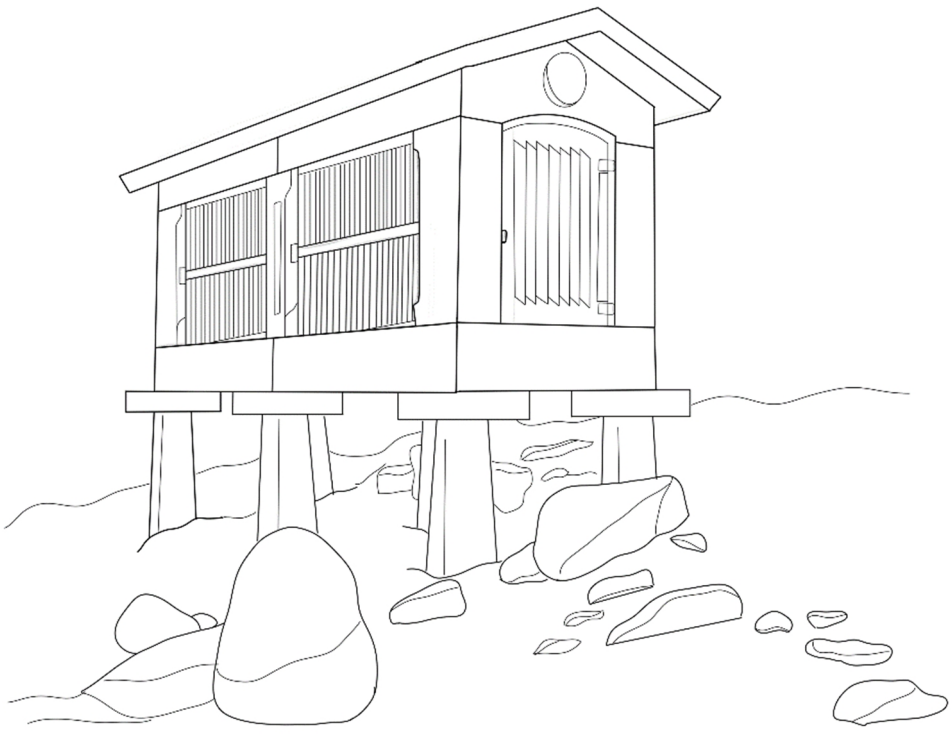
# Section C (Discussion and Main Conclusions)



# Chapter 10 - Synthesizing the results

## 10.1. General overview

The analysis of more than 2,000 samples from 491 stratigraphic units, and almost 9,500 L of sediment resulted in more than 300,000 fruits/seeds (units) identified in six archaeological sites (Table 10.1), covering a broad time span from the Iron Age to the Early Medieval Ages and two areas, namely the Mondego valley and above all Northern Portugal. The vast majority of those remains came from Castro S. João das Arribas (Chapter 7) and Senhora do Barrocal (Chapter 8), corresponding respectively to 44% and 47% of the fruits/seeds collected. In the remaining sites, namely Castelinho (Chapter 5), and mainly "Casa Romana" (Roman house) of the Castro de São Domingos (Chapter 3), Freixo/Tongobriga (Chapter 4) and Rei Ramiro (Chapter 6), the assemblages of fruits/seeds were significantly smaller.

Independently of the sampling strategy and the dimension of the assemblages, cereals were always predominant and the most frequent remains. In fact, except for Rei Ramiro, where such dominance was less obvious (40.6%), cereals were always more than 70% of the units recovered, and in several sites above 90% of all fruits/seeds. The majority of these correspond to grains, despite significant concentrations of chaff were sometimes found (e.g. Senhora do Barrocal). Other types of remains were often scarce and overall comprised some pulses, fruits, the latter diverse in some cases (e.g. Rei Ramiro), a single oil/fibre plant (flax), and wild plants.

Nonetheless, the study cases showed assemblages of fruits/seeds with different characteristics and were related to multiple chronological/cultural contexts. This diversity was sometimes registered within the same archaeological site - e.g. "Casa Romana" (Roman house) of the Castro de São Domingos, Freixo/Tongobriga - and within each analysed period (Rye-Chapter 9). Thus, in the following points, results obtained will be exposed according to the chronological and archaeological contexts of origin.

| Sites/Chapter | Stratigraphic units analysed | Volume analysed (L) | Total fruits/seeds (units) | Dominant group | Cereals % |
|---|---|---|---|---|---|
| "Casa Romana" (Roman house) of the Castro de São Domingos (3) | 74 | 467.6 | 2,679 | Cereals (grains and chaff) | 71.5% |
| Freixo/Tongobriga (4) | 51 | 995 | 2,713 | Cereals (grains and chaff) | 78.7% |
| Castelinho (5) | 226 | 7024.8 | 21,070 | Cereals (grains and chaff) | 90.7% |
| Rei Ramiro (6) | 100 | 416.9 | 2,087 | Cereals (grains and chaff) | 40.6% |
| Castro S. João Arribas (7) | 10 | 12 | 145,072 | Cereals | 98.2% |
| Senhora do Barrocal (8) | 30 | ≈ 460 | 154,846 | Cereals (grains and chaff) | 93.2% |

Table 10.1 - General fruits/seeds results of the study cases (individual sites). For more details, see the respective chapter of each study in section B.

## 10.2. Iron Age and Romanization

Iron Age assemblages (5$^{th}$ century BCE to the late 1$^{st}$ century BCE) from four archaeological sites located in Northern Portugal were studied: “Casa Romana” (Roman house) of the Castro de São Domingos, Freixo/Tongobriga, Castelinho, and Rei Ramiro. This work allowed the filling of some geographical gaps, namely in coastal (Rei Ramiro) and eastern (Castelinho) areas, as well as increase the data available for this period and elsewhere. Besides, other studies developed during the course of this thesis were also taken into consideration (Fig. 10.1).

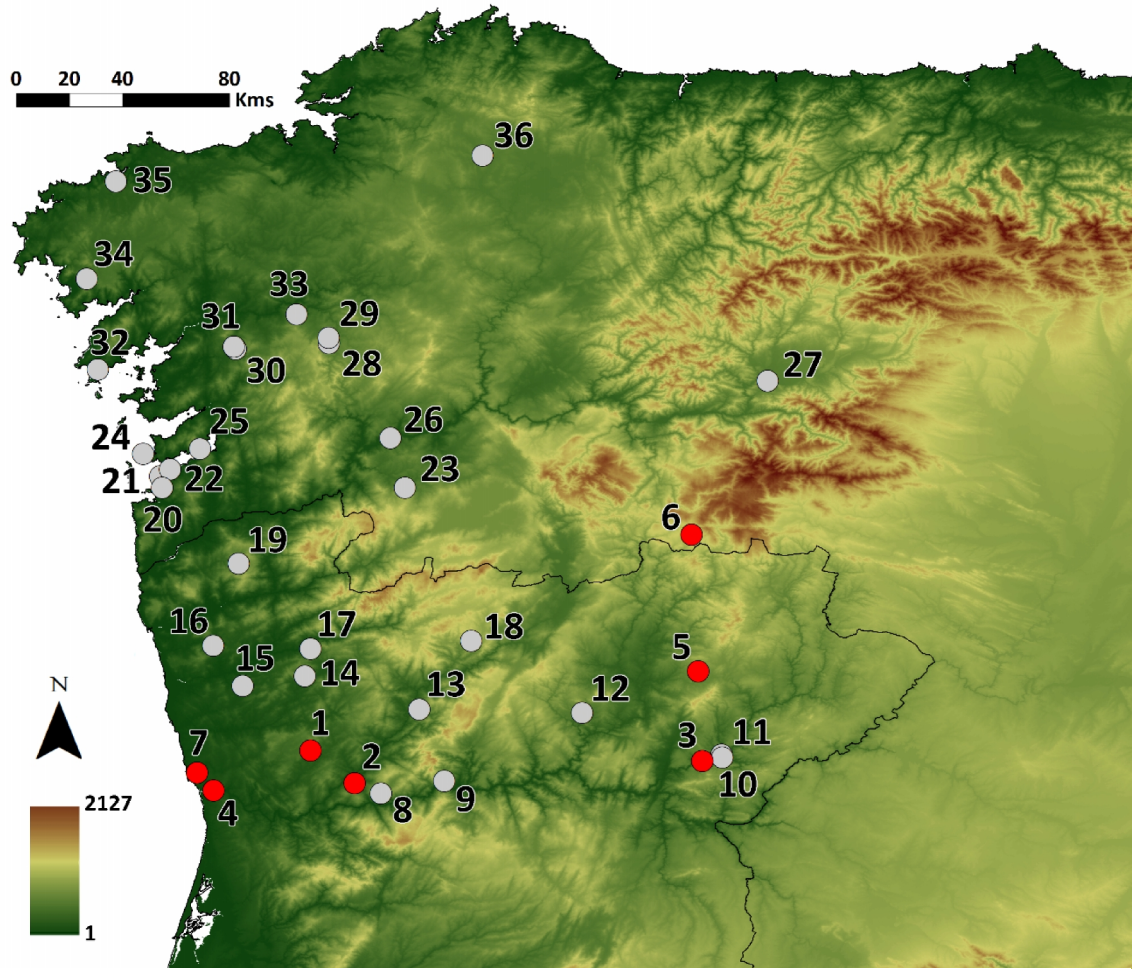



Figure 10.1 - Iron Age contexts (5th century BCE to the late 1st century BCE) with fruits/seeds remains (Northwest Iberia). The grey circles correspond to the fruits/seeds studies developed until this thesis started (2019), whereas the red circles correspond to the studies carried out during the course of this thesis, whether on the scope of this work or other projects. Legend: 1-"Casa Romana" (Roman house) of the Castro de São Domingos (Chapter 3); 2-Freixo/Tongobriga (Chapter 4); 3-Castelinho (Chapter 5); 4-Rei Ramiro (Chapter 6); 5-Terronha de Pinhovelo (this chapter); 6-Castelo Pequeno de Santigoso (Chapter 9); 7-Castro de Guifões (Seabra et al., 2020); 8-Cruito (Pinto da Silva, 1990); 9-Cidadelhe (Vaz et al., 2016b); 10-Quinta de Crestelos (Tereso et al., 2018a); 11-Chã (Vaz et al, 2016c); 12-Castro de Palheiros (Figueiral et al., 2017; Leite et al., 2018); 13-Crastoeiro (Seabra et al., 2018); 13-Briteiros (Tereso and Cruz, 2014); 15- Frijão (Tereso and Silva, 2014); 16-Cossourado (Silva, 2008); 17-S. João de Rei (Dopazo Martínez, 1996); 18-Lesenho (Tereso, 2012); 19-Cristelo (Silva, 2008); 20-Castro de Nabás (Martín-Seijo et al., 2019; Teira-Brión, 2019); 21-Castro da Illa de Toralla (Teira-Brión, 2019); 22-Castro de Punta do Muíño do Vento (Teira-Brión, 2019); 23-Castromao (García Rollán, 1971); 24-Monte do Facho (Teira-Brión, 2019); 25-Castro de Montealegre (Teira-Brión, 2019); 26-As Laias (Tereso, 2012; Tereso et al., 2013b); 27-El Castrelín (López-Merino et al., 2010); 28-Montaz (Téllez et al., 1990); 29-Cortegada (Arnanz and Chamorro, 1990); 30-Alto do Castro (Dopazo Martínez et al., 1996); 31-Castrolandín (Teira-Brión, 2019); 32-Castro da Cidá (Teira-Brión, 2019); 33-Castrovite (Teira-Brión, 2019); 34-Castro de Recarea (Teira-Brión, 2019); 35-Borneiro (Bettencourt, 1999); 36-Castro de Vixil (Ramil Rego, 1993). Fruits/seeds assemblages with unclear archaeobotanical and/or chronological data were excluded from this figure.

Cereals were always in higher amounts in the four Iron Age contexts studied. Grains of naked wheat were predominant, but almost all came from Castelinho (Phases I-IV) where far more sediment was analysed, and thus, results cannot be overemphasized. In

fact, it was observed that remains per litre were often scarce at Castelinho (see Chapter 5), and such results were only possible due to the bold sampling strategy implemented by the field team. Naked wheat was also relevant at Rei Ramiro (Phases I-II), being dominant alongside broomcorn millet. Still, only slightly more than 150 remains among grains and chaff were recovered in the Iron Age deposits (Chapter 6). It was often found in the site of "Casa Romana" (Roman house) of the Castro de São Domingos, however, the chronology of fruits/seeds remains was problematic at this site. Most of them came from secondary and/or tertiary deposits (*apud* Schiffer, 1996, La Motta and Schiffer, 1999), often incorporating material from different chronologies. Beyond that, the whole site suffered recent disturbances (agriculture and construction activities), which do not allow precise chronological considerations (Chapter 3). There was hardly any naked wheat remain in the fruits/seeds assemblage of Freixo/Tongobriga (Chapter 4).

Broomcorn millet was a common cereal in the Iron Age levels of the above-mentioned sites. It was frequently collected and a main crop in the smaller fruits/seeds assemblages ("Casa Romana" (Roman house) of the Castro de São Domingos, Freixo/Tongobriga, Rei Ramiro), while at Castelinho broomcorn millet was secondary and also less recurrent. A few grains were recovered in the Iron Age deposits of Castro de Guifões (Matosinhos, Northern Portugal) (Seabra et al., 2020). Another millet often identified corresponds to foxtail millet (*Setaria italica*). Although it was less represented than broomcorn millet, foxtail millet was usually found in Iron Age contexts, with the exception of Castelinho where no remain was observed.

The presence of hulled wheats was significant at Freixo/Tongobriga. Here, both grains and chaff (glume and spikelet bases) of spelt (*Triticum spelta*) were recovered in considerable amounts. Besides, glume and spikelets bases of *Triticum* sp. were also common, although their poor preservation did not allow a more detailed diagnosis. *Triticum* spikelets, and mainly glume bases were recurrent at "Casa Romana" (Roman house) of the Castro de São Domingos as well. Whereas spelt remains were more reduced. Given the general uncertainty about the chronology of the fruits/seeds remains, it was difficult to understand the role of hulled wheats at this site in the Iron Age. However, we cannot exclude that they were important crops, particularly due to the great relevance of hulled wheats during this period in Northwest Iberia (e.g. Tereso, 2012; Figueiral et al., 2017; Seabra et al., 2018; Teira-Brión, 2019). On the other hand, the fruits/seeds assemblages of Castelinho and Rei Ramiro showed rare glume bases of emmer/spelt (*Triticum dicoccum/spelta*). Castelinho must be interpreted in the light of information from

other sites in the Sabor valley, particularly Quinta de Crestelos (Tereso et al., 2018a). The lack of remains from hulled wheat suggest these were not cultivated in the valley.

At the same time that new study cases were developed for this thesis, one radiocarbon date was obtained on a spikelet of spelt from the Iron Age and Roman site of Terronha de Pinhovelo (Macedo de Cavaleiros, Northeastern Portugal), a site that provided a large and diverse fruits/seeds assemblage, including considerable amounts of hulled wheats (Tereso, 2007, 2009). The result (Table 10.2) showed a date range within the Late Iron Age/Early Roman period, contrary to the Late Roman chronology initially established for the deposits studied. Therefore, this assemblage should be reevaluated in future work and the chronology of the fruits/seeds remains redefined.

| Site | Context | Sampled context | Taxon dated | Lab. Reference | 14C age (yr B.P.) | Calibrated age (1 σ) | Calibrated age (2 σ) |
|---|---|---|---|---|---|---|---|
| Terronha de Pinhovelo | Sector B (Area I) | 65 (Hearth) | *Triticum spelta* (spikelet base) | D-AMS 042652 | 2071 ± 22 | 107-43 BCE | 165 BCE - 5 CE |

Table 10.2 - Radiocarbon date obtained at Terronha de Pinhovelo. Calibration through OxCal software (version 4.4.4) (Bronk Ramsey, 2001) IntCal20 calibration curve (Reimer et al., 2020).

Hulled barley (*Hordeum vulgare*) was normally collected in scarce amounts in the Iron Age contexts. This was particularly evident at “Casa Romana” (Roman house) of the Castro de São Domingos, Freixo/Tongobriga, and Rei Ramiro, where no more than 10 grains were found in each one of these sites, despite the great number of samples and contexts studied. Grains were recurrent at Castelinho, but hulled barley was still a secondary cereal in the fruits/seeds record. There was almost no evidence of hulled grains or with husks still attached, and only sporadic rachis segments were recovered at Freixo/Tongobriga, and Rei Ramiro.

The four Iron Age contexts studied displayed a few grains of oat (*Avena* sp.), while no floret base was securely ascribed to this period. Although two bases from domesticated oat (*Avena sativa/strigosa*) were recovered from a filling deposit of a posthole with an allegedly Iron Age chronology at “Casa Romana” (Roman house) of the Castro de São Domingos, a radiocarbon date on oat grains from the exact same level suggested a Roman chronology (1st century – early 3rd century CE) (see Chapter 3).

In two sites, namely “Casa Romana” (Roman house) do Castro de São Domingos and Freixo/Tongobriga, remains of rye (*Secale cereale*) were recovered in contexts attributed

to the Iron Age. Both assemblages provided a few grains, while scarce rachis segments were only recovered at “Casa Romana” (Roman house) of the Castro de São Domingos. Radiocarbon dates were obtained on grains to confirm such early chronology, showing calibrated ranges between the 4th century BCE and the early 1st century CE. Results that were similar to others obtained in Northwest Iberia and contributed to the multidisciplinary approach developed about rye (see Chapter 9 and above Chapter 11).

Domesticated pulses were rare in Iron Age deposits. Only a few more than 10 seeds of faba bean (*Vicia faba*) and a single pea (*Pisum sativum*) were recovered at Rei Ramiro. It was recovered one seed of faba bean at “Casa Romana” (Roman house) of the Castro de São Domingos, but as already mentioned, the chronology of fruits/seeds remains from this site is uncertain. Other pulses such as *Vicia/Lathyurs*, Fabaceae – *Medicago* type or Fabaceae – *Trifolium* type were common in the fruits/seed record, but a detailed diagnosis was not achievable and these likely correspond to wild remains.

Few, but diverse, edible fruits were identified in the analysed Iron Age deposits. Acorns (*Quercus* sp.), grape (*Vitis vinifera*) and blackberry/raspberry (*Rubus* sp.) were the most frequent, being identified in the majority of the sites. The variety of fruits was mainly noticed at Rei Ramiro. Here, besides the previously mentioned remains were recovered several pericarp fragments of hazelnut (*Corylus avellana*), stones of common hawthorn (*Crataegus monogyna*), fig (*Ficus carica*) seeds, an olive stone (*Olea europaea*), and seeds of Portuguese crowberry (*Corema album*). The last one was also identified in the Iron Age levels of Castro de Guifões, just a few kilometres away from Rei Ramiro (Seabra et al., 2020).

The fruits/seeds information from Early Roman times (late 1st century BCE – 3rd century CE) (Fig. 10.2) was limited and did not reveal profound changes regarding what was known from previous studies. The city of *Tongobriga* was probably founded around the late 1st century/early 2nd century CE and had an important Roman occupation (Dias, 1997), however, none of the analysed contexts showed secure chronologies within the Early Roman Empire. At Castelinho, only a transitional phase between the second half of the 1st century BCE and the 1st century BCE was studied (Phase V), which did not point to significant transformations in the site´s occupation that should have maintained its main functionally (storage). The fruits/seeds results sustain an idea of continuity, displaying the same pattern, with a predominance of naked wheat, followed by hulled barley and broomcorn millet. It was observed another transitional period at Rei Ramiro (Phases III-VII), which mainly corresponded to the construction of a large, elevated granary (*horreum*), likely around the second half of the 1st century BCE, already under

strong Roman influences. The Early Roman occupation (Phases VIII-IX) studied here essentially reflects the abandonment of this structure although there is no clear evidence to suggest the crops studied were charred in the structure. In comparison with the Iron Age deposits, it was found a smaller assemblage of fruits/seeds but the crops identified were the same. Cereals, namely grains of broomcorn millet and naked wheat were in higher numbers, while foxtail millet and hulled barley grains were secondary. The main difference concerned the less diversity of fruits, and weeds or ruderal plants, which could be related to the use of the area mainly for cereal storage, hence the *horreum* (see Chapter 6). At “Casa Romana” (Roman house) of the Castro de São Domingos, several structures (e.g. houses) were raised during the Roman period but the chronology of the fruits/seeds remains recovered in those contexts was also ambiguous. Beyond their general association with secondary and/or tertiary depositions, it was observed that Roman structures frequently overlapped previous Iron Age structures. The only secure Early Roman evidence corresponded to the above-mentioned oat remains, whose chronology was attributed through a radiocarbon date.

Recently, other studies were developed in Northern Portugal (Tereso et al., 2020; Vaz et al., 2021). The fruits/seeds assemblages from the Sabor valley provided scarce plant remains, despite the considerable number of assemblages studied (Tereso et al., 2020). The archaeobotanical study carried out in the necropolis of *Via XVII* (Braga, Northern Portugal) also displayed small amounts of fruits/seeds but a varied assemblage including several fruits and pulses was recovered (Vaz et al., 2021). Still, most of the information from this period in Northwest Iberia came from indigenous-type sites that reveal a general continuity regarding crop selection (e.g. Queiroga, 1992; Tereso, 2012; Tereso et al., 2013a; Figueiral et al., 2017; Leite et al., 2018; Teira-Brión, 2019), being necessary more analyses and a stronger sampling effort, mainly in sites founded in the Early Empire, in order to properly understand the economic and agricultural impact caused by the Romans in Northwest Iberia.

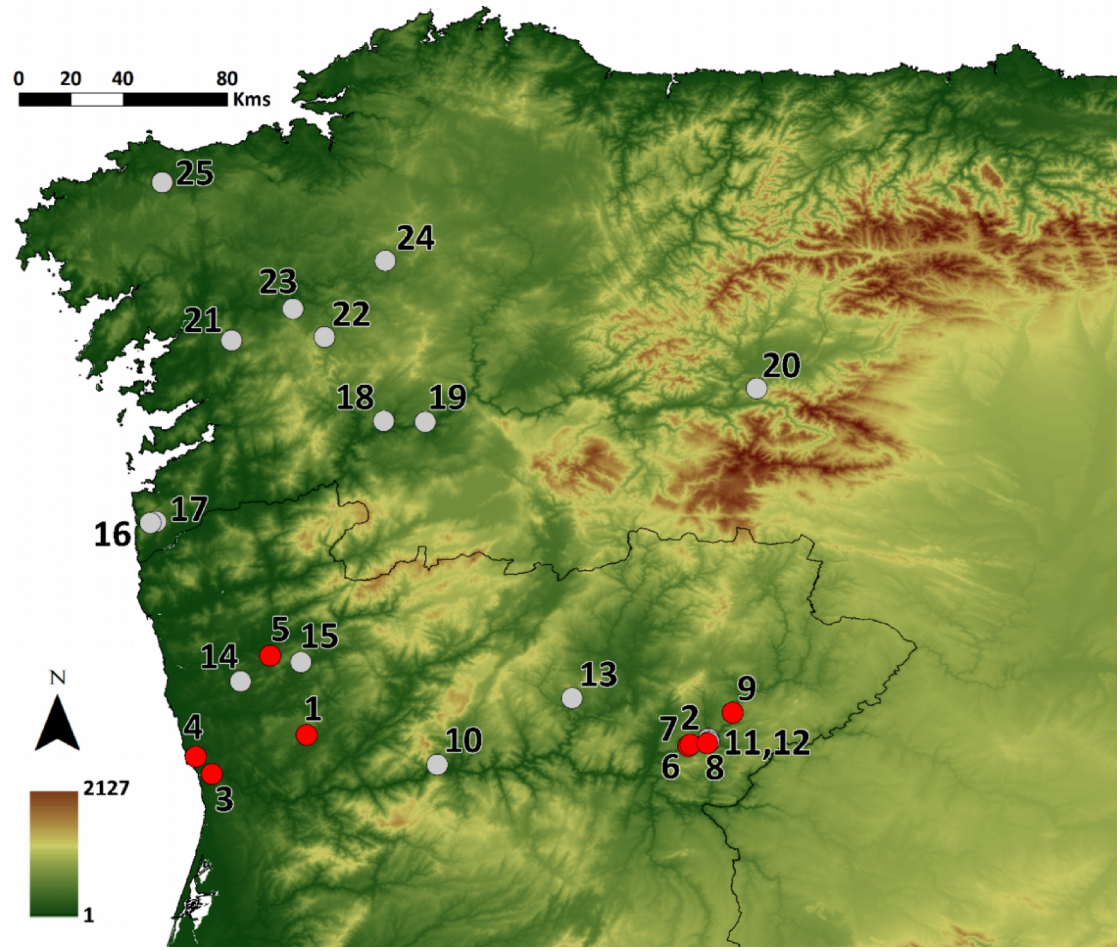



Figure 10.2 - Early Roman contexts (late 1st century BCE – 3rd century CE) with fruits/seeds remains (Northwest Iberia). The grey circles correspond to the fruits/seeds studies developed until this thesis started (2019), whereas the red circles correspond to the studies carried out during the course of this thesis, whether on the scope of this work or other projects. Legend: 1-"Casa Romana" (Roman house) of the Castro de São Domingos (Chapter 3); 2-Castelinho (Chapter 5); 3-Rei Ramiro (Chapter 6); 4-Castro de Guifões (Seabra et al., 2020); 5- Necropolis of *Via XVII* (Vaz et al., 2021); 6-Olival do Poço da Barca (Tereso et al., 2020); 7-Cemitério dos Mouros (Tereso et al., 2020); 8- Olival da Santa (Tereso et al., 2020); 9-Foz da Ribeira do Poio (Tereso et al., 2018b, 2020); 10-Cidadelhe (Vaz et al., 2016b); 11-Quinta de Crestelos (Tereso et al., 2018a); 12-Chã (Vaz et al., 2016c); 13-Castro de Palheiros (Figueiral et al., 2017; Leite et al., 2018); 14-Ermidas (Queiroga, 1992); 15-Briteiros (Tereso and Cruz, 2014); 16-A Burgueira (Peña-Chocarro et al., 2019b); 17-Monte Baixo (Teira-Brión, 2019); 18-San Cibran de Lás (Tereso et al., 2013a); 19-Reza Vella (Teira-Brión, 2019); 20-Castro de Orellán (López-Merino et al., 2010); 21-Castrolandín (Teira-Brión, 2019); 22-Montaz (Arnanz and Chamorro, 1990); 23-Castrovite (Teira-Brión, 2019); 24-Castro Pedro (Criado Boado, 1991); Petón do Castro (Dopazo-Martínez, 1996). Fruits/seeds assemblages with unclear archaeobotanical and/or chronological data were excluded from this figure.

## 10.3. Late Antiquity

Four of the six sites studied displayed fruits/seeds assemblages with a Late Antique chronology (3rd-7th centuries CE): "Casa Romana" (Roman house) of the Castro de São Domingos (Chapter 3), Freixo/Tongobriga (Chapter 4), Rei Ramiro (Chapter 6), and

Castro S. João das Arribas (Chapter 7). Other fruits/seeds assemblages with a Late Antique chronology were meanwhile analysed in northern Portugal (Fig. 10.3). Although the majority of the Late Antique contexts showed smaller fruits/seeds assemblages than those from previous periods, and comparisons among sites were difficult to establish, cereals were still largely predominant and other type of remains almost absent. Still, the fruits/seeds assemblages studied had different dimensions and were associated with contrasting archaeological contexts which will be now discussed.

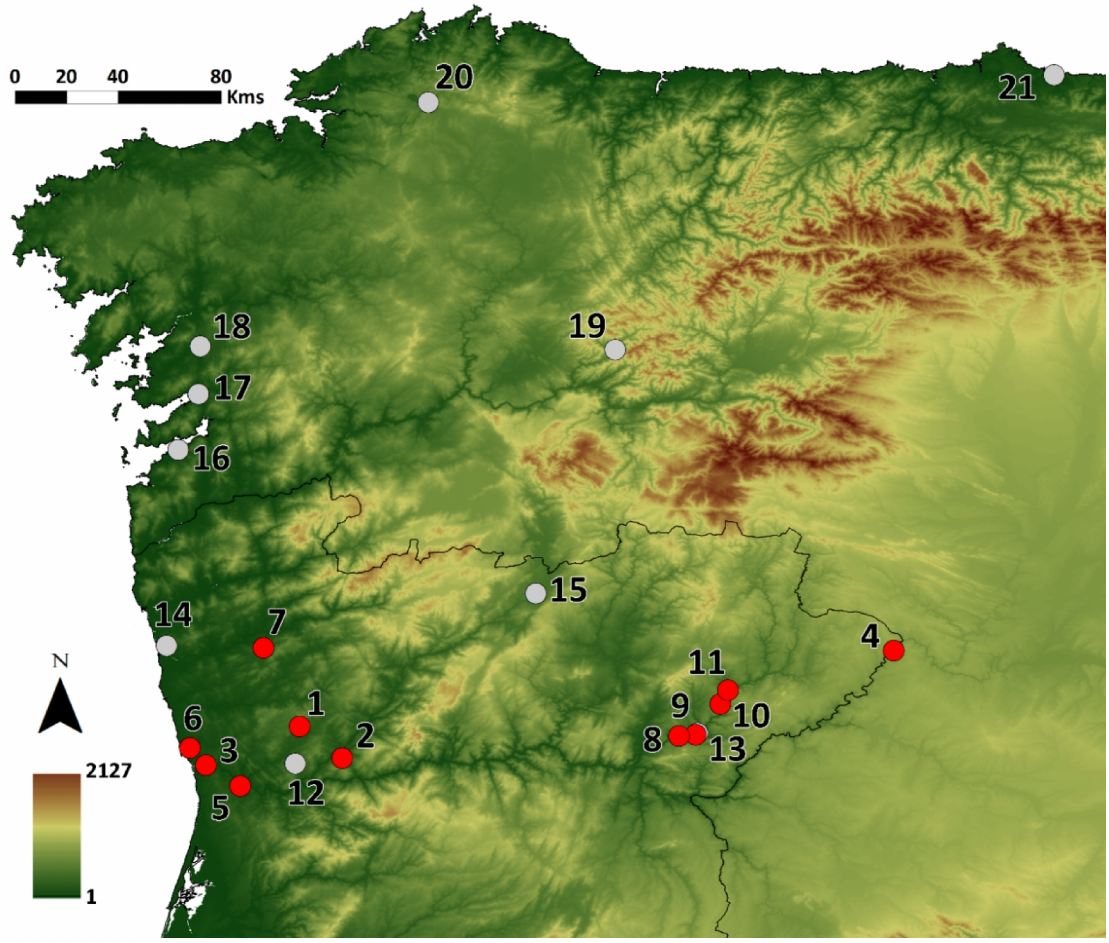



Figure 10.3 - Late Antique contexts (3rd-7th centuries CE) with fruits/seeds remains. The grey circles correspond to the fruits/seeds studies developed until this thesis started (2019), whereas the red circles correspond to the studies carried out during the course of this thesis, whether on the scope of this work or other projects. Legend: 1-"Casa Romana" (Roman house) of the Castro de São Domingos (Chapter 3); 2-Freixo/Tongobriga (Chapter 4); 3-Rei Ramiro (Chapter 6); 4-Castro S. João das Arribas (Chapter 7); 5-Castelo de Crestuma (Chapter 9); 6-Castro de Guifões (Seabra et al., 2020); 7-Necropolis of *Via XVII* (Vaz et al., 2021); 8-Cemitério dos Mouros (Tereso et al., 2020); 9-Olival da Santa (Tereso et al., 2020); 10-Vale da Bouça (Tereso et al., 2020); 11-Cabeço da Grincha (Tereso et al., 2020); 12-Monte Mozinho (Tereso et al., 2013c; Vaz et al., 2017); 13-Quinta de Crestelos (Tereso et al., 2018c); 14-Castro de São Lourenço (Tereso, 2012); 15-*Aquae Flaviae* (Vaz et al., 2016a); 16-O Areal (Teira-Brión, 2010, 2019, 2022);17-Agro de Deus (Peña-Chocarro et al., 2019b); 18- Rua Ferreiría nº59 (Teira-Brión, 2019); 19-Cova do Xato (Teira-Brión et al., 2012); 20-A Mourela (Antolín and Alonso, 2009); 21-La Tabacalera (Carrión Marco et al., 2015; Peña-Chocarro et al., 2019a). Fruits/seeds assemblages with unclear archaeobotanical and/or chronological data were excluded from this figure.

At Freixo/Tongobriga, fruits/seeds remains were recovered from a Roman house with a Late Antique occupation (*Impluvium* house). The *Impluvium* house provided a small fruits/seeds assemblage from two successive phases (3rd-5th centuries CE and 5th-7th centuries CE). Around 250 remains were collected, almost half of them corresponding to foxtail millet grains. Grains of rye and hulled barley were scarce. No domesticated pulse was identified, and only a few chestnut (*Castanea sativa*) fruits, a single grape pip, and some blackberry/raspberry seeds were recovered.

The Late Antique contexts from Rei Ramiro and "Casa Romana" (Roman house) of the Castro de São Domingos provided scarce fruits/seeds of problematic interpretation. In the first case, just five fruits/seeds were recovered from a few contexts of difficult detail with a 3rd-7th century CE chronology (Ramos and Carvalho, 2020). A concentration of remains that did not allow coherent considerations. Whereas at "Casa Romana" (Roman house) of the Castro de São Domingos the establishment of a clear chronology was not possible, as already mentioned for other contexts from this site. The vast majority of the remains came from filling deposits of Late Antique graves (5th-7th centuries CE) that were breached and revealed archaeological material from other periods (Iron Age and Roman period). In fact, at "Casa Romana" (Roman house) of the Castro de São Domingos there are no significant differences between assemblages from different chronologies and archaeological contexts. This homogeneity is perhaps a direct cause of the general soil remobilizations and perturbations occurred at this site (see Chapter 3).

The site of Castro S. João das Arribas showed a massive Late Antique (6th-7th centuries CE) assemblage with almost 150,000 fruits/seeds remains. Most of them were related to a storage area, more precisely with two above-ground structures, their surroundings, and ceramic vessels, in a central area of the site. Grains of rye were largely predominant, corresponding to around one-third of the total remains. Grains of naked wheat, hulled barley, broomcorn millet and foxtail millet together were a smaller part of the fruits/seeds assemblage (below 1%). Other remains rather than cereals were rare, and no domesticated pulse or fruit was observed. An oil or fibre plant was identified, namely some seeds of flax (*Linum usitatissimum*). Cornockle (*Agrostemma githago*) seeds were recovered in considerable numbers, and frequently in the same levels as rye. It suggests that rye was a winter crop, as expected.

The other Late Antique contexts studied in the scope of this thesis (Fig. 10.3) provided small fruits/seeds assemblages. At Castro de Guifões, it was recovered an assemblage with less than 300 remains characterized by the predominance of cereals (Seabra et al., 2020). Broomcorn millet grains were in higher amounts, followed by grains of rye, naked

wheat, foxtail millet, and hulled barley, which were scarcer. In the necropolis of *Via XVII*, the cremations contexts with Late Antiquity chronology displayed rare fruits/seeds (Vaz et al., 2021). In a similar way, the Late Antique levels from rural sites in the Sabor valley also showed few fruits/seeds remains (Tereso et al., 2020).

Despite the significant increment of studies in Late Antique contexts in Northern Portugal, several of them provided restricted information, not allowing detailed considerations about this long and complex chronological period. Neither fruits/seeds analyses are widespread by the northwestern territory nor the whole extension of this period is uniformly addressed. Therefore, more analyses should be carried out, particularly for lather phases in Late Antiquity (5$^{th}$-7$^{th}$ centuries), and central and inner areas of Northwest Iberia.

## 10.4. Early Medieval Ages

There have not been many archaeobotanical studies in Early Medieval sites in northern Portugal, and the few available assemblages were poor. As such, in order to enrich the diachronic perspective intended from the start and to obtain more data for the study focusing on the history of rye it was decided to include Senhora do Barrocal (Sátão, district of Viseu) (Fig. 10.4), although it is located in the Mondego basin. An extraordinary assemblage was found there, resulting from a fire event that took place around the 10$^{th}$-11$^{th}$ centuries CE. The archaeobotanical results revealed a varied assemblage, including massive amounts of fruits/seeds and food remains such as porridge-like or bread-like products, which were likely stored in a habitational structure built of oak (*Quercus* spp.) and chestnut wood (see Chapter 8).

The fruits/seeds assemblage provided 154,846 remains, and more than 90% corresponded to cereals, the vast majority grains. Rye and oat were by far predominant. Still, other cereals were found in considerable amounts, namely broomcorn millet, hulled barley, and naked wheat. Foxtail millet was rarer. Despite in lower amounts, chaff remains from the mentioned cereals were often found, in several cases still attached to the grains.

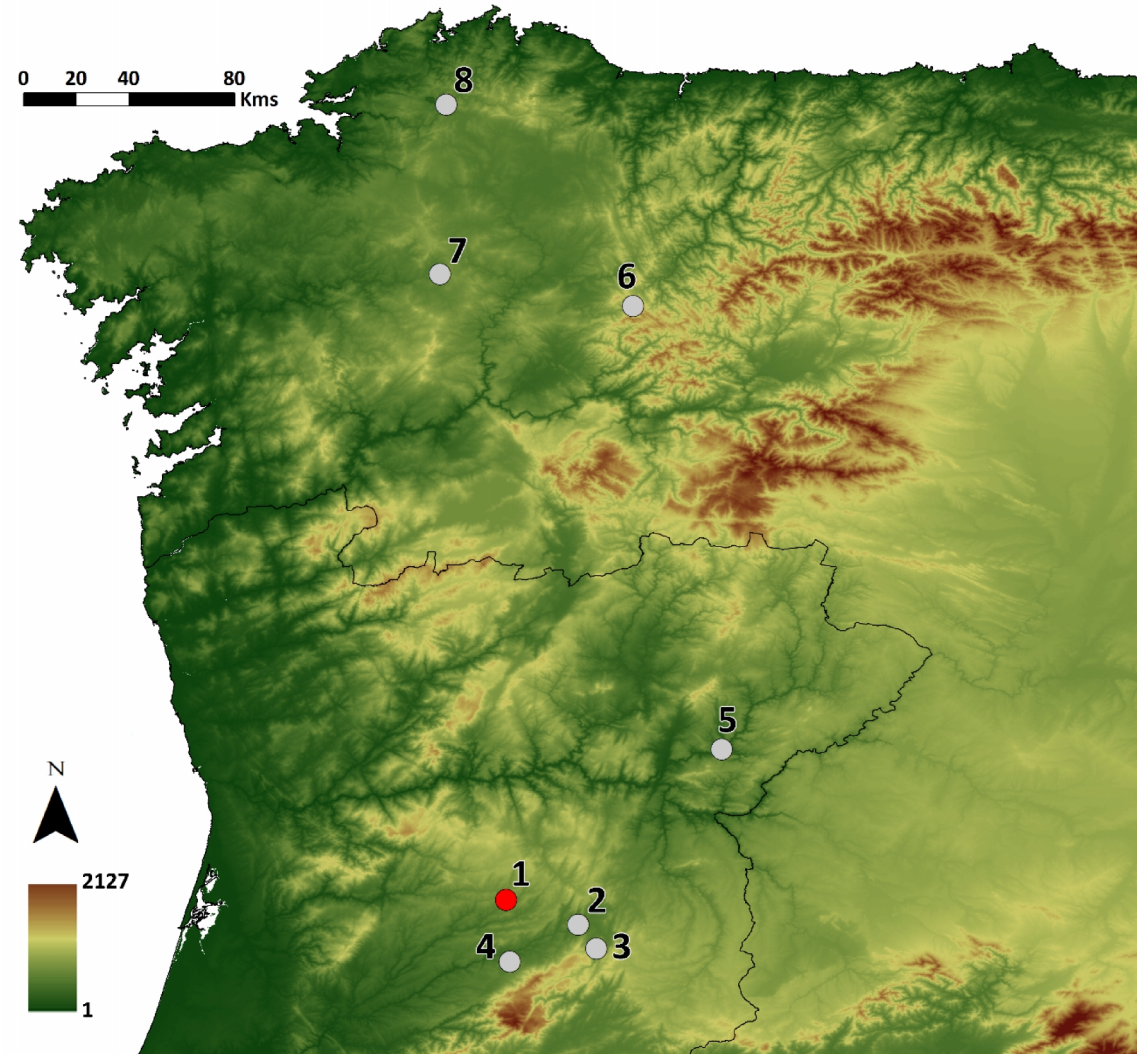



Figure 10.4 - Early Medieval contexts (8th-10th/11th centuries CE) with fruits/seeds remains. The grey circles correspond to the fruits/seeds studies developed until this thesis started (2019), whereas the red circle corresponds to the study carried out on the scope of this work. Legend: 1-Senhora do Barrocal (Chapter 8); 2-São Gens (Queiroz, 2009b; Oliveira et al., 2017) 3-Soida (Queiroz 2009a); 4- Penedo dos Mouros (Queiroz and Ruas, 2001; Queiroz and van Leeuwaarden, 2003); 5-Quinta de Crestelos (Tereso et al., 2018c) 6-Cova Eirós (Teira-Brión et al., 2012); 7-A Pataqueira (Teira-Brión, 2013); 8-A Mourela (Antolín and Alonso, 2009). Fruits/seeds assemblages with unclear archaeobotanical and/or chronological data were excluded from this figure.

Pulses and fruits were undoubtedly in smaller amounts, but some diversity was observed. Regarding pulses, seeds of pea and faba bean were more recurrently than seeds of grass/red pea (*Lathyrus cicera/sativus*) and lentil (*Lens culinaris*). The fruits were even less represented, nonetheless, it was noteworthy the presence of some grape remains, chestnut fruits and endocarps of sweet/sour cherry, which should correspond to crops. The same could be pointed for the aggregated seeds of flax found.

The archaeobotanical assemblage from Senhora do Barrocal is the result of a strong sampling effort and exceptional circumstances that allowed the preservation of a massive but also diverse archaeobotanical assemblage. Still, and despite the fruits/seeds record from other sites with identical chronologies in the Mondego valley showed some similarities (Queiroz and Ruas, 2001; Queiroz and van Leeuwaarden, 2003; Queiroz, 2009a, 2009b; Oliveira et al., 2017), the assemblage from Senhora do Barrocal is still a unique case in the region due to its dimension and diversity, as well as the information it provides regarding storage practices and food consumption. In addition, there are rare and small Early Medieval assemblages from sites located in Northwest Iberia (Antolín and Alonso, 2009; Teira-Brión et al., 2012; Teira-Brión, 2013, 2015; Tereso et al., 2018c). The lack of systematic sampling in Medieval contexts demands the development of new archaeobotanical studies for a proper understanding of agriculture practices in both regions, mainly in Northwest Iberia.

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# Chapter 11 - Crop diversity and storage practices, environment and past societies from the Iron Age to the Early Medieval period in Northwest Iberia

## 11.1. Crops: a diachronic perspective

The development of new archaeobotanical analyses in Northern Portugal and Senhora do Barrocal contributed with valuable information about crop diversity and agricultural practices through time. Cereals are the main staples, and they are, in fact, prevailing in the fruits/seeds assemblages. Still, it should be noted that preservation by charring is preponderant, and plant remains like cereals are more prone to be represented in such circumstances (e.g. Boardman and Jones, 1990; Van der Veen, 2007; Peña-Chocarro and Pérez-Jordà, 2019). Besides, rich fruits/seeds assemblages are often found in storage contexts, which are mainly composed of cereals and lead to a disproportionate representation of these in the fruits/seeds record as well as an incomplete view of the agricultural choices and food consumption by past communities. The same could be mentioned at the chronological level. Despite the increasing number of fruits/seeds studies in recent times, post-Iron Age contexts are still poorly represented, compromising the accuracy of broad diachronic perspectives. Having this in mind, the following brief overview, being based primarily on archaeological seeds and fruits, must be considered a tentative and surely provisional attempt to make sense of the growing amount of data regarding agriculture from the Iron Age to the Early Medieval Ages in Northwest Iberia.

Broomcorn millet (*Panicum miliaceum*) was the most recurrent cereal, being frequently recovered in sites from the periods here addressed. It should have had relevant role at least since the Late Bronze Age in Northwest Iberia (Aira Rodríguez et al., 1990; Tereso, 2012; Tereso et al., 2016; González-Rabanal et al., 2022), spreading out in the region particularly during the Iron Age (e.g. Dopazo Martínez, 1996; Tereso, 2012; Figueiral et al., 2017; Tereso et al., 2018a; Teira-Brión, 2019). It was commonly found, and sometimes in large amounts, as observed in sites such as Crasto de Palheiros (Murça, Northern Portugal), Castrovite (Pontevedra, Galicia), or Quinta de Crestelos (Mogadouro) (Figueiral, 2008; Rey Castiñeira et al., 2011; Figueiral et al., 2017; Leite,

2017; Leite et al., 2018; Tereso et al., 2018a; Teira-Brión, 2019). It is systematically recorded in Roman and post-Roman sites although in less expressive numbers (Tereso, 2012; Peña-Chocarro et al., 2019b; Teira-Brión, 2019). Still, its ubiquity suggests it kept some of the relevance it had since the Iron Age, revealed also by its recurrent presence in written sources from Late Medieval times (e.g. Portela Silva, 1976; Oliveira Marques, 1978; Gonçalves, 2012).

Recent findings showed that foxtail millet (*Setaria italica*) was another important crop in the Iron Age in Northwest Iberia, although not cultivated as recurrently as broomcorn millet. It was collected in several Galician sites, including in large numbers at Castro de Nabás (Martín-Seijo et al., 2019; Teira-Brión, 2019), and now also in Northern Portugal. Besides previous identifications at Crastoeiro (Seabra, 2015; Seabra et al., 2018), the majority of the Iron Age contexts studied in this approach provided foxtail millet grains. The record of foxtail millet afterward, namely in Late Antique and Early Medieval levels points to a continuous relevance of this cereal. Independently of the chronology, foxtail millet was normally less represented than broomcorn millet, nonetheless, the constant record of both millets suggests that they were relevant field crops since the Iron Age in Northwest Iberia. Their adaptability to different environmental conditions and their short growing cycles have made millets relevant crops in agricultural systems, increasing their versatility, allowing more productivity per year, and making communities less vulnerable to crop failures or any other types of disturbance (e.g. climate change, soil degradation) (Tereso, 2012). The relevant impact of this crop in human diet is shown also by isotopic data from burials in Northern Iberian sites. These do not confirm, so far, the consumption of millets in the Middle Bronze Age, but widely document it in the following periods (López-Costas et al., 2015; González-Rabanal et al., 2022).

Hulled wheats were crucial crops in the second half of the 1st millennium BCE. Emmer (*Triticum dicoccum*) and/or spelt (*Triticum spelta*) were identified in many Northwestern sites, being largely dominant in several cases (Figueiral, 2008; Tereso, 2012; Tereso et al., 2013b; Seabra, 2015; Figueiral et al., 2017; Leite 2017; Leite et al., 2018; Seabra et al., 2018). The relevance of hulled wheats seems to persist until Early Roman times in Northwest Iberia, but their reduced record in Late Antiquity indicates that they progressively lost relevance (Figueiral, 2008, López-Merino et al., 2010; Figueiral et al., 2017; Leite, 2017; Leite et al., 2018; Peña-Chocarro et al., 2019b; Teira-Brión, 2019). In Early Medieval assemblages, hulled wheats only appear in Galicia, at Cova Eirós (Lugo) (Teira-Brión et al., 2012), while in the Mondego valley no evidence of these remains was found so far.

Considering the large assemblages of hulled wheats collected in Iron Age deposits, naked wheat has been found in significantly smaller amounts. Its scarcity is notable in Late Antique and Early Medieval times in the regions here addressed, particularly in sites where rye is predominant (Teira-Brión et al., 2012; Tereso, 2012; Peña-Chocarro et al., 2019b; Teira-Brión, 2019). However, the recent results from the Douro valley improves our capacity to debate this matter, at least concerning the Iron Age and Early Roman periods in Northwest Iberia. The sites of Quinta de Crestelos and Castelinho (Torre de Moncorvo, Northern Portugal), placed near the Sabor river (a tributary of the Douro river) provided fruits/seeds assemblages characterized by the predominance of naked wheat. In Quinta de Crestelos, this predominance is common to Iron Age and Roman levels, while most data from Castelinho dates to a transition period between the Late Iron Age and the Roman period (1$^{st}$ century BCE). In other sites from the Sabor valley, with different chronologices, since the Early/Middle Bronze Age (Jesus et al., 2020) to Roman and Medieval times (Tereso et al., 2018a, 2020), naked wheat was also prevailing, and hulled wheats almost absent. Despite these assemblages showed few fruits/seeds remains, making difficult broad archaeobotanical considerations, the recurrence of naked wheat throughout the valley, through time, must be noted (Vaz et al., 2016c; Tereso et al., 2018a, 2018b, 2020; Jesus, 2020). Still, as all Sabor sites where placed in low-altitude areas near the river and several of them were related to considerably wide terrains with high agricultural potential, we cannot discard that those areas may have provided better conditions for the cultivation of a more demanding crop like naked wheat. This suggest that, at least in that region, when good soils were available, naked wheats were preferred to hulled wheats. This hypothesis may also help us interpret the relevance of naked wheat reported in the Middle Douro valley, more precisely in the province of Valladolid (Central Iberia). Here, several Iron Age assemblages, including from sites closer to river courses showed a clear dominance of naked wheat, being hulled wheats, namely emmer and einkorn (*Triticum monococcum*) scarce (Delibes de Castro et al., 1995; Delibes de Castro and Romero Carnicero, 2011).

It is tempting to see in this pattern a difference between Atlantic (related to what has been called the “Castro” culture) and Mediterranean (related to the Vettones) areas. Still, the abundance of hulled wheats at Crasto de Palheiros and Terronha de Pinhovelo suggests this is a simplistic perspective.

Furthermore, next to the Douro River and at a close distance from its mouth, the site of Rei Ramiro (Vila Nova de Gaia, Northern Portugal) showed a predominance of naked wheat from the Iron Age to the Early Roman Empire, while glume bases of hulled wheats

were rare. Still, Rei Ramiro is a quite different from other sites, particularly in the Roman period. It is being interpreted as a storage area to support Roman military incursions, thus its archaeobotanical assemblages may be conditioned more by this characteristic rather than by local/regional agricultural choices. In any way, it is clear now that naked wheat was another important crop in the Iron Age and Early Roman times.

Previous work suggested that hulled barley (*Hordeum vulgare*) was a secondary or rare crop in most cases, during all the time span considered in this study (e.g. Tereso, 2012; Peña-Chocarro et al., 2019b; Teira-Brión, 2019). The results from this thesis partially attested this idea but allowed us to mitigate it. Although grains of hulled barley are usually less abundant they are ubiquitous. Its recurrence, including in association with storage contexts as well as evidence from other areas of the Iberian Peninsula (e.g. Peña-Chocarro et al., 2019b) indicates that hulled barley had a continuous importance in the agricultural strategies of past communities, even if secondary regarding the wheats.

Oat (*Avena sp.*) was frequent in Iron Age levels in Northwest Iberia. Still, grains were not abundant, and floret bases were almost absent (Dopazo Martínez, 1996; Tereso, 2012; Tereso et al., 2013b; Seabra et al., 2018; Teira-Brión, 2019). These are fundamental to distinguish between crops and remains of wild oats (Van Zeist, 1968; Pasternak, 1991; Jacomet, 2006). The recurrence of oat, which was also observed in this approach, leads us to propose that it was cultivated during this period, though the absence of floret bases from domesticated oat cause some doubts. So far, the oldest of those came from “Casa Romana” (Roman house) of the Castro de São Domingos. Here, domesticated floret bases (*Avena sativa/strigosa*) were collected in the same level where dated oat grains revealed a Roman chronology (1$^{st}$-2$^{nd}$ centuries CE), suggesting an eventual connection between both types of remains (see Chapter 3). Its role at this site was difficult to characterize since just two floret bases from domesticated oat were collected and grains were not abundant. The same could be pointed regarding other contexts including of later chronology (Dopazo Martínez, 1996; Tereso, 2012; Tereso et al., 2013a, 2013c). A different scenario was observed in the Early Medieval assemblage of Senhora do Barrocal, where oat was the main crop alongside rye (*Secale cereale*). Grains were recovered in massive amounts, but floret bases of domesticated plants were also significant, suggesting we were dealing with a staple crop.

The research developed about rye allowed new developments in several topics involving this cereal (see Chapter 9). One of the main subjects concerned the introduction of rye in Northwest Iberia and the domesticated/weedy character of the earliest macroremains. According to the many radiocarbon dates obtained, the Bayesian and Kernel Density

analyses carried out, rye was introduced in the Iron Age, within a period from the 3rd century BCE to the first half of the 1st century BCE, potentially between the 3rd and the 2nd centuries BCE. Although the biometric approach and archaeobotanical data did not reveal unequivocal information, rye could have been a weed of spelt in those early times, and until the turn of the Era.

The circumstances of its arrival remain unclear. The chronologies reported are broadly contemporary to a phase of territorial changes and the first Roman campaigns in Northwest Iberia (e.g. Alarcão, 1992; Carvalho, 2008; Martins et al., 2012). But to establish a clear connection between rye and these dynamics is problematic. The introduction of rye as a crop by the Romans at that time is unlikely since it was not relevant in other areas of the Roman Empire. The assumption that rye was a weed in spelt fields had parallels in other European regions (Schmidl et al., 2007; Kohler-Schneider et al., 2015) thus is considered the most likely hypothesis, although not without doubts. Spelt was already a staple crop in previous chronologies in Northwest Iberia but before the study of Crastoeiro (Seabra et al., 2018), and the work carried out in this thesis, it had not been associated with remains of rye. Its presence in such early chronologies could be related to the introduction of new spelt varieties, still, it was questionable why rye was not found in other areas of Iberia rather than the Northwest. In order to answer these questions, new and solid fruits/seeds analyses must be developed not only throughout Iberia but also in other areas of Europe since the context of rye´s introduction and dissemination is poorly known.

The statistical analyses suggest there was an interval of around two centuries without rye being found in Northwest Iberia. It reappeared during the Roman period, probably between the late 2nd century and the turn of the 4th century CE. This time round, similarities with findings from Northeast Iberia were observed, pointing to the cultivation of rye in a later phase of the Roman period (Buxó, 1999; Alonso, 2005; Colominas et al., 2019). Its record increased throughout the Late Antiquity, becoming a common crop in the Iberian Peninsula and other areas of Europe.

Several factors were eventually responsible for the expansion of rye in Late Antiquity. The climatic instability of this period in Europe has been suggested to have played a crucial role in the dissemination of rye, since this crop would fit well in the more humid, and, particularly, colder conditions of this period (McCormick et al., 2012; McCormick, 2013). It was also a period of contacts with people from Central Europe with distinct cultural backgrounds, who already used rye as a staple crop. Those interactions, particularly since the early 5th century with the arrival of Germanic groups in Iberia could

have led to the dissemination of rye in the Peninsula. In Late Antiquity, there were also significant transformations in societies towards increasing ruralization and subsistence agricultural practices, in which an undemanding crop like rye would have been well-suited (Squatriti, 2019), mainly after the strong pressure applied during the Iron Age and Roman period in the agricultural soils of Northwest Iberia (Tereso, 2012). In this region, the raise of rye was also consonant with a decrease of hulled wheats in the fruits/seeds assemblages. It could be argued that the higher tolerance of rye to harsh environmental conditions and poor soils led past communities to choose rye over hulled wheats.

The archaeobotanical assemblage from Senhora do Barrocal reinforced the idea that the cultivation of rye was widespread and had a prominent role in Medieval times. This was also attested by other fruits/seeds assemblages, whether from Iberian or other European areas, and available written documentation (e.g. Oliveira Marques, 1978; Behre, 1992; Ruas, 1992; Gonçalves, 2012; Bakels, 2014; Jacomet, 2014; Mingote, 2014). The measuring of rye grains from assemblages with different chronological features showed that grains from Senhora do Barrocal were wider and thicker than grains from earlier chronologies, suggesting that the grains of rye increased in size in the Early Medieval period.

Pulses were generally scarce and undiversified in the archaeobotanical record of Northwest Iberia prior to this thesis. From the Iron Age until Late Antiquity, faba bean (*Vicia faba*) and pea (*Pisum sativum*) were the most common pulses (e.g. Tereso, 2012; Peña-Chocarro et al., 2019b; Teira-Brión, 2019). The same was observed throughout this work, being only identified the above-mentioned pulses and in rare amounts. Apart from this, it was noteworthy the identification of some lentil seeds (*Lens* sp.) in the necropolis of *Via XVII* of the Roman city of *Bracara Augusta* (Braga, Northern Portugal), and more precisely in association with a cremation deposit from the 1$^{st}$ century CE (Vaz et al., 2021). Until now, it corresponds to the oldest evidence of lentil in the region. Some differences were only detected in Early Medieval times at Senhora do Barrocal. Here, a small but varied assemblage of pulses with seeds of faba bean, pea, lentil, and grass/red pea (*Lathyrus cicera/sativus*) was collected. Still, faba bean, and pea were the main pulses (see Chapter 8).

The fruits were also recovered in reduced amounts, but on the other hand, they were more diverse in the archaeobotanical record. In the Iron Age, acorns (*Quercus* sp.), grape (*Vitis vinifera*), and blackberry/raspberry (*Rubus* sp. / *Rubus fruticosus*) were the most common fruits in Northwest Iberia (e.g. Pinto da Silva, 1988; Tereso, 2012; Vaz et al., 2016b; Seabra et al., 2018; Teira-Brión, 2019). Although the other fruit remains

essentially corresponded to rare or single findings, many fruits were identified, including remains of hazelnut (*Corylus avellana*), common hawthorn (*Crataegus monogyna*), fig (*Ficus carica*), olive (*Olea europaea*), Portuguese crowberry (*Corema album*), stone pine (*Pinus pinea*), strawberry tree (*Arbutus unedo*), and wild pear (*Pyrus* sp. / *Pyrus cordata*), the majority of them in sites in Northern Portugal (Chapter 6; Figueiral, 2008; Silva, 2008; Figueiral et al., 2017; Leite et al., 2018; Tereso et al., 2018a; Teira-Brión, 2019; Seabra et al., 2020). The general scarcity of fruits turns the establishment of detailed considerations a complicated task, and although most of the mentioned fruits likely reflect wild remains, we cannot discard, for instance, that some of the remains of grape, olive, or fig, at least those from more recent phases (Late Iron Age), perhaps correspond to domesticated remains, whether as a result of cultivation or trade.

The waterlogged contexts of O Areal (Pontevedra, Galicia) and *Aquae Flaviae* (Chaves, Northern Portugal) as well as the assemblages from the necropolises of *Via XVII* and Reza Vella (Ourense, Galicia) provided valuable information about the impact of Romans in Northwest Iberia, mainly regarding fruits (Teira-Brión, 2010; Vaz et al., 2016a; Teira-Brión, 2019; Vaz et al., 2021; Teira-Brión, 2022). The oldest remains found in the necropolis of *Via XVII* corresponded to hard parts of fruits such as several *Prunus* species, stone pine, and walnut (*Juglans regia*) (endocarps, scales, and shells, respectively). Most probably resulted from the funerary feast, but stone pines cones were used as fuel and its symbolism associated with death is deduced from written sources (Preiss et al., 2005; Vaz et al., 2021). The presence of exogenous plants, namely plum (*Prunus domestica*), peach (*Prunus domestica*), and cypress tree (*Cupressus sempervirens*), suggest, although with different aims, these species were introduced in the early stages of the Roman Empire. At Reza Vella, just a few endocarps of sweet cherry (*Prunus avium*) and half a fruit of walnut were collected. Similarly, these fruits may have been part of the Roman funerary ritual (Teira-Brión, 2019). The vast majority of these as well as other fruits such as the melon (*Cucumis melo*), chestnut (*Castanea sativa*), mulberry (*Morus nigra*), or olive were identified in Late Roman deposits, showing the existence of more diverse but also complex agrosystems during the Roman Empire, but also, possibly, routes in which some of these products may have been traded (Teira-Brión, 2010; Vaz et al., 2016a; Teira-Brión, 2019, 2022). In other contexts, domesticated fruits were often scarce but we need to consider that remains were mostly preserved by charring, which normally provide less diversity of plant remains than other preservation conditions, such as desiccation or waterlogging (e.g. Jacomet, 2007, 2013; Peña-Chocarro et al., 2019a). Chestnut was the most common fruit, being collected at

Freixo/Tongobriga (Marco de Canaveses, Northern Portugal), Castro de Guifões (Matosinhos, Northern Portugal), and Monte Mozinho (Penafiel, Northern Portugal) in Late Antique levels (Chapter 4, Vaz et al., 2017; Seabra et al., 2020). It was also present in the Early Medieval levels of Senhora do Barrocal. The record of chestnut was frequently coincident with those of rye, suggesting a possible relation between these two species, as observed in other European areas (Squatriti, 2019).

The evidence of oil or fibre plants was rare, and essentially sums up to the presence of flax (*Linum* sp. / *Linum usitatissimum*). It was already collected in Chalcolithic and Middle Bronze Age deposits (Ramil-Rego and Aira Rodríguez, 1993; Sanches, 1997; Bettencourt et al., 2007; Tereso et al., 2016; López-Dóriga, 2020) but it did not appear in a continuous way. In Northwest Iberia, flax was only again found in the Early Roman Period (2nd century CE) at Petón do Castro (Dopazo Martínez, 1996), and then after another long interval, it was recovered in Late Antique contexts (Chapter 7; Peña-Chocarro et al., 2019a, 2019b). In the Medieval period, flax was more recurrent, being found in Galicia and the Mondego valley as well as in other Iberian regions (e.g. Chapter 8; Teira-Brión et al., 2012; Peña-Chocarro et al., 2019b; Quirós-Castillo et al., 2020). Such inconsistent and commonly small records make considerations about flax problematic and likely correspond to a biased view of flax in agricultural systems.

## 11.2. Storage of crops in Northwest Iberia

Storage has been a crucial topic in many studies, either with or without archaeobotanical analyses in Northwest Iberia (e.g. Dopazo-Martínez, 1996; Álvarez González and López González, 2000; Rey Castiñeira et al., 2011; Resino, 2013; Tereso et al., 2013b; 2013c; Figueiral et al., 2017; Seabra et al., 2018; Teira-Brión, 2019). The same happened in several of the study cases here addressed, contributing with relevant information in this regard, and covering most of the time period in analysis (see Chapters 5–8).

Multiple storage facilities with diverse dimensions and characteristics were known in the region: aboveground structures (wattle and daub and other perishable structures, *horrea*, stone structures), underground features (pits), and ceramic vessels. Whatever the chronology, storage contexts often revealed large assemblages of fruits/seeds remains, mainly cereals, being either primary or secondary depositions. Other crops (e.g. pulses, fruits) were also found but always in reduced amounts. Although this may contribute to a biased view of the past agricultural choices as aforementioned, storage would have

been fundamental in the past, transcending the necessity of keeping crops safe or feeding a determined population, conditioning the social structure and territorial organization of ancient communities, and perhaps even being crucial in the development of power relations among differents elements of a community (see Chapter 5).

Many cereals (e.g. broomcorn millet, hulled barley) were often common in the diverse storage facilities identified in Northwest Iberia, independently of the chronology or dimension of the assemblages. Still, and although it was not possible to establish a direct relationship between certain crops and structures, some differences were observed, particularly concerning wheats and Iron Age and Early Roman contexts.

Hulled wheats were prevailing in different Iron Age structures, namely in wattle and daub structures at As Laias (Ourense, Galicia), wattle and daub and stone structures at Crasto de Palheiros, and pits at Crastoeiro (Mondim de Basto, Northern Portugal) (Figueiral, 2008; Tereso, 2012; Tereso et al., 2013b; Seabra, 2015; Figueiral et al., 2017; Leite 2017; Leite et al., 2018; Seabra et al., 2018). In the site of Castrovite, broomcorn millet was the main crop instead, but a significant concentration of hulled wheats was also recovered (Rey Castiñeira et al., 2011; Teira-Brión, 2019). In the fruits/seeds studies of As Laias and Crastoeiro, a distinction between emmer and spelt was possible, being the latter the main crop in both cases. The large concentration of spikelets in these two assemblages suggested grains were stored within spikelets, and pointed to long-term storage (Tereso et al., 2013b; Seabra, 2015; Seabra et al., 2018). In the site of S. João de Rei (Póvoa de Lanhoso, Northern Portugal), a considerable concentration of wheat (*Triticum* sp.) was also found inside a pit, but a detailed taxonomic diagnose was not achieved (Dopazo Martínez, 1996; Bettencourt, 1999; Oliveira, 2000).

The sites in Northern Portugal where elevated granaries (*horrea*) were found and archaeobotanical analyses were carried out (Quinta de Crestelos, Castelinho, and Rei Ramiro) shared a common feature, the predominance of naked wheat. Besides, the cereals recovered in these three contexts were almost the same (naked wheat, hulled barley, broomcorn millet), with the exception of foxtail millet which was only found in association with the *horreum* of Rei Ramiro. Cereals were probably stored as clean grain in these sites.

There were some architectural and chronological differences between those *horrea* (see Chapter 6). At Rei Ramiro, a single large *horreum* with a rectangular plan was identified, while in the Sabor sites several rectangular and circular *horrea* with small dimensions were observed. Chronologically, the *horreum* of Rei Ramiro was likely raised around the

second half of the 1st century BCE, in a moment of strong Roman influences, eventually in direct association with the Romanization process of Northwest Iberia. Its abandonment should have occurred during the Early Roman period (Ramos, 2020; Ramos and Carvalho, 2020). The *horrea* from Castelinho and Quinta de Crestelos were used during a similar period of time (2nd-1st centuries BCE), which certainly extended to the Early Roman period (1st-2nd centuries CE) at Quinta de Crestelos, but in an indigenous context, at least in its earliest phases. Although Salido Domínguez (2017) associated these *horrea* with military actions of the Roman army in the region, the archaeological and chronological evidence from the Sabor valley does not suggest it. Thus, although this hypothesis cannot be excluded, more research is necessary to attest it.

It is difficult to know the reasons behind the association between *horrea* and naked wheat. There are no clear technical issues in these elevated granaries favoring naked wheat and no clear chronological or cultural factors can be discerned either. These structures show the same chronology as some pits and wattle and daub structures mentioned above, some of which (e.g. Crasto de Palheiros) are located not far from the *horrea* here mentioned.

There are fewer storage contexts with fruits/seeds remains from Late Antiquity onwards. Still, this is more likely a consequence of the decrease in archaeobotanical studies in the region rather than a direct result of changes in storage practices. At Monte Mozinho, remains were found inside two aboveground quadrangular structures built in stone, but it is disputable if they correspond to primary depositions. Grains of rye and both broomcorn and foxtail millets were recovered in these facilities, particularly in the structure from Compartment 1 (Tereso, 2012; Tereso et al., 2013c). Two storage pits and a single ceramic vessel would have been equally used for storage, despite showing scarce fruits/seeds remains. Still, the record of a few naked wheat grains in one pit from Compartment 2, suggests this cereal was also associated with the storage facilities (Tereso, 2012; Tereso et al., 2013c).

A clearer Late Antique evidence of storage was observed at Castro S. João das Arribas (Chapter 7). Here, crops were kept in a central storage area around the 6th-7th centuries CE, particularly in two aboveground structures that were located close to each other and showed small dimensions (around 1m$^2$) and sub-quadrangular forms. Crops were also found scattered in the surroundings of these structures as well as in ceramic vessels (either inside and outside the sub-quadrangular structures). Diverse cereals and one oil/fibre plant – flax – were identified in this area, but the dominance of rye shaped this assemblage. Naked wheat, hulled barley, broomcorn millet, flax, foxtail millet, and oat

were found in small proportions. In this site, cereals were probably also stored as clean grain, since no chaff remains were found in this area.

Analyses of fruits/seeds in storage facilities from Early Medieval times are also scarce in Northwest Iberia. Storage practices were documented at Cova Eirós, where varied cereals, flax, and hazelnut remains were collected in one pit (Teira-Brión et al., 2012). Nonetheless, this type of structure was likely common during this period of time in the region, as revealed by other approaches, including or not archaeobotanical information (Teira-Brión et al., 2010; Resino, 2013). More data about Early Medieval storage was only available southwards, in the Mondego valley. At Senhora do Barrocal, large amounts of fruits/seeds remains were recovered from a building, probably constructed with perishable materials (Chapter 8). The assemblage was characterized by cereals, being rye and oat largely predominant. Other cereals, namely broomcorn millet, hulled barley, and naked wheat were recovered in smaller amounts. Foxtail millet was rare. These crops were likely stored in two areas of the building, according to the spatial distribution observed (Chapter 8). Still, results showed that most remains were concentrated in an 8m$^2$ space, but cereals were distributed differently throughout the area. It was also observed that fully prepared plant-based food was also kept within this space. Another space for storage is attested by the record of another concentration of fruits/seeds remains some metres away, where the only finds of flax were recovered.

The cereals identified were likely stored in different processing stages. The proportions of hulled grains and grains with husk remains attached with clean grains suggested that broomcorn millet and hulled barley were probably stored hulled, being admitted the same for oat, although with some reservations. On the other hand, rye and naked wheat should have been stored fully processed considering the higher amounts of clean grains found there, and the fact that these cereals are easily freed at the early stages of post-harvest processing. The coexistence in the same structure of cereals in different processing stages, but also the presence of crops with different characteristics (flax, pulses, fruits) and plant-based food products would imply the existence of containers or other elements to assure their separation and organization in this building. As mentioned above, the spatial distribution of the plant remains sustains this hypothesis. Considering the lack of clear perennial structural elements, perishable containers or barriers (e.g. wattle, basketry) were likely used.

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# Chapter 12 - Main conclusions and future work

## 12.1. Final considerations and the future ahead of us

The main goal of this thesis was to identify the main crops, clarify the chronology of the introduction or dissemination of some and understand agricultural and storage practices in Northern Portugal from the Iron Age to Early Medieval times. This work intended to fill some geographic and chronological gaps in the data available and, as such, understand better the relation between agricultural choices and broad social or environmental trends in a long-time span.

Through an ambitious project, we carried out seven archaeobotanical approaches, including analyses of individual sites but also concerning a particular species: rye (*Secale cereale*).

The results obtained in this thesis emphasized the determinant role played by a diversity of cereals in the agricultural strategies of the periods analysed. The predominance of cereals in the assemblages, even if partially reflecting preservation biases related to charring (e.g. Jacomet, 2007; Van der Veen, 2007; Jacomet, 2013; Peña-Chocarro and Pérez-Jordà, 2019; Peña-Chocarro et al., 2019b), inevitably determined the path of this work. As such, understanding the role of cereals in agricultural and storage strategies, ended up being our main focus. Some considerations about pulses, fruits, and oil/fibre plants were made, but those were limited by the reduced information obtained.

The analysed Iron Age deposits (5$^{th}$ century BCE- late 1$^{st}$ century BCE) from "Casa Romana" (Roman house) of the Castro de São Domingos (Chapter 3), Freixo/Tongobriga (Chapter 4), Castelinho (Chapter 5), and Rei Ramiro (Chapter 6) in Northern Portugal provided assemblages with different dimensions but all characterized by the predominance of cereals. Naked wheat (*Triticum aestivum/durum*) was particularly relevant at Castelinho and Rei Ramiro. A result coincident with the fruits/seeds data obtained at Quinta de Crestelos in the Sabor valley (Tereso et al., 2018). These three contexts shared common features such as the location nearby river courses (Douro and Sabor rivers) and the association with elevated granaries (*horrea*), still, the context behind the preference for naked wheat, whether due to environmental, political, or cultural factors, was not completely clear, and needs further research. Nevertheless, the results showed that naked wheat was another staple crop during the Iron Age. A relevance that seems to have continued in Early Roman times. Hulled wheats

were relevant in the Iron Age levels of Freixo/Tongobriga, and probably at "Casa Romana" (Roman house) of the Castro de São Domingos, despite regarding this last site there were doubts about the chronology of the plant remains (see Chapter 3). Spelt (*Triticum spelta*) was the only hulled wheat clearly identified at those sites. These results, together with the latest radiocarbon date obtained at Terronha de Pinhovelo (see Chapter 10), strengthen the major role of hulled wheats in the Iron Age, which were widely distributed in the Northwestern territory. The record of broomcorn millet (*Panicum miliaceum*) in the above-mentioned sites was in agreement with the pattern observed in the rest of Northwest Iberia (e.g. Dopazo Martínez, 1996; Figueiral, 2008; Tereso, 2012; Figueiral et al., 2017; Tereso et al., 2018; Teira-Brión, 2019), being widely found and pointing to a major relevance of this crop during the Iron Age. Foxtail millet (*Setaria italica*) was less expressive in the fruits/seeds record but recent evidence from Galicia (Martín-Seijo et al., 2019; Teira-Brión, 2019), together with the data obtained in this approach showed that it was also important in the agricultural systems of Northwest Iberia. The reduced presence of hulled barley (*Hordeum vulgare*) in the Iron Age contexts here addressed, and other data from the region suggest it had a secondary role, although it was frequently found, including in association with storage facilities (Figueiral, 2008; Figueiral et al., 2017; Seabra et al., 2018; Tereso et al., 2018; Teira-Brión, 2019).

The absence of floret bases of domesticated oat (*Avena sativa* or *Avena strigosa*) in Iron Age deposits caused some doubts about its intentional cultivation. Still, oat grains (*Avena* sp.) were recurrent in this work, and in other Northwestern sites (Dopazo Martínez, 1996; Tereso, 2012; Tereso et al., 2013; Seabra et al., 2018; Teira-Brión, 2019), indicating it was probably a crop. So far, the floret bases recovered at "Casa Romana" (Roman house) of the Castro de São Domingos correspond to the earliest evidence of bases from domesticated oat in Northwest Iberia, according to the radiocarbon date obtained on oat grains from the same level (1$^{st}$-2$^{nd}$ centuries CE) (see Chapter 3). On the other hand, the role of rye seems now clearer (Chapter 9). The statistical analyses suggested rye was introduced in the region between the 3$^{rd}$ century BCE and the first half of the 1$^{st}$ century BCE, probably within a period between the 3$^{rd}$ and the 2$^{nd}$ centuries BCE. Although the context of its introduction in Northwest Iberia was not fully clear, rye could have been a weed in fields of spelt.

The fruits/seeds data from Early Roman deposits was reduced and did not show significant differences in comparison with older contexts. However, none of the analysed assemblages were from sites of Roman foundation. As observed in other cases (e.g. necropolis of *Via XVII,* Reza Vella), Roman sites have the potential to bring new light on

the role of plant resources in the Romanization of indigenous communities and the role of Romans in changing agriculture and plant consumption in the region (Teira-Brión, 2019; Vaz et al., 2021). Thus, more archaeobotanical studies with well-defined sampling strategies are necessary. Only then it will be possible to fully relate archaeobotanical data with other archaeological information (e.g. regarding settlement strategies, presses, tanks and other structures, as well as ceramics used for storage, trade or food consumption) and thus better understand how Roman times changed Northwest Iberia agriculturally, and at other levels.

Whether through the fruits/seeds analyses developed in the scope of this study, namely at "Casa Romana" (Roman house) of the Castro de São Domingos", Freixo/Tongobriga, Rei Ramiro, Castro S. João das Arribas (Chapter 7) or other approaches carried out in recent years (Peña-Chocarro et al., 2019a, 2019b; Teira-Brión, 2019; Tereso et al., 2020; Vaz et al., 2021), Late Antique information (3$^{rd}$-7$^{th}$ centuries CE) is increasing in Northwest Iberia. Unfortunately, with the exception of the storage context from Castro S. João das Arribas, most of those assemblages provided few fruits/seeds remains.

Cereals were again dominant but comparisons with previous chronologies were complicated since we were facing a period with less archaeobotanical representation. Despite this, it was observed that rye was now a crop, and its relevance expanded during Late Antiquity, including in the Northwest and several other Iberian areas (e.g. Buxó, 1999; Alonso, 2005; Alonso et al., 2010; Vigil-Escalera et al., 2014; Colominas et al., 2019; Peña-Chocarro et al., 2019b) as well as elsewhere in Europe (e.g. Behre, 1992; McCormick, 2013; Bakels, 2014; Squatriti, 2019). Several factors would have been behind the dissemination of rye, including environmental, economic, or cultural reasons (McCormick et al., 2012; McCormick, 2013; Squatriti, 2019). In contrast, the presence of hulled wheats in the fruits/seeds assemblages declined massively, suggesting that the better adaptability of rye to adverse climatic conditions and soils with less fertility, as well as the fact that it was easier to process after the harvest, caused an eventual shift in the crop choices of past communities. It was difficult to detail the role of other cereals, namely both broomcorn and foxtail millets, naked wheat, and hulled barley, but their recurrence in several Late Antique deposits, including in storage contexts, leads us to propose they were relevant in the agricultural systems of Northwest Iberia.

Due to the lack of Early Medieval fruits/seeds assemblages from Northern Portugal, we expand the study area to the Mondego valley through the analysis of the archaeobotanical assemblage of Senhora do Barrocal (Chapter 8). It provided a broad assemblage composed not only of fruits/seeds remains but also of food and charcoal

fragments. Although the fruits/seeds assemblage showed a diversity of crops, cereals were by far predominant. Rye and oat were the main ones, whereas broomcorn millet, hulled barley, and naked wheat were less represented, and foxtail millet was scarce. They were likely stored in perishable containers or barriers, and in different processing stages, namely fully processed (rye, and naked wheat), and partially processed (broomcorn millet, hulled barley, and perhaps oat). Regarding the last cereal, the record of significant floret bases from domesticated oat (*Avena sativa/strigosa*) alongside large amounts of grains confirmed its cultivated status and crucial role in this site. The importance of rye is consistent with the archaeobotanical information and written sources available for the Iberian Peninsula and other parts of Europe, suggesting the spread of this crop during the Medieval period (e.g. Oliveira Marques, 1978; Behre, 1992; Ruas, 1992; Gonçalves, 2012; Bakels 2014; Jacomet, 2014; Mingote, 2014). The biometric characterization of rye grains unveiled a possible increase in grain size during the Early Medieval ages.

This thesis produced significant new archaeobotanical data for different geographical areas and chronological periods in Northern Portugal. Still, and as recurrently manifested throughout this thesis, it is an unfinished work. Even for periods archaeobotanically well represented such as the Iron Age in Northwest Iberia, there are topics that still require further investigation (e.g. oat´s cultivation, the context around the use of *horrea* and their association with naked wheat). For later chronologies, it rendered an increment of fruits/seeds analyses but still far from a scenario that allows a solid understanding of the use of plants as well as agricultural and storage practices conducted by past communities, and their consequent relation with historical and environmental events.

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# Attachments

Attachment 1 - Fruits and seeds from “Casa Romana” (Roman house) of the Castro de São Domingos (Lousada, Northern Portugal) (Supplementary material of Chapter 3)

Attachment 2 - Over the centuries: Long-term crop selection and diversity at Freixo/Tongobriga (Northwest Iberia) (Supplementary material of Chapter 4)

Attachment 3 - Crops behind closed walls: Fortified storage at Castelinho in the Late Iron Age of NW Iberia (Supplementary material of Chapter 5)

Attachment 4 - Archaeobotany with Douro view: fruits and seeds from the site of Rei Ramiro (Vila Nova de Gaia, Northern Portugal) (Supplementary material of Chapter 6)

Attachment 5 - Crops on the edge of a cliff: Storage at Castro S. João das Arribas (Northwest Iberia) in the Late Antiquity (Supplementary material of Chapter 7)

Attachment 6 - Crops on the Rocks: Production, Processing, and Storage at the Early Medieval Site of Senhora Do Barrocal (Municipality of Sátão, Central Portugal) (Supplementary material of Chapter 8)

Attachment 7 - The introduction and spread of rye in the Iberian Peninsula (Supplementary material of Chapter 9)

# Attachment 1 - Fruits and seeds from “Casa Romana” (Roman house) of the Castro de São Domingos (Lousada, Northern Portugal) (Supplementary material of Chapter 3)

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| Sample | Mesh | 2 mm | | 1 mm | | 0.5 mm | |
|---|---|---|---|---|---|---|---|
| | S.U. | Original weight (g) | Sorted (g) | Original weight (g) | Sorted (g) | Original weight (g) | Sorted (g) |
| **6** | 77 | 1.2 | 1.2 | 2.7 | 2.7 | 5.7 | 1.33 |
| **9** | 116 | 1.5 | 1.5 | 2.16 | 2.16 | 4.27 | 1.92 |
| **10** | 92 | 26.89 | 26.89 | 25.3 | 5.93 | 44.15 | 1.22 |
| **11** | 80 | 3.95 | 3.95 | 2.99 | 2.99 | 3.05 | 1.48 |
| **14** | 80 | 4.49 | 4.49 | 2.83 | 2.83 | 4.03 | 1.82 |
| **12** | 45 | 23.9 | 23.9 | 12.52 | 5.8 | 13.04 | 1.4 |
| **15** | 170 | 23.99 | 23.99 | 34.46 | 7.84 | 49.84 | 1.32 |
| **18** | 170 | 22.37 | 22.37 | 8.17 | 8.17 | 8.6 | 1.84 |
| **16** | 50 | 3.1 | 3.1 | 1.82 | 1.82 | 2.89 | 1.43 |
| **31** | 708 | 49.23 | 49.23 | 30.03 | 6.7 | 36.38 | 1.86 |
| **32** | 804 | 3.32 | 3.32 | 1.99 | 1.99 | 2.65 | 1.31 |
| **33** | 804 | 2.9 | 2.9 | 2.58 | 2.58 | 3.55 | 1.67 |
| **37** | 818 | 3.68 | 3.68 | 1.83 | 1.83 | 2.44 | 1.2 |
| **39** | 806 | 12.17 | 12.17 | 3.21 | 3.21 | 3.35 | 1.65 |
| **40** | 812 | 5.86 | 5.86 | 4.22 | 4.22 | 6.03 | 1.36 |
| **41** | 812 | 3.85 | 3.85 | 2.43 | 2.43 | 3.35 | 1.64 |
| **42** | 723 | 2.05 | 2.05 | 3.15 | 3.15 | 4.83 | 1.23 |
| **43** | 778 | 2.91 | 2.91 | 3.12 | 3.12 | 5.55 | 1.24 |
| **44** | 675 | 3.21 | 3.21 | 3.83 | 3.83 | 5.98 | 1.45 |
| **45** | 713 | 13.12 | 13.12 | 10.44 | 5.08 | 9.24 | 2.06 |
| **46** | 710 | 13.1 | 13.1 | 9.98 | 4.94 | 11.95 | 1.35 |
| **47** | 711 | 84.88 | 84.88 | 61.07 | 6.17 | 52.37 | 1.26 |
| **48** | 721 | 7.17 | 7.17 | 8.86 | 8.86 | 12.88 | 1.43 |
| **50** | 540 | 5.62 | 5.62 | 4.14 | 4.14 | 4.46 | 2.15 |
| **51** | 486 | 23 | 23 | 17.41 | 8.23 | 20.21 | 0.96 |
| **52** | 517 | 2.82 | 2.82 | 4.49 | 4.49 | 6.81 | 1.66 |
| **54** | 485 | 27.92 | 27.92 | 22.22 | 5.09 | 22.71 | 1.23 |
| **55** | 480 | 14.86 | 14.86 | 12.22 | 5.46 | 13.92 | 1.5 |
| **56** | 406 | 10.34 | 10.34 | 7.44 | 7.44 | 6.46 | 0.75 |
| **58** | 475 | 2.12 | 2.12 | 2.22 | 2.22 | 2.94 | 0.73 |
| **59** | 405 | 1.64 | 1.64 | 2.7 | 2.7 | 5.12 | 1.18 |
| **60** | 447 | 4.29 | 4.29 | 4.6 | 4.6 | 6.02 | 1.42 |
| **61** | 561 | 4.25 | 4.25 | 4.61 | 4.61 | 6.26 | 1.51 |
| **62** | 398 | 20.06 | 20.06 | 14.51 | 6.72 | 17.11 | 0.97 |
| **63** | 489 | 19.21 | 19.21 | 18 | 8.66 | 19.1 | 1.9 |
| **64** | 465 | 17.61 | 17.61 | 15.72 | 7.52 | 16.63 | 1.88 |
| **65** | 471 | 21.36 | 21.36 | 13.12 | 6.63 | 13.51 | 1.42 |
| **66** | 536 | 18.26 | 18.26 | 15.99 | 7.89 | 15.34 | 1.89 |
| **67** | 908 | 8.95 | 8.95 | 8.89 | 2.31 | 8.72 | 0.55 |
| **77** | 908 | 9.32 | 9.32 | 8.36 | 2.14 | 7.52 | 0.52 |
| **68** | 909 | 9.03 | 9.03 | 9.66 | 2.5 | 9.93 | 0.62 |
| **70** | 909 | 11.01 | 11.01 | 8.97 | 2.39 | 10.02 | 0.65 |
| **71** | 911 | 5.41 | 5.41 | 3.8 | 3.8 | 4.99 | 0.58 |
| **72** | 911 | 2.15 | 2.15 | 2.91 | 2.91 | 4.49 | 0.56 |
| **75** | 911 | 2.26 | 2.26 | 2.55 | 2.55 | 3.49 | 0.91 |
| **76** | 916 | 1.96 | 1.96 | 3.23 | 3.23 | 4.23 | 0.6 |
| **80** | 916 | 0.58 | 0.58 | 1.06 | 1.06 | 1.38 | 0.68 |
| **73** | 918 | 1.53 | 1.53 | 2.14 | 2.14 | 2.61 | 0.65 |
| **78** | 918 | 0.81 | 0.81 | 1.35 | 1.35 | 2.08 | 0.99 |
| **79** | 921 | 2.63 | 2.63 | 2.5 | 2.5 | 2.59 | 0.55 |
| **69** | 922 | 1.8 | 1.8 | 3.51 | 3.51 | 7.34 | 0.87 |
| **74** | 922 | 0.98 | 0.98 | 1.29 | 1.29 | 1.74 | 0.88 |
| **82** | 1013 | 0.96 | 0.96 | 1.65 | 1.65 | 2.78 | 1.34 |
| **90** | 1118 | 4.79 | 4.79 | 4.35 | 4.35 | 4.1 | 1.05 |
| **94** | 1207 | 0.94 | 0.94 | 1.41 | 1.41 | 3.71 | 0.98 |
| **83** | 1032 | 2.12 | 2.12 | 3.13 | 3.13 | 5.22 | 1.23 |
| **86** | 1015 | 2.91 | 2.91 | 2.23 | 2.23 | 4.88 | 1.2 |
| **95** | 1159 | 5.82 | 5.82 | 6.9 | 3.43 | 9.78 | 1.01 |
| **91** | 1038 | 4.21 | 4.21 | 5.1 | 2.62 | 6.68 | 0.73 |
| **88** | 1129 | 8.04 | 8.04 | 6.5 | 3.37 | 10.32 | 1.14 |
| **89** | 1123 | 5.66 | 5.66 | 6.59 | 3.48 | 18.58 | 1.24 |
| **87** | 1142 | 4.67 | 4.67 | 4.14 | 4.14 | 4.97 | 1.28 |
| **84** | 1037 | 23.76 | 23.76 | 13.59 | 3.29 | 15.73 | 0.96 |
| **92** | 1108 | 4.88 | 4.88 | 5.23 | 2.45 | 8.47 | 0.94 |
| **85** | 1149 | 7.62 | 7.62 | 6.82 | 3.25 | 9.35 | 1.07 |
| **93** | 1046 | 108.57 | 108.57 | 35.49 | 4.63 | 31.54 | 0.97 |

Table A1.1 - Subsampling applied at “Casa Romana” (Roman house) of the Castro de São Domingos.

| **Chronology** | **Iron Age** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Context type** | **Pits** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Context** | P2 | | | | | P27/47 | P30 | | P38 | P50 | P51 | P52 | | P54 | | | | P58 | | | | | P59 | | | P61 | | P63 | | P70 | P1057 |
| **Volume (Litres)** | 0.2 | 2 | 1.5 | 0.1 | 1 | 0.5 | 8 | 8 | 8 | 8 | 7 | 8 | 8 | 8 | 8 | 9 | 4 | 5 | 2 | 5 | 3 | 2 | 3 | 3 | 3 | 3 | 5 | 3 | 8 | 5 |
| **S.U.** | **50** | **50** | **50** | **51** | **51** | **52** | **561** | **405** | **447** | **536** | **710** | **711** | **723** | **708** | **713** | **721** | **806** | **806** | **813** | **814** | **814** | **816** | **804** | **804** | **818** | **818** | **812** | **812** | **1149** | **1037** |
| **Sample** | 5 | 16 | 17 | 1 | 13 | 2 | 61 | 59 | 60 | 66 | 46 | 47 | 42 | 31 | 45 | 48 | 38 | 39 | 20 | 34 | 35 | 27 | 32 | 33 | 36 | 37 | 40 | 41 | 85 | 84 |
| **Cereals (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | | | | |
| *Hordeum vulgare* (frag.) | | | | | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* | 1 | 1 | | | | | 3 | 2 | 1 | 56 | 33 | 8 | 13 | 22 | 48 | 25 | 6 | 16 | 1 | | | | 4 | | 1 | 4 | 7 | 5 | 1 |
| *Panicum miliaceum* (frag.) | | | | | | | | | | 21 | 10 | | 10 | 3 | 12 | 2 | 1 | | | | | | 2 | | | 1 | | | |
| *Setaria italica* | | | | | | | | 2 | 1 | 6 | 4 | | | | 8 | 3 | | | | | | | | | | 1 | | | | |
| *Setaria italica* (frag.) | | | | | | | | | | 2 | 4 | | | | 1 | 2 | | | | | | | | | | | | | | |
| Panicoideae | 1 | 3 | 3 | | | 1 | 3 | | 3 | 18 | 24 | 12 | | 5 | 29 | 10 | 1 | 7 | 5 | | | | 1 | 3 | | 1 | 2 | 4 | 6 | |
| Panicoideae (frag.) | | | 1 | | | | 4 | | 1 | 46 | 12 | 19 | | 13 | 38 | 20 | 1 | 4 | 1 | | | 3 | 3 | 3 | | | 2 | 3 | 9 | |
| Panicoideae (scutellum) | | | | | | | | | | | | | 1 | | | 1 | | | | | | | | | | | 2 | | | |
| *Triticum aestivum/durum* | | | | | | | | | | 6 | 6 | 2 | | 4 | 6 | 3 | | 1 | | | | 1 | | | | | 1 | 1 | 4 | |
| *Triticum aestivum/durum* (frag.) | | | | | | | 1 | | | 1 | 1 | 2 | | 1 | 2 | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (longitudinal frag.) | | | | | | | | | | | | | | | 4 | | | | | | | | | | | | | | 2 | |
| *Triticum spelta* | | | | | | | | | | | | 1 | | 1 | | | | | | | | | | | | | | | | |
| *Triticum* sp. | | | 1 | | | | 1 | | | 4 | | 5 | 1 | 30 | | | | | 1 | | | | | | | | 1 | | 1 | 6 |
| *Triticum* sp. (frag.) | | | | | | | | | 1 | | 1 | 1 | 2 | 7 | | 1 | | | 1 | | | | 1 | | | | | 1 | 1 | 5 |
| Triticeae | | | | | | | 1 | | | | 1 | | | 19 | 1 | 1 | | | | | | | 1 | | | 1 | | | 1 | |
| Triticeae (without scutellum) | 1 | | 2 | | | | | 1 | 3 | 12 | 13 | 5 | 1 | 13 | 13 | 11 | 5 | | 6 | | | | 1 | 3 | | | 10 | 4 | 8 | 10 |
| Triticeae (scutellum) | | | | | | | | 1 | | | | | 1 | 3 | 1 | | | | | | | | 1 | 1 | | | 1 | 1 | | 1 |
| Triticeae (embryo) | | 1 | | | | | | | | | | | | | | | | | 3 | | | | | | | | | 1 | | |
| **Cereals (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa/strigosa* (floret base) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicodeae (rachis frag.) | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* (rachis segment w/1 node) | | | | | | | | | | | | | 1 | 5 | | | | | | | | | | | | | | | | |
| *Triticum aestivum* (rachis segment w/2 nodes) | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | |
| *Triticum aestivum* (rachis internode frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis segment w/1 node) | | | | | | | | | | | | | | 5 | | | | 6 | 1 | 1 | | | | | | | 1 | | | |
| *Triticum aestivum/durum* (rachis segment w/3 nodes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | | | 1 | | | | | | 1 | 12 | 3 | 1 | 4 | 22 | 6 | 5 | 7 | 17 | 2 | | | 2 | | | | | 4 | 3 | 2 | 3 |
| *Triticum aestivum/durum* (rachis internode frag.) | | | | | | | | | | | | | | | 3 | | | 7 | | | | 1 | | | | | | | | |
| *Triticum spelta* (spikelet base) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum spelta* (glume base) | | | | | | | 1 | | 1 | 1 | 1 | | | | | | 2 | 3 | | | | | 2 | 1 | | | | | | 1 |
| *Triticum* sp. (spikelet base) | | | | | | | | 1 | | | | | | | | | 2 | 1 | | | | | | | | | 1 | 1 | | |
| *Triticum* sp. (glume base) | 2 | 3 | | | | | 3 | | | 1 | 11 | | 3 | 4 | | 5 | 3 | 7 | 1 | 1 | | | 4 | 6 | 4 | 3 | 14 | 25 | 1 | 4 |
| *Triticum* sp. (glume frag.) | | | | | | | | | 4 | | 4 | | 1 | 10 | 5 | | 16 | 55 | | | | | | 5 | 2 | 1 | 3 | 1 | | 1 |
| *Triticum* sp. (rachis frag.) | 2 | 5 | 3 | | 1 | | 3 | | 2 | 14 | 16 | 5 | 11 | 17 | 15 | 3 | 19 | 19 | 5 | 1 | | 3 | 3 | 8 | 7 | 7 | 16 | 18 | 5 | 4 |
| *Triticum* sp. (rachis internode frag.) | | | | | | | | | | 2 | | | | 3 | | | | | | | | | | | | | | | | 1 |
| Triticeae (awn frag.) | | | | | | | | | | | | | | 32 | | | 6 | 32 | 2 | | | | | 1 | | | | 1 | 2 | 1 |
| Triticeae (husks frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | 10 | | |
| Triticeae (rachis frag.) | 1 | | 10 | | 1 | 1 | 3 | | | | | | | | 1 | | | 3 | 13 | | | | | 1 | | | 8 | 9 | 1 | 2 |
| Triticeae (rachis internode frag.) | | | | | | | | 1 | | | | 1 | 1 | | | | 2 | 1 | | | | | | | | | | | | |

Table A1.2 - Full Carpological results from “Casa Romana” (Roman house) of the Castro de São Domingos.

| **Chronology** | **Iron Age** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Context type** | **Pits** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Context** | P2 | | | | | | P27/47 | | P30 | | P38 | P50 | P51 | P52 | | P54 | | | | P58 | | | | | P59 | | P61 | | P63 | | P70 | P1057 |
| **S.U.** | **50** | **50** | **50** | **51** | **51** | **52** | **561** | **405** | **447** | **536** | **710** | **711** | **723** | **708** | **713** | **721** | **806** | **806** | **813** | **814** | **814** | **816** | **804** | **804** | **818** | **818** | **812** | **812** | **1149** | **1037** |
| **Sample** | 5 | 16 | 17 | 1 | 13 | 2 | 61 | 59 | 60 | 66 | 46 | 47 | 42 | 31 | 45 | 48 | 38 | 39 | 20 | 34 | 35 | 27 | 32 | 33 | 36 | 37 | 40 | 41 | 85 | 84 |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | | | | | | | | | 3 | | 1 | 1 | | 2 | | | | | | | | | | | | | | | | |
| *Avena* sp. (frag.) | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | 1 | | |
| *Digitaria* sp. | | | | | | | | | | | | | | | | | 1 | | 1 | | | | | | | | | | | |
| *Poa* sp. | | | | | | | | | | 2 | 2 | 1 | | 2 | 1 | | 2 | 2 | | | | | 1 | 1 | | 2 | | | | |
| *Poa* sp. (frag.) | | | | | | | | | | | | | 1 | | | | | | | | | | | 1 | | | | | | |
| *Secale cereale* | | | | | | | | | | | | 6 | | | | | | | | | | | | | | | | | | |
| *Secale cereale* (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae | | 2 | 2 | | | | 2 | | | | | 4 | | 5 | 1 | | | 2 | | | 1 | | | | | | 2 | 4 | | |
| Poaceae (frag.) | | 3 | 2 | | | | | | | 1 | | 1 | | 6 | | 1 | 3 | 3 | | | | | | 1 | 2 | | 3 | | | |
| Poaceae (scutellum) | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (embryo) | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. (awn frag.) | | | | | | | | | | | | | | 1 | | | | 1 | | | | | | | | | | 2 | | |
| *Avena* sp. (husks frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* (rachis segment w/1 node) | | | | | | | 1 | 2 | 1 | | | | | | | | 2 | | | | | | | | | | | | | |
| *Secale cereale* (rachis segment w/2 nodes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* (rachis frag.) | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | |
| Poaceae (rachis frag.) | | | | | | | | | | | | 1 | | 2 | | | | | | | | | | | | | | 2 | | |
| **Fabaceae** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* (seed) | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | |
| Fabaceae - *Genista* type (seed) | | | 1 | | | | | | | | | | 1 | 5 | 1 | 1 | | | | | | | 1 | 1 | | | | 1 | | |
| Fabaceae - *Genista* type (seed frag.) | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | |
| Fabaceae – *Medicago* type (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Melilotus* type (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Trifolium* type (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (loment segment) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed) | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (seed) | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (cotyledon) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus/Pisum* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| *Vicia/Lathyrus/Pisum* (cotyledon) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus/Pisum* (seed frag.) | | | | | | | | | | | | 2 | | 1 | | | | | | | | | | | | | | | | |
| Fabaceae (seed) | | | | | | | | | | | | | 1 | 1 | | 1 | | | | | | | 1 | | | | | | | |
| Fabaceae (seed frag.) | | | | | 1 | | | | | | 1 | | | | | | | | | | | | | | | | 1 | | | |
| Fabaceae (cotyledon) | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cupule) | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cupule frag.) | | | | | | | | | | | | | | 1 | | 1 | | | | | | | | | | | | | | |
| *Quercus* sp. (pericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rubus* sp. (seed) | | | | | | | | | | 3 | 2 | | | | 1 | 3 | | | | | | | 1 | | | | | | | |
| *Rubus* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed) | | | | | | | 1 | | | | | 8 | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed frag.) | 2 | 2 | | 1 | | | 1 | 1 | 6 | | 1 | 2 | 1 | 2 | 1 | | 5 | 2 | | | 1 | 1 | | | 2 | | 1 | 1 | | |
| *Vitis vinifera* (pedicel) | | 1 | | | | | 1 | | 2 | | | 5 | 1 | 1 | | | | 1 | 1 | | | | | | 1 | | | | | 1 |

Table A1.2 - (continued).

| **Chronology** | **Iron Age** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Context type** | **Pits** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Context** | P2 | | | | | | P27/47 | P30 | | P38 | P50 | P51 | P52 | | P54 | | | | P58 | | | | | P59 | | | P61 | | P63 | | P70 | P1057 |
| **S.U.** | **50** | **50** | **50** | **51** | **51** | **52** | **561** | **405** | **447** | **536** | **710** | **711** | **723** | **708** | **713** | **721** | **806** | **806** | **813** | **814** | **814** | **816** | **804** | **804** | **818** | **818** | **812** | **812** | **1149** | **1037** |
| **Sample** | 5 | 16 | 17 | 1 | 13 | 2 | 61 | 59 | 60 | 66 | 46 | 47 | 42 | 31 | 45 | 48 | 38 | 39 | 20 | 34 | 35 | 27 | 32 | 33 | 36 | 37 | 40 | 41 | 85 | 84 |
| **Others** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae (cypsela) | 1 | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| Asteraceae - *Coleostephus* type (cypsela) | | | | | | | 1 | | 2 | | 1 | 2 | | 3 | 3 | | 13 | 60 | 1 | | | 1 | | 1 | | 1 | | 2 | | 20 |
| Asteraceae - *Coleostephus* type (cypsela frag.) | | | | | | | | | | 1 | | | | | 1 | | 3 | 6 | 1 | | | | | | | | | | | 1 |
| Caryophyllaceae (seed) | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | |
| *Carex* sp. (achene) | | | | | | | | | | | | | | | | | | 3 | 1 | | | | | | | | | | | |
| *Chenopodium* sp. (seed) | | | | | | | 1 | | 1 | | | 1 | 1 | 1 | 1 | | 1 | 1 | | | | 2 | 2 | | | 1 | | | 1 | |
| *Chenopodium* sp. (seed frag.) | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | |
| *Corrigiola litoralis* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Erica* sp. (leaf frag.) | | | | | | | | | 3 | | 4 | 4 | | | 6 | | 3 | | 4 | | | | 1 | | | 1 | 1 | 5 | 7 | |
| *Euphorbia* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rubiaceae (mericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* (mericarp) | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | |
| *Galium* sp. (mericarp) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* sp. (mericarp frag.) | | | | | | | | | | | | | | | | 7 | | | | | | | | | | | | | | |
| Lamiaceae (nutlet) | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | |
| *Malva* sp. (seed) | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed) | | | | | | | 2 | | | | | | 1 | 1 | | | 2 | | | | | | | | | | | | | |
| *Polygonum aviculare* (achene) | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | |
| *Polygonum lapathifolium* (achene) | | 1 | | | | | | | | | | | | 2 | | | | | | | | | | 1 | | | | | | |
| *Polygonum lapathifolium* (achene frag.) | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | |
| *Polygonum* sp. (achene) | | | | | | | | | | | | | | | | | 3 | | | | | | | | | | | | | |
| Polygonaceae (achene) | | | | | | | | | | | | | 1 | 1 | | 1 | | | | | 1 | | | | | | | | | |
| Polygonaceae (achene frag.) | | | | | | | | | | | 1 | | | 1 | | | 2 | | | | | | 1 | | | | | | | |
| *Portulaca oleracea* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | | | | | | | | | | | | | | | 15 | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment frag.) | | | | | | | | | | | | | | | | 11 | | | | | | | | | | | | | | |
| *Rumex acetosa* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex bucephalophorus* (achene) | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | |
| *Rumex* sp. (achene) | | | | | | | | 1 | | 2 | | | 1 | | 1 | 2 | | | 1 | | | | | | | | | | | |
| *Rumex* sp. (achene frag.) | | | 1 | | | | 1 | | | | | | | | 1 | | | | | | | | | | | | | | | |
| *Sambucus* sp. (stone) | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | |
| *Sherardia arvensis* (mericarp) | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | | |
| *Silene gallica* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Solanum* sp. (seed) | | | | | | | | | | 1 | 1 | | 1 | 1 | | | | 1 | | | | | | | | | | | | |
| *Spergula arvensis* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Stellaria/Cerastium* (seed) | | | | | | | | | | | | | | | 2 | | | | 1 | | | | | 1 | | 1 | 1 | | | |
| *Stellaria/Cerastium* (seed frag.) | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | |
| *Urtica* sp. (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| *Veronica* sp. (seed) | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| *Viola* sp. (seed) | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | |
| Undetermined (flower bud frag.) | | | | | | | 1 | | 1 | | | | | | | | 1 | | | | | | | | | 1 | | | | |
| Undetermined (plant spine frag.) | | 1 | 1 | | | | | | | | | 1 | | | | 2 | | 1 | | | | | | 1 | | | | | | |
| Undetermined (leaf frag.) | 12 | 9 | 21 | | 8 | 6 | 5 | 2 | 6 | 8 | 10 | 52 | 15 | 1,288 | 37 | 1 | 50 | 107 | 21 | 1 | | 2 | 9 | 14 | 4 | 4 | 45 | 100 | 15 | 28 |
| Undetermined (peduncule frag.) | | 1 | | | | | | | | | | | | 3 | 3 | | | 1 | 1 | | | | | | | | | | | |
| Undetermined (pericarp frag.) | | | | | | | | | | 1 | | 1 | | 1 | | 1 | | | 2 | | | | | | | | 1 | 7 | | |
| Undetermined (fruit/seed) | | | 1 | | | | | | | | 1 | | 1 | 1 | 1 | | | | | 1 | | | | | | 1 | | | 2 | 1 |
| Undetermined (fruit/seed frag.) | 65 | 253 | 387 | 1 | 16 | 25 | 108 | 58 | 102 | 297 | 248 | 256 | 179 | 513 | 461 | 237 | 468 | 650 | 250 | 17 | 7 | 48 | 134 | 142 | 101 | 72 | 216 | 367 | 155 | 69 |

Table A1.2 - (continued).

| **Chronology** | **Iron Age** | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Context type** | **Postholes** | | | | | | | | | | | | | | | | | |
| **Context** | PH484 | PH518 | | PH538 | | PH769 | PH773 | PH775 | PH777 | PH779 | PH792 | PH794 | PH798 | PH826 | | PH831 | PH1130 | PH1160 |
| **Volume (Litres)** | 2.5 | 6 | 5 | 8 | 1 | 3 | 3 | 0.1 | 2 | 5 | 1 | 1 | 2 | 2 | 3 | 0.1 | 7.5 | 8 |
| **S.U.** | **499** | **517** | **517** | **540** | **541** | **768** | **772** | **774** | **776** | **778** | **783** | **782** | **797** | **825** | **825** | **830** | **1129** | **1159** |
| **Sample** | 49 | 52 | 53 | 50 | 57 | 29 | 30 | 23 | 28 | 43 | 26 | 25 | 19 | 21 | 22 | 24 | 88 | 95 |
| **Cereals (grains)** | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (frag.) | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* | | | | 3 | | | 2 | | 3 | 3 | | 2 | | | | | 10 | 4 |
| *Panicum miliaceum* (frag.) | | | | 2 | | | | | | | | 1 | | | | | 1 | |
| *Setaria italica* | | | | 2 | | | | | | 2 | | | | | | | 3 | 3 |
| *Setaria italica* (frag.) | 1 | | | | | | | | | | | | | | | | | 1 |
| Panicoideae | 5 | | | 2 | 1 | 2 | | | 1 | 1 | | | 1 | | | | 4 | 4 |
| Panicoideae (frag.) | 3 | | | 6 | | 2 | | | 2 | 2 | 2 | 2 | | | | | 7 | 10 |
| Panicoideae (scutellum) | 1 | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* | | | | | | | | | | 2 | | 1 | | | | | 1 | 2 |
| *Triticum aestivum/durum* (frag.) | | | | | | | | | | 2 | | | | | | | 1 | |
| *Triticum aestivum/durum* (longitudinal frag.) | | | | | | | | | | 4 | | | | | | | 4 | |
| *Triticum spelta* | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. | | | | | | | | | | | | | | | | | 1 | |
| *Triticum* sp. (frag.) | | | | | | | 1 | | | 1 | | | | | | | | |
| Triticeae | | | | | | 1 | | | | | | | | | | | | |
| Triticeae (without scutellum) | 4 | | | 1 | | | 1 | | 2 | 4 | 1 | | | | 2 | | 5 | 4 |
| Triticeae (scutellum) | | | | | | | | | | 1 | | | | | | | 1 | |
| Triticeae (embryo) | | | | | | | | | | | | | | | | | | |
| **Cereals (chaff)** | | | | | | | | | | | | | | | | | | |
| *Avena sativa/strigosa* (floret base) | | | | | | | | | | 2 | | | | | | | | |
| Panicodeae (rachis frag.) | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* (rachis segment w/1 node) | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* (rachis segment w/2 nodes) | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* (rachis internode frag.) | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis segment w/1 node) | | | | | | | | | | 1 | | | | | | | 6 | |
| *Triticum aestivum/durum* (rachis segment w/3 nodes) | | | | | | | | | | 1 | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | 2 | | | | | | | | | 12 | | 1 | | | 1 | | 6 | 2 |
| *Triticum aestivum/durum* (rachis internode frag.) | | | | 1 | | | | | | | | | | | | | 1 | |
| *Triticum spelta* (spikelet base) | | | | | | | | | | | | | | | | | | |
| *Triticum spelta* (glume base) | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. (spikelet base) | | | | | | | 1 | | | | | | | | | | 1 | |
| *Triticum* sp. (glume base) | 1 | | | | | 2 | 1 | 1 | | 10 | 4 | 1 | 1 | | | 3 | | |
| *Triticum* sp. (glume frag.) | | | | | | 1 | | | | | | | | | | 1 | 1 | |
| *Triticum* sp. (rachis frag.) | 4 | | | 1 | | 12 | | | | 8 | 4 | 1 | | 2 | | 4 | 4 | |
| *Triticum* sp. (rachis internode frag.) | | | | | | | | | | | | | | | | | | |
| Triticeae (awn frag.) | | | | | | | 1 | | | | | | | | | 1 | 7 | 1 |
| Triticeae (husks frag.) | | | | | | | | | 1 | | | | | | | | | |
| Triticeae (rachis frag.) | 4 | 1 | | | | 2 | 1 | 1 | 2 | | 2 | 5 | | 2 | | 3 | 1 | 3 |
| Triticeae (rachis internode frag.) | | | | | | | | | | 3 | | | | | | | | |

Table A1.2 - (continued).

| **Chronology** | **Iron Age** | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Context type** | **Postholes** | | | | | | | | | | | | | | | | | |
| **Context** | PH484 | PH518 | | PH538 | | PH769 | PH773 | PH775 | PH777 | PH779 | PH792 | PH794 | PH798 | PH826 | | PH831 | PH1130 | PH1160 |
| **S.U.** | **499** | **517** | **517** | **540** | **541** | **768** | **772** | **774** | **776** | **778** | **783** | **782** | **797** | **825** | **825** | **830** | **1129** | **1159** |
| **Sample** | 49 | 52 | 53 | 50 | 57 | 29 | 30 | 23 | 28 | 43 | 26 | 25 | 19 | 21 | 22 | 24 | 88 | 95 |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | | | | | | | | | | 11 | | | | | | | | |
| *Avena* sp. (frag.) | 1 | | | | | | | | | 4 | | | | | | | | |
| *Digitaria* sp. | 1 | | | | | | | | | | | | | | | | | |
| *Poa* sp. | 2 | | | | | 2 | 1 | | | | 1 | 1 | | | | | 1 | |
| *Poa* sp. (frag.) | | | | | | | | | | | | 1 | | | | | | |
| *Secale cereale* | | | | | | | | | | | | | | | | | | |
| *Secale cereale* (frag.) | | | | | | | | | | | | | | | | | | |
| Poaceae | | | | | | | | | 1 | | 1 | | | | | | | |
| Poaceae (frag.) | 1 | | | | | 2 | 2 | | | 1 | | | | | | | | |
| Poaceae (scutellum) | | | | | | | | | | | | | | | | | | |
| Poaceae (embryo) | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | | | |
| *Avena* sp. (awn frag.) | 1 | | | | | | | | | 3 | | | | | | | | |
| *Avena* sp. (husks frag.) | | | | | | | | | | 2 | | | | | | | | |
| *Secale cereale* (rachis segment w/1 node) | | | | | | | | | | | | | | | | | | |
| *Secale cereale* (rachis segment w/2 nodes) | | | | | | | | | | | | | | | | | | |
| *Secale cereale* (rachis frag.) | | | | | | | | | | | | | | | | | | |
| Poaceae (rachis frag.) | | | | | | | 3 | | 1 | | | | | | | | | |
| **Fabaceae** | | | | | | | | | | | | | | | | | | |
| *Vicia faba* (seed) | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Genista* type (seed) | | | 2 | | | | | | | | | 2 | | | 1 | | | |
| Fabaceae - *Genista* type (seed frag.) | | | | | | | | | | | | | | | | | | |
| Fabaceae – *Medicago* type (seed) | | 1 | | | | | | | | | | | | | | | | |
| Fabaceae - *Melilotus* type (seed) | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Trifolium* type (seed) | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (loment segment) | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed) | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (seed) | | 10 | 3 | | | | | | | | | 1 | | | | | | |
| *Vicia/Lathyrus* (seed frag.) | | 5 | 8 | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (cotyledon) | | | 4 | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus/Pisum* (seed) | | 2 | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus/Pisum* (cotyledon) | | 1 | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus/Pisum* (seed frag.) | | 2 | | | | | | | | | | | | | | | | |
| Fabaceae (seed) | | 3 | 15 | | | | | | | | | | | | | | | |
| Fabaceae (seed frag.) | | 15 | 1 | | | | 1 | | | | | | | | | | | |
| Fabaceae (cotyledon) | | | | | | | | | | | | | | | | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon frag.) | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cupule) | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cupule frag.) | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (pericarp frag.) | | | | | | | | | | | | | | | | | | |
| *Rubus* sp. (seed) | | | | 1 | | | | | | | | | | 1 | | | 1 | 1 |
| *Rubus* sp. (seed frag.) | 1 | | | 2 | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed) | | | | | | 1 | | | | | | | | | | | | |
| *Vitis vinifera* (seed frag.) | 2 | | | | | | 1 | | | 1 | | 1 | | | | 1 | | |
| *Vitis vinifera* (pedicel) | | | | | | 1 | | | | 1 | | | | | | | | |

Table A1.2 - (continued).

| **Chronology** | **Iron Age** | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Context type** | **Postholes** | | | | | | | | | | | | | | | | | |
| **Context** | PH484 | PH518 | | PH538 | | PH769 | PH773 | PH775 | PH777 | PH779 | PH792 | PH794 | PH798 | PH826 | | PH831 | PH1130 | PH1160 |
| **S.U.** | **499** | **517** | **517** | **540** | **541** | **768** | **772** | **774** | **776** | **778** | **783** | **782** | **797** | **825** | **825** | **830** | **1129** | **1159** |
| **Sample** | 49 | 52 | 53 | 50 | 57 | 29 | 30 | 23 | 28 | 43 | 26 | 25 | 19 | 21 | 22 | 24 | 88 | 95 |
| **Others** | | | | | | | | | | | | | | | | | | |
| Asteraceae (cypsela) | | | | | | | | | | | | | | | | | | |
| Asteraceae - *Coleostephus* type (cypsela) | 1 | | | | | | | | | 49 | | | 2 | | | | | |
| Asteraceae - *Coleostephus* type (cypsela frag.) | | | | | | | | | | 16 | | | | | | | | |
| Caryophyllaceae (seed) | | | | | | | | | | | | | | | | | 1 | |
| *Carex* sp. (achene) | | | | | | | | | | | | | | | | | | 1 |
| *Chenopodium* sp. (seed) | 1 | | | | | 1 | | | | | | 4 | | | | | | |
| *Chenopodium* sp. (seed frag.) | | | | | | | | | | | | | | | | | | |
| *Corrigiola litoralis* (achene) | 1 | | | | | | | | | | | | | | | | | |
| *Erica* sp. (leaf frag.) | | | | | | 2 | 1 | | | | | 1 | | | | | | |
| *Euphorbia* sp. (seed) | | | | | | | | | | | | | | | | | | |
| Rubiaceae (mericarp frag.) | | | | | | | | | | | | | | | | | | |
| *Galium aparine* (mericarp) | | | | | | | | | | | | | | | | | | |
| *Galium* sp. (mericarp) | | | | | | | | | | | | | | | | | | |
| *Galium* sp. (mericarp frag.) | | | | | | | | | | | | | | | | | | |
| Lamiaceae (nutlet) | | | | | | | | | | | | | | | | | | |
| *Malva* sp. (seed) | | | | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed) | | | | | | | | | | | | | | | | | | |
| *Polygonum aviculare* (achene) | | | | | | | | | | | | | 1 | | | | | |
| *Polygonum lapathifolium* (achene) | | | | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* (achene frag.) | | | | | | | | | | | | | | | | | | |
| *Polygonum* sp. (achene) | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene) | | | | 1 | | | | | | | | | | | | | | |
| Polygonaceae (achene frag.) | | | | | | | | | | | | | | | | | | 1 |
| *Portulaca oleracea* (seed) | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | | | | | | | | | 2 | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment frag.) | | | | | | | | | | | | | | | | | | |
| *Rumex acetosa* (achene) | | | | 1 | | | | | | | | | | | | | | |
| *Rumex bucephalophorus* (achene) | | | | | | | | | | | | | 1 | | | | | |
| *Rumex* sp. (achene) | | | | | | | 2 | | | | | 1 | | | | | | |
| *Rumex* sp. (achene frag.) | | | | | | | | | | | | | | | | | | |
| *Sambucus* sp. (stone) | | | | | | | | | | | | | | | | | | |
| *Sherardia arvensis* (mericarp) | | | | | | | | | | | | | | | | | | |
| *Silene gallica* (seed) | | | | | | | | | | | | | | | | | | |
| *Solanum* sp. (seed) | | | | | | | | | | | | 1 | 1 | | | | | |
| *Spergula arvensis* (seed) | | | | | | | 1 | | | | | | | | | | | |
| *Stellaria/Cerastium* (seed) | 1 | | | | | | | | | 1 | | | | | | | | |
| *Stellaria/Cerastium* (seed frag.) | | | | | | | | | | | | | | | | | | |
| *Urtica* sp. (achene) | | | | | | | | | | | | | | | | | | |
| *Veronica* sp. (seed) | | | | | | | | | 1 | | | | | | | | | |
| *Viola* sp. (seed) | | | | | | | | | | | | | | | | | | |
| Undetermined (flower bud frag.) | | | | | | | 1 | | | 1 | | 1 | | | | | | |
| Undetermined (plant spine frag.) | | | | | | 2 | | | | | | 2 | | | | | | |
| Undetermined (leaf frag.) | 1 | | | 2 | | 11 | 16 | 1 | 14 | 47 | 5 | 6 | | | | 1 | 4 | |
| Undetermined (peduncule frag.) | | | 1 | | | | | | 1 | 1 | | | | | | | | |
| Undetermined (pericarp frag.) | | | | | | | | | | 1 | | | | | | | | |
| Undetermined (fruit/seed) | | | 3 | | | | | | | | 1 | | | | | | | |
| Undetermined (fruit/seed frag.) | 171 | 55 | 71 | 110 | 1 | 97 | 62 | 4 | 33 | 193 | 48 | 51 | 27 | 5 | 3 | 24 | 90 | 31 |

Table A1.2 - (continued).

| **Chronology** | **Iron Age** | | | | | | | | **Roman period** | | | **Late Antiquity** | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Context type** | **Foundation ditches of walls** | | | | | | | | | | | **Graves** | | | | | | | | | | | | | | | | | |
| **Context** | W268 | W389 | W408 | | W1243 | W409 | | W1205 | W213 | | W1171 | G6 | | G8 | | G9 | | G10 | | G11 | | | G12 | | | G13 | G15 | G16 | G17 |
| **Volume (Litres)** | 7 | 7 | 8 | 8 | 7 | 8 | 8 | 6 | 2 | 0.5 | 9 | 7 | 8 | 8 | 9 | 7 | 9 | 8 | 9 | 8 | 7 | 7 | 6 | 8 | 8.5 | 9 | 8.5 | 8.5 |
| **S.U.** | **1118** | **486** | **471** | **480** | **1123** | **465** | **485** | **1038** | **80** | **80** | **1108** | **922** | **922** | **916** | **916** | **908** | **908** | **909** | **909** | **911** | **911** | **911** | **918** | **918** | **921** | **1032** | **1207** | **1015** | **1013** |
| **Sample** | 90 | 51 | 65 | 55 | 89 | 64 | 54 | 91 | 11 | 14 | 92 | 69 | 74 | 80 | 76 | 67 | 77 | 68 | 70 | 71 | 72 | 75 | 73 | 78 | 79 | 83 | 94 | 86 | 82 |
| **Cereals (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* | 15 | 108 | 15 | 15 | 2 | 10 | 44 | 15 | 5 | 2 | 4 | 5 | 3 | 1 | 6 | 18 | 9 | 22 | 24 | 1 | 5 | 2 | 3 | 2 | 1 | 1 | | | |
| *Panicum miliaceum* (frag.) | 1 | 20 | 4 | 6 | 1 | 2 | 6 | 3 | 2 | 1 | | | 4 | | | 3 | 3 | 10 | 16 | | | 1 | | | | 1 | | | |
| *Setaria italica* | | 7 | | 1 | | 1 | 1 | 10 | | | | 1 | 1 | | | 1 | 2 | 1 | | 2 | 2 | 3 | | | | 3 | | | 1 |
| *Setaria italica* (frag.) | | | | | | 1 | 1 | 2 | | | | | | | | | | | 1 | 1 | | | | | | | | | |
| Panicoideae | 6 | 17 | 6 | 7 | 4 | 3 | 10 | 14 | 1 | 3 | 2 | | 3 | | 4 | 5 | 7 | 5 | 9 | 3 | 5 | | 2 | | | | | | |
| Panicoideae (frag.) | 4 | 49 | 11 | 23 | 1 | 3 | 23 | 20 | 1 | | 1 | 4 | 7 | | 2 | 1 | 7 | 16 | 7 | 3 | 4 | 2 | 2 | 1 | | 1 | | | |
| Panicoideae (scutellum) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* | 3 | 9 | 2 | 2 | | | 12 | | | 1 | 2 | | | | | | 1 | 1 | 2 | | | | | | 1 | | | 1 | |
| *Triticum aestivum/durum* (frag.) | | | 1 | 2 | | | | | | | | | | | | | | 1 | | | | | | | | | | | |
| *Triticum aestivum/durum* (longitudinal frag.) | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum spelta* | 2 | | | | | | | | 1 | | | | | | | | | | 4 | | | | | | | | | | |
| *Triticum* sp. | 1 | 1 | 4 | | 1 | 2 | 2 | 1 | 1 | | | | | | | 4 | 1 | 2 | 4 | | | | | | | | | | |
| *Triticum* sp. (frag.) | | 1 | 5 | | 2 | | | 2 | | | | | | | | | | | | 1 | 1 | | | | | | | 1 | |
| Triticeae | 2 | | 1 | | | | | | | | | 1 | | | 1 | 3 | | | | 1 | 1 | 1 | | 1 | | | | | |
| Triticeae (without scutellum) | 8 | 16 | 4 | 4 | 4 | 1 | 3 | 6 | 1 | 2 | 1 | 3 | 3 | 3 | 5 | 8 | 5 | 10 | 5 | 4 | 8 | 5 | 1 | 3 | 2 | 2 | | 2 | |
| Triticeae (scutellum) | | | 1 | 2 | | 1 | | | | | 1 | | | | | | | | | | | | | 1 | | | | | 1 |
| Triticeae (embryo) | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Cereals (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa/strigosa* (floret base) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicodeae (rachis frag.) | | | | | | | | | | | | | | | | | 1 | | 1 | | | | | | | | | | |
| *Triticum aestivum* (rachis segment w/1 node) | | 1 | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | |
| *Triticum aestivum* (rachis segment w/2 nodes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* (rachis internode frag.) | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis segment w/1 node) | | 2 | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis segment w/3 nodes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | 10 | 29 | 1 | 6 | | 3 | 2 | 7 | | | | 1 | | 2 | 1 | 1 | 1 | 2 | 3 | 1 | 2 | | | | | | | | |
| *Triticum aestivum/durum* (rachis internode frag.) | 1 | 3 | | | | | | | | | 3 | | | | | | | | | | | | | | | | | | |
| *Triticum spelta* (spikelet base) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum spelta* (glume base) | | | 4 | 2 | | | 1 | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. (spikelet base) | | | 1 | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. (glume base) | 11 | 1 | 11 | 8 | | 8 | 3 | | 1 | | | | | | | 3 | 2 | 5 | 4 | | | | | | | | | | 2 |
| *Triticum* sp. (glume frag.) | 1 | | 5 | | 1 | 1 | | 1 | 1 | | 2 | | | | | | | 1 | 1 | | | | 1 | | | | | | |
| *Triticum* sp. (rachis frag.) | 19 | 17 | 15 | 11 | 3 | 7 | 10 | 2 | 2 | | 11 | 1 | 2 | 2 | 1 | 4 | 9 | 13 | 6 | | 2 | 2 | 3 | 1 | | 1 | | | |
| *Triticum* sp. (rachis internode frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (awn frag.) | | | | | 1 | | | | | | 2 | | | | | | | | | | | | | | | | | | |
| Triticeae (husks frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (rachis frag.) | 10 | 1 | | | | | | 10 | 1 | | 2 | 2 | 8 | 5 | 1 | 6 | 1 | 9 | 4 | 4 | 3 | 1 | 6 | | 1 | 1 | 1 | | 1 |
| Triticeae (rachis internode frag.) | | | 1 | | | | | | 1 | | | | | | | | | | | | | | | | | | | | |

Table A1.2 - (continued).

| **Chronology** | **Iron Age** | | | | | | | | **Roman period** | | | **Late Antiquity** | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Context type** | **Foundation ditches of walls** | | | | | | | | | | | **Graves** | | | | | | | | | | | | | | | | | |
| **Context** | W268 | W389 | W408 | | W1243 | | W409 | W1205 | W213 | | W1171 | G6 | | G8 | | G9 | | G10 | | G11 | | | G12 | | | G13 | G15 | G16 | G17 |
| **S.U.** | **1118** | **486** | **471** | **480** | **1123** | **465** | **485** | **1038** | **80** | **80** | **1108** | **922** | **922** | **916** | **916** | **908** | **908** | **909** | **909** | **911** | **911** | **911** | **918** | **918** | **921** | **1032** | **1207** | **1015** | **1013** |
| **Sample** | 90 | 51 | 65 | 55 | 89 | 64 | 54 | 91 | 11 | 14 | 92 | 69 | 74 | 80 | 76 | 67 | 77 | 68 | 70 | 71 | 72 | 75 | 73 | 78 | 79 | 83 | 94 | 86 | 82 |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | 2 | | 2 | 2 | | 2 | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Digitaria* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Poa* sp. | 1 | | 3 | | | | | | | | | | | | | 1 | | | | | 1 | | | 1 | | | | | |
| *Poa* sp. (frag.) | | | | | | | | | | | 1 | | | | | | | 1 | | | | | | | | | | | |
| *Secale cereale* | | | | | | | | | | | | | 1 | | 1 | | | 1 | | | | | | | | | | | |
| *Secale cereale* (frag.) | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| Poaceae | | | | | | | | | 1 | | 1 | | | | | 1 | | | | | | | | | | | | | |
| Poaceae (frag.) | 1 | | 1 | 1 | 1 | | | | | 3 | | | | | | | | | | | | | | | | | | | 2 |
| Poaceae (scutellum) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (embryo) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. (awn frag.) | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. (husks frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* (rachis segment w/1 node) | 1 | | | | | | | | | | | 4 | 6 | | 1 | 5 | | 1 | | 2 | 8 | | 4 | 4 | 1 | 5 | | | 1 |
| *Secale cereale* (rachis segment w/2 nodes) | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| *Secale cereale* (rachis frag.) | | | | | | | | | | | | | 1 | | | | | | | | | | | 3 | | | | | |
| Poaceae (rachis frag.) | | | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Fabaceae** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Genista* type (seed) | | | 2 | | | | | 1 | | | | | | 1 | | | | | | | | 1 | | | | | | | |
| Fabaceae - *Genista* type (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Medicago* type (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Melilotus* type (seed) | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Trifolium* type (seed) | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (loment segment) | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (seed) | | | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (cotyledon) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus/Pisum* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus/Pisum* (cotyledon) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus/Pisum* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae (seed) | | | | | | 1 | | | | | | 1 | 1 | | | 1 | | | | | | | 1 | 1 | | | | | |
| Fabaceae (seed frag.) | | | | | | | | | | | | 3 | | | 1 | | 1 | | | | | | | | | | | | |
| Fabaceae (cotyledon) | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cupule) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cupule frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (pericarp frag.) | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rubus* sp. (seed) | | 6 | | 1 | | | | | | | | | | 1 | | | | | | | | | 1 | 2 | | | | | |
| *Rubus* sp. (seed frag.) | | | | | 1 | | | | | | | | | | | | | | | | | | 2 | | | | | | |
| *Vitis vinifera* (seed) | 1 | | 1 | | | 10 | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed frag.) | 3 | 1 | 5 | 6 | 3 | 28 | | | | | | | | | 1 | | 1 | | | | | | | | 1 | 1 | | | |
| *Vitis vinifera* (pedicel) | 2 | | 8 | 5 | | 15 | | | | | 5 | 1 | | | | 1 | | | | | | | | | | | | | |

Table A1.2 - (continued).

| **Chronology** | **Iron Age** | | | | | | | | **Roman period** | | | **Late Antiquity** | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Context type** | **Foundation ditches of walls** | | | | | | | | | | | **Graves** | | | | | | | | | | | | | | | | | |
| **Context** | W268 | W389 | W408 | | W1243 | W409 | | W1205 | W213 | | W1171 | G6 | | G8 | | G9 | | G10 | | G11 | | | G12 | | G13 | G15 | G16 | G17 | |
| **S.U.** | **1118** | **486** | **471** | **480** | **1123** | **465** | **485** | **1038** | **80** | **80** | **1108** | **922** | **922** | **916** | **916** | **908** | **908** | **909** | **909** | **911** | **911** | **911** | **918** | **918** | **921** | **1032** | **1207** | **1015** | **1013** |
| **Sample** | 90 | 51 | 65 | 55 | 89 | 64 | 54 | 91 | 11 | 14 | 92 | 69 | 74 | 80 | 76 | 67 | 77 | 68 | 70 | 71 | 72 | 75 | 73 | 78 | 79 | 83 | 94 | 86 | 82 |
| **Others** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae (cypsela) | | | | | | | | | | | | | | | | | | | | | | | | 3 | | 2 | | | |
| Asteraceae - *Coleostephus* type (cypsela) | | | 8 | 3 | | 1 | 1 | | 1 | | | | | 1 | | 1 | | | | | | | | 1 | | 3 | | 1 | |
| Asteraceae - *Coleostephus* type (cypsela frag.) | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| Caryophyllaceae (seed) | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | 1 |
| *Carex* sp. (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* sp. (seed) | 1 | | 1 | | | | | | | | | | 1 | | 1 | | 1 | 2 | | | | | | | | | | | |
| *Chenopodium* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola litoralis* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Erica* sp. (leaf frag.) | | 1 | 4 | 1 | | 1 | 1 | | | | | | | | | | | | | | | | | 2 | | | | | |
| *Euphorbia* sp. (seed) | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| Rubiaceae (mericarp frag.) | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | |
| *Galium aparine* (mericarp) | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| *Galium* sp. (mericarp) | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | 1 |
| *Galium* sp. (mericarp frag.) | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | |
| Lamiaceae (nutlet) | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| *Malva* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum aviculare* (achene) | | | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* sp. (achene) | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene) | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | 1 | |
| Polygonaceae (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Portulaca oleracea* (seed) | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | | | | | 2 | | | | | | 1 | | | | | | | | | 1 | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment frag.) | | | | | | | | | | | | 1 | | 1 | | | | 1 | 1 | 3 | | | 1 | | | | | | 2 |
| *Rumex acetosa* (achene) | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | |
| *Rumex bucephalophorus* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene) | 1 | 1 | 1 | | | | | 1 | | | | 1 | | | | | | 1 | | | | | | | | | | | |
| *Rumex* sp. (achene frag.) | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sambucus* sp. (stone) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sherardia arvensis* (mericarp) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* (seed) | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Solanum* sp. (seed) | | | | | | | | | | | 1 | | | | | | 1 | | | | | | | | | | | | |
| *Spergula arvensis* (seed) | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Stellaria/Cerastium* (seed) | | | | 1 | | | | | | | | | | | | | | | | | 1 | | | | | | | | |
| *Stellaria/Cerastium* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Urtica* sp. (achene) | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | |
| *Veronica* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Viola* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (flower bud frag.) | | | 1 | 1 | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| Undetermined (plant spine frag.) | | | 1 | | | 1 | | | | | | | | | | 2 | | | 3 | | 1 | | 1 | | | | | | |
| Undetermined (leaf frag.) | 21 | 4 | 53 | 25 | 2 | 18 | 13 | 12 | 2 | 2 | 13 | 1 | | | | | | | 2 | | | | | 4 | | | | 1 | |
| Undetermined (peduncule frag.) | | | 1 | 1 | | | | | | | | 1 | 1 | | 1 | | | | | | | 1 | | 1 | | | | | |
| Undetermined (pericarp frag.) | 1 | 1 | | 5 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (fruit/seed) | 4 | | | 2 | | | | | | | | | 1 | 1 | | | | | | | 1 | 1 | | 2 | 1 | | 1 | 1 | |
| Undetermined (fruit/seed frag.) | 174 | 441 | 387 | 419 | 42 | 127 | 210 | 132 | 99 | 36 | 89 | 47 | 102 | 24 | 55 | 141 | 125 | 184 | 226 | 50 | 83 | 41 | 61 | 96 | 22 | 21 | 6 | 14 | 32 |

Table A1.2 - (continued).

| **Chronology** | **Iron Age** | | **Roman period** | | | **Iron Age** | **Roman period** | | | **Iron Age** | **Roman period** | | **Iron Age** | **Iron Age** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Context type** | | | **Embankments** | | | **Abandonment/Destruction** | | | | | **Floor** | | **Hearth** | **Smelting area** | |
| **Context** | W111 | W408/409 | W505 | W505/566 | Q.H. | C.H.477 | | A/D | | F1206 | F1114 | F46 | HT 92 | P24 | P25 |
| **Volume (Litres)** | 0.5 | 6.5 | 7 | 8 | 9 | 9 | 0.5 | 0.2 | 0.2 | 7 | 3 | 1 | 1 | 2 | 0.1 |
| **S.U.** | **116** | **489** | **406** | **675** | **398** | **475** | **77** | **77** | **85** | **1142** | **1046** | **46** | **92** | **170** | **191** |
| **Sample** | 9 | 63 | 56 | 44 | 62 | 58 | 6 | 7 | 3 | 87 | 93 | 12 | 10 | 15 | 18 |
| **Cereals (grains)** | | | | | | | | | | | | | | | |
| *Hordeum vulgare* | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (frag.) | | | | | | | | | | | | | | | |
| *Panicum miliaceum* | 1 | 65 | 4 | | 12 | | | 1 | | 7 | | | | | |
| *Panicum miliaceum* (frag.) | | 15 | | | 2 | | | 2 | | | | | | | |
| *Setaria italica* | | 6 | | 2 | | 3 | | | | 1 | | | | | 2 |
| *Setaria italica* (frag.) | | | | | | | | 1 | | | | | | | |
| Panicoideae | | 29 | 2 | 1 | 4 | 4 | | 1 | | | | 1 | | | |
| Panicoideae (frag.) | | 60 | | | 4 | | 1 | | | | | | | | |
| Panicoideae (scutellum) | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* | | 8 | | | 8 | 1 | | | | | 1 | 3 | | | |
| *Triticum aestivum/durum* (frag.) | | | | | | 1 | | | | | 1 | | | | |
| *Triticum aestivum/durum* (longitudinal frag.) | | | | | | | | | | | | | | | |
| *Triticum spelta* | | 2 | | | | | | 1 | | | | | | | |
| *Triticum* sp. | | 5 | 1 | | 7 | | | | | 1 | | 2 | | | |
| *Triticum* sp. (frag.) | | 3 | | | 2 | | | | | | | 1 | | | |
| Triticeae | | | 2 | | | | | | | 1 | | | | | |
| Triticeae (without scutellum) | 1 | 22 | | | 11 | 3 | | 1 | 1 | 6 | | | | | |
| Triticeae (scutellum) | | | | | | 1 | | | | | | 1 | | | |
| Triticeae (embryo) | | | | | | | | | | | | | | | |
| **Cereals (chaff)** | | | | | | | | | | | | | | | |
| *Avena sativa/strigosa* (floret base) | | | | | | | | | | | | | | | |
| Panicodeae (rachis frag.) | | | | | | | | | | | | | | | |
| *Triticum aestivum* (rachis segment w/1 node) | | | | | | | | | | | | | | | |
| *Triticum aestivum* (rachis segment w/2 nodes) | | | | | | | | | | | | | | | |
| *Triticum aestivum* (rachis internode frag.) | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis segment w/1 node) | | 2 | | | | | | | | 1 | | | | | |
| *Triticum aestivum/durum* (rachis segment w/3 nodes) | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | | 19 | | | 4 | | | | | | | 3 | | | |
| *Triticum aestivum/durum* (rachis internode frag.) | | | | | | | | | | | | | | | |
| *Triticum spelta* (spikelet base) | | | | | | | | | | 1 | | | | | |
| *Triticum spelta* (glume base) | | 1 | | | 1 | | | | | | | | | | |
| *Triticum* sp. (spikelet base) | | | | | | | | | | | | 1 | | | |
| *Triticum* sp. (glume base) | | 3 | 1 | | 11 | 3 | | 1 | | 12 | | 2 | 1 | | |
| *Triticum* sp. (glume frag.) | | | | | | | | | | 2 | | | | | |
| *Triticum* sp. (rachis frag.) | | 13 | 2 | 1 | 9 | 4 | | 1 | | 24 | | 4 | | | |
| *Triticum* sp. (rachis internode frag.) | | 1 | | | | | | | | | | 1 | | | |
| Triticeae (awn frag.) | | | | | | | | | | 1 | | | | | 1 |
| Triticeae (husks frag.) | | | | | | | | | | | | | | | |
| Triticeae (rachis frag.) | | | | | 7 | | | | | 9 | | | | | |
| Triticeae (rachis internode frag.) | | | | | | | | | | | | | | | |

Table A1.2 - (continued).

| **Chronology** | **Iron Age** | | **Roman period** | | | **Iron Age** | **Roman period** | | | **Iron Age** | **Roman period** | **N/A** | **Iron Age** | **Iron Age** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Context type** | | | **Embankments** | | | **Abandonment/Destruction** | | | | | **Floor** | | **Hearth** | **Smelting area** | |
| **Context** | W111 | W408/409 | W505 | W505/566 | Q.H. | C.H.477 | A/D | | | F1206 | F1114 | F46 | HT 92 | P24 | P25 |
| **S.U.** | **116** | **489** | **406** | **675** | **398** | **475** | **77** | **77** | **85** | **1142** | **1046** | **46** | **92** | **170** | **191** |
| **Sample** | 9 | 63 | 56 | 44 | 62 | 58 | 6 | 7 | 3 | 87 | 93 | 12 | 10 | 15 | 18 |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | |
| *Avena* sp. | | | | | 1 | | | | | 1 | | | | | |
| *Avena* sp. (frag.) | | | | | | | | | | 1 | | | | | |
| *Digitaria* sp. | | | | | | | | | | | | | | | |
| *Poa* sp. | | | | | | | | | | | | | | | |
| *Poa* sp. (frag.) | | | | | | | | | | | | | | | |
| *Secale cereale* | | | | | | | | | | | | 1 | | | |
| *Secale cereale* (frag.) | | | | | | | | | | | | | | | |
| Poaceae | | | | | | | | | | | | 1 | | | |
| Poaceae (frag.) | | 1 | 1 | | | | | | | | | | | | |
| Poaceae (scutellum) | | | | | | | | | | | | | | | |
| Poaceae (embryo) | | | | | | | | | | | | | | | |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | |
| *Avena* sp. (awn frag.) | | | | | | | 1 | | | | | | | | 1 |
| *Avena* sp. (husks frag.) | | | | | | | | | | | | | | | |
| *Secale cereale* (rachis segment w/1 node) | | | | | | | | | | | | | | | |
| *Secale cereale* (rachis segment w/2 nodes) | | | | | | | | | | | | | | | |
| *Secale cereale* (rachis frag.) | | | | | | | | | | | | | | | |
| Poaceae (rachis frag.) | | | | | | | | | | | | | | | 1 |
| **Fabaceae** | | | | | | | | | | | | | | | |
| *Vicia faba* (seed) | | | | | | | | | | | | | | | |
| Fabaceae - *Genista* type (seed) | | | | | | | | | | | | | | | |
| Fabaceae - *Genista* type (seed frag.) | | | | | | | | | | | | | | | |
| Fabaceae – *Medicago* type (seed) | | | | | | | | | | | | | | | |
| Fabaceae - *Melilotus* type (seed) | | | | | | | | | | | | | | | |
| Fabaceae - *Trifolium* type (seed) | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (loment segment) | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed) | | | | | 1 | | | | | | | | | | |
| *Vicia/Lathyrus* (seed) | | | | | | | | | | 1 | | | | | |
| *Vicia/Lathyrus* (seed frag.) | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (cotyledon) | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus/Pisum* (seed) | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus/Pisum* (cotyledon) | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus/Pisum* (seed frag.) | | | | | | | | | | | | | | | |
| Fabaceae (seed) | | | | | 2 | | 2 | | | | | | | | |
| Fabaceae (seed frag.) | | | 1 | | | | | | | 3 | | | | | |
| Fabaceae (cotyledon) | | | | | | | | | | | | | | | |
| **Fruits** | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon frag.) | | | | | | | | | | | | 1 | | | |
| *Quercus* sp. (cupule) | | | | | | | | | | | | | | | |
| *Quercus* sp. (cupule frag.) | | | | | | | | | | | | | | | |
| *Quercus* sp. (pericarp frag.) | | | | | | | | | | | | | | | |
| *Rubus* sp. (seed) | | 1 | | | | | | | | | | | | | |
| *Rubus* sp. (seed frag.) | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed) | | | 2 | | | 1 | | | | 1 | 1 | 7 | | | |
| *Vitis vinifera* (seed frag.) | | | 1 | 1 | | | | | | 4 | | 14 | | | |
| *Vitis vinifera* (pedicel) | | | 2 | | | 3 | | | | | 1 | 2 | | | |

Table A1.2 - (continued).

| **Chronology** | **Iron Age** | | **Roman period** | | | **Iron Age** | **Roman period** | | | **Iron Age** | **Roman period** | **N/A** | **Iron Age** | **Iron Age** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Context type** | | | **Embankments** | | | **Abandonment/Destruction** | | | | | **Floor** | | **Hearth** | **Smelting area** | |
| **Context** | W111 | W408/409 | W505 | W505/566 | Q.H. | C.H.477 | A/D | | | F1206 | F1114 | F46 | HT 92 | P24 | P25 |
| **S.U.** | **116** | **489** | **406** | **675** | **398** | **475** | **77** | **77** | **85** | **1142** | **1046** | **46** | **92** | **170** | **191** |
| **Sample** | 9 | 63 | 56 | 44 | 62 | 58 | 6 | 7 | 3 | 87 | 93 | 12 | 10 | 15 | 18 |
| **Others** | | | | | | | | | | | | | | | |
| Asteraceae (cypsela) | | | | | | | | | | | | | 1 | | |
| Asteraceae - *Coleostephus* type (cypsela) | | 1 | | | 3 | | | | | | | 6 | | | 1 |
| Asteraceae - *Coleostephus* type (cypsela frag.) | | 1 | | | | | | | | | | 1 | | | |
| Caryophyllaceae (seed) | | | | | | | | | | | | | | | |
| *Carex* sp. (achene) | | | | | | | | | | | | | | | |
| *Chenopodium* sp. (seed) | | 1 | | | | | | | | | | | | | |
| *Chenopodium* sp. (seed frag.) | | | | | | | | | | | | | | | |
| *Corrigiola litoralis* (achene) | | | | | | | | | | | | | | | 1 |
| *Erica* sp. (leaf frag.) | | 1 | | | 10 | | | | | 2 | | | | 2 | |
| *Euphorbia* sp. (seed) | | | | | | | | | | | | | | | |
| Rubiaceae (mericarp frag.) | | | | | | | | | | | | | | | |
| *Galium aparine* (mericarp) | | | | | | | | | | | | | | | |
| *Galium* sp. (mericarp) | | | | | | | | | | | | | | | |
| *Galium* sp. (mericarp frag.) | | | | | | | | | | | | | | | |
| Lamiaceae (nutlet) | | | | | | | | | | | | | | | |
| *Malva* sp. (seed) | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed) | | | 1 | | | | | | | | | | | | |
| *Polygonum aviculare* (achene) | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* (achene) | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* (achene frag.) | | | | | | | | | | | | | | | |
| *Polygonum* sp. (achene) | | | | | | | | | | | | | | | |
| Polygonaceae (achene) | | | | | | | | | | | | 1 | | | |
| Polygonaceae (achene frag.) | | | 1 | | | | | | | | | | | | |
| *Portulaca oleracea* (seed) | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | | | | | | | | | | 1 | | | | |
| *Raphanus raphanistrum* (siliqua segment frag.) | | | | | | | | | | | | | | | |
| *Rumex acetosa* (achene) | | | | | | | | | | | | | | | |
| *Rumex bucephalophorus* (achene) | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene) | | 1 | 1 | | | | | | | 1 | | 7 | | | |
| *Rumex* sp. (achene frag.) | | | | | | | | | | | | 3 | | | |
| *Sambucus* sp. (stone) | | | | | | | | | | | | | | | |
| *Sherardia arvensis* (mericarp) | | | | | | | | | | | | | | | |
| *Silene gallica* (seed) | | | | | | | | | | | | | | | |
| *Solanum* sp. (seed) | | | | | | | | | | | | | | | |
| *Spergula arvensis* (seed) | | | | | | | | | | | | | | | |
| *Stellaria/Cerastium* (seed) | | 1 | | | | | | | 1 | | | | | | |
| *Stellaria/Cerastium* (seed frag.) | | | | | | | | | | | | | | | |
| *Urtica* sp. (achene) | | | | | | | | | | | | | | | |
| *Veronica* sp. (seed) | | | | | | | | | | | | | | | |
| *Viola* sp. (seed) | | | | | | | | | | | | | | | |
| Undetermined (flower bud frag.) | | 1 | | | | | | | | 2 | | | | | |
| Undetermined (plant spine frag.) | | | | | | | | | | | | | | | |
| Undetermined (leaf frag.) | | 20 | 5 | | 14 | 2 | 1 | | 2 | 11 | 9 | 1 | | | 13 |
| Undetermined (peduncule frag.) | | | 1 | | 1 | | | | | | | 1 | | | |
| Undetermined (pericarp frag.) | | 1 | | | | | | | | | | | | | |
| Undetermined (fruit/seed) | | 1 | 1 | 1 | | | | | | | | | | | |
| Undetermined (fruit/seed frag.) | 7 | 344 | 93 | 31 | 185 | 56 | 18 | 23 | 17 | 217 | 29 | 220 | 2 | 6 | 23 |

Table A1.2 - (continued).

# Attachment 2 - Over the centuries: Long-term crop selection and diversity at Freixo/Tongobriga (Northwest Iberia) (Supplementary material of Chapter 4)

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| Area | Context | S.U. | Squares | Sampled context - description | Chronology | Nº of samples collected | Recovered volume (L) | Nº of samples analysed | Analysed volume (L) |
|---|---|---|---|---|---|---|---|---|---|
| South Section | Wall | **4.1** | Ca 32 e 33 | Sediment accumulated next to the wall, filling of trench [11] - Wall Phase 2 | Iron Age | 4 | 136 | 4 | 136 |
| | | **4.2** | Ca 32 | Sediment accumulated next to the wall, filling of trench [11] - Wall Phase 2 | Iron Age | 2 | 33 | 1 | 25 |
| | | **4.3** | Ca 33 | Sediment accumulated next to the wall, filling of trench [11] - Wall Phase 2 | Iron Age | 1 | 40 | 1 | 40 |
| | | **5** | Ca 33 | Sediment accumulated next to the wall, evidence of a structure´s destruction - Wall Phase 2 | Iron Age | 11 | 261 | 1 | 25 |
| | | **6** | Ca 33 | Sediment accumulated next to the wall - Wall Phase 1 | Iron Age | 24 | 759 | 4 | 187 |
| | | **12** | X' W' V' 29 30 | Sediment accumulated next to the wall - Wall Phase 2 | Iron Age | 1 | 5 | 1 | 5 |
| | | **13** | X' W' V' 29 30 e T' U' 27 28 | Sediment accumulated next to the wall, evidence of a structure´s destruction - Wall Phase 2 | Iron Age | 2 | 15 | 2 | 15 |
| | | **14** | T' U' 27 28 | Sediment associated with a fire/destruction level of a habitational structure | Iron Age | 1 | 10 | 1 | 10 |
| | | **Miolo** | N/A | Sediment between wall´s stones | Iron Age | 15 | 18 | 2 | 3 |
| | | **M1** | Ca 34 | Sediment between wall´s stones - Wall Phase 2 | Iron Age | 5 | 14 | 2 | 6 |
| | | **M2** | Ca 34 | Sediment between wall´s stones - Wall Phase 2 | Iron Age | 3 | 11 | 2 | 6 |
| | | **M3** | Ca 34 | Sediment between wall´s stones - Wall Phase 2 | Iron Age | 3 | 14 | 2 | 9 |
| | | **M4** | Ca 34 | Sediment between wall´s stones - Wall Phase 1 | Iron Age | 3 | 13 | 2 | 9 |
| | | **M5** | Ca 34 | Sediment between wall´s stones - Wall Phase 1 | Iron Age | 1 | 6 | 1 | 6 |
| Housing complex I | *Impluvium* House | **2** | Ve 25 26 | Abandonment/Destruction layer - Roof´s destruction | Late Antiquity | 30 | 388 | 1 | 14 |
| | | **3** | Ve 25 26 | Abandonment layer - Fire level | Late Antiquity | 15 | 150 | 1 | 10 |
| | | **4** | Ve 25 26 | Abandonment layer | Late Antiquity | 24 | 249 | 1 | 10 |
| | | **6** | Ve 25 26 | Abandonment layer | Late Antiquity | 35 | 350 | 2 | 23 |
| | | **7** | Ve 25 26 | Abandonment layer | Late Antiquity | 16 | 160 | 2 | 24 |
| | | **8** | Ve 25 26 | Utilization layer - wood floor decomposition | Late Roman Period | 4 | 43 | 1 | 13 |
| | | **9** | Ve 25 26 | Wood floor use or its preparation | Late Roman Period | 4 | 32 | 4 | 32 |
| | | **11** | Ve 25 26 | Filling layer of a stone drainage system [10] | Late Roman Period | 1 | 9 | 1 | 9 |
| | | **12** | Ve 25 26 | Preparation layer, cut by a stone stone drainage system [10] | Late Roman Period | 5 | 49 | 5 | 49 |
| Housing complex I | Round Hut | **2** | Ef 19 | Destruction layer, cut by a modern pit [4] | Modern Period/Late Roman Period | 1 | 14 | 1 | 14 |
| | | **2a** | Ef 19 | Filling layer of a modern pit [4] | Modern Period/Late Roman Period | 1 | 9 | 1 | 9 |
| | | **3** | Ef 19 | Destruction layer, cut by a modern pit [4] | Modern Period/Late Roman Period | 6 | 54 | 2 | 18 |
| | | **5** | Ef 19 | Filling layer of a modern pit [4] | Modern Period/Late Roman Period | 5 | 45 | 2 | 18 |
| | | **6c** | Df 19 | Small circular hole | Late Roman Period | 1 | <1 | 1 | <1 |
| | | **6d** | Df 19 | Filling layer of posthole [33] | Late Roman Period | 1 | 2 | 1 | 2 |
| | | **7** | Df 19 | Destruction of wall [13] | Late Roman Period | 1 | 9 | 1 | 9 |
| | | **8** | Ef 19 | Abandonment level inside the hut | Late Roman Period | 1 | 9 | 1 | 9 |
| | | **9** | Df 19/Ef 19 | Layer outside the hut, cut by a modern pit [4] | Late Roman Period | 3 | 27 | 2 | 18 |
| | | **10** | Ef 19 | Layer outside the hut, cut by a modern pit [4] | Late Roman Period | 4 | 38 | 2 | 20 |
| | | **11** | Df 19 | Fire level - Destruction of small holes with triangular [6a], [6b] and circular [6c] morphology | Late Roman Period | 3 | 28 | 2 | 19 |
| | | **13** | Ef 19 | Masonry wall | Iron Age | 1 | 8 | 1 | 8 |
| | | **15** | Ef 19 | Destruction level outside the hut, cut by a modern pit [4] | Late Roman Period | 5 | 45 | 2 | 18 |
| | | **16** | Df 19 | Fire level inside the hut | Late Roman Period | 1 | 14 | 1 | 14 |
| | | **17** | Ef 19 | Abandonment level inside the hut | Late Roman Period | 1 | 9 | 1 | 9 |
| | | **18** | Ef 19 | Abandonment level inside the hut | Late Roman Period | 17 | 141 | 2 | 18 |
| | | **19** | Df 19/Ef 19 | Utilization layer inside the hut | Late Roman Period | 2 | 11 | 2 | 11 |
| | | **20** | Ef 19 | Floor layer inside the hut | Late Roman Period | 18 | 162 | 2 | 18 |
| | | **21** | Ef 19 | Layer outside the hut | Late Roman Period | 1 | 4 | 1 | 4 |
| | | **23** | Ef 19 | Layer in which the hut was raised, cut by pit [28] | Late Roman Period | 4 | 36 | 2 | 18 |
| | | **27** | Ef 19 | Lower part of the floor. Equal to [20] | Late Roman Period | 8 | 72 | 2 | 18 |
| | | **29** | Ef 19 | Filling layer of pit [28] | Late Roman Period | 21 | 184 | 2 | 18 |
| | | **30** | Ef 19 | Filling layer of pit [28]. Coat remains | Late Roman Period | 12 | 108 | 2 | 18 |
| | | **32** | Ef 19 | Filling of trench [31], established for the foundation of wall [13] | Late Roman Period | 1 | 9 | 1 | 9 |
| | | **34** | Ef 19 | Remains of the combustion structure [38] | Iron Age | 1 | 2 | 1 | 2 |
| | | **35** | Ef 19 | Remains of the combustion structure [38] | Iron Age | 1 | 4 | 1 | 4 |
| | | **36** | Ef 19 | Remains of the combustion structure [38] | Iron Age | 1 | 2 | 1 | 2 |
| | | **37** | Ef 19 | Remains of the combustion structure [38] | Iron Age | 1 | 4 | 1 | 4 |
| | | | | | **Total** | **333** | **3,815** | **85** | **995** |

Table A2.1 - Freixo/Tongobriga Inventory.

| | | | Meshes | |
|---|---|---|---|---|
| **Sample** | **Context** | **S.U.** | **1 mm** | **0.5 mm** |
| **14.34** | Wall | 4.1 | 28% | 33% |
| **14.37** | | 4.1 | 32% | 29% |
| **14.44** | | 4.1 | 46% | 15% |
| **14.38** | | 5 | 100% | 100% |
| **14.43** | | 6 | 50% | 0% |
| **15.261** | | 12 | 100% | 14% |
| **15.260** | | 13 | 100% | 33% |
| **15.263** | | 13 | 100% | 17% |
| **15.262** | | 14 | 100% | 14% |
| **15.383** | | M1 | 100% | 50% |
| **15.397** | Round hut | 2 | 100% | 50% |
| **15.404** | | 2a | 100% | 50% |
| **15.423** | | 3 | 100% | 50% |
| **15.428** | | 3 | 100% | 50% |
| **15.432** | | 5 | 100% | 50% |
| **15.450** | | 5 | 100% | 56% |
| **15.436** | | 9 | 100% | 50% |
| **15.438** | | 9 | 100% | 50% |
| **15.441** | | 10 | 100% | 50% |
| **15.424** | | 11 | 48% | 26% |
| **15.433** | | 11 | 27% | 13% |
| **15.453** | | 13 | 100% | 50% |
| **15.460** | | 15 | 47% | 26% |
| **15.461** | | 15 | 32% | 24% |
| **15.421** | | 16 | 49% | 24% |
| **15.412** | | 18 | 100% | 44% |
| **15.478** | | 20 | 100% | 50% |
| **15.443** | | 23 | 100% | 50% |
| **15.483** | | 27 | 100% | 50% |

Table A2.2 - Subsampling applied at Freixo/Tongobriga.

| **Context** | **Wall** | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volume (Litres)** | 70 | 18 | 40 | 8 | 25 | 40 | 25 | 9 | 18 | 120 | 40 | 5 | 7 | 8 | 10 | 1 | 2 | 4 | 2 | 3 | 3 | 7 | 4 | 5 | 6 |
| **S.U.** | **4.1** | **4.1** | **4.1** | **4.1** | **4.2** | **4.3** | **5** | **6** | **6** | **6** | **6** | **12** | **13** | **13** | **14** | **MIOLO** | **MIOLO** | **M1** | **M1** | **M2** | **M2** | **M3** | **M4** | **M4** | **M5** |
| **Analysed meshes (mm)** | > 0.25 | > 0.25 | > 0.25 | > 0.25 | All | > 0.25 | All | All | All | > 0.25 | 2/1 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | All | > 0.25 | > 0.25 |
| **Sample** | 14.33 | 14.34 | 14.37 | 14.44 | 14.1 | 14.35 | 14.38 | 14.25 | 14.27 | 14.42 | 14.43 | 15.261 | 15.260 | 15.263 | 15.262 | 15.365 | 15.369 | 15.383 | 15.384 | 15.385 | 15.386 | 15.390 | 15.389 | 15.392 | 15.393 |
| **Cereal (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | 1 | | | | | | | | | | 2 | | | | | | | | | | | | | | |
| *Avena* sp. (frag.) | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* | 1 | | | 1 | | | 1 | | | 1 | | 2 | | | | | | | 1 | | | | | | |
| *Hordeum vulgare* (frag.) | 1 | | | | | | 3 | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* | 63 | 26 | 20 | 44 | | 22 | 59 | | | 17 | 16 | 8 | | 2 | | 1 | 3 | 36 | 21 | 28 | 20 | | 8 | 1 | 1 |
| *Panicum miliaceum* (frag.) | | 13 | 4 | 12 | | | | | | | | 1 | | | | | | 2 | 1 | | 2 | | | 2 | 2 |
| *Setaria italica* | 45 | | | 1 | | 48 | 56 | | | 16 | 5 | 1 | | | | | | 1 | 1 | | | | 1 | | |
| *Setaria italica* (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf. *Setaria italica* | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae | 155 | 3 | 1 | 6 | 113 | 156 | 143 | | | 44 | 31 | 1 | | | 1 | | | 2 | 2 | 2 | 3 | | 1 | 1 | |
| Panicoideae (frag.) | | 1 | 4 | 6 | | | | | | | | | | | 2 | 1 | | 1 | 3 | 2 | 8 | | | | |
| cf. Panicoideae (seed frag.) | 63 | | | | | | 33 | | | 1 | | | | | | | | | | | | | | | |
| *Secale cereale* | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* (longitudinal frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf. *Secale cereale* | | | | | | | | | | 1 | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* | 5 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum spelta* | 17 | 4 | | 12 | 24 | 50 | 13 | | | 1 | 3 | | | 1 | | | 1 | 2 | 2 | 1 | 1 | | 1 | | |
| *Triticum spelta* (longitudinal frag.) | | | | | | 8 | | | | | | | | | | | | | | | | | | | |
| *Triticum spelta* (frag.) | | | | | 3 | 14 | 14 | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. | 1 | | 2 | 2 | 13 | | | | | 4 | | | | | | | | 2 | | | | | 1 | | |
| *Triticum* sp. (frag.) | 1 | 4 | | 5 | | | | | | | | | | 1 | | | | 2 | 1 | | | | | | |
| *Triticum* sp. (longitudinal frag.) | | | | | | | | | | | | | | | | | | 1 | | | | | | | |
| Triticeae (with scutellum) | 2 | | | | 1 | 4 | | | | 3 | | | | | | | | | | | | 1 | | | |
| Triticeae (without scutellum) | 17 | 7 | 1 | 6 | | 32 | 28 | | | 9 | 2 | | | 3 | | | 1 | 3 | 3 | 2 | 1 | 1 | | | |
| Triticeae (longitudinal frag.) | | | | | | | | | | | 2 | | | | | | | | | | | | | | |
| Triticeae (scutellum) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (embryo) | | | 1 | | | | | | | | | | | | | | | | | | | | | | |
| **Cereal (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (rachis segment with 1 node) | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (rachis frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* (hulled grain) | | | | | | | | | | | | | | | | | 1 | | | 1 | | | | | |
| *Panicum miliaceum* (grain with husks) | | | | | | | | | | | | | | | | | | | | | | | 7 | | |
| *Setaria italica* (hulled grains) | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| Panicoideae (grain with husks) | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Secale cereale* (rachis frag.) | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum spelta* (grain with husks) | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Triticum spelta* (rachis segment) | | | | | | 1 | | | | 2 | | | | | | | | | | | | | | | |
| *Triticum spelta* (spikelet base) | 6 | | | | 3 | 1 | 5 | | | | | | | | | | | | | | | | | | |
| *Triticum spelta* (glume base) | 28 | 1 | | | 7 | 7 | 50 | | | 16 | | 2 | | | | | | | 1 | 2 | 1 | | | | |
| *Triticum spelta* (glume frag.) | 5 | | | | | 3 | 12 | | | 6 | | | | | | | | | | | | | | | |
| *Triticum* sp. (spikelet base) | 4 | | 1 | | | 4 | | | | | | | | | | | | | | 1 | | | | | |
| *Triticum* sp. (glume base) | 7 | | 5 | 4 | | 14 | | | | | | 11 | | 2 | | 2 | 1 | 5 | 6 | 3 | | | | | 1 |
| *Triticum* sp. (glume frag.) | | | | | | | | | | | | | | | | | | | 2 | 2 | 3 | | | | |
| *Triticum* sp. (rachis frag.) | | | 1 | 1 | | | | | | | | 4 | | | | 1 | 3 | | | 1 | 2 | | | | 1 |
| *Triticum* sp. (rachis internode frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (awn frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (rachis frag.) | | | | | | | | | | 3 | | | | | | | | | | | | | | | |

Table A2.3 - Results per sample and s.u. (both units and fragments).

| **Context** | **Wall** | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **S.U.** | **4.1** | **4.1** | **4.1** | **4.1** | **4.2** | **4.3** | **5** | **6** | **6** | **6** | **6** | **12** | **13** | **13** | **14** | **MIOLO** | **MIOLO** | **M1** | **M1** | **M2** | **M2** | **M3** | **M4** | **M4** | **M5** |
| **Sample** | 14.33 | 14.34 | 14.37 | 14.44 | 14.1 | 14.35 | 14.38 | 14.25 | 14.27 | 14.42 | 14.43 | 15.261 | 15.260 | 15.263 | 15.262 | 15.365 | 15.369 | 15.383 | 15.384 | 15.385 | 15.386 | 15.390 | 15.389 | 15.392 | 15.393 |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lolium/Festuca* | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Poa* sp. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Poa*sp. (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae | 2 | | | | | | 6 | | 1 | 3 | | | | | | | | | | | | | | | |
| Poaceae (frag.) | 1 | | | | | | | | | 4 | | | | | | | | | | | | | | | |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (rachis frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Fabaceae** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Genisteae (seed) | 1 | | | | | 9 | | 4 | 1 | | 6 | | 3 | 1 | | | | 1 | | | | | | | |
| Genisteae (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf. Genisteae (seed frag.) | | | | | | | | 1 | 2 | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed) | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (seed) | 4 | | | | 1 | 6 | | | | 9 | 1 | 2 | 1 | | | | | | | | 1 | | | | |
| *Vicia/Lathyrus* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (cotyledon) | 1 | 1 | | | | 1 | | | | 1 | 1 | | | | | | | | | | | | | | |
| Fabaceae - *Trifolium type* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae (seed) | | | 1 | 1 | | 1 | | | | 5 | 1 | | 1 | | 1 | | | | | | | | | | |
| Fabaceae (seed frag.) | | | | | 1 | | | | | | | | 3 | | 3 | | | | | | | | | | |
| Fabaceae (cotyledon) | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* (fruit) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* (1/2 fruit) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* (fruit frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ficus carica* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus* sp. (bract) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus* sp. (bract frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon) | 1 | | | | | 3 | | | | 1 | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cupule) | 1 | | | | | | | | | 1 | | | | | | | | | | | | | | | |
| *Rubus* sp. (seed) | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Rubus* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sambucus* sp. (stone) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sambucus* sp. (stone frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed frag.) | | | 1 | | | | | | | | | | | | | | | | | 1 | | | | | |
| *Vitis vinifera* (pedicel) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rosaceae (seed) | | | | | | 1 | | | | | | | | | | | | | | | | | | | |

Table A2.3 - (continued).

| Context | Wall | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **S.U.** | **4.1** | **4.1** | **4.1** | **4.1** | **4.2** | **4.3** | **5** | **6** | **6** | **6** | **6** | **12** | **13** | **13** | **14** | **MIOLO** | **MIOLO** | **M1** | **M1** | **M2** | **M2** | **M3** | **M4** | **M4** | **M5** |
| **Sample** | 14.33 | 14.34 | 14.37 | 14.44 | 14.1 | 14.35 | 14.38 | 14.25 | 14.27 | 14.42 | 14.43 | 15.261 | 15.260 | 15.263 | 15.262 | 15.365 | 15.369 | 15.383 | 15.384 | 15.385 | 15.386 | 15.390 | 15.389 | 15.392 | 15.393 |
| **Other remains** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Asterolinon linum-stellatum* (seed) | | | | | | | | | | 1 | | | | | | | | | | | | | | | |
| Apiaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae (cypsela) | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| Caryophyllaceae (seed) | | | | | | | | 1 | | | | | | | | | | | | | | | | 1 | |
| *Carex* sp. (achene) | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae (seed) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cyperaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf. Cyperaceae (achene) | | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola litoralis/telephiifolia* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Erica* sp. (leaf frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Dianthus* sp. (seed) | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium/Asperula* (mericarp) | | | | | 1 | | | 2 | | 2 | | | | | | | | | | | | | | | |
| Rubiaceae (mericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lamiaceae (nutlet) | | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| *Linum* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* sp. (seed) | | | | | 1 | | | | | 1 | | | | | | | | | | | | | | | |
| Malvaceae (seed frag.) | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| *Montia fontana* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Portulaca oleracea* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum aviculare* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - lenticular type (achene) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* sp. (achene) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | | | | | | | | | 1 | | | | | | | | | | | | | | | |
| *Rumex acetosa/longifolius* (achene) | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| *Rumex acetosella* (achene) | | | | | 1 | | | | | 1 | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sherardia arvensis* (mericarp) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Spergula arvensis* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Spergula* sp. (seed) | | | | | | 3 | | | | | | | | | | | | | | | | | | | |
| *Solanum* sp. (seed) | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Solanum* sp. (seed frag.) | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Stellaria/Cerastium* (seed) | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Verbena officinalis* (mericarp) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Verbena officinalis* (mericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Veronica* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Viola* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (flower bud frag.) | 3 | | 1 | | | 1 | | | | 1 | | | | | | | | | | | | | | | |
| Undetermined (plant spine frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (leaf frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (pedicel) | | | | | | 1 | | | | | | | | | | | | | | | | | | | |
| Undetermined (peduncle frag.) | | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| Undetermined (pericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (tuber) | | | | | | | | | | | 1 | | | | | | | | | | | | | | |
| Undetermined (fruit/seed) | 8 | | | 1 | 10 | 4 | 1 | 2 | 5 | 9 | 4 | | 2 | 1 | | 1 | | | | | | | | 1 | |
| Undetermined (fruit/seed frag.) | 14 | 23 | 37 | 71 | 14 | 17 | 2 | 18 | 13 | 18 | 10 | 26 | 21 | 21 | 9 | 3 | 4 | 18 | 16 | 23 | 38 | 18 | 2 | 8 | 6 |

Table A2.3 - (continued).

| **Context** | ***Impluvium* house** | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volume (Litres)** | 14 | 10 | 10 | 14 | 9 | 15 | 9 | 13 | 9 | 9 | 9 | 5 | 14 | 8 | 8 | 9 |
| **S.U.** | **2** | **3** | **4** | **6** | **6** | **7** | **7** | **8** | **9** | **9** | **9** | **9** | **12** | **12** | **12** | **12** |
| **Analysed meshes (mm)** | All | All | All | All | All | All | All | All | All | All | All | All | All | All | All | All |
| **Sample** | 14.112 | 14.163 | 14.184 | 14.198 | 14.221 | 14.201 | 14.203 | 14.229 | 14.241 | 14.242 | 14.243 | 14.244 | 14.246 | 14.247 | 14.248 | 14.249 |
| **Cereal (grains)** | | | | | | | | | | | | | | | | |
| *Avena* sp. | | | 1 | | | | | | | | | | | | | |
| *Avena* sp. (frag.) | | | 1 | | | | | | | | | | | | | |
| *Hordeum vulgare* | 1 | 5 | | | | | | | | | | | | | | |
| *Hordeum vulgare* (frag.) | 1 | 3 | | | | | | | | | | | | | | |
| *Panicum miliaceum* | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* (frag.) | | | | | | | | | | | | | | | | |
| *Setaria italica* | 17 | 32 | 16 | 30 | 1 | 2 | 6 | | | | 1 | | 9 | 2 | 2 | |
| *Setaria italica* (frag.) | | | | | | | | | | | | | | | | |
| cf. *Setaria italica* | | | | 1 | | | 1 | | | | | | 1 | 1 | | |
| Panicoideae | | 24 | | | 3 | | | | | | | | | | | |
| Panicoideae (frag.) | | | | | | | | | | | | | | | | |
| cf. Panicoideae (seed frag.) | | | | | | | | | | | | | | | | |
| *Secale cereale* | 1 | 4 | 1 | 1 | | | | 1 | | | | | | | | |
| *Secale cereale* (frag.) | | | | | | | | | | | | | | | | |
| *Secale cereale* (longitudinal frag.) | 1 | 2 | | | | | 1 | | | | | | | | | |
| cf. *Secale cereale* | | 1 | | 2 | | | | | | | 1 | | | | | |
| *Triticum aestivum/durum* | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (frag.) | | | | | | | | | | | | | | | | |
| *Triticum spelta* | | | | | | | | | | | | | | | | |
| *Triticum spelta* (longitudinal frag.) | | | | | | | | | | | | | | | | |
| *Triticum spelta* (frag.) | | | | | | | | | | | | | | | | |
| *Triticum* sp. | 1 | | | | | | | | | | | | | | | |
| *Triticum* sp. (frag.) | | | | | | | | | | | | | | | | |
| *Triticum* sp. (longitudinal frag.) | | | | | | | | | | | | | | | | |
| Triticeae (with scutellum) | 1 | | 3 | 1 | | | | | | | | | | | | |
| Triticeae (without scutellum) | 8 | 22 | 1 | 12 | 1 | | | 1 | | | | | | | | |
| Triticeae (longitudinal frag.) | | | 1 | | | | | | | | | 1 | | | | |
| Triticeae (scutellum) | | | | | | | | | | | | | | | | |
| Triticeae (embryo) | | | | | | | | 1 | | | | | | | | |
| **Cereal (chaff)** | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (rachis segment with 1 node) | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (rachis frag.) | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* (hulled grain) | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* (grain with husks) | | | | | | | | | | | | | | | | |
| *Setaria italica* (hulled grains) | | | | | | | | | | | | | | | | |
| Panicoideae (grain with husks) | | | | | | | | | | | | | | | | |
| *Secale cereale* (rachis frag.) | 3 | | 1 | 1 | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | | | | | | | | | | | | | | | | |
| *Triticum spelta* (grain with husks) | | | | | | | | | | | | | | | | |
| *Triticum spelta* (rachis segment) | | | | | | | | | | | | | | | | |
| *Triticum spelta* (spikelet base) | | | | | | | | | | | | | | | | |
| *Triticum spelta* (glume base) | | | | | | | | | | | | | | | | |
| *Triticum spelta* (glume frag.) | | | | | | | | | | | | | | | | |
| *Triticum* sp. (spikelet base) | | | | | | | | | | | | | | | | |
| *Triticum* sp. (glume base) | | | | | | | | | | | 1 | | | | | |
| *Triticum* sp. (glume frag.) | | | | | | | | | | | | | | | | |
| *Triticum* sp. (rachis frag.) | | | | | | | | | | | | | | | | |
| *Triticum* sp. (rachis internode frag.) | | | | | | | | | | | | | | | | |
| Triticeae (awn frag.) | | | | | | | | | | | | | | | | |
| Triticeae (rachis frag.) | | | | | | | | | | | | | | | | |

Table A2.3 - (continued).

| **Context** | ***Impluvium* house** | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **S.U.** | **2** | **3** | **4** | **6** | **6** | **7** | **7** | **8** | **9** | **9** | **9** | **9** | **12** | **12** | **12** | **12** |
| **Sample** | 14.112 | 14.163 | 14.184 | 14.198 | 14.221 | 14.201 | 14.203 | 14.229 | 14.241 | 14.242 | 14.243 | 14.244 | 14.246 | 14.247 | 14.248 | 14.249 |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | |
| *Lolium/Festuca* | | | | | | | | | | | | | | | | |
| *Poa* sp. | | | | | 1 | | | | | | | | | | | |
| *Poa* sp. (frag.) | | | | | | | | | | | | | | | | |
| Poaceae | 1 | 5 | | 3 | | | | | | | | | | 1 | 1 | |
| Poaceae (frag.) | | | | 3 | | | 1 | | | | | | | | | |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | |
| Poaceae (rachis frag.) | | | | 1 | | | | | | | | | | | | |
| **Fabaceae** | | | | | | | | | | | | | | | | |
| Genisteae (seed) | | 1 | | | | | | | | | | | | | | |
| Genisteae (seed frag.) | | | | | | | | | | | | | | | | |
| cf. Genisteae (seed frag.) | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed) | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (seed) | 2 | 8 | 1 | 1 | | | | | | | | | | | | 1 |
| *Vicia/Lathyrus* (seed frag.) | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (cotyledon) | | | | | | | | | | | | | | | | |
| Fabaceae - *Trifolium type* (seed) | | | | | | | | | | | | | | | | |
| Fabaceae (seed) | | 1 | | | | | | | | | | | | | | |
| Fabaceae (seed frag.) | | | | | | | | | | | | | | | | |
| Fabaceae (cotyledon) | | | | | | | | | | | | | | | | |
| **Fruits** | | | | | | | | | | | | | | | | |
| *Castanea sativa* (fruit) | | 1 | | | | | | | | | | | | | | |
| *Castanea sativa* (1/2 fruit) | 4 | | | | | | | | | | | | | | | |
| *Castanea sativa* (fruit frag.) | 190 | 8 | 123 | 155 | | | | | | | | | | | | |
| *Ficus carica* (seed) | | | | | | | | | | | | | | | | |
| *Pinus* sp. (bract) | | | | | | | | | | | | | | | | |
| *Pinus* sp. (bract frag.) | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon) | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon frag.) | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cupule) | | | | | | | | | | | | | | | | |
| *Rubus* sp. (seed) | 5 | | 5 | 6 | | | | | | | | | | | | |
| *Rubus* sp. (seed frag.) | | | | 1 | | | | | | | | | | | | |
| *Sambucus* sp. (stone) | | | | | | | | | | | | | | | | |
| *Sambucus* sp. (stone frag.) | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed) | | | | | | | | | | 1 | | | | | | |
| *Vitis vinifera* (seed frag.) | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (pedicel) | | | | | | | | | | | | | | | | |
| Rosaceae (seed) | | | | | | | | | | | | | | | | |

Table A2.3 - (continued).

| **Context** | ***Impluvium* house** | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **S.U.** | **2** | **3** | **4** | **6** | **6** | **7** | **7** | **8** | **9** | **9** | **9** | **9** | **12** | **12** | **12** | **12** |
| **Sample** | 14.112 | 14.163 | 14.184 | 14.198 | 14.221 | 14.201 | 14.203 | 14.229 | 14.241 | 14.242 | 14.243 | 14.244 | 14.246 | 14.247 | 14.248 | 14.249 |
| **Other remains** | | | | | | | | | | | | | | | | |
| *Asterolinon linum-stellatum* (seed) | | | | | | | | | | | | | | | | |
| Apiaceae (achene) | | | | | | | | | | | | | | | | |
| Asteraceae (cypsela) | | 1 | | | | | | | | | | | | | | |
| Caryophyllaceae (seed) | | | | | | | | | | | | | | | | |
| *Carex* sp. (achene) | | | | | | | | | | | | | | | | |
| Chenopodiaceae (seed) | | 1 | | | | | | | | | | | | | | |
| Cyperaceae (achene) | | 2 | | | | | | | | | | | | | | |
| cf. Cyperaceae (achene) | | | | | | | | | | | | | | | | |
| *Corrigiola litoralis/telephiifolia* (achene) | | | | | | | | | | | | | | | | |
| *Erica* sp. (leaf frag.) | | | | | | | | | | | | | | | | |
| *Dianthus* sp. (seed) | | | | | | | | | | | | | | | | |
| *Galium/Asperula* (mericarp) | | | 1 | | | | | | | | | | | | | |
| Rubiaceae (mericarp frag.) | | | 1 | 6 | | | | | | | | | | | | |
| Lamiaceae (nutlet) | | | | | | | | | | | | | | | | |
| *Linum* sp. (seed) | | | | | | | | | | 1 | | | | | | |
| *Malva* sp. (seed) | | | | | | | | | | | | | | | | |
| Malvaceae (seed frag.) | | | | | | | | | | | | | | | | |
| *Montia fontana* (seed) | | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed) | | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed frag.) | | | | | | | | | | | | | | | | |
| *Portulaca oleracea* (seed) | | | | | 1 | | | | | | | | | | | |
| *Polygonum aviculare* (achene) | | | | | | | | | | | | | | | | |
| *Polygonum* - lenticular type (achene) | | | | | | | | | | | | | | | | |
| *Polygonum* sp. (achene) | | | | | | | | | | | | | | | | |
| Polygonaceae (achene) | | | | | | | | | | | | | | | | |
| Polygonaceae (achene frag.) | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | 1 | | | | | | | | | | | | | | |
| *Rumex acetosa/longifolius* (achene) | | | | | | | | | | | | | | | | |
| *Rumex acetosella* (achene) | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene) | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene frag.) | | | | | | | | | | | | | | | | |
| *Sherardia arvensis* (mericarp) | | | | | | | | | | | | | | | | |
| *Silene gallica* (seed) | | | | | | | | | | | | | | | | |
| *Spergula arvensis* (seed) | | | | | | | | | | | | | | | | |
| *Spergula* sp. (seed) | | | | | 1 | | | | | | | | | | | |
| *Solanum* sp. (seed) | | | | | | | | | | | | | | | | |
| *Solanum* sp. (seed frag.) | | | | | | | | | | | | | | | | |
| *Stellaria/Cerastium* (seed) | | | | | | | | | | | | | | | | |
| *Verbena officinalis* (mericarp) | | | | | | | | | | | | | | | | |
| *Verbena officinalis* (mericarp frag.) | | | | | | | | | | | | | | | | |
| *Veronica* sp. (seed) | | | | | | | | | | | | | | | | |
| *Viola* sp. (seed) | | 1 | | | | | | | | | | | | | | |
| Undetermined (flower bud frag.) | | | | | | | | | | | | | | | | |
| Undetermined (plant spine frag.) | | | | 1 | | | | | 1 | | | | | | | |
| Undetermined (leaf frag.) | | | | | | | | | | | | | | | | |
| Undetermined (pedicel) | | | | | | | | | | | | | | | | |
| Undetermined (peduncle frag.) | | | | | | | | | | | | | | | | |
| Undetermined (pericarp frag.) | | | | | | | | | | | | | | | | |
| Undetermined (tuber) | | | | | | | | | | | | | | | | |
| Undetermined (fruit/seed) | | 6 | | | 1 | | 1 | | | | | | | | | |
| Undetermined (fruit/seed frag.) | 3 | 12 | 5 | 27 | 1 | | | | | | | | | | | |

Table A2.3 - (continued).

| Context | Round hut | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volume (Litres)** | 14 | 9 | 9 | 9 | 9 | 9 | 2 | 9 | 9 | 9 | 9 | 9 | 11 | 9 | 10 | 8 | 9 | 9 | 14 | 9 |
| **S.U.** | **2** | **2a** | **3** | **3** | **5** | **5** | **6d** | **7** | **8** | **9** | **9** | **10** | **10** | **11** | **11** | **13** | **15** | **15** | **16** | **17** |
| **Analysed meshes (mm)** | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 |
| **Sample** | 15.397 | 15.404 | 15.423 | 15.428 | 15.432 | 15.450 | 15.448 | 15.417 | 15.439 | 15.436 | 15.438 | 15.441 | 15.442 | 15.424 | 15.433 | 15.453 | 15.460 | 15.461 | 15.421 | 15.467 |
| **Cereal (grains)** | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | | | | | | | | | | | | | | | | | 1 | | | |
| *Avena* sp. (frag.) | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* | | | | | | | | | | | | | | | 3 | | | | | |
| *Hordeum vulgare* (frag.) | | | | | | | | | | | | | | | | | 1 | | | |
| *Panicum miliaceum* | 1 | 3 | 2 | 3 | | 3 | | | 1 | 3 | 8 | 3 | 3 | 3 | 4 | 1 | 2 | 3 | 1 | |
| *Panicum miliaceum* (frag.) | 2 | 2 | | | | | | | | | | | | 2 | | | 1 | | | |
| *Setaria italica* | | | | | | 2 | | | | 2 | 1 | 1 | 1 | | | | 6 | 1 | | |
| *Setaria italica* (frag.) | | | | | | | | | | | | | 1 | | 1 | | | | | |
| cf. *Setaria italica* | | | | | | | | | | | | | | | | | | | | |
| Panicoideae | 2 | 1 | | | 1 | 5 | | | | 4 | 3 | 1 | | 1 | 1 | | 5 | 3 | 2 | |
| Panicoideae (frag.) | | | 1 | | | 3 | | 1 | 1 | 1 | 1 | | 1 | 2 | 1 | 1 | 3 | 1 | | |
| cf. Panicoideae (seed frag.) | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* | | | | | | | | | | | | | | | 1 | | | | | |
| *Secale cereale* (frag.) | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* (longitudinal frag.) | | | | | | | | | | | | | | | | | | | | |
| cf. *Secale cereale* | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (frag.) | | | | | | | | | | | | | | | | | 1 | | | |
| *Triticum spelta* | | | 1 | | | | | | | 1 | | 1 | 1 | | | | | 2 | | |
| *Triticum spelta* (longitudinal frag.) | | | | | | | | | | | | | | | | | | | | |
| *Triticum spelta* (frag.) | | | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. | | | | | | | | | | | 2 | 1 | 2 | | 1 | | | | | |
| *Triticum* sp. (frag.) | | | | | | | | | | 2 | | 2 | | | | | 1 | | | |
| *Triticum* sp. (longitudinal frag.) | | | | | | | | | | | | | | | | | | | | |
| Triticeae (with scutellum) | | | | | | | | | | | | | | | | | | | | |
| Triticeae (without scutellum) | 4 | 2 | 3 | 5 | | 1 | | 1 | 1 | 2 | 3 | 4 | 6 | 2 | 3 | 1 | | 3 | 1 | 2 |
| Triticeae (longitudinal frag.) | | | | | | | | | | | | | | | | | | | | |
| Triticeae (scutellum) | | | | | | | | | | | | | | | | | 1 | | | |
| Triticeae (embryo) | | | | | | 1 | | | | | | | | | | | | | | |
| **Cereal (chaff)** | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (rachis segment with 1 node) | | | | | | | | | | | | | | | 1 | | 1 | | | |
| *Hordeum vulgare* (rachis frag.) | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* (hulled grain) | | | | | | | | | | | | | | | | | | 1 | | |
| *Panicum miliaceum* (grain with husks) | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (hulled grains) | | | | | | | | | | | | | | | | | | | | |
| Panicoideae (grain with husks) | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* (rachis frag.) | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | | | | | | | | | | | | | | | | | | | | |
| *Triticum spelta* (grain with husks) | | | | | | | | | | | | | | | | | | | | |
| *Triticum spelta* (rachis segment) | | | | | | | | | | | | | | | | | | | | |
| *Triticum spelta* (spikelet base) | | | | | | | | | | | | | | | | | | | | |
| *Triticum spelta* (glume base) | | | | | | | | 1 | | | | | 1 | | | | | | | |
| *Triticum spelta* (glume frag.) | | | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. (spikelet base) | | | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. (glume base) | | 2 | | | | 1 | | | 2 | | | 1 | | | | 1 | | | | |
| *Triticum* sp. (glume frag.) | | | | | | | | | | | | 1 | 2 | | | | | | | 1 |
| *Triticum* sp. (rachis frag.) | | | | | | | | 2 | | | | | | | | | | | | 2 |
| *Triticum* sp. (rachis internode frag.) | | | | | | | | | | | | | | | | | | | | |
| Triticeae (awn frag.) | | | | | | | | | | | | | | | | | | | | |
| Triticeae (rachis frag.) | | | | | | | | | | | | | | | | | | | | |

Table A2.3 - (continued).

| Context | Round hut | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **S.U.** | **2** | **2a** | **3** | **3** | **5** | **5** | **6d** | **7** | **8** | **9** | **9** | **10** | **10** | **11** | **11** | **13** | **15** | **15** | **16** | **17** |
| **Sample** | 15.397 | 15.404 | 15.423 | 15.428 | 15.432 | 15.450 | 15.448 | 15.417 | 15.439 | 15.436 | 15.438 | 15.441 | 15.442 | 15.424 | 15.433 | 15.453 | 15.460 | 15.461 | 15.421 | 15.467 |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | |
| *Lolium/Festuca* | | | | | | | | | | | 1 | | | | | | | | | |
| *Poa* sp. | | | | | | | | | | | | 1 | 1 | | | | | | | |
| *Poa* sp. (frag.) | | 2 | | | | | | | | | | | | | | | | | | |
| Poaceae | | | | | | | | | 1 | | 6 | 1 | | 1 | | | 1 | | | 1 |
| Poaceae (frag.) | | 1 | 1 | 2 | | | | | | 4 | 5 | | 3 | | | | 2 | | | |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | | | | | |
| Poaceae (rachis frag.) | | | | | | | | | | | | | | | | | | | | |
| **Fabaceae** | | | | | | | | | | | | | | | | | | | | |
| Genisteae (seed) | | | | | | | 1 | | | | | | 2 | | | | | | | |
| Genisteae (seed frag.) | | | | | | | 1 | | | | | | | | | | | | | |
| cf. Genisteae (seed frag.) | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp.(seed) | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (seed) | | | | | | | | | | | 1 | | | | | | | | | |
| *Vicia/Lathyrus* (seed frag.) | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (cotyledon) | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Trifolium type* (seed) | | | | | | | | | | | | | | | | | | | | |
| Fabaceae (seed) | 1 | | | | 1 | | | | | | | | 1 | | | | 1 | | | |
| Fabaceae (seed frag.) | | | | | | | | | 1 | | | | | | | | | | | |
| Fabaceae (cotyledon) | | | 1 | | | | | | 1 | | | | | | | | | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* (fruit) | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* (1/2 fruit) | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* (fruit frag.) | | | | | | | | | | | | | | | | | | | | |
| *Ficus carica* (seed) | | | | | | | | | | 1 | 13 | | 1 | | | | 1 | | | |
| *Pinus* sp. (bract) | | | | | | | | | | | 1 | | | | | | | | | |
| *Pinus* sp. (bract frag.) | | | | | | | | | | | 1 | | | | | | | | | |
| *Quercus* sp. (cotyledon) | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon frag.) | | | | | | | | | | | | | | 2 | | | | | | |
| *Quercus* sp. (cupule) | | | | | | | | | | | | | | | | | | | | |
| *Rubus* sp. (seed) | | | | | | | | | | | 2 | 1 | 1 | | | | | | | |
| *Rubus* sp. (seed frag.) | | | | | | | | | | | | | 1 | | | | | | | |
| *Sambucus* sp. (stone) | | | | | | | | | | | 1 | | | | | | | | | |
| *Sambucus* sp. (stone frag.) | | | | | | | | | | | 2 | | | | | | | | | |
| *Vitis vinifera* (seed) | | | | | | | | | | 1 | 18 | | 1 | | 1 | | 1 | | | |
| *Vitis vinifera* (seed frag.) | | | | | | | | | | 1 | 1 | 1 | | | | | | | | |
| *Vitis vinifera* (pedicel) | 1 | | 2 | | | | | | | 1 | 15 | | | | | | | | | |
| Rosaceae (seed) | | | | | | | | | | | | | | | | | | | | |

Table A2.3 - (continued).

| Context | Round hut | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **S.U.** | **2** | **2a** | **3** | **3** | **5** | **5** | **6d** | **7** | **8** | **9** | **9** | **10** | **10** | **11** | **11** | **13** | **15** | **15** | **16** | **17** |
| **Sample** | 15.397 | 15.404 | 15.423 | 15.428 | 15.432 | 15.450 | 15.448 | 15.417 | 15.439 | 15.436 | 15.438 | 15.441 | 15.442 | 15.424 | 15.433 | 15.453 | 15.460 | 15.461 | 15.421 | 15.467 |
| **Other remains** | | | | | | | | | | | | | | | | | | | | |
| *Asterolinon linum-stellatum* (seed) | | | | | | | | | | | | | | | | | | | | |
| Apiaceae (achene) | | | | | | | | | | | 2 | | | | | | | | | |
| Asteraceae (cypsela) | | | | | 1 | | | | | | | | | | | | | | | |
| Caryophyllaceae (seed) | | | | | | | | | | | | | | | | | | | | |
| *Carex* sp. (achene) | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae (seed) | | | | | | | | | | | | | | | | | | | | |
| Cyperaceae (achene) | | | | | | | | | | | | | | | | | | | | |
| cf. Cyperaceae (achene) | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola litoralis/telephiifolia* (achene) | | | | | | | | | | | | | | | | | | | | |
| *Erica* sp. (leaf frag.) | | | | | | | | | | | | | | | | | | | | |
| *Dianthus* sp. (seed) | | | | | | | | | | | | | | | | | | | | |
| *Galium/Asperula* (mericarp) | | | | | | | | | | 1 | | | 1 | | | | | | | |
| Rubiaceae (mericarp frag.) | | | | | | | | | | | | | | | | | | | | |
| Lamiaceae (nutlet) | | | | | | | | | | | | | | | | | | | | |
| *Linum* sp. (seed) | | | | | | | | | | | | | | | | | | | | |
| *Malva* sp. (seed) | | | | | | | | | | 1 | 12 | 3 | | | | | | | | |
| Malvaceae (seed frag.) | | | | | | | | | | | | | | | | | | | | |
| *Montia fontana* (seed) | | | | | | | | | | | 26 | | | | | | | | | |
| *Plantago* sp. (seed) | | | | 1 | | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | |
| *Portulaca oleracea* (seed) | | | | | | | | | | | | | | | | | | | | |
| *Polygonum aviculare* (achene) | | | | | | | | | | | 1 | | 1 | | | | | | | |
| *Polygonum* - lenticular type (achene) | 2 | | | | | | | | | | | | | | | | | | | |
| *Polygonum* sp. (achene) | | | 1 | | | | | | | 1 | | | 1 | | | | | 1 | | |
| Polygonaceae (achene) | | | | | | | | | | | 2 | | | | | | | | | |
| Polygonaceae (achene frag.) | | | | | | | | | | | 2 | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | | | | | | | | | | | | | | | | 1 | | 1 | |
| *Rumex acetosa/longifolius* (achene) | | | | | | | | | | | | | | | | | | | | |
| *Rumex acetosella* (achene) | | | | | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene) | | | 1 | 3 | | 2 | | | | 1 | 8 | 1 | 2 | | | | | | | |
| *Rumex* sp. (achene frag.) | | | | | | | | | | | 3 | | | | | | | | | |
| *Sherardia arvensis* (mericarp) | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* (seed) | | | | | | | | | | | | | | | | | | | | |
| *Spergula arvensis* (seed) | | | | | | | | | | | | | | | | | | | | |
| *Spergula* sp. (seed) | | | | | | | | | | | | | | | | | | | | |
| *Solanum* sp. (seed) | | | | | | | | | 1 | 3 | 35 | 1 | | | | | | | | |
| *Solanum* sp. (seed frag.) | | | | | | | | | | 1 | 3 | 1 | | | | | | | | |
| *Stellaria/Cerastium* (seed) | | | 1 | | | | | | | | | | | | 1 | | | | | |
| *Verbena officinalis* (mericarp) | | | | | | | | | | | 4 | 1 | | | | | | | | |
| *Verbena officinalis* (mericarp frag.) | | | | | | | | | | | 1 | | | | | | | | | |
| *Veronica* sp. (seed) | | | | | | | | 1 | | | | | | | | | | | | |
| *Viola* sp. (seed) | | | | | | | | | | | | | | | | | | | | |
| Undetermined (flower bud frag.) | | | | | | | | | | | | | | 1 | 1 | | | | | |
| Undetermined (plant spine frag.) | | | | | | | | | | | | | | | | | | | | |
| Undetermined (leaf frag.) | | | | | | | | | | | | 1 | | 1 | | | | | 1 | |
| Undetermined (pedicel) | | | | | | | | | | | | | | | | | | | | |
| Undetermined (peduncle frag.) | | | | | | | | | | | | | | | | | | | | |
| Undetermined (pericarp frag.) | | | | | | | | | | | | | | 1 | | | | | | |
| Undetermined (tuber) | | | | | | | | | | | | | | | | | | | | |
| Undetermined (fruit/seed) | | | 3 | | 1 | | 1 | | 5 | 3 | 8 | 2 | 5 | 4 | 5 | | | | | 1 |
| Undetermined (fruit/seed frag.) | 9 | 28 | 27 | 10 | 10 | 19 | 14 | 17 | 29 | 29 | 218 | 63 | 149 | 68 | 81 | 6 | 41 | 51 | 91 | 28 |

Table A2.3 - (continued).

| **Context** | **Round hut** | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volume (Litres)** | 9 | 9 | 9 | 2 | 9 | 9 | 4 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 2 | 4 | 2 | 4 |
| **S.U.** | **18** | **18** | **19** | **19** | **20** | **20** | **21** | **23** | **23** | **27** | **27** | **29** | **29** | **30** | **30** | **32** | **34** | **35** | **36** | **37** |
| **Analysed meshes (mm)** | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 | > 0.25 |
| **Sample** | 15.402 | 15.412 | 15.416 | 15.449 | 15.472 | 15.478 | 15.452 | 15.440 | 15.443 | 15.483 | 15.488 | 15.482 | 15.507 | 15.511 | 15.516 | 15.434 | 15.413 | 15.411 | 15.410 | 15.520 |
| **Cereal (grains)** | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | 1 | | | | | 3 | | | | | | | | | | | 3 | | | |
| *Avena* sp. (frag.) | 1 | 1 | | | | 3 | | | | | | | | | | | | | | |
| *Hordeum vulgare* | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (frag.) | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* | 5 | 3 | 2 | | 1 | | 9 | 3 | | | | 4 | | | | 6 | | | 1 | |
| *Panicum miliaceum* (frag.) | 2 | | 1 | | 1 | | 1 | | | | | 1 | | | | | | | | |
| *Setaria italica* | 3 | 1 | 4 | | 3 | | | 3 | | | | | | | | 2 | | | | |
| *Setaria italica* (frag.) | | | | | | | | | | | | | | | | | | | | |
| cf. *Setaria italica* | | | | | | | | | | | | | | | | | | | | |
| Panicoideae | 4 | | | | 2 | | 1 | 1 | | 1 | | 2 | 1 | | | 2 | | 1 | | |
| Panicoideae (frag.) | 3 | | 2 | | 1 | 1 | 3 | 1 | | | | 2 | | | | 6 | | | | |
| cf. Panicoideae (seed frag.) | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* | | | | | | | | | | | | | | | | | 1 | | | |
| *Secale cereale* (frag.) | | | | | | 1 | | | | | | | | | | | | | | |
| *Secale cereale* (longitudinal frag.) | | | | | | | | | | | | | | | | | | | | |
| cf. *Secale cereale* | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* | | | | | | | | | 1 | | 1 | | | | | | | | | |
| *Triticum aestivum/durum* (frag.) | | | | | | | | | | | | | | | | | | | | |
| *Triticum spelta* | | | | | | | | | | | | | 1 | | | | | | | |
| *Triticum spelta* (longitudinal frag.) | | | | | | | | | | | | | | | | | | | | |
| *Triticum spelta* (frag.) | | | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. | | 1 | | | | | | | | | 1 | | 1 | | | | | | 1 | |
| *Triticum* sp. (frag.) | | 2 | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. (longitudinal frag.) | | | | | | | | | | | | | | | | | | | | |
| Triticeae (with scutellum) | | | 1 | | | | | | | | 1 | | | | | | | | | |
| Triticeae (without scutellum) | 1 | 1 | | | | 1 | | 2 | 2 | | 2 | | 1 | | | 4 | 2 | | 1 | 1 |
| Triticeae (longitudinal frag.) | | | | | | | | | | | | | | | | | | | | |
| Triticeae (scutellum) | | | | | | | | | | | | 1 | | | | | | | | |
| Triticeae (embryo) | | | | | | | | | | | | | | | | | | | | |
| **Cereal (chaff)** | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (rachis segment with 1 node) | | | | | | 1 | | | | | 1 | | | | | | | | | |
| *Hordeum vulgare* (rachis frag.) | | | | | 1 | 1 | | | | | | | | | | | | | | |
| *Panicum miliaceum* (hulled grain) | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* (grain with husks) | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (hulled grains) | | | | | | | | | | | | | | | | | | | | |
| Panicoideae (grain with husks) | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* (rachis frag.) | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | | | | | | | | | | | | 1 | 1 | | | | | | | |
| *Triticum spelta* (grain with husks) | | | | | | | | | | | | | | | | | | | | |
| *Triticum spelta* (rachis segment) | | | | | | | | | | | | | | | | | | | | |
| *Triticum spelta* (spikelet base) | | | | | | 1 | | | | | | | | | | | | | | |
| *Triticum spelta* (glume base) | | | | | | 7 | | | | 1 | 3 | 1 | 1 | 1 | | | 1 | 2 | 2 | 2 |
| *Triticum spelta* (glume frag.) | | | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. (spikelet base) | | | | | 1 | | | | 1 | | 1 | | 1 | | | 1 | | | | |
| *Triticum* sp. (glume base) | 1 | | 2 | | 2 | 17 | | 1 | 2 | 2 | 9 | 7 | 10 | 1 | 1 | 4 | 11 | 2 | 1 | 6 |
| *Triticum* sp. (glume frag.) | | 1 | | | 1 | 16 | 1 | 1 | | 4 | 14 | 12 | 5 | 1 | | 4 | 12 | 2 | 1 | 5 |
| *Triticum* sp. (rachis frag.) | 2 | | | 2 | 1 | 4 | | | 2 | | 4 | | 12 | 3 | | 2 | 13 | 2 | 2 | 3 |
| *Triticum* sp. (rachis internode frag.) | | | | | | 2 | | | | | | | | | | | | | | |
| Triticeae (awn frag.) | | | | | | | | | | | 1 | 2 | 1 | | | | | | | 2 |
| Triticeae (rachis frag.) | | | | | | 7 | | | | 1 | | 6 | 6 | | | | | | | 3 |

Table A2.3 - (continued).

| Context | Round hut | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **S.U.** | **18** | **18** | **19** | **19** | **20** | **20** | **21** | **23** | **23** | **27** | **27** | **29** | **29** | **30** | **30** | **32** | **34** | **35** | **36** | **37** |
| **Sample** | 15.402 | 15.412 | 15.416 | 15.449 | 15.472 | 15.478 | 15.452 | 15.440 | 15.443 | 15.483 | 15.488 | 15.482 | 15.507 | 15.511 | 15.516 | 15.434 | 15.413 | 15.411 | 15.410 | 15.520 |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | |
| *Lolium/Festuca* | | | | | | | | | | | | | | | | | | | | |
| *Poa* sp. | | | | | | | | | | | | | | | | | 2 | | | |
| *Poa* sp. (frag.) | | | | | | | | | | | | | | | | | | | | |
| Poaceae | | | 1 | | | 1 | | | | | | | 1 | | | | 2 | | | |
| Poaceae (frag.) | 3 | | 2 | | 1 | 2 | 1 | | | | | 1 | 2 | 2 | | | 3 | | | |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | | | | | |
| Poaceae (rachis frag.) | | | | | | | | | | | | | | | | | | | | |
| **Fabaceae** | | | | | | | | | | | | | | | | | | | | |
| Genisteae (seed) | | | | | | 3 | | 1 | 4 | 4 | 2 | | 1 | | 1 | | | 2 | | |
| Genisteae (seed frag.) | | | | | | | | | | 1 | | | | | 1 | | | | | |
| cf. Genisteae (seed frag.) | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed) | | | | | | | | | | | 1 | | | | | | | | | |
| *Vicia/Lathyrus* (seed) | | | | | | | | 6 | | 8 | | | | | 2 | 2 | 1 | | | |
| *Vicia/Lathyrus* (seed frag.) | | | | | | | | 1 | | 2 | | | | | | | | | | |
| *Vicia/Lathyrus* (cotyledon) | | | | | | | | | | 1 | | | | | | | | | | |
| Fabaceae - *Trifolium type* (seed) | | | | | | | | | | 1 | 1 | | | | | | | | | |
| Fabaceae (seed) | | | 1 | | | | | | | | | | 1 | 1 | | | | | | |
| Fabaceae (seed frag.) | | | | | | | | | 1 | | | 2 | 1 | 1 | 1 | 1 | | 1 | | |
| Fabaceae (cotyledon) | | | | | | | | | | | | | | | 1 | | | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* (fruit) | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* (1/2 fruit) | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* (fruit frag.) | | | | | | | | | | | | | | | | | | | | |
| *Ficus carica* (seed) | | | | | | | | | | | | | | | | 1 | | | | |
| *Pinus* sp. (bract) | | | | | | | | | | | | | | | | | | | | |
| *Pinus* sp. (bract frag.) | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon) | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon frag.) | 1 | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cupule) | | | | | | | | | | | | | | | | | | | | |
| *Rubus* sp. (seed) | | | | | | | | | | 1 | 3 | | | | | | | | | |
| *Rubus* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | |
| *Sambucus* sp. (stone) | | | | | | | | | | | | 1 | 1 | | | | | | | |
| *Sambucus* sp. (stone frag.) | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed) | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed frag.) | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (pedicel) | | | | | | | | | | | | | | | | | | | | |
| Rosaceae (seed) | | | | | | | | | | | | | | | | | | | | |

Table A2.3 - (continued).

| Context | Round hut | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **S.U.** | **18** | **18** | **19** | **19** | **20** | **20** | **21** | **23** | **23** | **27** | **27** | **29** | **29** | **30** | **30** | **32** | **34** | **35** | **36** | **37** |
| **Sample** | 15.402 | 15.412 | 15.416 | 15.449 | 15.472 | 15.478 | 15.452 | 15.440 | 15.443 | 15.483 | 15.488 | 15.482 | 15.507 | 15.511 | 15.516 | 15.434 | 15.413 | 15.411 | 15.410 | 15.520 |
| **Other remains** | | | | | | | | | | | | | | | | | | | | |
| *Asterolinon linum-stellatum* (seed) | | | | | | | | | | | | | | | | | | | | |
| Apiaceae (achene) | | | | | | | | | | | | | | | | | | | | |
| Asteraceae (cypsela) | | | | | | | | | | | | | | | | | | | | |
| Caryophyllaceae (seed) | | | | | | | | | | | | | 1 | | | | | | | |
| *Carex* sp. (achene) | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae (seed) | | | | | | | | | | | | | | | | | | | | |
| Cyperaceae (achene) | | | | | | | | | | | | | | | | | | | | |
| cf. Cyperaceae (achene) | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola litoralis/telephiifolia* (achene) | | | | | | | | | | | | | | | 1 | | | | | |
| *Erica* sp. (leaf frag.) | | | | | | | | | | | | | | | | | | 1 | | |
| *Dianthus* sp. (seed) | | | | | | | | | | | | | | | | | | | | |
| *Galium/Asperula* (mericarp) | | | | | | | | | | | | | | | | | | | | |
| Rubiaceae (mericarp frag.) | | | | | | | | | | | | | | | | | | | | |
| Lamiaceae (nutlet) | | | | | | | | | | | | | | | | 1 | | | | |
| *Linum* sp. (seed) | | | | | | | | | | | | | | | | | | | | |
| *Malva* sp. (seed) | | | | | | | | | | | | | | | 1 | | | | | |
| Malvaceae (seed frag.) | | | | | | | | | | | | | | | | | | | | |
| *Montia fontana* (seed) | | | | | | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed) | | | | | | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | |
| *Portulaca oleracea* (seed) | | | | | | | | | | | | | | | | | | | | |
| *Polygonum aviculare* (achene) | | | | | | | | | | | | 1 | | | | | | | | |
| *Polygonum* - lenticular type (achene) | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* sp. (achene) | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene) | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene frag.) | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | | | | | | | | | | | | | | | | | | | |
| *Rumex acetosa/longifolius* (achene) | | | | | | | | | | | | | | | | | | | | |
| *Rumex acetosella* (achene) | | | | | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene) | | | | | | 1 | 1 | | 1 | | 1 | 1 | | | | | | | | |
| *Rumex* sp. (achene frag.) | | | | | | | | | | | | | | | | | | | | |
| *Sherardia arvensis* (mericarp) | | | | | | | | | | 1 | | | | | | | | | | |
| *Silene gallica* (seed) | | | | | | | | | | 1 | | | | | | | | | | |
| *Spergula arvensis* (seed) | | | | | | | | | | | | | | | 1 | | | | | |
| *Spergula* sp. (seed) | | | | | | | | | | | | | | | | | | | | |
| *Solanum* sp. (seed) | | | | | | | | | | | | | | | | | | | | |
| *Solanum* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | |
| *Stellaria/Cerastium* (seed) | | | | | | | | | | | | | 1 | | | | | | | |
| *Verbena officinalis* (mericarp) | | | | | | | | | | | | 1 | | | | | | | | |
| *Verbena officinalis* (mericarp frag.) | | | | | | | | | | | | | | | | | | | | |
| *Veronica* sp. (seed) | | | | | | | | | | | | | | | | | | | | |
| *Viola* sp. (seed) | | | | | | | | | | | | | | | | | | | | |
| Undetermined (flower bud frag.) | | | | | | | | | 1 | | | | | | | | | | | 1 |
| Undetermined (plant spine frag.) | | | | | | | | | | | | | | | | | | | | |
| Undetermined (leaf frag.) | | | | | 2 | | | | | | 4 | 29 | 25 | | | 1 | | | | |
| Undetermined (pedicel) | | | | | | | | | | | | | | | | | | | | |
| Undetermined (peduncle frag.) | | | | | | | | | | | | | | | | | | | | |
| Undetermined (pericarp frag.) | | | | | | | | | | | | 3 | | 1 | 2 | | | | | |
| Undetermined (tuber) | | | | | | | | | | | | | | | | | | | | |
| Undetermined (fruit/seed) | | 3 | | | | 2 | | | 2 | 1 | | 3 | 5 | | | 1 | 1 | 1 | 1 | 2 |
| Undetermined (fruit/seed frag.) | 37 | 24 | 14 | 4 | 48 | 51 | 37 | 41 | 52 | 64 | 93 | 100 | 115 | 67 | 51 | 40 | 53 | 24 | 16 | 44 |

Table A2.3 - (continued).

# Attachment 3 - Crops behind closed walls: Fortified storage at Castelinho in the Late Iron Age of NW Iberia (Supplementary material of Chapter 5)

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| Context type | Context | Sampled context (S.U.) | Sampled context - description | Phase | Number of Samples | Processing | Volume (L) |
|---|---|---|---|---|---|---|---|
| A1 | Hearth 48 | **48** | Sub-rectangular clay base | V | 1 | Floated | 2.7 |
| | Hearth 49 | **49** | Circular clay base | V | 2 | Floated | 6 |
| | | **355** | Ceramic layer (construction) | V | 1 | Floated | 1.7 |
| | Hearth 68B | **68B** | Circular clay base | II/III | 1 | Floated | 4.5 |
| | Hearth 68C | **783** | Layer associated with oven | II/III | 17 | Floated | 95,6 |
| | Hearth 149A | **149** | Utilization layer | V | 6 | Floated | 25,4 |
| | Hearth 227 | **227** | Clay base | V | 3 | Floated | 12 |
| | | **228** | Conscrution layer | V | 1 | Floated | 4.5 |
| | Hearth 480 | **480** | Clay base | II/III | 7 | Floated | 21 |
| | | **481** | Second clay base | II/III | 2 | Floated | 10 |
| | Hearth 491 | **479** | Utilization layer | II/III | 3 | Floated | 6.5 |
| | | **491** | Clay base | II/III | 1 | Floated | 4.3 |
| | | **493** | Utilization layer | II/III | 6 | Floated | 26 |
| | Hearth 595 | **595** | Clay base | V | 2 | Floated | 6.2 |
| | | | | | 1 | Handpicked | N/A |
| A2 | Oven 331 | **331** | Oven clay base | II/III | 4 | Floated | 13 |
| | | **332** | Abandonment/Destruction layer | II/III | 5 | Floated | 21.4 |
| | Oven 446 | **446** | Oven clay base | II/III | 1 | Floated | 10.5 |
| | Oven 510 | **459** | Abandonment/Destruction layer | II/III | 1 | Floated | 4.5 |
| | Oven 711 | **712** | Utilization layer | IV | 2 | Floated | 7.8 |
| | | **721** | Utilization layer | IV | 1 | Floated | 12.3 |
| | Oven 750 | **745** | Abandonment/Destruction layer | IV | 6 | Floated | 34.8 |
| | | **746** | Utilization layer | IV | 4 | Floated | 19.3 |
| | | **747** | Utilization layer | IV | 6 | Floated | 28.4 |
| | | | | | 1 | No data | N/A |
| | | | | | 1 | Handpicked | N/A |
| B1 | *Horreum* I | **660** | Quadrangular structure closely attached to *Horreum* I | IV/V | 6 | Floated | 104.1 |
| | *Horrea* I, II | **244** | Abandonment/Destruction layer | IV/V | 2 | Floated | 12,2 |
| | | **273** | Abandonment/Destruction layer | IV/V | 2 | Floated | 5.6 |
| | *Horreum* II | **653A** | Between parallel walls | IV/V | 7 | Floated | 104.5 |
| | | **653B** | Between parallel walls | IV/V | 4 | Floated | 64.9 |
| | | **653C** | Between parallel walls | IV/V | 8 | Floated | 149.8 |
| | *Horreum* III | **654A** | Between parallel walls | IV/V | 4 | Floated | 67.8 |
| | | **654B** | Between parallel walls | IV/V | 4 | Floated | 74.9 |
| | | **654C** | Between parallel walls | IV/V | 5 | Floated | 101.1 |
| | *Horreum* IV | **552** | Between parallel walls | IV/V | 15 | Floated | 133.6 |
| | | **553** | Between parallel walls | IV/V | 13 | Floated | 135.3 |
| | | **554** | Between parallel walls | IV/V | 9 | Floated | 189.5 |
| | *Horreum* VI | **126** | Floor layer | IV/V | 16 | Floated | 105.8 |
| | | **695** | Filling layer between walls 686 and 704 nearby *Horreum* | IV/V | 5 | Floated | 21 |
| | | **699** | Abandonment layer | IV/V | 1 | Floated | 4.5 |
| | | **703** | Abandonment layer | IV/V | 1 | Floated | 2.7 |
| | | **725** | Abandonment layer | IV/V | 5 | Floated | 31.7 |
| | | **728** | Floor layer | IV/V | 19 | Floated | 187.1 |
| | | **730A** | Utilization/Abandonment layer | IV/V | 9 | Floated | 87.2 |
| | | **730B** | Utilization/Abandonment layer | IV/V | 17 | Floated | 208.7 |

Table A3.1 - Castelinho Inventory.

| Context type | Context | Sampled context (S.U.) | Sampled context - description | Phase | Number of Samples | Processing | Volume (L) |
|---|---|---|---|---|---|---|---|
| B1 | *Horreum* VII | **3** | Abandonment/Destruction layer | IV/V | 9 | Floated | 21.8 |
| | | | | | 3 | No data | N/A |
| | | **397** | Between parallel walls | IV/V | 33 | Floated | 140.4 |
| | | | | | 8 | No data | N/A |
| | | **397A** | Between parallel walls | IV/V | 51 | Floated | 172.2 |
| | | | | | 2 | No data | N/A |
| | | | | | 1 | Handpicked | N/A |
| | | **397B** | Between parallel walls | IV/V | 44 | Floated | 180.9 |
| | | **397C** | Between parallel walls | IV/V | 7 | Floated | 28.2 |
| | | **412B** | Embankment/Conscrution layer | IV/V | 2 | Floated | 4.2 |
| | | | | IV/V | 1 | Handpicked | N/A |
| | | **412C** | Embankment/Conscrution layer | IV/V | 2 | Floated | 5.5 |
| B2 | Semicircular structure 256 | **257** | Abandonment/Destruction layer | III | 15 | Floated | 66.5 |
| | | **281** | Abandonment/Destruction layer | III | 11 | Floated | 73.9 |
| | Semicircular structures 256/258 | **196** | Destruction layer | III | 7 | Floated | 28.4 |
| | | **211** | Destruction layer | III | 2 | Floated | 8.5 |
| | Semicircular structure 258 | **259** | Filling layer | III | 17 | Floated | 67.8 |
| | | **415** | Floor layer | III | 9 | Floated | 63.7 |
| | Semicircular structure 380 | **282** | Abandonment/Destruction layer | III | 2 | Floated | 7 |
| | | | | | 4 | Handpicked | N/A |
| | | **288** | Abandonment/Destruction layer | III | 36 | Floated | 145.5 |
| | | | | | 2 | Handpicked | N/A |
| | | **348** | Filling layer | III | 35 | Floated | 126.6 |
| | | | | | 1 | No data | N/A |
| | | | | | 1 | Handpicked | N/A |
| | | **359** | Abandonment/Destruction layer | III | 35 | Floated | 126.9 |
| | | | | | 1 | No data | N/A |
| | | | | | 1 | Handpicked | N/A |
| | | **371** | Abandonment/Destruction layer | III | 24 | Floated | 175.8 |
| | | | | | 1 | Handpicked | N/A |
| B3 | *Dolium* 352 | **350** | Deposit inside vessel | IV/V | 4 | Floated | 53.1 |
| C1 | East corridor | **30** | Circulation layer | IV | 1 | Floated | 1.3 |
| | | | | | 4 | No data | N/A |
| | | | | | 3 | Handpicked | N/A |
| | West Corridor - Structures 440 and 411 | **57** | Circulation layer | IV | 2 | Floated | 6 |
| | | | | | 1 | No data | N/A |
| | | | | | 2 | Handpicked | N/A |
| | West corridor | **69** | Circulation layer | II/III | 16 | Floated | 46.6 |
| | East corridor | **171** | Circulation layer | IV | 6 | Floated | 28.3 |
| | Southeast gate | **190** | Circulation layer | V | 4 | Floated | 22.6 |
| | Southeast gate | **191** | Circulation layer | V | 4 | Floated | 23.4 |
| | Middle platform - Unknown Structures | **202** | Circulation layer | V | 5 | Floated | 41.6 |
| | Upper platoform - Walls 061, 062 and 437 | **229** | Circulation layer | V | 2 | Floated | 7.3 |
| | East corridor | **260** | Circulation layer | II/III | 2 | Floated | 12.2 |
| | East corridor | **261** | Circulation layer | II | 4 | Floated | 15.7 |
| | Southeast gate | **271** | Circulation layer | III/IV | 15 | Floated | 86 |
| | | | | | 1 | No data | N/A |
| | Middle platform - Unknown Structures | **303** | Circulation layer | V | 47 | Floated | 230.9 |
| | Southeast gate | **309** | Circulation layer | III/IV | 1 | Floated | 4.5 |

Table A3.1 - (continued).

| Context type | Context | Sampled context (S.U.) | Sampled context - description | Phase | Number of Samples | Processing | Volume (L) |
|---|---|---|---|---|---|---|---|
| C1 | Middle platform | **316** | Circulation layer | V | 1 | Floated | 3 |
| | | | | | 1 | No data | N/A |
| | West corridor - Structures 440 and 411 | **320** | Circulation layer | IV | 34 | Floated | 140.2 |
| | | | | | 1 | No data | N/A |
| | | | | | 5 | Handpicked | N/A |
| | West corridor - Postholes 805,676 and *dolium* 352 | **322** | Circulation layer | IV/V | 1 | Handpicked | N/A |
| | Middle platform - Structures 325, 327, 327A, 333, 471 | **334** | Circulation layer | V | 6 | Floated | 33 |
| | Low platform | **343** | Circulation layer | V | 3 | Floated | 11 |
| | East corridor | **365** | Circulation layer | II | 1 | Floated | 15.5 |
| | East corridor | **373** | Stone floor | II | 1 | Floated | 1,5 |
| | Middle platform | **405** | Clay floor | V | 4 | Floated | 12.5 |
| | Middle platform- Unknown Structures | **435** | Circulation layer | V | 5 | Floated | 25.6 |
| | Middle platform- Unknown Structures | **461** | Circulation layer | IV/V | 6 | Floated | 33.5 |
| | | | | | 1 | Handpicked | N/A |
| | Middle platform | **470** | Circulation layer | V | 1 | Floated | 9 |
| | West Corridor | **501** | Clay Floor | II/III | 3 | Floated | 13.2 |
| | West Corridor | **515** | Circulation layer | II/III | 4 | Floated | 12 |
| | West Corridor | **563** | Circulation layer | II | 13 | Floated | 77.8 |
| | | | | | 3 | Handpicked | N/A |
| | Southwest gate | **702** | Circulation layer | V | 4 | Floated | 14.7 |
| | | | | | 2 | Handpicked | N/A |
| | Southwest gate | **707** | Circulation layer | V | 2 | Floated | 9.8 |
| | | | | | 1 | Handpicked | N/A |
| C2 | East Corridor | **7** | Abandonment/Destruction layer | V | 6 | Floated | 10.5 |
| | East Corridor | **25** | Abandonment/Destruction layer | IV/V | 3 | Floated | 5.1 |
| | | | | | 2 | No data | N/A |
| | West Corridor | **37** | Abandonment/Destruction layer | V | 5 | Floated | 44.2 |
| | | | | | 1 | No data | N/A |
| | | | | | 2 | Handpicked | N/A |
| | North Turret | **64** | Destruction layer | IV | 6 | Floated | 19 |
| | | | | | 1 | No data | N/A |
| | | | | | 1 | Handpicked | N/A |
| | East Corridor | **155** | Abandonment layer - East Corridor | V | 4 | Floated | 16.6 |
| | Southeast Turret, Walls 28 and 109 | **156** | Destruction layer | V | 10 | Floated | 51 |
| | | | | | 1 | Handpicked | N/A |
| | Middle platform - Structures 325, 327, 327A, 471 | **218** | Destruction layer | V | 1 | Floated | 12.5 |
| | Middle platform - Walls 10 and 325 | **219** | Destruction layer | V | 2 | Floated | 12.6 |
| | Southeast gate and Wall 109 | **220** | Destruction layer | V | 6 | Floated | 26.2 |
| | Southeast gate | **221** | Abandonment layer | V | 7 | Floated | 30.7 |
| | North Wall | **231** | Desctruction layer | V | 2 | Handpicked | N/A |
| | Middle platform | **237** | Abandonment/Destruction layer | IV/V | 25 | Floated | 138.5 |
| | | | | | 5 | No data | N/A |
| | | **280** | Abandonment/Destruction layer | IV/V | 4 | Floated | 16.5 |
| | Low platform | **345** | Abandonment layer | V | 1 | Handpicked | N/A |
| | Southwest gate - Structure 769 | **434** | Abandonment/Destruction layer | V | 1 | Floated | 3.2 |
| | Middle platform - Walls 10 and 478 | **476** | Desctruction layer | V | 1 | Floated | 6.2 |
| | Middle platform - Unknow structures | **488** | Desctruction layer | V | 1 | Floated | 7.5 |
| | West Corridor - Hut 495 | **489** | Abandonment layer | II/III | 8 | Floated | 46.3 |
| | | | | | 4 | No data | N/A |

Table A3.1 - (continued).

| Context type | Context | Sampled context (S.U.) | Sampled context - description | Phase | Number of Samples | Processing | Volume (L) |
|---|---|---|---|---|---|---|---|
| C2 | Low platform - Walls 10, 681 and 682 | **499** | Desctruction layer | V | 2 | Floated | 5.1 |
| | | | | | 1 | Handpicked | N/A |
| | Middle platform - Unknow structures | **538** | Desctruction layer | V | 1 | Floated | 4.7 |
| | Upper platform - Wall 637 | **594** | Desctruction layer | V | 2 | Floated | 10.1 |
| | Southeast gate - Unknow structures | **602** | Desctruction layer | V | 1 | Floated | 5.5 |
| | Southwest gate - Structure 670 | **692** | Abandonment layer | V | 5 | Floated | 20.1 |
| | Southwest gate | **854A** | Desctruction layer | V | 1 | Handpicked | N/A |
| C3 | East Corridor - Walls 10 and 27 | **26** | Embankment layer | IV | 1 | No data | N/A |
| | East Corridor- Wall 028 | **32** | Embankment layer | III | 1 | Floated | 0.4 |
| | | | | | 3 | No data | N/A |
| | East Corridor- Wall 028 | **32B** | Embankment layer | III | 1 | Handpicked | N/A |
| | West Corridor | **65** | Embankment layer | IV | 1 | Handpicked | N/A |
| | West Corridor | **128** | Embankment layer | V | 8 | Floated | 63.9 |
| | | | | | 2 | Handpicked | N/A |
| | Upper platform -Wall 061 | **204** | Embankment layer | IV/V | 1 | Floated | 6 |
| | West Corridor | **246** | Embankment layer | V | 1 | Floated | 7.5 |
| | | | | | 4 | Handpicked | N/A |
| | West Corridor | **278** | Embankment layer | IV/V | 1 | Floated | 22 |
| | | | | | 1 | Handpicked | N/A |
| | Upper platform - Walls 62 and 457 | **294** | Embankment layer | V | 1 | Floated | 3 |
| | Middle platform | **335** | Embankment layer | V | 1 | Floated | 15.4 |
| | West Corridor | **337** | Embankment layer | IV | 4 | Floated | 14.1 |
| | | | | | 3 | Handpicked | N/A |
| | Upper platform - Walls 62 and 437 | **341** | Embankment layer | V | 1 | Floated | 4.6 |
| | Middle platform - Unknow structures | **354** | Embankment layer | V | 4 | Floated | 37 |
| | Southeast gate - Wall 912 | **366** | Embankment layer | III | 2 | Floated | 25.3 |
| | | | | | 1 | Handpicked | N/A |
| | West Corridor - Wall 384 | **370** | Embankment layer | III | 2 | Floated | 8.2 |
| | | | | | 1 | Handpicked | N/A |
| | West Corridor | **383** | Embankment layer | IV | 2 | Floated | 13.9 |
| | | | | | 4 | Handpicked | N/A |
| | West Corridor | **387** | Embankment layer | II/III | 2 | Floated | 6 |
| | | | | | 1 | Handpicked | N/A |
| | Middle platform - Unknow structures | **388** | Embankment layer | IV/V | 2 | Floated | 10.7 |
| | Middle platform - Unknow structures | **389** | Embankment layer | V | 7 | Floated | 32.6 |
| | | | | | 2 | Handpicked | N/A |
| | Middle platform - Walls 447 and 448 | **390** | Embankment layer | V | 3 | Floated | 14.8 |
| | | | | | 1 | Handpicked | N/A |
| | West Corridor | **392** | Embankment layer | IV | 1 | Floated | 2.3 |
| | West Corridor | **395** | Embankment layer | IV | 2 | Floated | 6.6 |
| | | | | | 3 | Handpicked | N/A |
| | West Corridor | **396** | Embankment layer | IV | 2 | Floated | 5.7 |
| | | | | | 1 | Handpicked | N/A |
| | West Corridor | **436** | Embankment layer | IV | 2 | Floated | 9.2 |
| | | | | | 2 | No data | N/A |
| | | | | | 5 | Handpicked | N/A |
| | Middle platform - Unknow structures | **441** | Embankment layer | V | 5 | Floated | 32.8 |
| | | | | | 1 | No data | N/A |
| | West Corridor | **472** | Embankment layer | III | 4 | Floated | 22.5 |

Table A3.1 - (continued).

| Context type | Context | Sampled context (S.U.) | Sampled context - description | Phase | Number of Samples | Processing | Volume (L) |
|---|---|---|---|---|---|---|---|
| C3 | West Corridor | **473** | Embankment layer | II/III | 2 | Floated | 8.2 |
| | | | | | 2 | Handpicked | N/A |
| | West Corridor | **494** | Embankment layer | II/III | 2 | Floated | 12.3 |
| | | | | | 2 | Handpicked | N/A |
| | West Corridor | **495** | Embankment layer | II/III | 25 | Floated | 120.5 |
| | West Corridor | **506** | Embankment layer | II/III | 2 | Floated | 11.7 |
| | Low platform | **511** | Embankment layer | IV/V | 1 | Floated | 3.8 |
| | | | | | 1 | Handpicked | N/A |
| | Middle platform - access to *Horrea* | **522** | Embankment layer | IV/V | 2 | Floated | 7.9 |
| | | | | | 1 | Handpicked | N/A |
| | West Corridor - Wall 384 | **537** | Embankment layer | III | 7 | Floated | 41.9 |
| | Middle platform | **541** | Embankment layer | IV/V | 4 | Floated | 40.9 |
| | Low platform | **559** | Embankment layer | V | 1 | Handpicked | N/A |
| | West Corridor | **565** | Embankment layer | II | 3 | Floated | 18 |
| | | | | | 1 | Handpicked | N/A |
| | West Corridor | **579** | Embankment layer | II | 2 | Floated | 13.3 |
| | | | | | 1 | Handpicked | N/A |
| | West Corridor | **586** | Embankment layer | II | 2 | Floated | 1.5 |
| | Southeast gate | **587** | Embankment layer | V | 2 | Floated | 8.1 |
| | Midlle platform | **588** | Embankment layer | IV | 1 | Floated | 0.1 |
| | Middle platform - access to *Horrea* | **589** | Embankment layer | IV/V | 2 | Floated | 6 |
| | Southwest gate | **590** | Embankment layer | V | 5 | Floated | 22.8 |
| | | | | | 3 | Handpicked | N/A |
| | Low platform | **598** | Embankment layer | IV/V | 2 | Floated | 17 |
| | | | | | 1 | Handpicked | N/A |
| | Low platform | **615** | Embankment layer | V | 2 | Floated | 17 |
| | | | | | 1 | No data | N/A |
| | Southeast gate - Wall 617 | **618** | Embankment layer | III | 1 | Floated | 7,5 |
| | | | | | 1 | Handpicked | N/A |
| | North turret construction | **622** | Embankment layer | IV | 4 | Floated | 13,6 |
| | West Corridor - Wall 384 | **624** | Embankment layer | I/II | 3 | Floated | 12 |
| | | | | | 2 | Handpicked | N/A |
| | West Corridor - Wall 384 | **627** | Embankment layer | I/II | 5 | Floated | 49.1 |
| | Midlle platform | **628** | Embankment layer | V | 2 | Floated | 4.5 |
| | Middle platform - Wall 478 | **629** | Embankment layer | V | 1 | Floated | 4.5 |
| | Low platform | **648** | Embankment layer | V | 1 | Handpicked | N/A |
| | Southwest gate | **658** | Embankment layer | V | 1 | Floated | 2.2 |
| | Southwest gate | **659** | Embankment layer | V | 1 | Floated | 2.2 |
| | North turret construction | **714** | Embankment layer | IV | 1 | Handpicked | N/A |
| | Southwest gate | **726** | Embankment layer | IV | 1 | Handpicked | N/A |
| | North turret construction | **788** | Embankment layer | II | 1 | Floated | 12.5 |
| | East Corridor - Wall 824 | **820** | Embankment layer | II/III | 14 | Floated | 139.5 |
| | | | | | 3 | Handpicked | N/A |
| D | Low platform- Rock outcrop depression | **406** | Filling layer | IV | 3 | Floated | 11.9 |
| | | | | | 1 | Handpicked | N/A |
| | Low platform - Rock outcrop depression | **611** | Filling layer | IV | 21 | Floated | 314.8 |
| | | | | | 1 | Handpicked | N/A |
| | Southwest gate - Structure 766A | **766** | Filling layer | IV | 3 | Floated | 24 |

Table A3.1 - (continued).

| Context type | Context | Sampled context (S.U.) | Sampled context - description | Phase | Number of Samples | Processing | Volume (L) |
|---|---|---|---|---|---|---|---|
| D1 | Posthole 107B | **107** | Posthole filling | V | 1 | Floated | 2.5 |
| | | | | | 1 | Handpicked | N/A |
| | Posthole 267B | **267** | Posthole filling | IV | 4 | Floated | 20.9 |
| | Posthole 754 | **283** | Posthole filling | V | 1 | Floated | 5 |
| | Posthole 752 | **292** | Posthole filling | V | 1 | Floated | 5,7 |
| | Posthole 756 | **305** | Posthole filling | V | 1 | Floated | 1.5 |
| | Posthole 805 | **362** | Posthole filling | IV | 1 | Floated | 0.7 |
| | Posthole 465B | **465** | Posthole filling | III/IV | 1 | Floated | 2.5 |
| | Posthole 508 | **483** | Posthole filling | II/III | 1 | Floated | 4.4 |
| | Posthole 486 | **484** | Posthole filling | II/III | 2 | Floated | 8.2 |
| | Posthole 487 | **485** | Posthole filling | II/III | 7 | Floated | 22.3 |
| | | | | | 1 | Handpicked | N/A |
| | Posthole 512B | **512A** | Posthole filling | V | 1 | Floated | 2 |
| | Posthole 513B | **513A** | Posthole filling | V | 1 | Floated | 3 |
| | Posthole 514B | **514A** | Posthole filling | V | 1 | Floated | 4.2 |
| | Posthole 516A | **516** | Posthole filling | V | 1 | Floated | 4.5 |
| | Posthole 572 | **566** | Posthole filling | II/III | 1 | Floated | 3.2 |
| | Posthole 573 | **567** | Posthole filling | II/III | 1 | Floated | 5.6 |
| | Posthole 574 | **568** | Posthole filling | II | 1 | Floated | 3.7 |
| | Posthole 575 | **569** | Posthole filling | II | 1 | Floated | 2.3 |
| | Posthole 576 | **570** | Posthole filling | II | 1 | Floated | 3.5 |
| | Posthole 577 | **571** | Posthole filling | II | 1 | Floated | 1.8 |
| | Posthole 581 | **580** | Posthole filling | II | 1 | Floated | 1.5 |
| | Posthole 634 | **633** | Posthole filling | V | 1 | Floated | 3.5 |
| | Posthole 644 | **642** | Posthole filling | II | 1 | Floated | 2 |
| | Posthole 647 | **645** | Posthole filling | II | 1 | Floated | 4.5 |
| | Posthole 710A | **710** | Posthole filling | IV/V | 1 | Floated | 2.3 |
| D2 | Ditch I | **74** | Filling layer | IV | 2 | Floated | 8 |
| | | | | | 2 | Handpicked | N/A |
| | Ditch II | **79** | Filling layer | IV | 1 | Handpicked | N/A |
| | Ditch 142A | **142** | Filling layer | V | 3 | Floated | 13 |
| | Ditch III | **289** | Filling layer | III/IV | 1 | Floated | 1.1 |
| | Ditch III | **310** | Filling layer | III/IV | 4 | Floated | 31.7 |
| | | | | | 1 | No data | N/A |
| | Ditch III | **329** | Filling layer | III/IV | 1 | Floated | 0.6 |
| | | | | | 1 | No data | N/A |
| | | | | | 2 | Handpicked | N/A |
| | Ditch III | **344** | Filling layer | III/IV | 1 | Floated | 1.2 |
| | Ditch III | **363** | Filling layer | III/IV | 1 | Handpicked | N/A |
| | Ditch II | **408** | Filling layer | IV | 1 | No data | N/A |
| | | | | | 1 | Handpicked | N/A |
| | Ditch 584 | **532** | Filling layer | V | 4 | Floated | 29.4 |
| | Ditch III | **533** | Filling layer | III/IV | 1 | Floated | 2.1 |
| | | | | | 1 | Handpicked | N/A |
| | Ditch III | **649** | Filling layer | III/IV | 1 | Floated | 10 |
| D3 | Wall 10 | **455** | Filling layer | V | 34 | Floated | 169 |
| | Wall 826 | **826** | Schist wall | III/IV | 3 | Handpicked | N/A |

Table A3.1 - (continued).

| Context type | Context | Sampled context (S.U.) | Sampled context - description | Phase | Number of Samples | Processing | Volume (L) |
|---|---|---|---|---|---|---|---|
| E | East corridor - Concentrated deposit | **31** | Layer with several charred remains | IV | 8 | No data | N/A |
| | | | | | 1 | Handpicked | N/A |
| | Upper platform structure 226 | **276** | Small schist rocks | V | 1 | Floated | 3,6 |
| | | **377** | Schist slabs | V | 1 | Handpicked | N/A |
| | | **378** | Soil sample inside structure | V | 2 | Floated | 9.7 |
| | West corridor - Structure 411 | **321** | Layer over structure | IV | 2 | Floated | 7.3 |
| | Walls 300 and 301 | **429** | Layer between walls | V | 2 | Floated | 2.5 |
| | Middle platform - Concentrated deposit | **521** | Layer with metallurgical residues | IV/V | 12 | Floated | 96.3 |
| | Southwest gate - Concentrated deposit | **674** | Layer with metallurgical residues | V | 5 | Floated | 18.5 |
| | | | | | 1 | Handpicked | N/A |
| | Southwest gate - Concentrated deposit | **691** | Layer with metallurgical residues | V | 2 | Floated | 8.4 |
| | Southwest gate - Structure 709A | **709** | Abandonment layer inside a possible niche | V | 3 | Floated | 14.2 |
| | East corridor - Concentrated deposit over Wall 826 | **825** | Layer associated with changes in walls 826 and 28 | II/III | 6 | Floated | 65 |
| | North - Defensive system | **835** | Layer between construction of north turret 798 and wall reinforcement 840 | V | 1 | Handpicked | N/A |

Table A3.1 - (continued).

| Mesh | s.u. | 2 mm | | 1 mm | | 0.5 mm | |
|---|---|---|---|---|---|---|---|
| Sample | | Original weight (g or ml) | Sorted (g or ml) | Original weight (g or ml) | Sorted (g or ml) | Original weight (g or ml) | Sorted (g or ml) |
| **27** | **31** | 100 ml | 36.2 ml | | | | |
| **121** | **31** | | | 59.02 g | 14.89 g | | |
| **688** | **627** | 63.52 g | 14.94 g | | | | |
| **715** | **611** | 52.66 g | 9.45 g | 60.61 g | 3.14 g | 51.46 g | 2.57 g |
| **783** | **142** | | | | | 11.01 g | 3.55 g |
| **839** | **611** | 20.02 g | 7.59 g | 21.79 g | 8.96 g | 16.2 g | 1.95 g |
| **979** | **820** | 48.07 g | 15.68 g | 42.28 g | 10.82 g | 34.49 g | 8.36 g |
| **1000** | **825** | | | | | 30.97 g | 6.66 g |
| **1050** | **455** | | | 11.05 g | 3.64 g | 20.54 g | 1.71 g |

Table A3.2 - Light fractions subsampled at Castelinho.

| Context type | A1 - Hearths | | | | | | | | | | | | | A2 - Ovens | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | H48 | H49 | H68B | H68C | H149A | H227 | | H480 | | H491 | | | H595 | O331 | | O446 | O510 | O711 | | O750 | | |
| Sampled context (s.u.) | 48 | 49 | 68B | 783 | 149 | 227 | 228 | 480 | 481 | 479 | 491 | 493 | 595 | 331 | 332 | 446 | 459 | 712 | 721 | 745 | 746 | 747 |
| **Cereal (grains)** | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* | | | | | 24 | | | | | | | | | | 3 | | 1 | 1 | 7 | 1 | | 4 |
| *Hordeum vulgare* (frag.) | | | | | 25 | | | 1 | | | | | | | 2 | 1 | 1 | | 3 | | | 1 |
| *Panicum miliaceum* | 3 | | | 1 | 1 | | | | | | | | | | | | | | | 1 | 1 | 2 |
| *Panicum miliaceum* (frag.) | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae (frag.) | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae (scutellum) | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* | 1 | | 1 | 10 | 16 | | | 1 | | | | | | | 4 | 2 | 1 | | 13 | 181 | 94 | 105 |
| *Triticum aestivum/durum* (frag.) | | | | | 9 | | | | | | | | | | 4 | 2 | | | | 58 | 16 | 14 |
| *Triticum aestivum/durum* (longitudinal frag.) | | | | | 8 | | | | | | | | | 2 | | 1 | | | 4 | 12 | 17 | 38 |
| *Triticum* sp. | | | | | | | | | | | | | | | | | | | | 1 | | 1 |
| Triticeae (with scutellum) | | | 1 | 1 | 2 | | | | | | | | | 1 | | | | | | 42 | 7 | 14 |
| Triticeae (without scutellum) | | | 14 | 54 | 185 | | | | 1 | 1 | | 37 | 15 | 45 | 123 | 150 | 136 | 21 | 79 | 908 | 1,133 | 558 |
| Triticeae (embryo) | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (scutellum) | | | | | | | | | | | | 1 | | | | | | | | | | |
| **Cereal (chaff)** | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (lemma base with grain) | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum dicoccum/spelta* (glume base) | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. (rachis frag.) | | | | | | | | | | | | | | | | | | | | | | |
| cf. *Triticum aestivum* (rachis node) | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (spikelet base) | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (spike frag.) | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | | | | | | | | | | | | | | | | | | | | | | |
| *Lolium* sp. | | | | | 2 | | | | | | | 1 | | | 1 | | 1 | | 2 | 28 | 6 | 7 |
| *Lolium* sp. (frag.) | | | | | | | | | | | | | | | 2 | | | | | | | |
| Poaceae | | | | 1 | 1 | | | | | | | | | | 1 | | | 1 | | | | 1 |
| Poaceae (frag.) | | | | | | | | | | | | | | 1 | | | | | 2 | | 4 | 1 |
| Poaceae (scutellum) | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (embryo) | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. (awn) | | | | | | | | | | | | | | | | | | | | | | |
| *Lolium* sp. (spikelet with grain) | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (spike frag.) | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (rachis frag.) | | | | | | | | | | | | | | | | | | | | | | |
| **Fabaceae** | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (loment segment - frag.) | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (seed) | | | | | | | | | | | | 1 | | | | | | 1 | | | | |
| Fabaceae (seed frag.) | 1 | | | | | | | | | | | | | | | | | 1 | | | 1 | |
| Fabaceae - *Genista* type (seed) | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Trifolium* type (seed) | | | | | | | | 1 | | | | | | | | | | | | | | |
| Fabaceae - *Medicago* type (seed) | | | | | | | | 2 | | | | | | | | | | | | | | |

Table A3.3 - Total results of the Carpological analysis. In some contexts, volume was not recorded (N.A.= Non Available). In others it was only partially recorded (see Table A3.1) and number of remains per litre may be slightly overestimated.

| Context type | A1 - Hearths | | | | | | | | | | | | | A2 - Ovens | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | H48 | H49 | H68B | H68C | H149A | H227 | | H480 | | | H491 | | H595 | O331 | | O446 | O510 | O711 | | | O750 | | |
| Sampled context (s.u.) | 48 | 49 | 68B | 783 | 149 | 227 | 228 | 480 | 481 | 479 | 491 | 493 | 595 | 331 | 332 | 446 | 459 | 712 | 721 | 745 | 746 | 747 | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | |
| cf. *Corlyus avellana* (nut frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon frag.) | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed) | | | | | | | | | | | | | | | 1 | | | | | | | | |
| *Vitis vinifera* (seed frag.) | | | | | | | | | | | | | | | 2 | | | 1 | 2 | | | | |
| *Vitis vinifera* (pedicel) | | | | | | | | | | | | | | | | | | | | | | | |
| **Other remains** | | | | | | | | | | | | | | | | | | | | | | | |
| Apiaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae (cypsela) | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* type (cypsela) | | | | | | | | | | | | | | | | | | | | | | | |
| *Asterolinon linum-stellatum* (seed) | | | | | | | | | | | | | | | | | | | | | | | |
| *Asterolinon linum-stellatum* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Carex - Muricata* type (achene) | | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae (seed) | | | | | | | | 1 | | | | | | | 1 | | | | | | | | |
| *Cistus ladanifer* (capsule frag.) | | | | | 1 | | | | | | | 251 | | 3 | 19 | 13 | 1 | | | | 3 | | |
| *Cistus ladanifer* (receptacle) | | | | | | | | | | | | 5 | | | | | | | | | | | |
| *Cistus ladanifer* (receptacle with peduncle) | | | | | | | | | | | | 5 | | | | | | | | | | | |
| *Cistus ladanifer* (peduncle) | | | | | | | | | | | | 2 | | | | | | | | | | | |
| Cyperaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | |
| *Erica* sp. (leaf frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* (mericarp) | | | | | | | | | | | | | | | | | | | | | | | |
| *Lepidium* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* sp. (seed) | | | | | | | | 1 | 2 | | | | | | | | | 3 | | | | | |
| *Malva* sp. (seed frag.) | | | | | | | 2 | | | | | | | | | | | | | | | | |
| *Malva nicaeensis* (capsule with seed) | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva nicaeensis* (capsule frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum aviculare* (achene) | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - lenticular type (achene) | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed) | | | | | | | | 2 | | | | | | | | | | | | | | | 1 |
| Polygonaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | | | | | | | | | | | | | | | | | | 1 | | | | |
| *Raphanus raphanistrum* (siliqua segment frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene) | | | | | | | | | | | | | | | | | | 1 | | | | | |
| *Rumex* sp. (achene frag.) | | | | | | | | | | | | | | | | | | | | | 1 | | |
| *Rumex conglomeratus/crispus* (achene) | | | | | | | | | | | | | | | | | | 1 | | | | | |
| *Saponaria officinalis* (seed) | | | | | | | | | | | | | | | | | | 1 | | | | | |
| *Sherardia arvensis* (mericarp) | | | | | | | | | | | | | | | | | | 1 | | | | | |
| *Sherardia* (mericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* (seed) | | | | | | | | | | | | | | | 1 | | | | | | | | |
| *Silene* sp. (capsule frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Valerianella dentata* (achene) | | | | | | | | | | | | | | | | | | | | | | | |
| Monocotyledon (stem) | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (stem) | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (peduncle) | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (flower bud) | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (flower part) | | | | | | | | | | | | | | | | | | | 1 | | | | |
| Undetermined (seed/fruit) | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (seed/fruit frag.) | 6 | 2 | 2 | 1 | 22 | 7 | 8 | 8 | 3 | | 3 | 153 | | 1 | 4 | 2 | 2 | 1 | | 704 | 2 | | |
| **Total (units)** | 4 | 0 | 2 | 13 | 50 | 0 | 0 | 8 | 2 | 0 | 0 | 2 | 0 | 2 | 12 | 2,5 | 3 | 10 | 25 | 260 | 117 | 154 | |
| **Sedimen volume** | 2.7 | 6 | 4.5 | 95.6 | 25.4 | 12 | 4.5 | 21 | 10 | 6.5 | 4.3 | 26 | 6.2 | 13 | 21.4 | 10.5 | 4.5 | 7.8 | 12.3 | 34.8 | 19.3 | 28.4 | |
| **Number of remains per litre** | 1.5 | 0.0 | 0.4 | 0.1 | 2.0 | 0,0 | 0.0 | 0.4 | 0.2 | 0.0 | 0,0 | 0.1 | 0.0 | 0.2 | 0.6 | 0.2 | 0.7 | 1.3 | 2.0 | 7.5 | 6.0 | 5.4 | |

Table A3.3 - (continued).

| Context type | B1 – *Horreum* | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | H1 | H1/2 | | H2 | | | H3 | | H4 | | | | | | | H6 | | | | | | | | H7 | | | |
| Sampled context (s.u.) | 660 | 244 | 273 | 653A | 653B | 653C | 654A | 654B | 654C | 552 | 553 | 554 | 126 | 695 | 699 | 703 | 725 | 728 | 730A | 730B | 3 | 397 | 397A | 397B | 397C | 412B | 412C |
| **Cereal (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* | 11 | 7 | 6 | 5 | 1 | 8 | 1 | 5 | 28 | 16 | 13 | 34 | | 9 | 2 | | | 24 | 6 | 5 | 1 | 4 | 6 | 5 | 3 | | |
| *Hordeum vulgare* (frag.) | 9 | 5 | 3 | | 3 | | 5 | 4 | 18 | 13 | 7 | 29 | | 4 | | 1 | 1 | 25 | 3 | 5 | 1 | 2 | 2 | 5 | 3 | | 1 |
| *Panicum miliaceum* | | | | | | | | 1 | | | 1 | 12 | 1 | | | | 1 | | 1 | 1 | | 4 | 10 | 8 | 1 | 2 | |
| *Panicum miliaceum* (frag.) | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | |
| Panicoideae | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | |
| Panicoideae (frag.) | | | | | | | | | | | | | | | | | | | | | | | 2 | | 1 | | |
| Panicoideae (scutellum) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* | 17 | 3 | 2 | 78 | 44 | 663 | 61 | 29 | 68 | 64 | 56 | 180 | 1 | 7 | | | 2 | 24 | 32 | 165 | 46 | 102 | 310 | 228 | 22 | 2 | 6 |
| *Triticum aestivum/durum* (frag.) | 6 | | | 4 | 5 | 281 | 10 | 10 | 3 | 10 | 6 | 27 | 2 | 1 | | | | 4 | 6 | 42 | 1 | 16 | 43 | 30 | 5 | | 1 |
| *Triticum aestivum/durum* (longitudinal frag.) | | | | | 10 | 105 | 15 | 9 | 22 | 14 | 13 | 52 | | | | | | 5 | 20 | 47 | | 18 | 65 | 44 | 5 | 1 | 2 |
| *Triticum* sp. | | | | | | 1 | | | | | 1 | | | | | | | | | | | | 2 | 2 | | | |
| Triticeae (with scutellum) | 1 | | | 10 | 4 | 17 | 3 | 4 | 2 | 3 | 12 | 39 | | 4 | | | 1 | 2 | 4 | 23 | 2 | 17 | 30 | 18 | 3 | 1 | |
| Triticeae (without scutellum) | 67 | 34 | 19 | 267 | 195 | 979 | 475 | 533 | 273 | 139 | 231 | 875 | 9 | 25 | 2 | 1 | 1 | 180 | 226 | 403 | 79 | 570 | 1,150 | 1,038 | 80 | 16 | 52 |
| Triticeae (embryo) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (scutellum) | | | | | | | | | | | | 1 | | | | | 1 | | | | | 3 | 7 | | | | |
| **Cereal (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (lemma base with grain) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | |
| *Triticum dicoccum/spelta* (glume base) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. (rachis frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf. *Triticum aestivum* (rachis node) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (spikelet base) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (spike frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lolium* sp. | 1 | | 1 | 6 | 5 | 6 | 1 | | 4 | 2 | 1 | 12 | | | | | 1 | | 1 | 20 | 6 | 6 | 20 | 19 | | | |
| *Lolium* sp. (frag.) | | | | | 1 | 1 | | 1 | | | | 1 | | | | | | 1 | 1 | 3 | | | 3 | 1 | | | |
| Poaceae | | | | | | | | 1 | 2 | 1 | 1 | 22 | 1 | | | | 1 | 3 | 1 | 5 | | 2 | 2 | 2 | 3 | | |
| Poaceae (frag.) | | | | | 1 | | | 1 | 1 | | | 9 | | | | | | | | 4 | 1 | 1 | 6 | 3 | 1 | 1 | |
| Poaceae (scutellum) | | | | | | | 1 | | | | | | | | | | | | | 1 | | | | | | | |
| Poaceae (embryo) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. (awn) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lolium* sp. (spikelet with grain) | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (spike frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (rachis frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Fabaceae** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (loment segment - frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (seed) | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| Fabaceae (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Genista* type (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Trifolium* type (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Medicago* type (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A3.3 - (continued).

| Context type | B1 - *Horreum* | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | H1 | H1/2 | | | H2 | | | H3 | | | | H4 | | | | | | H6 | | | | | | | H7 | | | |
| Sampled context (s.u.) | 660 | 244 | 273 | 653A | 653B | 653C | 654A | 654B | 654C | 552 | 553 | 554 | 126 | 695 | 699 | 703 | 725 | 728 | 730A | 730B | 3 | 397 | 397A | 397B | 397C | 412B | 412C |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf. *Corlyus avellana* (nut frag.) | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| *Quercus* sp. (cotyledon frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed) | 1 | | | | | | | | | | | | 24 | | | | | 1 | 9 | 7 | | | | 3 | | | |
| *Vitis vinifera* (seed frag.) | 54 | | | | | | 4 | | | | | 8 | 20 | | | | | 2 | 3 | 4 | | | | 1 | | | |
| *Vitis vinifera* (pedicel) | 4 | | | | 1 | 1 | | | | | | 4 | | | | | | | | | | | | 2 | | | |
| **Other remains** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Apiaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae (cypsela) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* type (cypsela) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Asterolinon linum-stellatum* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Asterolinon linum-stellatum* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| *Carex - Muricata* type (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* (capsule frag.) | | | | | | | | | | | | 2 | | | | | 1 | | | | | | 2 | | | | |
| *Cistus ladanifer* (receptacle) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* (receptacle with peduncle) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* (peduncle) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cyperaceae (achene) | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | |
| *Erica* sp. (leaf frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* (mericarp) | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| *Lepidium* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| *Malva* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva nicaeensis* (capsule with seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva nicaeensis* (capsule frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum aviculare* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - lenticular type (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene) | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| *Rumex* sp. (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus/crispus* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Saponaria officinalis* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sherardia arvensis* (mericarp) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sherardia* (mericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene* sp. (capsule frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Valerianella dentata* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Monocotyledon (stem) | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | |
| Undetermined (stem) | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| Undetermined (peduncle) | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| Undetermined (flower bud) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (flower part) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (seed/fruit) | | | | | 1 | | | | | | | | | | | | | | | | | | 1 | 1 | | | |
| Undetermined (seed/fruit frag.) | 303 | 21 | 29 | 220 | 41 | 573 | 15 | | | | 86 | 676 | 30 | 110 | 6 | 1 | 74 | | | 57 | 43 | 520 | 708 | 52 | 68 | | |
| **Total (units)** | 31 | 10 | 9 | 99 | 60 | 748 | 73.5 | 44.5 | 115 | 93 | 91.5 | 328 | 27 | 20 | 2 | 0 | 7 | 56.5 | 64 | 250 | 55 | 146 | 415 | 308 | 34.5 | 5.5 | 7 |
| **Sedimen volume** | 104 | 12.2 | 5.6 | 105 | 64.9 | 150 | 67.8 | 74.9 | 101 | 134 | 135 | 190 | 106 | 21 | 4.5 | 2.7 | 31.7 | 187 | 87.2 | 209 | 21.8 | 140 | 172 | 181 | 28.2 | 4.2 | 5.5 |
| **Number of remains per litre** | 0.3 | 0.8 | 1.6 | 0.9 | 0.9 | 5.0 | 1.1 | 0.6 | 1.1 | 0.7 | 0.7 | 1.7 | 0.3 | 1.0 | 0.4 | 0.0 | 0.2 | 0.3 | 0.7 | 1.2 | 2.5 | 1.0 | 2.4 | 1.7 | 1.2 | 1.3 | 1.3 |

Table A3.3 - (continued).

| Context type | B2 - Semicircular structure | | | | | | | | | | | B3 - *Dolium* | C1 - Floor | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | SS 256 | | SS 256/258 | | S258 | | | | S380 | | | | | | | | | | | | | | | | | | | | |
| Sampled context (s.u.) | 257 | 281 | 196 | 211 | 259 | 415 | 282 | 288 | 348 | 359 | 371 | 350 | 30 | 57 | 69 | 171 | 190 | 191 | 202 | 229 | 260 | 261 | 271 | 303 | 309 | 316 | 320 | 334 | 343 |
| **Cereal (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* | 5 | 4 | | | 9 | 23 | 1 | 28 | 10 | 6 | 2 | 2 | | 1 | | 4 | 1 | 14 | 3 | | | 2 | 9 | 4 | | | 21 | 1 | |
| *Hordeum vulgare* (frag.) | 9 | 5 | | | 15 | 36 | | 19 | 7 | 3 | 2 | 1 | | | | 8 | 3 | 29 | | | | 3 | 11 | 3 | | 1 | 11 | 1 | |
| *Panicum miliaceum* | | | 1 | | 2 | 3 | 36 | 572 | 281 | 121 | 56 | 1 | 1 | 1 | | | | | | | | | | | | | 182 | | |
| *Panicum miliaceum* (frag.) | | | | | | 2 | 1 | 38 | 15 | 5 | 14 | | | 1 | | | | | | | | | | | | | 3 | | |
| Panicoideae | | | | | | | | 21 | 7 | 3 | 1 | | | | | | | | | | | | | | | | | | |
| Panicoideae (frag.) | | | | | | | 8 | 58 | 11 | 8 | 5 | | | | | | | | | | | | | 1 | | | 1 | | |
| Panicoideae (scutellum) | | | | | | | | 10 | 4 | | | | | | | | | | | | | | | | | | 1 | | |
| *Triticum aestivum/durum* | 7 | 1 | 1 | | 4 | 26 | 6 | 630 | 739 | 299 | 189 | 74 | 14 | 1 | 2 | 6 | 1 | 6 | 2 | | | 1 | 17 | 14 | 2 | | 516 | 18 | |
| *Triticum aestivum/durum* (frag.) | | 1 | 1 | | 5 | 17 | 5 | 225 | 142 | 74 | 75 | 16 | 11 | | | 2 | 1 | 4 | 2 | | | 3 | 9 | 2 | | | 137 | 9 | |
| *Triticum aestivum/durum* (longitudinal frag.) | | 1 | | | 1 | 6 | 5 | 271 | 294 | 153 | 109 | 38 | 2 | | | | 1 | 1 | | | | 2 | 9 | 1 | | | 160 | | |
| *Triticum* sp. | | | | | | | | 3 | | 1 | 1 | | | | | | | | | | 1 | | 3 | | | | 4 | | |
| Triticeae (with scutellum) | | | 1 | | 2 | | | 44 | 70 | 29 | 10 | 8 | | | | | | | | | 1 | | 6 | 1 | | | 27 | 2 | |
| Triticeae (without scutellum) | 101 | 26 | 13 | 6 | 115 | 408 | 28 | 2,562 | 3,955 | 1825 | 1387 | 540 | 79 | 19 | 14 | 110 | 13 | 42 | 13 | | 68 | 148 | 514 | 100 | 1 | | 3,380 | 78 | 2 |
| Triticeae (embryo) | | | | | | | | 2 | | | | | 1 | | | | | | | | | | | | | | | | |
| Triticeae (scutellum) | | | | | 7 | | | 79 | 13 | 5 | 2 | | 75 | 1 | | | 1 | 2 | 1 | | | | | | | | 2 | 1 | |
| **Cereal (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (lemma base with grain) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | |
| *Triticum dicoccum/spelta* (glume base) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. (rachis frag.) | | | 1 | | | | | 2 | | 1 | | | | | | | | | | | | | | | | | | | |
| cf. *Triticum aestivum* (rachis node) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (spikelet base) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (spike frag.) | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lolium* sp. | | | 2 | | 3 | 3 | 3 | 111 | 111 | 54 | 36 | 19 | 3 | | | 2 | 1 | 2 | | | | 1 | 5 | 4 | | | 84 | | |
| *Lolium* sp. (frag.) | 1 | | | 1 | | 1 | | 32 | 12 | 5 | 9 | | | | | | | | | | | | | 1 | | | 14 | | |
| Poaceae | | 1 | 3 | | | 5 | | 23 | 9 | 11 | 2 | 8 | 2 | | | 1 | | | | | 1 | 2 | 2 | | | | 5 | | |
| Poaceae (frag.) | 1 | 1 | 2 | 1 | | 1 | | 17 | 7 | 3 | 3 | 3 | | 1 | | 2 | | 3 | | | 1 | | 1 | | | | 11 | | |
| Poaceae (scutellum) | | | | | | | | 5 | | | | | | | | | | 2 | | | | | | | | | | | |
| Poaceae (embryo) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. (awn) | | | | | | | 1 | 2 | | | | | | | | | 1 | | | | | | | | | | | | |
| *Lolium* sp. (spikelet with grain) | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (spike frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (rachis frag.) | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Fabaceae** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (loment segment - frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* (seed frag.) | | | | | | | | | 3 | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (seed) | | 1 | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | |
| Fabaceae (seed frag.) | 1 | | | | | | | | 1 | | | | | | | | | | | | | | | | | | 4 | | |
| Fabaceae - *Genista* type (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Trifolium* type (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Fabaceae - *Medicago* type (seed) | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | |

Table A3.3 - (continued).

| Context type | B2 - Semicircular structure | | | | | | | | | | | B3 - *Dolium* | C1 - Floor | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | SS 256 | | SS 256/258 | | S258 | | | | S380 | | | | | | | | | | | | | | | | | | | | |
| Sampled context (s.u.) | 257 | 281 | 196 | 211 | 259 | 415 | 282 | 288 | 348 | 359 | 371 | 350 | 30 | 57 | 69 | 171 | 190 | 191 | 202 | 229 | 260 | 261 | 271 | 303 | 309 | 316 | 320 | 334 | 343 |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf. *Corlyus avellana* (nut frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed) | | 3 | 1 | | 3 | 1 | | 1 | 2 | | | | | | | | | | | | | | | 1 | | | | | |
| *Vitis vinifera* (seed frag.) | 1 | 5 | | | 83 | 1 | | 1 | | | 1 | | | | | 3 | | | 19 | | 1 | | | 1 | | | | | |
| *Vitis vinifera* (pedicel) | | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other remains** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Apiaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae (cypsela) | | | | | | | | 3 | | | 1 | | | | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* type (cypsela) | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | 1 | | |
| *Asterolinon linum-stellatum* (seed) | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| *Asterolinon linum-stellatum* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Carex - Muricata* type (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* (capsule frag.) | 36 | 1 | 14 | 8 | 36 | | | 2 | 2 | 1 | | | | | | | 25 | 7 | 4 | | 2 | | 2 | | | | 4 | | |
| *Cistus ladanifer* (receptacle) | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* (receptacle with peduncle) | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* (peduncle) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cyperaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Erica* sp. (leaf frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* (mericarp) | | | | | | | | | 1 | 1 | 1 | | | | | | | | | | | | | | | | | | |
| *Lepidium* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* sp. (seed) | | | | | | | | 6 | | 1 | 1 | | | | | | | | | | 1 | | | 1 | | | | | |
| *Malva* sp. (seed frag.) | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Malva nicaeensis* (capsule with seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva nicaeensis* (capsule frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum aviculare* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| *Polygonum* - lenticular type (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| *Plantago* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment-frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene) | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene frag.) | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus/crispus* (achene) | | | | | | | | | 4 | | 1 | | | | | | | | | | | | | | | | 1 | | |
| *Saponaria officinalis* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sherardia arvensis*(mericarp) | | | | | | | | 2 | | | | | | | | | | | | | | | | | | | | | |
| *Sherardia* (mericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| *Silene* sp. (capsule frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Valerianella dentata* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Monocotyledon (stem) | | | | | | | | 3 | | | | | | | | | 1 | | | | | | | | | | | | |
| Undetermined (stem) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (peduncle) | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (flower bud) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (flower part) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (seed/fruit) | | | | | | | | | | | 4 | | | | | | | | | | | | | | | | 1 | | |
| Undetermined (seed/fruit frag.) | 154 | 85 | 145 | 80 | 1,655 | | 127 | 13,333 | 893 | 1,084 | 17 | 23 | 1,531 | 25 | 4 | 1 | 129 | 220 | 58 | 7 | 4 | 32 | 20 | 92 | 58 | | 678 | 224 | 7 |
| **Total (units)** | 12 | 10.5 | 9 | 0 | 24.5 | 64 | 48.5 | 1,581 | 1,385 | 604 | 361 | 131 | 21 | 3 | 2 | 13 | 3,5 | 22,5 | 5 | 0 | 4 | 7 | 46.5 | 25.5 | 2 | 0 | 924 | 23 | 0 |
| **Sedimen volume** | 66.5 | 73.9 | 28.4 | 8.5 | 67.8 | 63.7 | 7 | 145.5 | 127 | 127 | 176 | 53.1 | 1.3 | 6 | 46.6 | 28.3 | 22.6 | 23.4 | 41.6 | 7.3 | 12.2 | 15.7 | 86 | 231 | 4,5 | 3 | 140 | 33 | 11 |
| **Number of remains per litre** | 0.2 | 0.1 | 0.3 | 0.0 | 0.4 | 1.0 | 6.9 | 10.9 | 10.9 | 4.8 | 2.1 | 2.5 | 16.2 | 0.5 | 0.0 | 0.5 | 0.2 | 1.0 | 0.1 | 0.0 | 0.3 | 0.4 | 0.5 | 0.1 | 0.4 | 0.0 | 6.6 | 0.7 | 0.0 |

Table A3.3 - (continued).

| Context type | C1 - Floor | | | | | | | | | | | C2 - Abandonment/Destruction | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sampled context (s.u.) | 365 | 373 | 405 | 435 | 461 | 470 | 501 | 515 | 563 | 702 | 707 | 7 | 25 | 37 | 64 | 155 | 156 | 218 | 219 | 220 | 221 | 237 | 280 | 345 | 476 | 488 | 489 | 499 | 538 | 594 | 602 | 692 |
| **Cereal (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* | 7 | 11 | 2 | | 1 | | | 2 | | 1 | 2 | 1 | | | 1 | 13 | 16 | | | 4 | 1 | 4 | 7 | | 6 | | 5 | 1 | | | | 2 |
| *Hordeum vulgare* (frag.) | 8 | 5 | 2 | 2 | 1 | | 1 | 5 | | | | 1 | | | | 21 | 26 | | | 18 | 15 | 12 | 17 | | 9 | | 8 | 1 | | | | |
| *Panicum miliaceum* | 4 | | 1 | | | | | 1 | 2 | | | | 2 | 2 | | | 2 | | | | | 1 | | | | | 24 | 2 | | | 4 | |
| *Panicum miliaceum* (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Panicoideae (frag.) | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | | | | 2 | | | | | |
| Panicoideae (scutellum) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* | 9 | 18 | 5 | 4 | | 5 | | | 1 | | 2 | 2 | 1 | | 1 | 4 | 8 | 2 | | 9 | 12 | 39 | 2 | 2 | 10 | | 5 | 75 | 2 | | 15 | 9 |
| *Triticum aestivum/durum* (frag.) | 2 | 9 | 2 | 3 | | | | | | | 1 | | 1 | 1 | | 3 | 3 | | | | 9 | 10 | 2 | 3 | 2 | | | 41 | 2 | | 2 | 2 |
| *Triticum aestivum/durum* (longitudinal frag.) | 3 | 3 | 5 | 1 | | 1 | | | 1 | | 1 | | | | | 1 | 1 | | 1 | | 7 | 8 | 3 | 1 | | | 1 | 32 | 1 | | | 5 |
| *Triticum* sp. | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (with scutellum) | 2 | 8 | | | | | | | 3 | | | | | | | | 2 | | | 1 | | 7 | | | 3 | | | 2 | | | | |
| Triticeae (without scutellum) | 357 | 586 | 2 | 11 | 8 | 7 | 11 | 23 | 46 | 3 | 16 | 10 | 3 | 6 | | 55 | 69 | | | 24 | 72 | 195 | 16 | 31 | 31 | 4 | 82 | 177 | 24 | | 143 | 186 |
| Triticeae (embryo) | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (scutellum) | | | | | 1 | | | | | | | | | | | | | | | | 1 | 1 | 1 | | | | | 25 | 1 | | 6 | |
| **Cereal (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (lemma base with grain) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum dicoccum/spelta* (glume base) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. (rachis frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf. *Triticum aestivum* (rachis node) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (spikelet base) | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | |
| Triticeae (spike frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lolium* sp. | 6 | 8 | | 1 | | | | | | | 1 | 1 | | | | | 1 | | | 1 | | 4 | 1 | | 1 | | | 9 | | | 5 | |
| *Lolium* sp. (frag.) | 4 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 2 | | | 2 | |
| Poaceae | 2 | 1 | | | | | | | | | | | | | 1 | | 1 | | | 1 | | 4 | | | 3 | | 2 | | 2 | | | |
| Poaceae (frag.) | 4 | | | | | | | | | | | | | | | | | | | 1 | | | | | 2 | | 1 | 2 | | | | |
| Poaceae (scutellum) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | |
| Poaceae (embryo) | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. (awn) | | | | | 1 | | | | | | | | | | | | | | | | | 2 | | | | | | | 1 | | | |
| *Lolium* sp. (spikelet with grain) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (spike frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (rachis frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Fabaceae** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (loment segment - frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Genista* type (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Trifolium* type (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| Fabaceae - *Medicago* type (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A3.3 - (continued).

| Context type | C1 - Floor | | | | | | | | | | | C2 - Abandonment/Destruction | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sampled context (s.u.) | 365 | 373 | 405 | 435 | 461 | 470 | 501 | 515 | 563 | 702 | 707 | 7 | 25 | 37 | 64 | 155 | 156 | 218 | 219 | 220 | 221 | 237 | 280 | 345 | 476 | 488 | 489 | 499 | 538 | 594 | 602 | 692 |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf. *Corlyus avellana* (nut frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed) | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed frag.) | | | | | | | | | | | 2 | | | | | | | 8 | | | | 2 | | | | | | | | | | 1 |
| *Vitis vinifera* (pedicel) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other remains** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Apiaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae (cypsela) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* type (cypsela) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Asterolinon linum-stellatum* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Asterolinon linum-stellatum* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Carex - Muricata* type (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* (capsule frag.) | | | | | 2 | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* (receptacle) | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* (receptacle with peduncle) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* (peduncle) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cyperaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Erica* sp. (leaf frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* (mericarp) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lepidium* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | |
| *Malva* sp. (seed frag.) | | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva nicaeensis* (capsule with seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva nicaeensis* (capsule frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum aviculare* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - lenticular type (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| *Plantago* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus/crispus* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Saponaria officinalis* (seed) | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | 4 | | | |
| *Sherardia arvensis* (mericarp) | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| *Sherardia* (mericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene* sp. (capsule frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Valerianella dentata* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Monocotyledon (stem) | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (stem) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (peduncle) | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (flower bud) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (flower part) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (seed/fruit) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | |
| Undetermined (seed/fruit frag.) | | 6 | 45 | 36 | 42 | 36 | 1 | | 5 | 1 | 3 | 1 | | 18 | 9 | 21 | 41 | 35 | 19 | 11 | 133 | 305 | 74 | 4 | 40 | 8 | 4 | 6,228 | 151 | 1 | 667 | 448 |
| **Total (units)** | 31.5 | 47.5 | 10.5 | 5.5 | 1 | 5.5 | 0 | 3 | 7.5 | 1 | 7.5 | 4 | 3 | 2 | 4 | 17.5 | 30.5 | 2 | 0.5 | 14 | 18.5 | 63 | 11.5 | 2,5 | 23 | 1 | 37.5 | 105 | 11.5 | 0 | 25 | 13.5 |
| **Sedimen volume** | 15.5 | 1.5 | 12.5 | 25.6 | 33.5 | 9 | 13.2 | 12 | 77.8 | 14.7 | 9.8 | 10.5 | 5.1 | 44.2 | 19 | 16.6 | 51 | 12.5 | 12.6 | 26.2 | 30.7 | 139 | 16.5 | N/A | 6.2 | 7.5 | 46.3 | 5.1 | 4.7 | 10.1 | 5.5 | 20.1 |
| **Number of remains per litre** | 2.0 | 31.7 | 0.8 | 0.2 | 0.0 | 0.6 | 0.0 | 0.3 | 0.1 | 0.1 | 0.8 | 0.4 | 0.6 | 0.0 | 0.2 | 1.1 | 0.6 | 0.2 | 0.0 | 0.5 | 0.6 | 0.5 | 0.7 | | 3.7 | 0.1 | 0.8 | 20.6 | 2.4 | 0.0 | 4.5 | 0.7 |

Table A3.3 - (continued).

| Context type | C3 - Enbankment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sampled context (s.u.) | 32 | 65 | 128 | 204 | 246 | 278 | 294 | 335 | 337 | 341 | 354 | 366 | 370 | 383 | 387 | 388 | 389 | 390 | 392 | 395 | 396 | 436 | 441 | 472 | 473 | 494 | 495 | 506 | 511 | 522 | 537 | 541 | 565 |
| **Cereal (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* | | | 1 | | 4 | | | 1 | | | 1 | 4 | | 2 | | | | | | | 1 | | | 1 | | | | 1 | 1 | 18 | | | |
| *Hordeum vulgare* (frag.) | | | 1 | | 3 | | | 3 | | | | 3 | | | | 3 | 3 | | 1 | | | 1 | | 14 | | | | 1 | 1 | 42 | 1 | | |
| *Panicum miliaceum* | 1 | | 1 | | 112 | | | | 3 | | | | 7 | 3 | 13 | 1 | | | | | 1 | 10 | 1 | 3 | 3 | 2 | 14 | 3 | | | 5 | | |
| *Panicum miliaceum* (frag.) | | | | | 2 | | | | | | | | 1 | | | | | | | | | 1 | | | 1 | | | | | | 2 | | |
| Panicoideae | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | |
| Panicoideae (frag.) | | | 4 | | | | | | | | | | 1 | 1 | | | | | | 2 | | | | 3 | | 1 | | 1 | | | 3 | | |
| Panicoideae (scutellum) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* | 5 | | 3 | | | 10 | | 4 | 7 | | 5 | 134 | 14 | 4 | 15 | 6 | 9 | 8 | 1 | | 1 | 62 | 12 | 21 | 5 | 2 | 43 | 14 | 1 | 8 | 13 | 7 | |
| *Triticum aestivum/durum* (frag.) | 1 | | 4 | | 1 | | | 1 | 4 | | | 13 | 3 | 1 | 5 | 6 | 6 | | 3 | 1 | | 31 | 4 | 13 | 3 | 7 | 9 | 1 | | 7 | 2 | 7 | 2 |
| *Triticum aestivum/durum* (longitudinal frag.) | | | | | | | | | 6 | | 4 | 52 | | 4 | 6 | 3 | | 1 | 1 | 2 | | 15 | 4 | 3 | | 2 | 12 | | | 1 | 3 | 2 | |
| *Triticum* sp. | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | 4 | | | | | 1 | |
| Triticeae (with scutellum) | 1 | | | | | | | 3 | | | 1 | 2 | 2 | 1 | 1 | | 4 | 1 | | | | 5 | 2 | 4 | | 1 | 3 | 1 | | | 1 | 1 | |
| Triticeae (without scutellum) | 32 | | 60 | 1 | 29 | 32 | 2 | 8 | 42 | | 42 | 2164 | 24 | 89 | 247 | 8 | 38 | 5 | 34 | 24 | 4 | 172 | 87 | 324 | 41 | 64 | 415 | 136 | 2 | 98 | 33 | 30 | 1 |
| Triticeae (embryo) | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| Triticeae (scutellum) | | | 1 | | | | | | 6 | | | | | 1 | | | | | | | | | | | | | | 4 | | 6 | 1 | | |
| **Cereal (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (lemma base with grain) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| *Triticum aestivum/durum* (rachis node) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum dicoccum/spelta* (glume base) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. (rachis frag.) | | | | | | | | | | | | | 2 | | | | | | | | | | | 1 | | | | | | | | | |
| cf. *Triticum aestivum* (rachis node) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (spikelet base) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (spike frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lolium* sp. | 1 | | 3 | | 4 | | | | 4 | | 1 | 6 | 1 | 2 | 5 | 2 | 1 | | 2 | | | 18 | 5 | 13 | | 3 | 8 | 4 | 1 | | 4 | 4 | |
| *Lolium* sp. (frag.) | | | 1 | | 1 | | | | | | 2 | 1 | | | 1 | | | | | | | 4 | | 3 | | 3 | | | | | 1 | | |
| Poaceae | | | | | 1 | 1 | | | | | | 3 | 1 | 2 | | | | | | | | 2 | | 11 | | | 1 | | | 1 | | 1 | |
| Poaceae (frag.) | | | 1 | | | | | | | | | | 1 | | 3 | | | | | | | 2 | | 4 | | | | | | | | | |
| Poaceae (scutellum) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (embryo) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. (awn) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lolium* sp. (spikelet with grain) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (spike frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (rachis frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Fabaceae** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (loment segment - frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Genista* type (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Trifolium* type (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Medicago* type (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A3.3 - (continued).

| Context type | C3 - Enbankment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sampled context (s.u.) | 32 | 65 | 128 | 204 | 246 | 278 | 294 | 335 | 337 | 341 | 354 | 366 | 370 | 383 | 387 | 388 | 389 | 390 | 392 | 395 | 396 | 436 | 441 | 472 | 473 | 494 | 495 | 506 | 511 | 522 | 537 | 541 | 565 |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf. *Corlyus avellana* (nut frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed) | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | 1 | | | | | | |
| *Vitis vinifera* (seed frag.) | | | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| *Vitis vinifera* (pedicel) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other remains** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Apiaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae (cypsela) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* type (cypsela) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Asterolinon linum-stellatum* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Asterolinon linum-stellatum* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Carex - Muricata* type (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* (capsule frag.) | | | 2 | | | | | | 1 | | | | | 11 | 2 | | | | | | | | | | | | 2 | | | 2 | 1 | | |
| *Cistus ladanifer* (receptacle) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* (receptacle with peduncle) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* (peduncle) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cyperaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Erica* sp. (leaf frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* (mericarp) | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | |
| *Lepidium* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* sp. (seed) | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| *Malva* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva nicaeensis* (capsule with seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva nicaeensis* (capsule frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum aviculare* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - lenticular type (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene) | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus/crispus* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | |
| *Saponaria officinalis* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sherardia arvensis* (mericarp) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sherardia* (mericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene* sp. (capsule frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Valerianella dentata* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Monocotyledon (stem) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (stem) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (peduncle) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (flower bud) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (flower part) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (seed/fruit) | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (seed/fruit frag.) | 19 | 7 | 304 | | 127 | | 4 | 38 | 360 | 7 | 81 | 19 | 96 | 732 | | 57 | 61 | 29 | 231 | 107 | 15 | 583 | 703 | 88 | 138 | 382 | 377 | 2,246 | 20 | 612 | 332 | 43 | 52 |
| **Total (units)** | 8 | 0 | 8 | 0 | 121 | 11 | 0 | 9 | 17 | 0 | 10 | 177 | 26 | 16 | 37 | 11.5 | 14 | 10.5 | 3.5 | 2 | 3 | 105 | 24 | 57.5 | 8 | 9 | 80 | 24 | 4 | 27.5 | 24.5 | 15 | 0 |
| **Sedimen volume** | 0.4 | N/A | 63.9 | 6 | 7.5 | 22 | 3 | 15.4 | 14.1 | 4.6 | 37 | 25.3 | 8.2 | 13.9 | 6 | 10.7 | 32.6 | 14.8 | 2.3 | 6.6 | 5.7 | 9.2 | 32.8 | 22.5 | 8.2 | 12.3 | 121 | 11.7 | 3.8 | 7.9 | 41.9 | 40.9 | 18 |
| **Number of remains per litre** | 20.0 | | 0.1 | 0.0 | 16.1 | 0.5 | 0.0 | 0.6 | 1.2 | 0.0 | 0.3 | 7.0 | 3.2 | 1.2 | 6.2 | 1.1 | 0.4 | 0.7 | 1.5 | 0.3 | 0.5 | 11.4 | 0.7 | 2.6 | 1.0 | 0.7 | 0.7 | 2.1 | 1.1 | 3.5 | 0.6 | 0.4 | 0.0 |

Table A3.3 - (continued).

| Context type | C3 - Enbankment | | | | | | | | | | | | | | | | D- Filling deposit | | | D1 - Posthole | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sampled context (s.u.) | 579 | 586 | 587 | 589 | 590 | 598 | 615 | 618 | 622 | 624 | 627 | 628 | 659 | 714 | 726 | 788 | 820 | 406 | 611 | 766 | 107 | 267 | 283 | 292 | 305 | 465 | 483 | 484 | 485 | 512A | 513A | 514A |
| **Cereal (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* | 1 | | | 27 | 1 | 2 | | | | | | | | | | | 15 | | 139 | 4 | | 1 | | | | | 1 | 2 | | | | |
| *Hordeum vulgare* (frag.) | | | 5 | 53 | | 5 | | | | | | | | 1 | | | 3 | | 62 | 1 | | 1 | | | | | | | | | | |
| *Panicum miliaceum* | | | | | | | | | | | | | | | | | 25 | | | | | 1 | | | | | | | 2 | | | |
| *Panicum miliaceum* (frag.) | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | 2 | | | |
| Panicoideae | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | |
| Panicoideae (frag.) | | | | | | | | | | | | | | | | | 3 | | | | | | | | | | | | | | | |
| Panicoideae (scutellum) | | | | | | | | | | | | | | | | | | | 8 | | | | | | | | | | | | | |
| *Triticum aestivum/durum* | 1 | | | 11 | 2 | 19 | 5 | | | | 9 | | | | | | 584 | 3 | 1,622 | 4 | 1 | | 2 | | | 3 | | | 1 | | | |
| *Triticum aestivum/durum* (frag.) | 1 | | | | 1 | 4 | 2 | 1 | | | 2 | | | | | | 79 | 1 | 214 | | | | | | | 1 | 1 | | | | | |
| *Triticum aestivum/durum* (longitudinal frag.) | | | 3 | | 1 | 1 | 3 | | | | | | | | | | 323 | 1 | 134 | 2 | | 1 | | | | | | | | 2 | |
| *Triticum* sp. | | | | | | | | | | | | | | | | | | | 12 | | | | | | | | | | | | | |
| Triticeae (with scutellum) | | | | | | 3 | 1 | | | | 9 | | | | | | 8 | | 448 | | | | | | | | | | 1 | | | |
| Triticeae (without scutellum) | 1 | | 5 | 25 | 98 | 228 | 78 | 1 | 1 | | 5 | | 6 | | | 157 | 5,174 | 2 | 3,713 | 49 | 2 | 90 | 4 | 2 | 1 | 16 | 2 | 35 | 6 | 12 | 35 | 101 |
| Triticeae (embryo) | | | | | | | | | | | | | | | | | | | 5 | | | | | | | | | | | | | |
| Triticeae (scutellum) | | | | | | 7 | 1 | | | | | | | | | | 7 | | 3161 | | | 1 | | | | | | | | | | |
| **Cereal (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (lemma base with grain) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | |
| *Triticum dicoccum/spelta* (glume base) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. (rachis frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf. *Triticum aestivum* (rachis node) | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | |
| Triticeae (spikelet base) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (spike frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lolium* sp. | | | | | 1 | | 1 | 1 | | | | | | | | | 41 | | 127 | | | | | | | | | | | | | |
| *Lolium* sp. (frag.) | | | | | | | | | | | | | | | | | 6 | | 5 | | | | | | | | | | | | | |
| Poaceae | | | | | | | | | | | 4 | | | | | | 6 | | 83 | | | | | | | | | | | | | |
| Poaceae (frag.) | | | | | 1 | | | | | 1 | | | | | | | 8 | | 8 | | | | | | | | | | | | | |
| Poaceae (scutellum) | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (embryo) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. (awn) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lolium* sp. (spikelet with grain) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (spike frag.) | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | |
| Poaceae (rachis frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Fabaceae** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (loment segment - frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Genista* type (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Trifolium* type (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Medicago* type (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A3.3 - (continued).

| Context type | C3 - Enbankment | | | | | | | | | | | | | | | | | D- Filling deposit | | | D1 - Posthole | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sampled context (s.u.) | 579 | 586 | 587 | 589 | 590 | 598 | 615 | 618 | 622 | 624 | 627 | 628 | 659 | 714 | 726 | 788 | 820 | 406 | 611 | 766 | 107 | 267 | 283 | 292 | 305 | 465 | 483 | 484 | 485 | 512A | 513A | 514A |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf. *Corlyus avellana* (nut frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed frag.) | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | 1 | 1 | 1 | | |
| *Vitis vinifera* (pedicel) | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| **Other remains** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Apiaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae (cypsela) | | | | | | | | | | | | | | | | | | | 20 | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* type (cypsela) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Asterolinon linum-stellatum* (seed) | | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Asterolinon linum-stellatum* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Carex - Muricata* type (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* (capsule frag.) | | | | | | 1 | | | | | | | | | | | | | 3 | | | 7 | | | | | | | | | | 1 |
| *Cistus ladanifer* (receptacle) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* (receptacle with peduncle) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* (peduncle) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cyperaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Erica* sp. (leaf frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* (mericarp) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lepidium* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva nicaeensis* (capsule with seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva nicaeensis* (capsule frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum aviculare* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - lenticular type (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment-frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene) | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus/crispus* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Saponaria officinalis* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sherardia arvensis* (mericarp) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sherardia* (mericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene* sp. (capsule frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Valerianella dentata* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Monocotyledon (stem) | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | |
| Undetermined (stem) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (peduncle) | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | |
| Undetermined (flower bud) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (flower part) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (seed/fruit) | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| Undetermined (seed/fruit frag.) | 6 | 10 | 17 | 42 | 8 | 1,122 | 97 | | 5 | 2 | 4 | 1 | | | 2 | 447 | 6,584 | 20 | 17,432 | | | 5 | | | 1 | | 3 | | 29 | | 1 | |
| **Total (units)** | 2 | 0 | 1.5 | 38 | 6.5 | 24.5 | 8.5 | 1 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 844 | 3.5 | 2,518 | 9 | 1 | 3.5 | 2 | 0 | 0 | 3 | 1 | 2 | 4 | 0 | 1 | 0 |
| **Sedimen volume** | 13.3 | 1.5 | 8.1 | 6 | 22.8 | 17 | 17 | 7.5 | 13.6 | 12 | 49.1 | 4.5 | 2.2 | N/A | N/A | 12.5 | 140 | 11.9 | 314.8 | 24 | 2.5 | 20.9 | 5 | 5.7 | 1.5 | 2.5 | 4.4 | 8.2 | 22.3 | 2 | 3 | 4.2 |
| **Number of remains per litre** | 0.2 | 0.0 | 0.2 | 6.3 | 0.3 | 1.4 | 0.5 | 0.1 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | | | 0.0 | 6.0 | 0.3 | 8.0 | 0.4 | 0.4 | 0.2 | 0.4 | 0.0 | 0.0 | 1.2 | 0.2 | 0.2 | 0.2 | 0.0 | 0.3 | 0.0 |

Table A3.3 - (continued).

| Context type | D1 - Posthole | | | | | | | | | D2 - Ditch | | | | | D3 - Wall | | E - Other Concentrated deposit | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sampled context (s.u.) | 516 | 566 | 567 | 569 | 571 | 633 | 642 | 645 | 710 | 79 | 142 | 310 | 532 | 649 | 455 | 826 | 31 | 276 | 321 | 378 | 429 | 521 | 674 | 691 | 709 | 825 |
| **Cereal (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* | | | | | | | | | 1 | | 3 | | | | 1 | | 12 | | 1 | | | 24 | | 1 | 4 | 35 |
| *Hordeum vulgare* (frag.) | 1 | | | | | 1 | | | | | | | | | 6 | | | | 1 | | | 17 | | 2 | 2 | 12 |
| *Panicum miliaceum* | | | | | 1 | | | 8 | | | 1 | | | | 5 | | | | 6 | | | | | | | 31 |
| *Panicum miliaceum* (frag.) | | | | | | | | | | | | | | | | | 1 | | | | | | | | | 3 |
| Panicoideae | | | | | | | | | | | | | | | | | | | | | | | | | | 4 |
| Panicoideae (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| Panicoideae (scutellum) | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Triticum aestivum/durum* | | | | | | | | 22 | | | 2 | 1 | | | 104 | | 1,135 | 1 | 10 | | 1 | 8 | 4 | 16 | 1 | 718 |
| *Triticum aestivum/durum* (frag.) | | | | | | 1 | | 2 | 1 | | 1 | | 4 | | 16 | | 19 | | 2 | | | 4 | 1 | 4 | | 312 |
| *Triticum aestivum/durum* (longitudinal frag.) | | | | 1 | | 1 | | 9 | | | | | | | 89 | 1 | 46 | | 4 | | | 2 | 4 | | 1 | 478 |
| *Triticum* sp. | | | | | | | | | | | | | | | 3 | | | | | | | | | | | 1 |
| Triticeae (with scutellum) | | | | | | | | 2 | 1 | | | | | | 16 | | 169 | | | | | 6 | | 2 | | 54 |
| Triticeae (without scutellum) | | | | 9 | 8 | 18 | 11 | 48 | 18 | 3 | 28 | | 31 | 5 | 178 | 7 | 630 | | 139 | 4 | 2 | 269 | 109 | 140 | 156 | 23,508 |
| Triticeae (embryo) | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Triticeae (scutellum) | | | | | | | | | | | 3 | | | | 120 | | 14 | | | | | | | | | 122 |
| **Cereal (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (lemma base with grain) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | | | | | | | | | | 1 | | | | | | | | | | | | | | | | 3 |
| *Triticum dicoccum/spelta* (glume base) | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Triticum* sp. (rachis frag.) | | | | | | | | | | 1 | | | | | | | | | | | | | | | | 1 |
| cf. *Triticum aestivum* (rachis node) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (spikelet base) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (spike frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lolium* sp. | | | | | | | | 4 | | | | | | | 27 | | 44 | | 2 | | | 2 | | 3 | | 87 |
| *Lolium* sp. (frag.) | | | | | | | | | | | | | | | 2 | | 1 | | | | | 1 | | | | 15 |
| Poaceae | | | | | | | | | | | | | | | 18 | | 37 | | | | | | | | | 38 |
| Poaceae (frag.) | | | | | | | | | | | | | | | 2 | | 1 | | | | | | | | | 72 |
| Poaceae (scutellum) | | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| Poaceae (embryo) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. (awn) | | | | | | | | | | 6 | | | | | | | | | | | | | | | | |
| *Lolium* sp. (spikelet with grain) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (spike frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (rachis frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Fabaceae** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed) | | | | | | | | | | 9 | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (seed frag.) | | | | | | | | | | 4 | | | | | | | | | | | | | | | | |
| *Ornithopus* sp. (loment segment - frag.) | | | | | | | | | | 2 | | | | | | | | | | | | | | | | |
| *Vicia faba* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae (seed frag.) | | | | | | | | | | 3 | | | | | | | | | | | | | | | | |
| Fabaceae - *Genista* type (seed) | | | | | | | | | | 11 | | | | | | | | | | | | | | | | |
| Fabaceae - *Trifolium* type (seed) | | | | | | | | | | | | | | | 1 | | | | | | | | | | | |
| Fabaceae - *Medicago* type (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A3.3 - (continued).

| Context type | D1 - Posthole | | | | | | | | | D2 - Ditch | | | | | D3 - Wall | | E - Other Concentrated deposit | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sampled context (s.u.) | 516 | 566 | 567 | 569 | 571 | 633 | 642 | 645 | 710 | 79 | 142 | 310 | 532 | 649 | 455 | 826 | 31 | 276 | 321 | 378 | 429 | 521 | 674 | 691 | 709 | 825 |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf. *Corlyus avellana* (nut frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed frag.) | | | | | | 1 | | | | | 1 | | | | | | | | 1 | | | 1 | | | 4 | |
| *Vitis vinifera* (pedicel) | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| **Other remains** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Apiaceae (achene) | | | | | | | | | | 209 | | | | | | | | | | | | | | | | |
| Asteraceae (cypsela) | | | | | | | | | | 3 | | | | | | | | | | | | | | | | 1 |
| Asteraceae - *Chrysanthemum* type (cypsela) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Asterolinon linum-stellatum* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Asterolinon linum-stellatum* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Carex - Muricata* type (achene) | | | | | | | | | | 2 | | | | | | | | | | | | | | | | |
| *Chenopodium* sp. (seed) | | | | | | | | | | 3 | | | | | | | | | | | | | | | | |
| Chenopodiaceae (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* (capsule frag.) | | | | | | | | | | 1 | 2 | | | | 4 | | | | 2 | | | | | | | 1 |
| *Cistus ladanifer* (receptacle) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* (receptacle with peduncle) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* (peduncle) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cyperaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Erica* sp. (leaf frag.) | | | | | | | | | | 1 | | | | | | | | | | | | | | | | |
| *Galium aparine* (mericarp) | | | | | | | | | | | | | | | | | | | 1 | | | | | | | |
| *Lepidium* sp. (seed) | | | | | | | | | | | | | | | | | | | 1 | | | | | | | |
| *Malva* sp. (seed) | | | | | | | | | | 26 | | | | | | | | | | | | | | | | |
| *Malva* sp. (seed frag.) | | | | | | | | | | 31 | | | | | | | | | | | | | | | | |
| *Malva nicaeensis* (capsule with seed) | | | | | | | | | | 1 | | | | | | | | | | | | | | | | |
| *Malva nicaeensis* (capsule frag.) | | | | | | | | | | 10 | | | | | | | | | | | | | | | | |
| *Polygonum aviculare* (achene) | | | | | | | | | | 1 | | | | | | | | | | | | | | | | |
| *Polygonum* - lenticular type (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene) | | | | | | | | | | 2 | | | | | | | | | | | | | | | | |
| Polygonaceae (achene frag.) | | | | | | | | | | 1 | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment frag.) | | | | | | | | | | 3 | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus/crispus* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Saponaria officinalis* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sherardia arvensis*(mericarp) | | | | | | | | | | 22 | | | | | | | | | | | | | | | | |
| *Sherardia* (mericarp frag.) | | | | | | | | | | 2 | | | | | | | | | | | | | | | | |
| *Silene gallica* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene* sp. (capsule frag.) | | | | | | | | | | 3 | | | | | | | | | | | | | | | | |
| *Valerianella dentata* (achene) | | | | | | | | | | 1 | | | | | | | | | | | | | | | | |
| Monocotyledon (stem) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (stem) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (peduncle) | | | | | | | | | | 9 | | | | | | | | | | | | | | | | 1 |
| Undetermined (flower bud) | | | | | | | | | | 3 | | | | | | | | | | | | | | | | |
| Undetermined (flower part) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (seed/fruit) | 1 | | | | | 3 | | | | | | | | | | | | | 7 | | | | | | | |
| Undetermined (seed/fruit frag.) | | 5 | 1 | | | 1 | | | 7 | 1,351 | 153 | | 63 | | 1,011 | | 1,250 | | 4 | 1 | 28 | 77 | 7 | | 46 | 1,201 |
| **Total (units)** | 1 | 0 | 0 | 0,5 | 1 | 3.5 | 0 | 40.5 | 2 | 289 | 6 | 1 | 0 | 0 | 220 | 0.5 | 1,420 | 1 | 30 | 0 | 1 | 41 | 6 | 19 | 8.5 | 1,208 |
| **Sedimen volume** | 4.5 | 3.2 | 5.6 | 2.3 | 1.8 | 3.5 | 2 | 4.5 | 2.3 | N/A | 13 | 31.7 | 29.4 | 10 | 169 | N/A | N/A | 3.6 | 7.3 | 9.7 | 2.5 | 96.3 | 18.5 | 8.4 | 14.2 | 65 |
| **Number of remains per litre** | 0.2 | 0.0 | 0.0 | 0.2 | 0.6 | 1.0 | 0.0 | 9.0 | 0.9 | | 0.5 | 0.0 | 0.0 | 0.0 | 1.3 | | | 0.3 | 4.1 | 0.0 | 0.4 | 0.4 | 0.3 | 2.3 | 0.6 | 18.6 |

Table A3.3 - (continued).

| Context type | A1 - Hearths | | | | | | | | | | | | | A2 - Ovens | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | H48 | H49 | | H68B | H68C | H149A | H227 | | H480 | | | H491 | | O331 | | O459 | O711 | | | O750 | | |
| Sampled contex (s.u.) | 48 | 49 | 355 | 68-B | 783 | 149 | 227 | 228 | 480 | 481 | 479 | 491 | 493 | 331 | 332 | 459 | 712 | 721 | 745 | 746 | 747 |
| *Acer* sp. | | | | 2 | | | | | | | | | | | | | | | | | |
| *Alnus* sp. | | | | 1 | 2 | | | | | | | | 2 | | | | 1 | | | 2 | |
| *Alnus/Corylus* | | | | | | | | | | | | | | | | | | | | | |
| *Arbutus unedo* | 1 | | | | 48 | | | | | 1 | 1 | | 2 | | | | | 13 | | 10 | 6 |
| *Cistus* sp. | | | | 6 | 83 | 4 | | | 30 | 2 | 29 | 3 | 34 | | 3 | | 2 | | 58 | 31 | 67 |
| *Corylus avellana* | | | | | | | | | | | | | | | | | | | | | |
| *Erica arborea/australis* | | | | | 17 | | | | | | | | | | | | | | 4 | | 4 |
| *Erica scoparia/umbellata* | | | | | | | | | | | | | | | | | | | | 9 | |
| *Erica* sp. | | | | 1 | 19 | | | | | | 11 | | 24 | | 2 | | | | | | 10 |
| Fabaceae | 1 | | 1 | | 9 | 3 | | | | 3 | 13 | | 27 | 2 | 1 | | 2 | 12 | 8 | 20 | 3 |
| Fagaceae | | | | | | | | | | | | | | | | | | | | | |
| *Ficus carica* | | | | | | | | | | | | | | | | | | | | | |
| *Fraxinus* sp. | | | | 1 | 4 | | | | | | | | 3 | 1 | | | 1 | 2 | 2 | 1 | |
| *Hedera* sp. | | | | | 1 | | | | | | | | | | | | | | | | |
| *Juglans regia* | | | | | | | | | | | | | | | | | | | | | |
| *Juniperus* sp. | | | | 1 | 1 | | | | | | | | 3 | | | | | | 3 | | |
| *Laurus nobilis* | | | | | | | | | | | | | | | | | | | | | |
| *Olea europaea* | | | | | 3 | | | | | | | | | | | | | | | | |
| *Pinus pinaster* | 1 | | | | 8 | 20 | | 1 | 1 | | 2 | | 5 | 5 | 2 | | 4 | 114 | 16 | 41 | 66 |
| *Pinus pinea/pinaster* | 1 | | | | | | | | | | | | | | | | 30 | | | | |
| *Pinus* sp. | | | | 1 | | 1 | | | | | | | | 1 | | | | | | | 2 |
| *Pistacia lentiscus* | | | | | | | | | | | | | | | | | | | | | |
| *Pistacia terebinthus* | | | | | | | | | | | | | | | | | | | | | |
| *Pistacia* sp. | | | | | | | | | | | | | | | | | | | | | |
| *Populus* sp. | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium/cerasus* | | | | | | | | | | | | | | | | | | | | | |
| *Prunus* sp. | | | | | | | | | | | | | | | | | | | | | |
| *Quercus suber* | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. - deciduous | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. - evergreen | | 3 | | 2 | 46 | 8 | 2 | | 1 | | 8 | 6 | 40 | 4 | 1 | | 126 | 5 | 7 | 36 | 9 |
| *Quercus* sp. | 1 | | | | | 2 | | | | | | | | | | | 1 | | | | |
| *Rhamnus/Phillyrea* | | | | | 1 | | | | | | | | | | | | | | 1 | | |
| Rosaceae Maloideae | | | | | | | | | | | | | | | | | | | | | 1 |
| *Salix* sp. | 6 | | | | | | | | | | | | | | | | | | | | |
| *Salix /Populus* | | | | | | | | | | | | | | | | | | | | | |
| *Ulmus* sp. | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* | | | | | | | | | | | | | | | | | | | | | |
| Dycotiledon | 6 | 1 | 1 | 3 | 8 | 60 | 2 | | 1 | 2 | 3 | 10 | 10 | 2 | 7 | 2 | 1 | 4 | 1 | | |
| Angiosperm | 2 | | | | | | | | | | | | | | | | | | | | |
| Gymnosperm | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | 1 | | | | | 2 | | | | | 7 | | | | | | | | | | |
| **Total** | 20 | 4 | 2 | 18 | 250 | 100 | 4 | 1 | 33 | 8 | 74 | 19 | 150 | 15 | 16 | 2 | 168 | 150 | 100 | 150 | 168 |

Table A3.4 - Total results of the Charcoal analysis.

| Context type | B1 - *Horreum* | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | H 1 | H 1/2 | | H 2 | | | H 3 | | | H 4 | | | | | H 6 | | | | | | | | H 7 | | | |
| Sampled contex (s.u.) | 660 | 273 | 244 | 653-B | 653-C | 654-A | 654-B | 654-C | 552 | 553 | 554 | 126 | 695 | 699 | 703 | 725 | 728 | 730-A | 730-B | 3 | 397 | 397-A | 397-B | 397-C | 412-B | 412-C |
| *Acer* sp. | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| *Alnus* sp. | | | | | | 1 | 1 | | 1 | 6 | 2 | | | 1 | | | | | 2 | | 1 | 5 | | | | |
| *Alnus/Corylus* | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| *Arbutus unedo* | 1 | 1 | | | 4 | 12 | 4 | | 16 | 2 | | | | | | | | | 3 | 2 | 19 | 40 | 35 | 5 | | 2 |
| *Cistus* sp. | 2 | 2 | 4 | 6 | 12 | 13 | 14 | 9 | 17 | 26 | 7 | 2 | 2 | 7 | 12 | | 3 | 4 | 29 | | 67 | 82 | 105 | 19 | 3 | 5 |
| *Corylus avellana* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Erica arborea/australis* | | | | | 6 | 14 | | | 6 | 17 | | | | 3 | 10 | | | | 11 | | 43 | 196 | 108 | 14 | 2 | 8 |
| *Erica scoparia/umbellata* | | 1 | | | | | | | | | 20 | | | | | | | | | | 2 | 1 | 1 | 1 | | |
| *Erica* sp. | | | 3 | | 3 | | 9 | | 37 | | | | | | | 2 | | | 4 | | 13 | 63 | 17 | | | 14 |
| Fabaceae | | 3 | 1 | | 3 | 22 | | | 2 | 10 | | | | | | | | | 3 | | 31 | 43 | 80 | 11 | | 3 |
| Fagaceae | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ficus carica* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Fraxinus* sp. | | | 2 | 9 | 4 | 8 | 20 | | 4 | 18 | 31 | | | | | | 1 | | 3 | | 23 | 90 | 49 | 5 | | 1 |
| *Hedera* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Juglans regia* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Juniperus* sp. | | 2 | | | 2 | 6 | 2 | | | 4 | | | | | | | | 2 | | | 6 | 2 | 9 | 2 | 2 | 6 |
| *Laurus nobilis* | | | | | | | | | | | | | | | | | | | | | | 5 | | | | |
| *Olea europaea* | | 1 | | | | 6 | | | | | 2 | | 1 | | | | | | 2 | | 1 | 4 | 7 | 1 | | |
| *Pinus pinaster* | | | 4 | | 28 | 44 | 10 | 3 | | 62 | 9 | 1 | 11 | 6 | | | | | 37 | 5 | 303 | 444 | 645 | 186 | 5 | 58 |
| *Pinus pinea/pinaster* | 1 | 6 | | 21 | | 10 | | 7 | 9 | 10 | 7 | 3 | | | | 11 | 4 | 5 | | | 81 | 111 | 179 | 10 | 3 | 10 |
| *Pinus* sp. | | | | | | | | 5 | 5 | 6 | | | | | | | | | 9 | | 172 | 75 | 181 | 9 | 4 | 6 |
| *Pistacia lentiscus* | | | | | | | | | | | | | | | | | | | | | 4 | | 21 | | | |
| *Pistacia terebinthus* | | | | | | | | | | | | | | | | | | | | | 1 | 1 | 24 | | | |
| *Pistacia* sp. | | | | | | | | | | | | | | | | | | | | | 2 | | 2 | | | |
| *Populus* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium/cerasus* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus* sp. | | | | | | | | | 1 | | | | | | | | | | | | | | 1 | | | 7 |
| *Quercus suber* | | | | | | | | | 1 | | | | | 1 | | | | | | 4 | 8 | 4 | 4 | | | |
| *Quercus* sp. - deciduous | 1 | | | | 1 | 2 | | | 1 | 5 | 2 | | | | | | | | 1 | | 20 | 8 | 19 | 2 | | |
| *Quercus* sp. - evergreen | 14 | 10 | 2 | 14 | 37 | 118 | 39 | 15 | 71 | 110 | 77 | 9 | 17 | 1 | 3 | 2 | 11 | 7 | 46 | 11 | 257 | 402 | 463 | 42 | 6 | 6 |
| *Quercus* sp. | 4 | 6 | | 15 | | 5 | | 2 | 3 | 6 | 16 | 11 | | 1 | | | | 4 | | 8 | 43 | 35 | 32 | | 13 | 1 |
| *Rhamnus/Phillyrea* | | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| Rosaceae Maloideae | | | | 2 | | | | | 1 | 6 | 2 | | | | | | | | | | 12 | 17 | 12 | | | |
| *Salix* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Salix /Populus* | | | | | | | 1 | | | | | | | | | | | | | | | | | | | |
| *Ulmus* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* | | | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| Dycotiledon | 18 | 18 | 11 | 19 | | 24 | | 19 | 1 | 4 | 25 | 25 | 22 | 8 | 2 | 11 | 28 | 4 | | 11 | 218 | 349 | 181 | 29 | 8 | 17 |
| Angiosperm | | | | | | | | | | | | | | | | | | | | | 1 | | 1 | | | |
| Gymnosperm | 5 | | | | | 3 | | | 2 | | | 1 | | | | | 4 | | | | 32 | 10 | 27 | | 1 | |
| Undetermined | | | | | | | | | | | | | | | | | | | | | 17 | 23 | 31 | 1 | | |
| **Total** | 46 | 50 | 27 | 86 | 100 | 289 | 100 | 60 | 178 | 292 | 200 | 52 | 53 | 28 | 27 | 26 | 51 | 26 | 150 | 41 | 1,377 | 2,013 | 2,235 | 337 | 47 | 144 |

Table A3.4 - (continued).

| Context type | B2 - Semicircular struture | | | | | | | | | | | B3 - *Dolium* | C1 - Floor | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | SS 256 | | SS 256/258 | | SS 258 | | | SS 380 | | | | *Dolium* 352 | | | | | | | | | | | | | | | | | | | | | | | |
| Sampled contex (s.u.) | 257 | 281 | 196 | 211 | 259 | 415 | 282 | 288 | 348 | 359 | 371 | 350 | 30 | 57 | 69 | 171 | 190 | 191 | 202 | 229 | 260 | 261 | 271 | 303 | 309 | 316 | 320 | 322 | 334 | 343 | 365 | 373 | 405 |
| *Acer* sp. | | | | | | | | 21 | 22 | 9 | | | | | | | | | | | | | | | | | 13 | | | | | | | |
| *Alnus* sp. | 10 | 1 | | | 3 | 1 | | 44 | 12 | 10 | 4 | | 1 | | | 1 | | 1 | | | | | 3 | | | | 6 | | | | | | | |
| *Alnus/Corylus* | | | | | | | | 3 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Arbutus unedo* | 1 | | | | | | | 61 | 29 | 23 | 14 | 1 | 33 | 10 | 1 | | | | 1 | | | | 9 | 3 | | | 22 | | 4 | 5 | | | | |
| *Cistus* sp. | 15 | 12 | 14 | 2 | 4 | | 3 | 273 | 180 | 102 | 55 | | 9 | 5 | 3 | 3 | 3 | 6 | 1 | | 6 | | 26 | 5 | | | 107 | | 11 | 11 | | 5 | 24 |
| *Corylus avellana* | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | | | | | | | | | | | |
| *Erica arborea/australis* | 8 | 5 | | | 1 | | | 120 | 33 | 27 | | | 5 | 1 | | | | 4 | | | | | 4 | | | | 27 | | | | | | | |
| *Erica scoparia/umbellata* | | | | | | | | 4 | 5 | 2 | | 3 | 91 | | | 1 | | 1 | | | | | | | | | 1 | | | | | | | |
| *Erica* sp. | 24 | 4 | | | 2 | | | 125 | 7 | 14 | 12 | | 7 | 8 | | | | 5 | 2 | | | | 5 | | | | 26 | | 4 | | | 1 | 1 |
| Fabaceae | 4 | 2 | | | 11 | | | 57 | 50 | 26 | 17 | | 15 | 4 | | 2 | | 1 | | | 4 | | 7 | 1 | | | 20 | | | 1 | | | 4 |
| Fagaceae | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ficus carica* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Fraxinus* sp. | 7 | 3 | 1 | | 2 | | 2 | 168 | 59 | 37 | 8 | 4 | 22 | | | | 2 | 2 | 3 | | | | 4 | | | | 51 | | 2 | | | | 2 |
| *Hedera* sp. | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Juglans regia* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Juniperus* sp. | | | | 1 | | 2 | | 15 | 6 | 15 | | | | | | | | | 1 | | | | | | | | 4 | | 14 | 1 | | | 1 |
| *Laurus nobilis* | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | 2 | | | |
| *Olea europaea* | | | | | | | 4 | 12 | 3 | 3 | | | 1 | | | | | | | | | | | | | | 9 | | | | | | | |
| *Pinus pinaster* | 3 | 23 | 3 | | 2 | | 40 | 412 | 355 | 172 | 59 | 16 | 111 | 12 | 3 | 1 | 2 | 9 | 4 | 3 | 1 | 1 | 32 | 10 | | | 174 | 11 | 36 | 24 | 13 | 3 | 3 |
| *Pinus pinea/pinaster* | | | | 4 | 1 | 2 | 22 | 24 | 69 | 44 | 7 | | 2 | 3 | | 1 | 3 | | | | | | 5 | | | | 27 | | 4 | | 8 | | 5 |
| *Pinus* sp. | 1 | 1 | 2 | | 3 | 1 | | 173 | 19 | 34 | 3 | | | | | 5 | | | | | | | 1 | | | | 43 | 15 | | | | | |
| *Pistacia lentiscus* | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pistacia terebinthus* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pistacia* sp. | | | | | | | | | 1 | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| *Populus* sp. | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium/cerasus* | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus* sp. | | | | | | | | 2 | 15 | 10 | | | | | 1 | 2 | | | | | | | | | | | 1 | | | | | | | |
| *Quercus suber* | | | | | 5 | | | 23 | 4 | 18 | | 1 | | 2 | | | | 2 | 8 | | | | 7 | | | | 21 | | 1 | | 2 | | |
| *Quercus* sp. - deciduous | 2 | | | | | | | 62 | 55 | 26 | 6 | | 6 | | | | 4 | | | | | 1 | | 2 | | | 6 | | 5 | | | | |
| *Quercus* sp. - evergreen | 79 | 49 | 20 | 2 | 17 | 4 | 2 | 595 | 432 | 249 | 133 | | 34 | 23 | 9 | 7 | 4 | 10 | 35 | 5 | 5 | 3 | 55 | 64 | 1 | 6 | 151 | | 12 | 1 | 1 | 1 | 25 |
| *Quercus* sp. | | | 8 | | 5 | 2 | | 49 | 22 | 28 | 2 | 2 | 11 | 1 | | 1 | 2 | 8 | 17 | | | | 25 | 5 | | | 49 | | | | 4 | | |
| *Rhamnus/Phillyrea* | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | 2 | | | | | |
| Rosaceae Maloideae | | | | | | | | 3 | 4 | 34 | 1 | | | | | | | | | | | | | | | | 1 | | | | | | | |
| *Salix* sp. | | | | | | | | 9 | | | | 11 | 1 | | | | | | | | | 1 | | 2 | | | 1 | | | 1 | | | | |
| *Salix /Populus* | | | | | | | | 3 | | 1 | | | | 1 | | | | | | | | | | | | | 2 | | | | | | | |
| *Ulmus* sp. | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dycotiledon | 4 | 38 | 61 | 24 | 29 | 4 | 10 | 196 | 447 | 142 | 18 | 11 | 79 | 33 | 32 | 16 | 40 | 79 | 123 | 12 | 4 | 6 | 95 | 80 | | 2 | 226 | | 44 | 20 | 12 | 2 | 28 |
| Angiosperm | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | | | | | | | | | |
| Gymnosperm | | | 1 | | | 1 | | 5 | 14 | 3 | 2 | | | 7 | | | | | 1 | | | | 2 | | | | 11 | | | 1 | | | |
| Undetermined | 1 | | 1 | | 2 | | | 3 | 8 | 6 | | | | 1 | | | | | | | | | 1 | | | | 3 | | | | | | |
| **Total** | 159 | 138 | 111 | 33 | 87 | 17 | 83 | 2,465 | 1,857 | 1,041 | 341 | 49 | 429 | 112 | 49 | 40 | 60 | 129 | 196 | 20 | 20 | 12 | 282 | 172 | 1 | 8 | 1,003 | 26 | 139 | 65 | 42 | 12 | 93 |

Table A3.4 - (continued).

| Context type | C1 - Floor | | | | | | | | C2 - Abandonment/Destruction | | | | | | | | | | | | | | | | | | | | C3 - Enbankment | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sampled contex (s.u.) | 435 | 461 | 470 | 501 | 515 | 563 | 702 | 707 | 7 | 25 | 37 | 64 | 155 | 156 | 218 | 219 | 220 | 221 | 231 | 237 | 280 | 488 | 489 | 499 | 538 | 692 | 854-A | 32-B | 65 | 128 | 204 | 246 | 278 | 294 | 335 | 337 |
| *Acer* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | | 78 | | | | | | | | | 4 |
| *Alnus* sp. | | | | | | | | | | | | | 3 | | | | | 1 | | 10 | | | | | | | | | 1 | 2 | | 22 | | | | |
| *Alnus/Corylus* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Arbutus unedo* | | | | | | | | | | | | 3 | | | 1 | | | | | 6 | | | 1 | 29 | | | | | 1 | | | | 4 | | 4 | |
| *Cistus* sp. | | | | 27 | 33 | | 1 | | | | 1 | 3 | | 18 | 4 | 1 | 1 | 3 | | 11 | 3 | | 137 | 2 | 1 | 1 | | | 3 | 2 | | | 2 | | 1 | 4 |
| *Corylus avellana* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Erica arborea/australis* | | | | | | | | | | | | 5 | | | 1 | | 6 | | 2 | 60 | | | | | | 5 | | | 64 | 5 | | 5 | | 37 | | 1 |
| *Erica scoparia/umbellata* | | | | | | | | | | | | 3 | | | | | | | | | | | | | | | | | 17 | | | | 4 | 3 | | |
| *Erica* sp. | | | | 1 | 3 | | | | | 2 | | 1 | | 4 | | | | 2 | | 11 | | | 2 | | | | | | 20 | 4 | | 4 | | 26 | 1 | 2 |
| Fabaceae | | | | | | | 20 | 11 | | | 1 | 19 | 5 | 5 | | | 1 | 1 | | 33 | 6 | | 3 | | | 3 | | | 1 | 2 | | 1 | 1 | | | 4 |
| Fagaceae | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | |
| *Ficus carica* | | | | | | | | | | | | | | | | | | | | 8 | | | | | | | | | | | | | | | | |
| *Fraxinus* sp. | | | | | | | 2 | 1 | | | | 19 | 2 | 1 | 3 | 1 | 2 | | | 5 | | | 1 | | | 3 | | | | 11 | | | 2 | | | 6 |
| *Hedera* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Juglans regia* | | | | | | | | | | | | | | | | | | | | 12 | | | | | | | | | | | | | | | | |
| *Juniperus* sp. | | | | | | | 99 | | | | 5 | | 1 | | 1 | | | | | 2 | | | | | | 6 | | | | 1 | | | 1 | | | |
| *Laurus nobilis* | | | | | | | | | | | | | | | | | | | | 20 | 2 | | | | | | | | | | | | | | | |
| *Olea europaea* | | | | | | 4 | | | | | | | | | | | | | | 6 | | | | | | | | | 3 | | | | | | | |
| *Pinus pinaster* | 1 | | | 1 | 1 | 1 | 47 | 196 | | 78 | 38 | 9 | | 41 | 4 | 10 | 5 | 14 | 23 | | | | 3 | 144 | 4 | 62 | 16 | 50 | 1 | 21 | | 23 | 1 | | 12 | 40 |
| *Pinus pinea/pinaster* | | | | | | | 14 | | | | 2 | | | 9 | | | | 2 | | | | | | 4 | 1 | | 18 | | | 1 | 1 | 1 | | | | |
| *Pinus* sp. | | | | 1 | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Pistacia lentiscus* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pistacia terebinthus* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pistacia* sp. | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Populus* sp. | | | | | | | | | | | | | | | | | | | | 31 | 4 | | | | | | | | | | | | | | | |
| *Prunus avium/cerasus* | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | |
| *Prunus* sp. | | | | | | | 6 | | | | | | 2 | | | | | | | 103 | 6 | | | | | | 2 | | | | | | | | | |
| *Quercus suber* | | | | | | | | | | | 4 | 8 | | | | | 9 | 1 | | 49 | 2 | 1 | | | | | | | | 10 | | 19 | | 1 | | 4 |
| *Quercus* sp. - deciduous | | 1 | | | | | | | | | | 10 | | 1 | | | | | | | | | | | | 1 | | | | | | | | | | 1 |
| *Quercus* sp. - evergreen | 3 | 1 | | 2 | 8 | 70 | 9 | 42 | 1 | 1 | 34 | 5 | 3 | 52 | 7 | | 5 | 9 | | | 1 | | 2 | | 2 | 19 | | 3 | 2 | | 52 | 8 | | 13 | 16 |
| *Quercus* sp. | | 5 | 2 | | | | | | | 2 | 1 | 23 | | 4 | 2 | | 18 | 9 | | | | | | | | | 1 | | 16 | 7 | 9 | 2 | | | 13 |
| *Rhamnus/Phillyrea* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rosaceae Maloideae | | | | | | | | | | | | | | 1 | 2 | | | | | | | | | | | | | | 8 | | | | | | | |
| *Salix* sp. | | | | | | | | | | 5 | 1 | | | | 2 | | | | | 142 | 10 | | | | | | | | 9 | | | | | | | 1 |
| *Salix /Populus* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ulmus* sp. | | | | | | | | | | | | | | | | | | | | 17 | | | | | | | | | | | | | | | | |
| *Vitis vinifera* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dycotiledon | 12 | 1 | 1 | 12 | 2 | 10 | 14 | | 9 | 9 | 20 | 33 | 22 | 103 | 13 | 1 | 31 | 39 | 66 | | | 6 | 98 | 2 | 1 | | | | 28 | 127 | 9 | 37 | 6 | 33 | 19 | 55 |
| Angiosperm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gymnosperm | | | | | | | 7 | | | | | 1 | | 3 | | | 1 | | | | | | | | | | | | | | | | | | | |
| Undetermined | | | | | | | 1 | | | | | | | | | | | | | | | | 1 | | | | | | | 8 | | | 1 | | | 1 |
| **Total** | 16 | 8 | 3 | 44 | 47 | 85 | 220 | 250 | 10 | 97 | 107 | 142 | 38 | 242 | 40 | 13 | 80 | 82 | 91 | 528 | 34 | 7 | 248 | 181 | 9 | 100 | 115 | 50 | 150 | 221 | 17 | 173 | 32 | 100 | 50 | 152 |

Table A3.4 - (continued).

| Context type | C3 - Enbankment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sampled contex (s.u.) | 341 | 354 | 366 | 370 | 383 | 387 | 388 | 389 | 390 | 392 | 395 | 396 | 436 | 441 | 472 | 473 | 494 | 495 | 506 | 511 | 522 | 537 | 541 | 559 | 565 | 579 | 586 | 587 | 589 | 590 | 594 | 598 | 615 | 618 | 622 | 624 |
| *Acer* sp. | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | |
| *Alnus* sp. | | 1 | | | | 1 | | | | | | | | | | | | 4 | | | | | | | | | | | | | | | | | | 8 |
| *Alnus/Corylus* | | | | | | | | | | | | | | | | | | 5 | | | | | | | | | | | | | | | | | | |
| *Arbutus unedo* | | | | | 8 | 1 | 2 | | 3 | | 2 | | 60 | | | 6 | | 34 | 2 | | | | | | | 1 | 2 | | | 40 | | | | | | 1 |
| *Cistus* sp. | | 2 | 3 | 7 | | 7 | 3 | 3 | | | 5 | 9 | 4 | 2 | 6 | 8 | | 69 | | 1 | 2 | 1 | 1 | | | | | 2 | 1 | 3 | 2 | | 1 | | 4 | 11 |
| *Corylus avellana* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Erica arborea/australis* | | 18 | | 2 | | | | 2 | | | | | 1 | | 8 | | | 22 | | | | | 1 | | | | | | | 13 | | | | | | 5 |
| *Erica scoparia/umbellata* | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | 1 | | | | | | | 1 | |
| *Erica* sp. | | 21 | | | | 11 | 2 | | | 4 | 4 | | | | 3 | 1 | 11 | 11 | | | | | | | | 1 | | | 1 | 2 | | | | | | 3 |
| Fabaceae | | 4 | 1 | 2 | | 2 | | 2 | | | 1 | 1 | 2 | | | 1 | | 20 | 1 | | | | 2 | | | | | | | 27 | 1 | | | | | 6 |
| Fagaceae | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ficus carica* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Fraxinus* sp. | | 1 | 1 | | 2 | 2 | 3 | 5 | 5 | | 1 | | 15 | 1 | 1 | | | 30 | 1 | | 1 | | 1 | | | 1 | | | 2 | | | | | | | 9 |
| *Hedera* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Juglans regia* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Juniperus* sp. | | | | 1 | | | 2 | 1 | | | | | 2 | | | | | 13 | | 1 | | 1 | | | | | | | | 11 | | | | | | 3 |
| *Laurus nobilis* | | | | | | | | | | | | | | | | | | | | | | | 8 | | | | | | | | | | | | | |
| *Olea europaea* | | | | | | | | 2 | | | | | | | | | | 1 | | | | | 1 | | | | | | | | | | | | 1 | |
| *Pinus pinaster* | | 3 | 2 | 17 | 13 | 4 | 27 | 10 | 59 | 1 | 8 | | 106 | 8 | 16 | 32 | 59 | 51 | 8 | 50 | | | | 2 | | 1 | | 16 | | 43 | | 7 | 40 | | 1 | 25 |
| *Pinus pinea/pinaster* | 1 | | 1 | | 25 | | | 5 | | | | | 9 | | 1 | | | 7 | 1 | | | | | | | | | | | 21 | | | | 17 | | 6 |
| *Pinus* sp. | | | 2 | | | | | | | | 2 | | | | | 6 | 2 | 11 | | | | | | | | | | | | | | | | | | 7 |
| *Pistacia lentiscus* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pistacia terebinthus* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pistacia* sp. | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Populus* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium/cerasus* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus* sp. | | | | | | | | | 2 | | | | 1 | | | | | 3 | | | | | 5 | | | | | | | 2 | | | | | | |
| *Quercus suber* | | 6 | | 3 | 3 | 1 | | 5 | 4 | 2 | 2 | | 22 | | | | | | 1 | | | 6 | | | | | | | | 4 | | | | 1 | |
| *Quercus* sp. - deciduous | | | | | | | | | | | | | 2 | | | | | 6 | | | 10 | | | | | | | | 1 | | | | | | |
| *Quercus* sp. - evergreen | 1 | | 42 | 2 | 38 | 10 | 14 | 30 | 1 | | 4 | 24 | 15 | 11 | 5 | 4 | | 129 | | 1 | 3 | 4 | | | 2 | | 1 | 3 | 17 | 1 | 1 | | 1 | | 28 |
| *Quercus* sp. | | 3 | 3 | | | | | 9 | | | 1 | | 15 | | 1 | 1 | 8 | 22 | | | | 2 | | | 2 | 1 | | | | 2 | | | | | 5 |
| *Rhamnus/Phillyrea* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rosaceae Maloideae | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Salix* sp. | | 1 | | | | | | | | | | | | | | | | | | | | | 9 | | | | | | | | | | | | | |
| *Salix /Populus* | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Ulmus* sp. | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | |
| *Vitis vinifera* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dycotiledon | 4 | 24 | 6 | 6 | 19 | | 19 | 43 | 15 | 4 | 33 | 24 | 14 | 6 | 29 | 10 | 14 | 181 | 8 | 8 | 8 | 2 | | | 7 | 4 | | 11 | 10 | 11 | 6 | 1 | 5 | | 3 | 3 |
| Angiosperm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gymnosperm | | | | | 4 | | | | | | | 1 | 3 | | | | 1 | 13 | | | | | | | | | | | | | | | | | | |
| Undetermined | | 3 | | | | | | | | | | | | | | | 1 | 13 | | | | | | | | | | | 5 | | | | | | |
| **Total** | 6 | 87 | 61 | 40 | 112 | 39 | 72 | 117 | 89 | 11 | 64 | 59 | 272 | 28 | 70 | 69 | 96 | 647 | 22 | 61 | 24 | 16 | 30 | 2 | 11 | 9 | 2 | 31 | 22 | 191 | 16 | 9 | 46 | 17 | 12 | 121 |

Table A3.4 - (continued).

| Context type | C3 - Enbankment | | | | | | | | D - Filling deposit | | | D1 - Posthole | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sampled contex (s.u.) | 627 | 628 | 629 | 648 | 658 | 659 | 726 | 820 | 406 | 611 | 766 | 107 | 267 | 283 | 305 | 465 | 483 | 484 | 485 | 512 | 513 | 516-A | 566 | 568 | 569 | 570 | 580 | 633 | 642 | 645 | 710 |
| *Acer* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Alnus* sp. | | | | | | | | | | | | | | 1 | | | 1 | | | | | | | | | | | | | | |
| *Alnus/Corylus* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Arbutus unedo* | 6 | | | | 3 | 5 | | 8 | 3 | 34 | 6 | 1 | | | | | | | | | | | | | 1 | | | | | 13 | |
| *Cistus* sp. | | | | | | | | 9 | 10 | 5 | 46 | | 1 | 1 | | | 5 | 29 | 4 | 1 | 21 | | | | | | | 4 | | 8 | |
| *Corylus avellana* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Erica arborea/australis* | | | | | | | | | 2 | | 39 | | | | | | | | | | | | | 2 | | | | 2 | | | |
| *Erica scoparia/umbellata* | | | | | | | | | 9 | | | | | | | | | | | | | | | | | | | | | 1 | |
| *Erica* sp. | | | | | | | | | 1 | | 24 | | 2 | | | | 1 | | 2 | | | | 1 | | | | | | | | |
| Fabaceae | 2 | | | | 10 | | | | | | | | | | | | | | | | | | 1 | | | | | | | 3 | |
| Fagaceae | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ficus carica* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Fraxinus* sp. | 2 | | | | | | | 5 | 1 | | 1 | 30 | | 1 | | 3 | | | | | | | | | | | | | 1 | | |
| *Hedera* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Juglans regia* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Juniperus* sp. | | | | | 13 | | | | 1 | | 4 | | | | | 1 | | | | | | | | | | | | | | | |
| *Laurus nobilis* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Olea europaea* | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinaster* | 8 | | | 21 | | 3 | 22 | 141 | 5 | 131 | 9 | 2 | | 4 | | | 1 | 6 | | | | | | | 1 | | | | | | 2 |
| *Pinus pinea/pinaster* | 53 | | | | | | | 4 | | 4 | | | 1 | | 1 | | | | | | | | | | | | | | | 3 | |
| *Pinus* sp. | 3 | | | | | | 28 | 12 | | | | | | | | | 2 | | | 1 | | | | | | | | | | | |
| *Pistacia lentiscus* | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | |
| *Pistacia terebinthus* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pistacia* sp. | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Populus* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium/cerasus* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus suber* | 9 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. - deciduous | | | | | | | | | | 3 | 2 | | | | | | | | | | | | | | 1 | | | | | | |
| *Quercus* sp. - evergreen | 43 | | 1 | | 2 | 9 | | 36 | 5 | 17 | 17 | 3 | 3 | 10 | | | 8 | 49 | | | | 1 | | | 3 | 1 | | 1 | | | 10 |
| *Quercus* sp. | 11 | | | | | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | 5 | |
| *Rhamnus/Phillyrea* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rosaceae Maloideae | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| *Salix* sp. | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | | | | |
| *Salix /Populus* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ulmus* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dycotiledon | 13 | | | | | | | 12 | 29 | 22 | | 6 | 10 | 23 | 5 | | | 2 | 94 | | 2 | 1 | | | 3 | | 3 | 1 | | 30 | |
| Angiosperm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gymnosperm | | | | | | | | | | 5 | | | 1 | | | | | | | | | | | | | | | | | | |
| Undetermined | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | |
| **Total** | 150 | 1 | 1 | 21 | 28 | 17 | 50 | 228 | 66 | 226 | 150 | 42 | 18 | 40 | 6 | 4 | 18 | 86 | 100 | 2 | 23 | 2 | 2 | 2 | 11 | 1 | 3 | 8 | 1 | 65 | 12 |

Table A3.4 - (continued).

| Context type | D2 - Ditch | | | | | | | | | | | D3 - Wall | | E - Other Concentrated Deposit | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Context | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sampled contex (s.u.) | 74 | 79 | 142 | 289 | 310 | 329 | 344 | 363 | 408 | 532 | 533 | 455 | 826 | 31 | 276 | 377 | 378 | 321 | 429 | 521 | 674 | 691 | 709 | 825 | 835 |
| *Acer* sp. | | 2 | | | | | | | | | | | | | | | | 2 | | | | | | | |
| *Alnus* sp. | | | | 1 | | | | | | | | 2 | | | | | 1 | 2 | | | | | | | |
| *Alnus/Corylus* | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Arbutus unedo* | | | | | | | | | | | | 1 | 6 | | | | | | | | 2 | 2 | | 6 | |
| *Cistus* sp. | | | 2 | | | | | | | 2 | | 19 | | 1 | 1 | | 2 | 42 | 3 | 13 | 5 | 10 | 1 | 6 | |
| *Corylus avellana* | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Erica arborea/australis* | | | | | | | | | | | | 6 | | | | | 3 | | | 5 | 10 | 4 | | | |
| *Erica scoparia/umbellata* | | | | | | | | | | | | | | | | | | | | 1 | | | | 2 | |
| *Erica* sp. | | | | | | 2 | | | | 7 | | 1 | | | | 2 | | 5 | | 7 | 3 | 1 | 1 | | |
| Fabaceae | 1 | | | | | 7 | | | | | | 2 | | | | | | 5 | 1 | | 3 | 5 | 3 | | |
| Fagaceae | | | | | | 80 | | | | | | | | | | | | | | | | | | | |
| *Ficus carica* | | | | | | 3 | | | | | | | | | | | | | | | | | | | |
| *Fraxinus* sp. | | | 1 | | | 1 | | | | 2 | 50 | 7 | | | | | | 8 | | | 4 | 6 | 1 | 4 | |
| *Hedera* sp. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Juglans regia* | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Juniperus* sp. | 116 | | 3 | | 1 | 28 | | | | | | | | | 3 | | | 2 | | | 4 | 1 | | | |
| *Laurus nobilis* | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Olea europaea* | | | | | | 6 | | | | 1 | | | | | | | | | | | | | | 4 | |
| *Pinus pinaster* | 5 | | | 1 | | | 5 | | | 6 | | 35 | 244 | 12 | | | 4 | 31 | | 9 | 12 | 10 | 9 | 144 | 35 |
| *Pinus pinea/pinaster* | | 1 | | | | | | | | 1 | | 5 | | | | | | | 3 | | 3 | | | | |
| *Pinus* sp. | | 6 | | | | | | | | | | | | | | | | 6 | | 1 | | | | | 9 |
| *Pistacia lentiscus* | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pistacia terebinthus* | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pistacia* sp. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Populus* sp. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium/cerasus* | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus* sp. | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Quercus suber* | | | | | | 30 | | | | | | | | | | | | | | 2 | 4 | | | | |
| *Quercus* sp. - deciduous | | | | | 1 | | | | | | | | | | | | | 1 | | | 1 | | | | |
| *Quercus* sp. - evergreen | | | 112 | | 1 | 6 | 1 | | | | | 56 | | | 9 | | 8 | 46 | 14 | 19 | 55 | 61 | 2 | 27 | |
| *Quercus* sp. | | | 1 | | | | | | | 3 | | 5 | | | | | | | | 1 | 2 | | | | |
| *Rhamnus/Phillyrea* | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rosaceae Maloideae | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Salix* sp. | | | | | | 2 | | | | | | | | | | | | | | | | | | 2 | |
| *Salix /Populus* | | | | | | | | | | | | | | | | | 1 | | | | | | | | |
| *Ulmus* sp. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dycotiledon | | 5 | 16 | 1 | | 18 | 2 | 23 | 1 | 9 | | 79 | | | 13 | | | | 41 | 43 | 13 | | | 5 | |
| Angiosperm | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gymnosperm | 9 | | | | | 1 | | | | | | 2 | | | | | | | | | | | | | |
| Undetermined | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Total** | 131 | 14 | 135 | 3 | 3 | 184 | 9 | 23 | 1 | 31 | 50 | 220 | 250 | 13 | 26 | 2 | 19 | 150 | 62 | 101 | 121 | 100 | 17 | 200 | 44 |

Table A3.4 - (continued).

# Attachment 4 - Archaeobotany with Douro view: fruits and seeds from the site of Rei Ramiro (Vila Nova de Gaia, Northern Portugal) (Supplementary material of Chapter 6)

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Chapter published in the book “Amanhar a Terra. Arqueologia da Agricultura [Do Neolítico ao Período Medieval]”. Supplementary material that is not available in the original paper.

| Period | Phase/Century | Sector | S.U. | Nº of samples collected | Recovered volume (L) | Nº of samples analysed | Analysed volume (L) | Nº of samples included (units) | Included volume (L) | Processing | Sampled context | Context |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Iron Age | I-II (4th-2nd centuries BCE) | 1 | **1252** | 8 | 31 | 7 | 27 | 7 | 27 | Floated | Circulation layer | Context D |
| | | | **1253** | 1 | 2 | 1 | 2 | 1 | 2 | Floated | | |
| | | | **1325** | 1 | 3 | 1 | 3 | 1 | 3 | Floated | Posthole | |
| | | | **1329** | 1 | 2 | 1 | 2 | 1 | 2 | Floated | | |
| | | | **1396** | 1 | 2 | 1 | 2 | 1 | 2 | Floated | | |
| | | | **1355** | 1 | N/A | 1 | N/A | 0 | N/A | Handpicked | | |
| | | | **1343** | 1 | 0.1 | 1 | 0.1 | 0 | 0 | Floated | Refuse deposit | Context G |
| | | | **1361** | 1 | 1 | 1 | 1 | 1 | 1 | Floated | | |
| | | | **1364** | 1 | N/A | 1 | N/A | 0 | N/A | Handpicked | | |
| | | | **1431** | 1 | 0.1 | 1 | 0.1 | 0 | 0 | Floated | Posthole | |
| | | | **1440** | 1 | 0.2 | 1 | 0.2 | 0 | 0 | Floated | | |
| | | | **1365** | 3 | 13 | 1 | 5 | 1 | 5 | Floated | | |
| | | | | 1 | N/A | 1 | N/A | 0 | N/A | Handpicked | Refuse deposit | |
| | | | **1370** | 1 | 2 | 1 | 2 | 1 | 2 | Floated | | |
| | | | **1311** | 1 | 3 | 1 | 3 | 1 | 3 | Floated | Hearth | |
| | | | **1318** | 1 | 0.2 | 1 | 0.2 | 1 | 0.2 | Floated | Combustion structure | |
| | | | **1437** | 3 | 14 | 1 | 4 | 1 | 4 | Floated | | |
| | | | **1492** | 1 | 0.2 | 1 | 0.2 | 1 | 0.2 | Floated | Posthole | |
| | | | **1284** | 1 | 0.1 | 1 | 0.1 | 1 | 0.1 | Floated | Circulation layer | |
| | | | **1270** | 1 | 5 | 1 | 5 | 1 | 5 | Floated | | |
| | | | **1277** | 1 | 6 | 1 | 6 | 1 | 6 | Floated | | N/A |
| | | | **1308** | 1 | 4 | 1 | 4 | 1 | 4 | Floated | Concentrated deposit | |
| | | | **1430** | 2 | 10 | 1 | 5 | 1 | 5 | Floated | | |
| | | | **1438** | 1 | 5 | 1 | 5 | 1 | 5 | Floated | | |
| | | | **1367** | 1 | N/A | 1 | N/A | 0 | N/A | Handpicked | | |
| | | | **1273** | 1 | 4.5 | 1 | 4.5 | 1 | 4.5 | Floated | Refuse deposit | |
| | | | **1250** | 1 | N/A | 1 | N/A | 0 | N/A | Handpicked | | |
| | | 2 | **2187** | 3 | 11 | 1 | 5 | 1 | 5 | Floated | Posthole | Context B |
| | | | **2189** | 1 | 2 | 1 | 2 | 1 | 2 | Floated | | |
| | | | **2212** | 1 | 0.1 | 1 | 0.1 | 1 | 0.1 | Floated | | |
| | | | **2316** | 1 | 5 | 1 | 5 | 1 | 5 | Floated | | |
| | | | **2338** | 1 | 4 | 1 | 4 | 1 | 4 | Floated | | |
| | | | **2340** | 1 | 3 | 1 | 3 | 1 | 3 | Floated | | |
| | | | **2183** | 1 | 2 | 1 | 2 | 0 | 0 | Floated | Circulation layer | |
| | | | **2174** | 2 | 6 | 2 | 6 | 2 | 6 | Floated | Refuse deposit | Context C |
| | | | **2192** | 1 | 3 | 1 | 3 | 1 | 3 | Floated | | |
| | | | **2345** | 1 | 2 | 1 | 2 | 0 | 0 | Floated | | |
| | | | **2180** | 5 | 24 | 2 | 10 | 2 | 10 | Floated | | |
| | | | | 1 | N/A | 1 | N/A | 1 | N/A | Handpicked | | |
| | | | **2194** | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | Floated | Hut base | |
| | | | **2193** | 1 | 4 | 1 | 4 | 1 | 4 | Floated | Hearth | |
| | | | **2261** | 1 | 0.5 | 1 | 0.5 | 1 | 0.5 | Floated | Posthole | Context E |
| | | | **2265** | 1 | 0.5 | 1 | 0.5 | 1 | 0.5 | Floated | | |
| | | | **2297** | 1 | 1 | 1 | 1 | 1 | 1 | Floated | | |
| | | | **2255** | 1 | 1 | 1 | 1 | 1 | 1 | Floated | Refuse deposit | |
| | | | **2355** | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | Floated | Posthole | |
| | | | **2246** | 17 | 48.8 | 9 | 15.3 | 8 | 15.2 | Floated | Concentrated deposit | Context F |
| | | | **2342** | 23 | 72.3 | 8 | 22.3 | 8 | 22.3 | Floated | | |
| | | | | 1 | N/A | 1 | N/A | 0 | N/A | Handpicked | | |
| | | | **2190** | 1 | 0.1 | 1 | 0.1 | 0 | 0 | Floated | Hearth | N/A |
| | | | **2227** | 1 | 2 | 1 | 2 | 1 | 2 | Floated | Combustion structure | |
| | | | **2229** | 1 | 1 | 1 | 1 | 1 | 1 | Floated | | |
| | | | **2405** | 1 | 3 | 1 | 3 | 1 | 3 | Floated | Concentrated deposit | |
| | | | **2185** | 1 | N/A | 1 | N/A | 0 | N/A | Handpicked | Destruction layer | |
| | | | **2221** | 2 | 8 | 1 | 4 | 1 | 4 | Floated | Refuse deposit | |
| | | | **2402** | 2 | 3.5 | 2 | 3.5 | 1 | 3 | Floated | | |
| | | | **2314** | 1 | N/A | 1 | N/A | 0 | N/A | Handpicked | | |

Table A4.1 - Rei Ramiro Inventory.

| Period | Phase/Century | Sector | S.U. | Nº of samples collected | Recovered volume (L) | Nº of samples analysed | Analysed volume (L) | Nº of samples included (units) | Included volume (L) | Processing | Sampled context | Context |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Late Iron Age/Early Roman period | III-VII (1st century BCE) | 1 | **1102** | 2 | 13 | 1 | 5 | 1 | 5 | Floated | Concentrated deposit | Context 2 |
| | | | **1115** | 2 | 13 | 1 | 6 | 1 | 6 | Floated | Refuse deposit | Context 3 |
| | | | **1105** | 1 | N/A | 1 | N/A | 1 | N/A | Handpicked | | |
| | | | **1116** | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | Floated | Concentrated deposit | Context 4 |
| | | | **1237** | 1 | 3 | 1 | 3 | 1 | 3 | Floated | Hearth | |
| | | | **1238** | 1 | 1 | 1 | 1 | 1 | 1 | Floated | | |
| | | | **1243** | 1 | 2 | 1 | 2 | 1 | 2 | Floated | Combustion structure | |
| | | | **1202** | 2 | 4 | 1 | 2 | 1 | 2 | Floated | | |
| | | | **1236** | 2 | 7 | 1 | 3 | 1 | 3 | Floated | Concentrated deposit | N/A |
| | | | **1140** | 2 | N/A | 2 | N/A | 0 | N/A | Handpicked | | |
| | | | **1205** | 1 | 4 | 1 | 4 | 0 | 0 | Floated | Refuse deposit | |
| | | | **1234** | 1 | N/A | 1 | N/A | 0 | N/A | Handpicked | | |
| | | | **1160** | 1 | N/A | 1 | N/A | 0 | N/A | Handpicked | N/A | |
| | | 2 | **2171** | 1 | 0.1 | 1 | 0.1 | 1 | 0.1 | Floated | Hearth | Context B |
| | | | **2173** | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | Floated | Destruction layer | |
| | | | **2136** | 1 | 4 | 1 | 4 | 1 | 4 | Floated | Concentrated deposit | |
| | | | **2238** | 1 | 3 | 1 | 3 | 1 | 3 | Floated | | |
| | | | **2153** | 1 | 1 | 1 | 1 | 0 | 0 | Floated | Refuse deposit | |
| | | | | 1 | N/A | 1 | N/A | 0 | N/A | Handpicked | | |
| | | | **2143** | 1 | N/A | 1 | N/A | 0 | N/A | Handpicked | | N/A |
| | | | **2151** | 1 | N/A | 1 | N/A | 0 | N/A | Handpicked | | |
| | | | **2152** | 1 | N/A | 1 | N/A | 0 | N/A | Handpicked | Refuse deposit | |
| | | | **2169** | 1 | N/A | 1 | N/A | 0 | N/A | Handpicked | | |
| | | | **2175** | 1 | N/A | 1 | N/A | 0 | N/A | Handpicked | | |
| | | | **2176** | 1 | N/A | 1 | N/A | 1 | N/A | Handpicked | | |
| Early Roman period | VIII-IX (1st-2nd centuries CE) | 1 | **1075/76** | 4 | 17 | 4 | 17 | 4 | 17 | Floated | Circulation layer | Context 0 |
| | | | | 2 | N/A | 2 | N/A | 0 | N/A | Handpicked | | |
| | | | **1073** | 1 | N/A | 1 | N/A | 0 | N/A | Handpicked | Refuse deposit | |
| | | | **1030** | 6 | 25 | 3 | 13 | 3 | 13 | Floated | Refuse deposit | Context 1 |
| | | | **1086** | 3 | 12 | 1 | 4.5 | 1 | 4.5 | Floated | Concentrated deposit | Context 2 |
| | | | **1080** | 7 | 25 | 5 | 17 | 5 | 17 | Floated | Refuse deposit | |
| | | | **1059** | 3 | 11 | 3 | 11 | 3 | 11 | Floated | Refuse deposit | Context 3 |
| | | | **1081** | 6 | 25 | 5 | 21 | 5 | 21 | Floated | | |
| | | | **1083** | 3 | 11 | 1 | 5 | 1 | 5 | Floated | Concentrated deposit | |
| | | | **1027** | 14 | 46.5 | 11 | 35.5 | 11 | 35.5 | Floated | Refuse deposit | Context 4 |
| | | | **1084** | 12 | 42.5 | 9 | 31 | 8 | 28 | Floated | | |
| | | | **1085** | 4 | 16 | 4 | 16 | 4 | 16 | Floated | Refuse deposit | Context 5 |
| | | | **1077** | 2 | 9 | 1 | 5 | 1 | 5 | Floated | Concentrated deposit | Context 6 |
| | | | **1049** | 1 | 4 | 1 | 4 | 1 | 4 | Floated | Hearth | N/A |
| | | 2 | **2065** | 1 | 2 | 1 | 2 | 1 | 2 | Floated | Combustion structure | N/A |
| | | | **2089** | 1 | 1 | 1 | 1 | 1 | 1 | Floated | | |
| | | | **2044** | 1 | 1 | 1 | 1 | 1 | 1 | Floated | Stone deposit | |
| | | | **2056** | 2 | 9 | 2 | 9 | 2 | 9 | Floated | Concentrated deposit | |
| Late Antiquity | X (3rd-7th centuries CE) | 2 | **2017** | 1 | 2 | 1 | 2 | 1 | 2 | Floated | Refuse deposit | N/A |
| | | | **2158** | 1 | 0.1 | 1 | 0.1 | 1 | 0.1 | Floated | | |
| | | | **2157** | 2 | N/A | 2 | N/A | 1 | N/A | Handpicked | | |
| | | | **2162** | 1 | N/A | 1 | N/A | 0 | N/A | Handpicked | | |
| | | | **2166** | 1 | N/A | 1 | N/A | 0 | N/A | Handpicked | | |

Table A4.1 - (continued).

| Mesh | S.U. | 2 mm | | | 1 mm | | | 0.5 mm | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample | | Original weight (g) | Sorted (g) | % | Original weight (g) | Sorted (g) | % | Original weight (g) | Sorted (g) | % |
| **216** | 2158 | Without subsampling | | | Without subsampling | | | 8.8 | 2.15 | 24.4% |
| **80** | 1252 | Without subsampling | | | Without subsampling | | | 7.92 | 1.94 | 24.5% |
| **196** | 2246 | Without subsampling | | | Without subsampling | | | 10.42 | 2.54 | 24.4% |
| **23** | 1243 | Without subsampling | | | Without subsampling | | | 4.19 | 0.94 | 22.4% |
| **186** | 1084 | Without subsampling | | | Without subsampling | | | 4.89 | 1.17 | 23.9% |
| **175** | 1075/76 | Without subsampling | | | Without subsampling | | | 4.54 | 1.01 | 22.2% |
| **207** | 1252 | Without subsampling | | | Without subsampling | | | 8.13 | 1.85 | 22.8% |
| **57** | 1081 | Without subsampling | | | Without subsampling | | | 7.8 | 1.94 | 24.9% |
| **182** | 1030 | Without subsampling | | | Without subsampling | | | 6.45 | 1.7 | 26.4% |
| **184** | 1084 | Without subsampling | | | Without subsampling | | | 4.12 | 1.1 | 26.7% |
| **32** | 1252 | Without subsampling | | | Without subsampling | | | 9.59 | 2.24 | 23.4% |
| **51** | 1075/76 | Without subsampling | | | Without subsampling | | | 6.6 | 1.46 | 22.1% |
| **167** | 1084 | Without subsampling | | | Without subsampling | | | 6.27 | 1.42 | 22.6% |
| **50** | 1075/76 | Without subsampling | | | Without subsampling | | | 5.71 | 1.37 | 24% |
| **14** | 1083 | Without subsampling | | | Without subsampling | | | 6.84 | 1.73 | 25.3% |
| **113** | 1284 | Without subsampling | | | Without subsampling | | | 6.3 | 1.58 | 25.1% |
| **61** | 1085 | Without subsampling | | | Without subsampling | | | 6.54 | 1.66 | 25.4% |
| **202** | 2342 | Without subsampling | | | Without subsampling | | | 12.02 | 2.98 | 24.8% |
| **144** | 2174 | Without subsampling | | | Without subsampling | | | 6.54 | 1.7 | 26,0% |
| **111** | 1059 | Without subsampling | | | Without subsampling | | | 5.83 | 1.55 | 26.6% |
| **181** | 1030 | Without subsampling | | | Without subsampling | | | 4.77 | 1.19 | 24.9% |
| **59** | 1080 | Without subsampling | | | Without subsampling | | | 5.27 | 1.24 | 23.5% |
| **52** | 2056 | Without subsampling | | | Without subsampling | | | 5.59 | 1.45 | 25.9% |
| **195** | 2246 | Without subsampling | | | Without subsampling | | | 8.84 | 2.12 | 24% |
| **58** | 1081 | Without subsampling | | | Without subsampling | | | 4.28 | 1.13 | 26.4% |
| **62** | 1085 | Without subsampling | | | Without subsampling | | | 4.2 | 0.99 | 23.6% |
| **56** | 1081 | Without subsampling | | | Without subsampling | | | 10.92 | 2.82 | 25.8% |
| **55** | 1081 | Without subsampling | | | Without subsampling | | | 5.51 | 1.48 | 26.9% |
| **65** | 2221 | Without subsampling | | | Without subsampling | | | 8.09 | 1.82 | 22.5% |
| **199** | 2342 | Without subsampling | | | Without subsampling | | | 8.13 | 1.84 | 22.6% |
| **174** | 2342 | Without subsampling | | | 11.46 | 5.53 | 48.3% | 18.87 | 2.14 | 11.3% |
| **91** | 1080 | Without subsampling | | | 4.54 | 2.24 | 49.3% | 7.51 | 0.92 | 12.3% |
| **79** | 1205 | Without subsampling | | | 12.3 | 6.13 | 49.8% | 20.79 | 2.24 | 10.8% |
| **203** | 2342 | Without subsampling | | | 3.26 | 1.64 | 50.3% | 4.83 | 0.59 | 12.2% |
| **169** | 1238 | Without subsampling | | | 3.06 | 1.47 | 48% | 3.86 | 0.5 | 13% |
| **22** | 1202 | Without subsampling | | | 9.85 | 4.81 | 48.8% | 9.78 | 1.23 | 12.6% |
| **151** | 2017 | Without subsampling | | | 5.21 | 2.55 | 48.9% | 7.24 | 0.75 | 10.4% |
| **108** | 2044 | Without subsampling | | | 6.19 | 3.06 | 49.4% | 5.81 | 0.68 | 11.7% |
| **2** | 1437 | Without subsampling | | | 13.49 | 6.89 | 51.1% | 10.63 | 1.22 | 11.5% |
| **105** | 1492 | Without subsampling | | | 4.92 | 2.38 | 48.4% | 4.56 | 0.51 | 11.2% |
| **13** | 2402 | Without subsampling | | | 5.16 | 2.41 | 46.7% | 3.56 | 0.43 | 12.1% |
| **44** | 1077 | Without subsampling | | | 10.96 | 5.39 | 49.2% | 9.32 | 1.09 | 11.7% |
| **3** | 1273 | Without subsampling | | | 9.31 | 4.57 | 49.1% | 9.27 | 1.16 | 12.5% |
| **106** | 2089 | Without subsampling | | | 9.26 | 4.51 | 48.7% | 8.21 | 0.96 | 11.7% |
| **21** | 1311 | Without subsampling | | | 10.08 | 4.78 | 47.4% | 11.06 | 1.46 | 13.2% |
| **35** | 1308 | Without subsampling | | | 13.58 | 6.53 | 48.1% | 11.76 | 1.3 | 11.1% |
| **25** | 1430 | Without subsampling | | | 14.57 | 7.64 | 52.4% | 15.61 | 1.82 | 11.7% |
| **78** | 1270 | Without subsampling | | | 11.03 | 5.5 | 49.9% | 11.01 | 1.41 | 12.8% |
| **95** | 2136 | Without subsampling | | | 6.14 | 3.09 | 50.3% | 9.27 | 1.05 | 11.3% |
| **140** | 1102 | Without subsampling | | | 35.19 | 8.96 | 25.5% | 28.72 | 1.69 | 5.9% |
| **26** | 2193 | Without subsampling | | | 21.36 | 5.51 | 25.8% | 16.58 | 0.94 | 5.7% |
| **87** | 2338 | Without subsampling | | | 23.03 | 5.86 | 25.4% | 15.48 | 0.91 | 5.9% |
| **220** | 2405 | Without subsampling | | | 41.93 | 10.58 | 25.2% | 40.63 | 2.53 | 6.2% |
| **222** | 1115 | Without subsampling | | | 82.17 | 18.49 | 22.5% | 50.18 | 2.98 | 5.9% |
| **190** | 1370 | Without subsampling | | | 37.25 | 9.28 | 24.9% | 30.53 | 2.13 | 7% |
| **109** | 2065 | Without subsampling | | | 44.14 | 11.41 | 25.8% | 35.32 | 2.01 | 5.7% |
| **6** | 2316 | Without subsampling | | | 27.62 | 6.93 | 25.1% | 26.88 | 1.76 | 6.5% |
| **86** | 2187 | Without subsampling | | | 43.59 | 9.33 | 21.4% | 44.52 | 3.05 | 6.9% |
| **149** | 2229 | Without subsampling | | | 50.21 | 12.97 | 25.8% | 38.61 | 2.28 | 5.9% |
| **66** | 2238 | 197.87 | 90.89 | 45.9% | 59.02 | 7.44 | 12.6% | 41.08 | 1.24 | 3% |
| **147** | 2180 | 124.98 | 68.47 | 54.8% | 74.25 | 9.58 | 12.9% | 63.43 | 1.86 | 2.9% |
| **85** | 1438 | 133.74 | 59.11 | 44.2% | 56.1 | 7.02 | 12.5% | 34.62 | 1.12 | 3.2% |
| **150** | 1049 | 282.92 | 148.22 | 52.4% | 193.7 | 21.01 | 10.8% | 53.72 | 1.28 | 2.4% |
| **206** | 1277 | 158.5 | 69.92 | 44.1% | 95.16 | 12.38 | 13% | 68.1 | 2.02 | 3% |
| **205** | 1236 | 368.28 | 176.84 | 48% | 128.95 | 15.12 | 11.7% | 66.58 | 1.68 | 2.5% |
| **63** | 2180 | 248.19 | 142.29 | 57.3% | 109.44 | 13.41 | 12.3% | 57.19 | 1.79 | 3.1% |
| **177** | 1059 | 68.59 | 35.18 | 51.3% | 44.33 | 5.28 | 11.9% | 30.96 | 0.99 | 3.2% |
| **219** | 2246 | 65.43 | 34.91 | 53.4% | 30.3 | 3.41 | 11.3% | 23.06 | 0.75 | 3.3% |
| **226** | 2342 | 80.9 | 37.49 | 46.3% | 55.06 | 6.26 | 11.4% | 45.84 | 1.3 | 2.8% |
| **227** | 2402 | 57.65 | 30.94 | 53.7% | 29.01 | 3.6 | 12.4% | 31.58 | 0.98 | 3.1% |
| **214** | 2342 | 138.06 | 66.63 | 48.3% | 76.08 | 10.57 | 13.9% | 73.38 | 2.38 | 3.2% |
| **200** | 2342 | 115.36 | 58.9 | 51.1% | 52.14 | 6.55 | 12.6% | 47.48 | 1.41 | 3% |
| **178** | 1059 | 73.61 | 41.82 | 56.8% | 52.3 | 6.77 | 12.9% | 53.99 | 1.89 | 3.5% |
| **54** | 1365 | 116.03 | 66.42 | 57.2% | 40.01 | 5.02 | 12.5% | 37.63 | 1.2 | 3.2% |
| **164** | 2192 | 2.48 | 2.48 | 100% | 2.02 | 2.02 | 100% | 2.49 | 0.7 | 28.1% |

Table A4.2 - Subsampling applied at Rei Ramiro.

| Period | Iron Age | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | I-II (4th-2nd centuries BCE) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sector | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | |
| Context | | | | | | D | | | | | | | | | | G | | | | | | N/A | | | | | | |
| Sampled Context | | | | Circulation | | | | | Posthole | | Refuse | | Posthole | | Refuse | | Hearth | Combustion | Posthole | Circulation | | Concentrated | | | | | Refuse | |
| Volume (Litres) | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 2 | 3 | 2 | 2 | 0.1 | 1 | 0.1 | 0.2 | 5 | 2 | 3 | 0.2 | 4 | 0.2 | 0.1 | 5 | 6 | 4 | 5 | 5 | 4.5 |
| S.U. | **1252** | **1252** | **1252** | **1252** | **1252** | **1252** | **1252** | **1253** | **1325** | **1329** | **1396** | **1343** | **1361** | **1431** | **1440** | **1365** | **1370** | **1311** | **1318** | **1437** | **1492** | **1284** | **1270** | **1277** | **1308** | **1430** | **1438** | **1273** |
| Sample | 32 | 33 | 53 | 80 | 142 | 188 | 207 | 96 | 72 | 152 | 153 | 104 | 73 | 76 | 75 | 54 | 190 | 21 | 82 | 2 | 105 | 113 | 78 | 206 | 35 | 25 | 85 | 3 |
| **Cereal (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* | | | | | | | | | | | | | | | | 3 | | | | 1 | | | 1 | | | | | |
| *Hordeum vulgare* (frag.) | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | |
| *Triticum aestivum/durum* | | | | | 1 | | | | | | 1 | | | | | 1 | 3 | | | 2 | | | | | | | | |
| *Triticum aestivum/durum* (frag.) | | | | | | | | | | | | | | | | 3 | | | | | | | | | | | | |
| *Triticum aestivum/durum* (longitudinal frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* | | | | | | 1 | 1 | | | | | | | | | | 4 | 4 | 2 | 7 | 3 | 2 | 2 | 1 | 3 | 15 | 1 | |
| *Panicum miliaceum*(frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | |
| *Setaria italica* | | | | | | | | | | | | | | | | | | | | 3 | | | 2 | | 1 | 3 | | 1 |
| *Setaria italica* (frag.) | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| *Panicum/Setaria* | | | | | | | | | | | | | | | | | | | | | 2 | | | | | 1 | | |
| *Panicum/Setaria* (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae | 1 | 5 | | 2 | | | | | | | 2 | | 1 | | | 4 | 3 | 1 | 6 | 12 | 6 | | 7 | | 1 | 12 | 3 | 1 |
| Panicoideae (frag.) | | | | | | | | | | | | | | | | 1 | 2 | | 2 | 6 | 6 | | 1 | | | 14 | | 2 |
| *Triticum* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| *Triticum* sp. (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (with scutellum) | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | |
| Triticeae (without scutellum) | | | 1 | | | | | | | | | | | | | 2 | 1 | | | | 1 | | | | 1 | | 1 | |
| Triticeae (embryo) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae/Panicoideae (agglomerated frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Cereal (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (rachis segment w/ 1 node) | | | | | 1 | | | | | | | | | | | | | | 1 | | | | | | | | | |
| *Triticum aestivum* (rachis segment w/ 2 nodes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis segment w/ 1 node) | | | | | 2 | | | | | | | | | | | 4 | | | 2 | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | | | 1 | | | | | 1 | | | | | | | | 1 | 4 | | 2 | | 2 | | 1 | | | | | |
| *Triticum aestivum/durum* (rachis internode frag.) | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | |
| *Triticum dicoccum/spelta* (glume base) | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| *Triticum* sp. (rachis frag.) | | | | | | | | | 1 | | 1 | | | | | | 5 | 1 | 1 | 1 | 3 | | | | | 1 | | |
| Triticeae (rachis internode frag.) | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (husks frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (rachis frag.) | | | | | | | | | | | | | | | | | | | 5 | | 2 | | | | | | | |
| Triticeae (awn frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | | | | | | | | | | | | | | | | | | | | 1 | 2 | | | | | 1 | | |
| *Avena* sp. (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Digitaria sanguinalis* | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| *Digitaria* sp. (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lolium/Festuca* | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | |
| *Phalaris* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Poa* sp. | | | | | | | | | | | | | | | | 1 | 6 | | 2 | 3 | | | | 1 | | 4 | 4 | |
| *Poa* sp. (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria* sp. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae | 1 | | | | | | | | | | | | | | | | 2 | | 2 | | | | | | | 5 | 2 | |
| Poaceae (frag.) | | 1 | | 1 | | | | | | 1 | | | | | | 1 | 1 | | 3 | | | | | | 3 | 1 | 1 | |

Table A4.3 - Full carpological results from Rei Ramiro.

| Period | Iron Age | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | I-II (4th-2nd centuries BCE) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sector | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | |
| Context | | | | | | D | | | | | | | | | | G | | | | | | | | | | | | |
| Sampled Context | Circulation | | | | | | | Posthole | | | Refuse | | Posthole | | Refuse | | Hearth | Combustion | Posthole | Circulation | N/A | Concentrated | | | | | Refuse | |
| S.U. | 1252 | 1252 | 1252 | 1252 | 1252 | 1252 | 1252 | 1253 | 1325 | 1329 | 1396 | 1343 | 1361 | 1431 | 1440 | 1365 | 1370 | 1311 | 1318 | 1437 | 1492 | 1284 | 1270 | 1277 | 1308 | 1430 | 1438 | 1273 |
| Sample | 32 | 33 | 53 | 80 | 142 | 188 | 207 | 96 | 72 | 152 | 153 | 104 | 73 | 76 | 75 | 54 | 190 | 21 | 82 | 2 | 105 | 113 | 78 | 206 | 35 | 25 | 85 | 3 |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (awn frag.) | | | | | | | | | | | | | | | | | 1 | | | | 2 | | | | | | | |
| Poaceae (husks frag.) | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | |
| Poaceae (rachis frag.) | | | | | | 1 | | | | | | | | | | 2 | 1 | | | 1 | | | | | | | | |
| **Fabaceae (seeds)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| *Vicia faba* (cotyledon) | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| *Vicia faba* (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| *Vicia/Lathyrus* (seed) | | | | | | 1 | | | | | | | | | | | | | | | | | 1 | | | 1 | | |
| *Vicia/Lathyrus* (cotyledon) | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| *Vicia/Lathyrus* (frag.) | | | | | | | | 1 | | | | | | | | | | 1 | | | | | | | | | 1 | |
| Fabaceae – *Genista* type | | | | | | | | | | | | | | | | 1 | | 2 | | | | | | | 1 | | 1 | 2 |
| Fabaceae – *Genista* type (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Fabaceae – *Melilotus* type | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae – *Trifolium* type | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Fabaceae (seed) | | | | | | | | | | 1 | | | | | | | 3 | | | 2 | | | | | 1 | 3 | 3 | |
| Fabaceae (cotyledon) | | | | | | | 1 | | | | | | | | | | | 1 | | | | | | | | 1 | | |
| Fabaceae (seed frag.) | | | | | | 1 | 1 | | | 1 | | | | | | | | | | | | | | | | 1 | | 2 |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corema album* (seed) | | | | | | | | | | | | | | | | | 2 | | | 7 | | 1 | | | | 1 | 5 | |
| *Corema album* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corylus avellana* (pericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Crataegus monogyna* (endocarp) | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | |
| *Ficus carica* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Olea europaea* (endocarp and seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (acorn) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon frag.) | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | |
| *Quercus* sp. (cupule) | | | | | | | | | | | | | | | | | | | | 5 | | | | | | | | |
| *Quercus* sp. (pericarp base) | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| *Quercus* sp. (pericarp base frag.) | | | | | | | | | | | | | | | | 1 | 3 | | | 1 | | | | | | | | |
| *Quercus* sp. (pericarp frag.) | | | | | | | | | | | | | | | | 117 | 385 | | | 230 | | | | | | | 8 | |
| *Rubus* sp. (seed) | 1 | 1 | | | | 1 | | | | | | | | | | | | | 1 | 2 | | | | | | 4 | | |
| *Rubus* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | |
| *Vitis vinifera* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (pedicel) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (frag.) | | | | | | | | | | | | | | | | | 7 | | | | | | | | | | 1 | |
| Rosaceae (endocarp) | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| **Others** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Apiaceae (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* type (cypsela) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae (cypsela) | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Asteraceae (cypsela frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Carex* sp. (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Caryophyllaceae (seed) | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | | |
| Caryophyllaceae (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A4.3 - (continued).

| Period | Iron Age | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | I-II (4th-2nd centuries BCE) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sector | D | | | | | | | | | | | | | 1 G | | | | | | | N/A | | | | | | |
| Context | Circulation | | | | | | | Posthole | | | Refuse | | Posthole | | Refuse | | Hearth | Combustion | | Posthole | Circulation | Concentrated | | | | | Refuse | |
| Sampled Context | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S.U. | 1252 | 1252 | 1252 | 1252 | 1252 | 1252 | 1252 | 1253 | 1325 | 1329 | 1396 | 1343 | 1361 | 1431 | 1440 | 1365 | 1370 | 1311 | 1318 | 1437 | 1492 | 1284 | 1270 | 1277 | 1308 | 1430 | 1438 | 1273 |
| Sample | 32 | 33 | 53 | 80 | 142 | 188 | 207 | 96 | 72 | 152 | 153 | 104 | 73 | 76 | 75 | 54 | 190 | 21 | 82 | 2 | 105 | 113 | 78 | 206 | 35 | 25 | 85 | 3 |
| **Others** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* sp. (seed) | | | | | | | | | | | | | | | | 1 | | | 4 | 1 | 1 | | | | | 3 | | |
| *Chenopodium* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| Chenopodiaceae (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus* sp. (capsule frag.) | | | | | | | | | | | | | | | | | | 1 | 2 | | | | | | | | | |
| *Corrigiola litoralis* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Echium* sp. (nutlet) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* (mericarp) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* sp. (mericarp) | | | | | | | | | | | | | | | | 1 | | | | 1 | | | | | | 1 | | |
| *Galium* sp. (mericarp frag.) | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lamiaceae (nutlet) | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Linum* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* sp. (seed) | | | | | | 1 | | | | | | | | | | | | | | | | | | | | 1 | | |
| *Papaver* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago lanceolata* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed) | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | |
| *Polygonum aviculare* (achene) | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | |
| *Polygonum lapathifolium* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - lenticular type (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - lenticular type (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - trigonal type (achene) | | | | | | | | | | | | | | | | | | | 1 | | | 1 | | | | | | |
| Polygonaceae (achene) | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | |
| Polygonaceae (achene frag.) | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| *Portulaca oleracea* (seed) | | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | |
| *Ranunculus* sp. (achene) | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| *Rumex acetosella* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus/crispus* (achene) | | | | | | | | | | | | | | | | 4 | 3 | | 1 | 2 | 1 | | | | | | | |
| *Rumex crispus/obtusifolius* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene) | | | | | | | | | | | | | | | | | 1 | | | 1 | | | | | 1 | 1 | | |
| *Rumex* sp. (achene frag.) | | | | | | | | | | | | | | | | | 2 | | | | | | | | | 1 | | |
| *Sambucus* sp. (stone) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sambucus* sp. (stone frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sherardia arvensis* (mericarp) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* (seed) | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Silene* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Solanum* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Spergula arvensis* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Stellaria/Cerastium* (seed) | | | | | | | | | | | | | | | | | 3 | | | | | | | | | 1 | | 1 |
| *Viola* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (flower bud frag.) | | 1 | | | | | | | | | | | | | | | | | | 1 | | | | | | | | |
| Undetermined (plant spine frag.) | | | | | | | | | | 2 | | | | | | | | | | | | | | | 1 | 1 | 1 | |
| Undetermined (peduncule frag.) | | | | | 1 | | | | | | | | | | | | 1 | | 1 | | | 1 | | | 1 | | | |
| Undetermined (pericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (fruit/seed) | | 1 | 2 | | | | | | | | | | | | | 3 | 9 | | 2 | 2 | | | 1 | | 3 | 6 | 2 | 1 |
| Undetermined (fruit/seed frag.) | 39 | 10 | 37 | 49 | 101 | 36 | 27 | 11 | 25 | 70 | 24 | 4 | 25 | 1 | 4 | 177 | 211 | 30 | 543 | 45 | 56 | 8 | 34 | 122 | 48 | 119 | 89 | 12 |

Table A4.3 - (continued).

| Period | Iron Age | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | I-II (4th -2nd centuries BCE) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sector | 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Context | B | | | | | | | | | | | | | | C | | E | | | | F | | | | | |
| Sampled Context | Posthole | | | | | | Circulation | | | Refuse | | | | | Hut base | Hearth | Posthole | | | Refuse | Posthole | Concentrated | | | | | |
| Volume (Litres) | 5 | 2 | 0.1 | 5 | 4 | 3 | 2 | 3 | 3 | 3 | 2 | 5 | 5 | RM | 1.5 | 4 | 0.5 | 0.5 | 1 | 1 | 1.5 | 2 | 1 | 2 | 3 | 1 |
| S.U. | **2187** | **2189** | **2212** | **2316** | **2338** | **2340** | **2183** | **2174** | **2174** | **2192** | **2345** | **2180** | **2180** | **2180** | **2194** | **2193** | **2261** | **2265** | **2297** | **2255** | **2355** | **2246** | **2246** | **2246** | **2246** | **2246** |
| Sample | 86 | 163 | 165 | 6 | 87 | 71 | 34 | 17 | 144 | 164 | 225 | 63 | 147 | 138 | 24 | 26 | 103 | 107 | 102 | 157 | 1 | 30 | 189 | 195 | 196 | 209 |
| **Cereal (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* | | | | 1 | | | | | | | | 2 | | | | | | | | | | 1 | | | | |
| *Hordeum vulgare* (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* | 8 | | | 71 | 6 | | | | | | | 1 | 5 | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (frag.) | | | | 12 | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (longitudinal frag.) | | | | 1 | | | | | | | | | 1 | | | | | | | | | | | | | |
| *Panicum miliaceum* | 9 | | 1 | 5 | 4 | | | | | 3 | | 6 | 3 | | | | | | 1 | | 1 | | | | | |
| *Panicum miliaceum* (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* | 2 | | | 4 | | | | | | 1 | | 3 | | | | 3 | | | | 1 | | 1 | | | | |
| *Setaria italica* (frag.) | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| *Panicum/Setaria* | 1 | | | 1 | | | | | | | | 2 | 1 | | 1 | | | | | | | | | | | |
| *Panicum/Setaria* (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae | 1 | | | 2 | 4 | | | | | | | 2 | 1 | | 2 | 12 | | 1 | | 1 | 1 | 1 | | 2 | | |
| Panicoideae (frag.) | | 1 | | | 2 | | | | | | | 4 | | | 1 | | | 2 | | | | | | | | |
| *Triticum* sp. | 1 | | | 14 | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. (frag.) | 2 | | | 18 | 2 | | | | | | | | | | | | | | 1 | | | | | | | |
| Triticeae (with scutellum) | | | | | | | | | 1 | | | 1 | | | | | | | | | 1 | | 1 | | 1 | |
| Triticeae (without scutellum) | 3 | | | 68 | 7 | | | | | | | 3 | 3 | | 4 | | | | | | | 1 | 4 | 1 | | |
| Triticeae (embryo) | | | | | | | | | | | | | | 1 | | | | | | | | | | | | |
| Triticeae/Panicoideae (agglomerated frag.) | | | | 1 | | | | | | | | | | | | | | | | | | | | | | |
| **Cereal (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (rachis segment w/ 1 node) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* (rachis segment w/ 2 nodes) | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis segment w/ 1 node) | | 6 | | 1 | | | | 1 | | 1 | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | | 6 | | 6 | 1 | 1 | | 2 | | 2 | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis internode frag.) | | 3 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum dicoccum/spelta* (glume base) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. (rachis frag.) | | 10 | | 8 | 1 | | | | | | | | | | | | | | 2 | | | | | | | |
| Triticeae (rachis internode frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (husks frag.) | | 26 | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (rachis frag.) | | 129 | | | | | | | 1 | | | | 1 | | | 1 | | | | | | | | | | 4 |
| Triticeae (awn frag.) | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | | | | 5 | 1 | | | | | | | 1 | | | | | | | | | | | | | | |
| *Avena* sp. (frag.) | | | | 1 | | | | | | | | | | | | | | | | | | 1 | | | | |
| *Digitaria sanguinalis* | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| *Digitaria* sp. (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lolium/Festuca* | | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| *Phalaris* sp. | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Poa* sp. | | | | | 1 | | | | 1 | | | | | | | 1 | | | | | 1 | 2 | | | | |
| *Poa* sp. (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria* sp. | | | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| Poaceae | 1 | 5 | | 5 | | | | | | | | | 1 | | | | | | | | | 1 | 2 | 1 | 1 | |
| Poaceae (frag.) | | 1 | | 1 | | | | 1 | | | | 1 | | | | | | | 1 | 1 | | | | 1 | 3 | |

Table A4.3 - (continued).

| Period | Iron Age | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | I-II (4th -2nd centuries BCE) | | | | | | | | | | | | | | | | | | | | | | | | |
| Sector | | | | | | | | | | | | | | 2 | | | | | | | | | | | |
| Context | | | | | | | B | | | | | | | | | C | | | E | | | F | | | |
| Sampled Context | Posthole | | | | | | Circulation | | | Refuse | | | | | | Hut base | Hearth | | Posthole | | | Refuse | Posthole | Concentrated | | | | |
| S.U. | 2187 | 2189 | 2212 | 2316 | 2338 | 2340 | 2183 | 2174 | 2174 | 2192 | 2345 | 2180 | 2180 | 2180 | 2194 | 2193 | 2261 | 2265 | 2297 | 2255 | 2355 | 2246 | 2246 | 2246 | 2246 | 2246 |
| Sample | 86 | 163 | 165 | 6 | 87 | 71 | 34 | 17 | 144 | 164 | 225 | 63 | 147 | 138 | 24 | 26 | 103 | 107 | 102 | 157 | 1 | 30 | 189 | 195 | 196 | 209 |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (awn frag.) | | | | 2 | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (husks frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (rachis frag.) | | | | | | | | | | | | 1 | | | | | | | | | 1 | | | | 2 | |
| **Fabaceae (seeds)** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* | | | | 1 | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* | 4 | | | 1 | 1 | | | | | | | 1 | | | | 1 | | | | | | | | | | |
| *Vicia faba* (cotyledon) | 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* (frag.) | 5 | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (seed) | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (cotyledon) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (frag.) | 3 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae – *Genista* type | | | | 1 | | | | | | | | | | | | | | | | | | 1 | | 1 | | |
| Fabaceae – *Genista* type (frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae – *Melilotus* type | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| Fabaceae – *Trifolium* type | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae (seed) | | 1 | | 1 | 2 | | | 1 | | 1 | | | | | 1 | 1 | | | | | 2 | 1 | 1 | 1 | | 1 |
| Fabaceae (cotyledon) | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| Fabaceae (seed frag.) | 1 | 1 | | | | | | 1 | | | | | | | | 1 | | 1 | | | | | | | 2 | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corema album* (seed) | | | | | | | | | | | | 2 | | | | | | | | | | | | | | |
| *Corema album* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corylus avellana* (pericarp frag.) | 8 | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Crataegus monogyna* (endocarp) | | | | 1 | | | | | | | | 1 | | | | | | | | | | | | | | |
| *Ficus carica* (seed) | | | | | | | | | | | | | | | | | | | | | | 4 | | | | 1 |
| *Olea europaea* (endocarp and seed) | | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (acorn) | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| *Quercus* sp. (cotyledon) | | | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| *Quercus* sp. (cotyledon frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cupule) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (pericarp base) | | | | | | | | | | | | | | | | 6 | | | | | | | | | | |
| *Quercus* sp. (pericarp base frag.) | | | | | | | | | | | | | | | | 6 | | | | | | | | | | |
| *Quercus* sp. (pericarp frag.) | 1 | | | | | | | | | | | | | | | 155 | | | | | | | | | | |
| *Rubus* sp. (seed) | | | | | | | | | | | | 2 | | | 1 | | | | | | 1 | | | 4 | 1 | |
| *Rubus* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| *Vitis vinifera* (seed) | 6 | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (pedicel) | 10 | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (frag.) | 3 | | | | 1 | | | | | | | | | | | | | | | | | | | | | 1 |
| Rosaceae (endocarp) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Others** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* (seed) | | | | | | | | | | | | | | | | | | | | | 2 | | | | | |
| *Anagallis arvensis* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Apiaceae (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* type (cypsela) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae (cypsela) | | | | 1 | | | | | | | | | 1 | | | | | | | | | | | | | |
| Asteraceae (cypsela frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Carex* sp. (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Caryophyllaceae (seed) | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| Caryophyllaceae (seed frag.) | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |

Table A4.3 - (continued).

| Period | Iron Age | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | I-II (4th -2nd centuries BCE) | | | | | | | | | | | | | | | | | | | | | | | | |
| Sector | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| Context | B | | | | | | | | | | | | | | C | | E | | | | F | | | | |
| Sampled Context | Posthole | | | | | | Circulation | | | Refuse | | | | | Hut base | Hearth | Posthole | | | Refuse | Posthole | Concentrated | | | | |
| S.U. | 2187 | 2189 | 2212 | 2316 | 2338 | 2340 | 2183 | 2174 | 2174 | 2192 | 2345 | 2180 | 2180 | 2180 | 2194 | 2193 | 2261 | 2265 | 2297 | 2255 | 2355 | 2246 | 2246 | 2246 | 2246 | 2246 |
| Sample | 86 | 163 | 165 | 6 | 87 | 71 | 34 | 17 | 144 | 164 | 225 | 63 | 147 | 138 | 24 | 26 | 103 | 107 | 102 | 157 | 1 | 30 | 189 | 195 | 196 | 209 |
| **Others** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* sp. (seed) | | | | 1 | 1 | | | | | | | | | | | | | | 1 | | | | | | 1 | |
| *Chenopodium* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae (seed frag.) | | | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| *Cistus* sp. (capsule frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola litoralis* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Echium* sp. (nutlet) | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Galium aparine* (mericarp) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* sp. (mericarp) | | | | 1 | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* sp. (mericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lamiaceae (nutlet) | | | | | | | | | | | | | | | 1 | | | | | | | | | | | |
| *Linum* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Papaver* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago lanceolata* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum aviculare* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* (achene) | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - lenticular type (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - lenticular type (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - trigonal type (achene) | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene) | | | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| Polygonaceae (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Portulaca oleracea* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ranunculus* sp. (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex acetosella* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus/crispus* (achene) | | | | 3 | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex crispus/obtusifolius* (achene) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene) | | | | 1 | 1 | | | | | | | | | | | | | | 1 | | | | | | | |
| *Rumex* sp. (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sambucus* sp. (stone) | | | | | | | | | | | | | | | | | | | | | 1 | | | 1 | 3 | |
| *Sambucus* sp. (stone frag.) | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | |
| *Sherardia arvensis* (mericarp) | | | | | | | | | | | | | | | | | | | | | | | 2 | 1 | | |
| *Silene gallica* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Solanum* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Spergula arvensis* (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Stellaria/Cerastium* (seed) | | 1 | | | | | | | | | | | | | | 1 | | | | | 1 | | | | | |
| *Viola* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (flower bud frag.) | 1 | | | 1 | | | | | | | | | 1 | 1 | 1 | 2 | | | | | | 1 | | 2 | | |
| Undetermined (plant spine frag.) | | | | 1 | | | | | | | | | | | | | | | | | 8 | | | 24 | 5 | |
| Undetermined (peduncule frag.) | | | | 1 | | | | | | | | 1 | | | | | | | | 1 | | | | | | |
| Undetermined (pericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (fruit/seed) | 1 | 1 | | 1 | 2 | | | | | | | 3 | | 2 | | | | | | | 2 | | | 3 | | 2 |
| Undetermined (fruit/seed frag.) | 105 | 101 | 5 | 259 | 74 | 8 | 4 | 18 | 54 | 49 | 35 | 89 | 56 | 3 | 18 | 162 | 10 | 4 | 35 | 27 | 80 | 15 | 24 | 181 | 97 | 14 |

Table A4.3 - (continued).

| Period | Iron Age I-II (4th -2nd centuries BCE) | | | | | | | | | | | | | | | | | | | | Late Iron Age/Early Roman period III-VII (1st century BCE) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | | | | | | | | | | | | | | | | | | | | | | | | |
| Sector | 2 | | | | | | | | | | | | | | | | | | | | 1 | | | |
| Context | F | | | | | | | | | | | | | Hearth | Combustion | N/A | Refuse | | | | 2 | 3 | 3 | 4 |
| Sampled Context | Concentrated | | | | | | | | | | | | | | | Concentrated | | | | | Concentrated | Refuse | | Concentrated |
| Volume (Litres) | 0.1 | 0.1 | 0.1 | 6 | 3 | 2 | 4 | 3 | 0.2 | 0.1 | 5 | 5 | RM | 0.1 | 2 | 1 | 3 | 4 | 0.5 | 3 | 5 | 6 | RM | 1.5 |
| S.U. | **2246** | **2246** | **2246** | **2246** | **2342** | **2342** | **2342** | **2342** | **2342** | **2342** | **2342** | **2342** | **2342** | **2190** | **2227** | **2229** | **2405** | **2221** | **2402** | **2402** | **1102** | **1115** | **1105** | **1116** |
| Sample | 210 | 211 | 212 | 219 | 174 | 199 | 200 | 202 | 203 | 213 | 214 | 226 | 129 | 223 | 154 | 149 | 220 | 65 | 13 | 227 | 140 | 222 | 135 | 31 |
| **Cereal (grains)** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| *Hordeum vulgare* (frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* | | | | | | | | 1 | | 1 | | | | | | 4 | | | | | | 2 | | |
| *Triticum aestivum/durum* (frag.) | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Triticum aestivum/durum* (longitudinal frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* | | | | | 26 | 1 | 1 | 21 | | | | | | | 1 | 2 | | 2 | | | | | | |
| *Panicum miliaceum* (frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* | | | | | 1 | | | 2 | | | | | | | | | | 2 | | | | | | |
| *Setaria italica* (frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum/Setaria* | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum/Setaria* (frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae | | | 1 | | 37 | | | 83 | | | | | | | | 5 | | 5 | | | | | | |
| Panicoideae (frag.) | | | | | 8 | | | 14 | | | | | | | 1 | 2 | | 5 | | | | | | |
| *Triticum* sp. | | | | | | | | | | | | | | | | | | | | | | 1 | | 1 |
| *Triticum* sp. (frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (with scutellum) | | | | | | | | | | | | | | | | 1 | | | | | | | | |
| Triticeae (without scutellum) | | | | | | | | | | | | | | | | 3 | | 1 | | 1 | | | | 5 |
| Triticeae (embryo) | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae/Panicoideae (agglomerated frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| **Cereal (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (rachis segment w/ 1 node) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* (rachis segment w/ 2 nodes) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis segment w/ 1 node) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | | | | | | | | | | | | | | | | | | | | 1 | | 1 | | |
| *Triticum aestivum/durum* (rachis internode frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum dicoccum/spelta* (glume base) | | | | | | | | | | | | | | | | 1 | | | | | | | | |
| *Triticum* sp. (rachis frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (rachis internode frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (husks frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (rachis frag.) | 1 | | | | | | | 1 | | | | | | 1 | | 1 | | | | | | | | |
| Triticeae (awn frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. (frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Digitaria sanguinalis* | | | | | 72 | 2 | | 41 | | | | | | | | | | | | | | | | |
| *Digitaria* sp. (frag.) | | | | | | | | 11 | | | | | | | | | | | | | | | | |
| *Lolium/Festuca* | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Phalaris* sp. | | | | | 2 | | | | | | | | | | | | | | | | | | | |
| *Poa* sp. | 1 | | | | 1 | 13 | | | | | | 2 | | | | | 1 | | | | | | | 1 |
| *Poa* sp. (frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria* sp. | | | | | 4 | | | 5 | | | | | | | | | | | | | | | | |
| Poaceae | | | | | 44 | | | 104 | | | | | | | | 1 | | | | | | | | 1 |
| Poaceae (frag.) | | | | | 36 | | 1 | 101 | | | | | | | 3 | | | | | | | 1 | | 1 |

Table A4.3 - (continued).

| Period | Iron Age I-II (4th -2nd centuries BCE) | | | | | | | | | | | | | | | | | | | | Late Iron Age/Early Roman period III-VII (1st century BCE) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | | | | | | | | | | | | | | | | | | | | | | | | |
| Sector | 2 | | | | | | | | | | | | | | | | | | | | 1 | | | |
| Context | F | | | | | | | | | | | | | Hearth | Combustion | | N/A | | Refuse | | 2 | 3 | 3 | 4 |
| Sampled Context | Concentrated | | | | | | | | | | | | | | | | Concentrated | | | | Concentrated | Refuse | | Concentrated |
| S.U. | 2246 | 2246 | 2246 | 2246 | 2342 | 2342 | 2342 | 2342 | 2342 | 2342 | 2342 | 2342 | 2342 | 2190 | 2227 | 2229 | 2405 | 2221 | 2402 | 2402 | 1102 | 1115 | 1105 | 1116 |
| Sample | 210 | 211 | 212 | 219 | 174 | 199 | 200 | 202 | 203 | 213 | 214 | 226 | 129 | 223 | 154 | 149 | 220 | 65 | 13 | 227 | 140 | 222 | 135 | 31 |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (awn frag.) | | | | | 6 | 2 | | | | | | | | | | | | | | | | | | |
| Poaceae (husks frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (rachis frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| **Fabaceae (seeds)** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| *Vicia faba* (cotyledon) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* (frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (seed) | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (cotyledon) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (frag.) | | | | | | | 1 | | | | | | | | | | | | | | | 1 | | |
| Fabaceae – *Genista* type | | | | | | | | 1 | | | 1 | 1 | | | | | | 3 | | | | | | |
| Fabaceae – *Genista* type (frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae – *Melilotus* type | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae - *Trifolium* type | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae (seed) | | | | | | 4 | 1 | | | | | | | | | | 1 | 1 | | 1 | | 2 | | |
| Fabaceae (cotyledon) | | | | | | | | | 1 | | | | | | | | | | | | | | | |
| Fabaceae (seed frag.) | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corema album* (seed) | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Corema album* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corylus avellana* (pericarp frag.) | | | | | | | | | | | | | | | | 5 | | | | | | | | |
| *Crataegus monogyna* (endocarp) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ficus carica* (seed) | | | | | | 11 | | 3 | | | | 6 | | | | | | | | | | | | |
| *Olea europaea* (endocarp and seed) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (acorn) | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon) | | | | | | | | | | | | | | | | 2 | | | | | | | | |
| *Quercus* sp. (cotyledon frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cupule) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (pericarp base) | | | | | | | | | | | | | | | | 7 | | | | | | | | |
| *Quercus* sp. (pericarp base frag.) | | | | | | | | | | | | | | | | 30 | | | | | | | | |
| *Quercus* sp. (pericarp frag.) | | | | | | | | | | | | | | | | 1,386 | | | | | | | | |
| *Rubus* sp. (seed) | | | | | | 9 | | 1 | 1 | | | | | | | | | | | | | | | |
| *Rubus* sp. (seed frag.) | | | | | | 8 | | 1 | 1 | | | 1 | | | | | | | | | | | | |
| *Vitis vinifera* (seed) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (pedicel) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (frag.) | | | | | | 1 | | 7 | | | 1 | | | | | | | | | | | 1 | | |
| Rosaceae (endocarp) | | | | | | | | | | | | | | | | | | | | | | | | |
| **Others** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* (seed) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* (seed frag.) | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| Apiaceae (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* type (cypsela) | | | | | | | | | | | | | | | | | | 1 | | | | | | |
| Asteraceae (cypsela) | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae (cypsela frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Carex* sp. (achene) | | | | | 1 | | | 1 | | | | 1 | | | | | | | | 1 | | | | |
| Caryophyllaceae (seed) | | | | | | 1 | | | | | | | | | 1 | | | | | | | | | |
| Caryophyllaceae (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | |

Table A4.3 - (continued).

| Period | Iron Age I-II (4th -2nd centuries BCE) | | | | | | | | | | | | | | | | | | | | Late Iron Age/Early Roman period III-VII (1st century BCE) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | | | | | | | | | | | | | | | | | | | | | | | | |
| Sector | 2 | | | | | | | | | | | | | | | | | | | | 1 | | | |
| Context | F | | | | | | | | | | | | | Hearth | Combustion | N/A | Refuse | | | 2 | 3 | 3 | 4 |
| Sampled Context | Concentrated | | | | | | | | | | | | | | | Concentrated | | | | Concentrated | Refuse | | Concentrated |
| S.U. | 2246 | 2246 | 2246 | 2246 | 2342 | 2342 | 2342 | 2342 | 2342 | 2342 | 2342 | 2342 | 2342 | 2190 | 2227 | 2229 | 2405 | 2221 | 2402 | 2402 | 1102 | 1115 | 1105 | 1116 |
| Sample | 210 | 211 | 212 | 219 | 174 | 199 | 200 | 202 | 203 | 213 | 214 | 226 | 129 | 223 | 154 | 149 | 220 | 65 | 13 | 227 | 140 | 222 | 135 | 31 |
| **Others** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* sp. (seed) | | | | | 3 | | | 6 | | | | | | | | | 1 | 1 | | | | | | |
| *Chenopodium* sp. (seed frag.) | | | | | | | | 5 | | | | | | | | | | | | | | | | |
| Chenopodiaceae (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus* sp. (capsule frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola litoralis* (achene) | | | | | | | | 1 | | | | | | | | | | | | | | | | |
| *Echium* sp. (nutlet) | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* (mericarp) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* sp. (mericarp) | | | | | | | | | | | | | | | | 1 | | | | | | | | |
| *Galium* sp. (mericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| Lamiaceae (nutlet) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* sp. (seed) | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Malva* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Papaver* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago lanceolata* (seed) | | | | | | | | | | | | | | | | | | | | | | 5 | | |
| *Plantago* sp. (seed) | | | | | | | | | | | | | | | | | | | | | 5 | 1 | | |
| *Polygonum aviculare* (achene) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* (achene) | | | | | 5 | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - lenticular type (achene) | | | | | | | | 9 | | | | | | | | | | | | | | | | |
| *Polygonum* - lenticular type (achene frag.) | | | | | | | | 1 | | | | | | | | | | | | | | | | |
| *Polygonum* - trigonal type (achene) | | | | | 2 | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene) | | | | | 1 | | | | | | | | | | | | 1 | 1 | | | | | | 1 |
| Polygonaceae (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Portulaca oleracea* (seed) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ranunculus* sp. (achene) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| *Rumex acetosella* (achene) | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Rumex conglomeratus/crispus* (achene) | | | | | | 1 | | | | | | | | | | | | | | | | | | 2 |
| *Rumex crispus/obtusifolius* (achene) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene) | | | | | 1 | | | 5 | | | | | | | | 2 | | | | | | 1 | | 12 |
| *Rumex* sp. (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sambucus* sp. (stone) | | | | | 2 | | 1 | | | | | 1 | | | | | | | | | | | | |
| *Sambucus* sp. (stone frag.) | | | | | | | 1 | | | | | 1 | | | | | | | | | | | | |
| *Sherardia arvensis* (mericarp) | | | | | | 2 | | | | | | 1 | | | | | | | | | | | | |
| *Silene gallica* (seed) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Solanum* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Spergula arvensis* (seed) | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Stellaria/Cerastium* (seed) | | | | | | 3 | | | | | | | | | 1 | | | 1 | | | | | | |
| *Viola* sp. (seed) | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| Undetermined (flower bud frag.) | | | | | | 2 | | 1 | | | | | | | | 1 | | | | | | | | |
| Undetermined (plant spine frag.) | | | | 3 | | 15 | 1 | 2 | | | 1 | 5 | | | | | 1 | | | | | | | |
| Undetermined (peduncule frag.) | | | | | 1 | | | | | | | 1 | | | | 1 | | | | | | | | |
| Undetermined (pericarp frag.) | | | | | | | | | | | | 2 | | | | | | | | | | | | |
| Undetermined (fruit/seed) | | | | | 11 | 3 | | 11 | | 2 | | | | | | | | | | | | | | 1 |
| Undetermined (fruit/seed frag.) | 5 | 3 | | 14 | 76 | 46 | 88 | 529 | 1 | 1 | 37 | 61 | 86 | 4 | 46 | 178 | 9 | 57 | 4 | 26 | 3 | 25 | | 23 |

Table A4.3 - (continued).

| Period | Late Iron Age/Early Roman period III-VII (1st century BCE) | | | | | | | | | | Early Roman period VIII-IX (1st-2nd centuries CE) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | | | | | | | | | | | | | | | | | | | | | | | | |
| Sector | 1 | | | | | 2 | | | | | 1 | | | | | | | | | | | | | |
| Context | N/A | | | | | B | | N/A | | | 0 | | | | | 1 | | | 2 | | | | | |
| Sampled Context | Hearth | | Combustion | Concentrated | | Hearth | Destruction | Concentrated | | Refuse | Circulation | | | | | Refuse | | Concentrated | | | Refuse | | | |
| Volume (Litres) | 3 | 1 | 2 | 2 | 3 | 0.1 | 1.5 | 4 | 3 | RM | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 4.5 | 3 | 3 | 4 | 3 | 4 | |
| S.U. | **1237** | **1238** | **1243** | **1202** | **1236** | **2171** | **2173** | **2136** | **2238** | **2176** | **1075/76** | **1075/76** | **1075/76** | **1075/76** | **1030** | **1030** | **1030** | **1086** | **1080** | **1080** | **1080** | **1080** | **1080** | |
| Sample | 27 | 169 | 23 | 22 | 205 | 161 | 20 | 95 | 66 | 137 | 5 | 50 | 51 | 175 | 46 | 181 | 182 | 67 | 9 | 59 | 60 | 68 | 91 | |
| **Cereal (grains)** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| *Hordeum vulgare* (frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* | | | | | | | 1 | | | | | | | | 1 | 1 | | 4 | | | 2 | 2 | 5 | |
| *Triticum aestivum/durum* (frag.) | | | | | | | | 1 | | | | | | | | | | 1 | | | | | | |
| *Triticum aestivum/durum* (longitudinal frag.) | | | | | | | | 1 | | | | | | | | | | | | | | | 1 | |
| *Panicum miliaceum* | | 2 | 1 | 5 | 7 | | | 1 | | | 3 | 2 | | 3 | 1 | 2 | 1 | | 1 | 1 | 1 | 1 | 1 | |
| *Panicum miliaceum* (frag.) | 1 | | | | | | | | | | | | | | | | | | | | | 1 | | |
| *Setaria italica* | | 2 | | | 4 | | | | | | | 2 | | | 1 | | 1 | | | | | | 1 | |
| *Setaria italica* (frag.) | 1 | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum/Setaria* | | | | | 4 | | | | | | | | | | | | | | | | | | | |
| *Panicum/Setaria* (frag.) | | | | | | | | | | | 1 | | | | | | | | | | | | | |
| Panicoideae | | 11 | 6 | 7 | 4 | | | | | | | 1 | | | 3 | 2 | 1 | 5 | | 2 | | 1 | 1 | |
| Panicoideae (frag.) | | 3 | 5 | 2 | 3 | | | | | | | | | 1 | 2 | | | | | | 1 | 2 | 2 | |
| *Triticum* sp. | | 1 | | 2 | | | | | | | | | | | | | | | 1 | | | 1 | | |
| *Triticum* sp. (frag.) | | 1 | | | | | | | | | | | | 1 | | 1 | | | | | | | | |
| Triticeae (with scutellum) | | | | | | | | | | | | | 1 | 1 | | | | | | | 1 | 2 | | |
| Triticeae (without scutellum) | | | | | | | | 6 | | | 3 | | | | | 8 | 2 | 3 | 2 | 2 | 7 | | 3 | |
| Triticeae (embryo) | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| Triticeae/Panicoideae (agglomerated frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| **Cereal (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (rachis segment w/ 1 node) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* (rachis segment with 2 nodes) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis segment w/ 1 node) | | 2 | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | | | 1 | | | 2 | | 1 | | | 2 | | | 1 | | 1 | 3 | | | | 1 | 1 | | |
| *Triticum aestivum/durum* (rachis internode frag.) | | 1 | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum dicoccum/spelta* (glume base) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. (rachis frag.) | | 2 | 1 | | | | | 1 | | | | | | | | | | | | | 1 | | 1 | |
| Triticeae (rachis internode frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (husks frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (rachis frag.) | | | | | | | | | | | | 1 | | | | | | 2 | | | 9 | | 1 | |
| Triticeae (awn frag.) | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | | | | | | 1 | | | | | | 1 | | | | 3 | | | | | | | | |
| *Avena* sp. (frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Digitaria sanguinalis* | | | | | | | | | | | | | | | | | | | | | | | | |
| *Digitaria* sp. (frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lolium/Festuca* | | | | | | | | | | | | | | | | | | | | | | | | |
| *Phalaris* sp. | | | | | | | | | | | | | | | | | | | | | | | | |
| *Poa* sp. | 3 | | | | | 3 | | 1 | | | | | | | | | | | | | | | | |
| *Poa* sp. (frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria* sp. | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae | | | 1 | 1 | 1 | 2 | | 2 | | | | | | | | | | | 2 | | | | 1 | |
| Poaceae (frag.) | | | | 3 | | | | 4 | | | | | | 1 | 1 | | | | | | 1 | 1 | | |

Table A4.3 - (continued)

| Period | Late Iron Age/Early Roman period III-VII (1st century BCE) | | | | | | | | | | Early Roman period VIII-IX (1st-2nd centuries CE) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | | | | | | | | | | | | | | | | | | | | | | | | |
| Sector | 1 | | | | | 2 | | | | | 1 | | | | | | | | | | | | | |
| Context | N/A | | | | | B | | N/A | | | 0 | | | | 1 | | | | 2 | | | | | |
| Sampled Context | Hearth | | Combustion | Concentrated | | Hearth | Destruction | Concentrated | | Refuse | Circulation | | | | Refuse | | | Concentrated | | | Refuse | | | |
| S.U. | 1237 | 1238 | 1243 | 1202 | 1236 | 2171 | 2173 | 2136 | 2238 | 2176 | 1075/76 | 1075/76 | 1075/76 | 1075/76 | 1030 | 1030 | 1030 | 1086 | 1080 | 1080 | 1080 | 1080 | 1080 | |
| Sample | 27 | 169 | 23 | 22 | 205 | 161 | 20 | 95 | 66 | 137 | 5 | 50 | 51 | 175 | 46 | 181 | 182 | 67 | 9 | 59 | 60 | 68 | 91 | |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (awn frag.) | | | | | | | | | | | | | | | | | | 1 | | | | | | |
| Poaceae (husks frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (rachis frag.) | | | | | | | | 1 | | | | 1 | | | 2 | | | | | 1 | | 2 | 1 | |
| **Fabaceae (seeds)** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* | | | | 1 | | | | | | 1 | | | | | | | | | | | | | | |
| *Vicia faba* (cotyledon) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* (frag.) | | | | 1 | | | | | | | | | | | 1 | | | | 1 | | | | | |
| *Vicia/Lathyrus* (seed) | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| *Vicia/Lathyrus* (cotyledon) | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| *Vicia/Lathyrus* (frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae – *Genista* type | | 1 | | | | | | | | | | | | 1 | | | | | | | | | 1 | |
| Fabaceae – *Genista* type (frag.) | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| Fabaceae – *Melilotus* type | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| Fabaceae – *Trifolium* type | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae (seed) | 2 | | | | | | 1 | | | | | 24 | 1 | | | | | | | | | 1 | | |
| Fabaceae (cotyledon) | | | | | | | | | | | | | | | 1 | | | | | | | 1 | | |
| Fabaceae (seed frag.) | | | | | | | | 1 | | | | | | | 4 | | 1 | | | | 1 | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corema album* (seed) | | | | 2 | | 1 | 1 | | | | 1 | | 1 | 1 | 1 | | | | | | 1 | | 1 | |
| *Corema album* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corylus avellana* (pericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Crataegus monogyna* (endocarp) | | | | | 1 | | | | | | | | | | | | | | | | | | | |
| *Ficus carica* (seed) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Olea europaea* (endocarp and seed) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (acorn) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cupule) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (pericarp base) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (pericarp base frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (pericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rubus* sp. (seed) | | 1 | | | | | | | | | | | | | 1 | | 1 | | | | | | | |
| *Rubus* sp. (seed frag.) | | | | | | 11 | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed) | 1 | | | | 2 | 1 | | | | | | 2 | 1 | | | | | | | | | | | |
| *Vitis vinifera* (pedicel) | | | | 1 | 1 | | | | | | 1 | | | | | | | | | | | | | |
| *Vitis vinifera* (frag.) | 4 | 1 | 2 | | | 8 | | 2 | | | 7 | | 1 | | 1 | 1 | | | | | | | | |
| Rosaceae (endocarp) | | | | | | | | | | | | | | | | | | | | | | | | |
| **Others** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* (seed) | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| Apiaceae (achene frag.) | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Asteraceae - *Chrysanthemum* type (cypsela) | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| Asteraceae (cypsela) | | | 1 | | | | | | | | | | | | | 1 | | | | | | | | |
| Asteraceae (cypsela frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Carex* sp. (achene) | | | | | | | | | | | | | | | | | | | | | | | | |
| Caryophyllaceae (seed) | 5 | | | 1 | 1 | | | | 1 | | | | | | | | | | | | | | | |
| Caryophyllaceae (seed frag.) | 1 | | | | | | | | | | | | | | | | | | | | | | | |

Table A4.3 - (continued).

| Period | Late Iron Age/Early Roman period III-VII (1st century BCE) | | | | | | | | | | Early Roman period VIII-IX (1st-2nd centuries CE) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | | | | | | | | | | | | | | | | | | | | | | | | |
| Sector | | | 1 | | | 2 | | | | | 1 | | | | | | | | | | | | | |
| Context | | | N/A | | | B | | | N/A | | 0 | | | | 1 | | | | 2 | | | | | |
| Sampled Context | Hearth | | Combustion | | Concentrated | Hearth | Destruction | | Concentrated | Refuse | Circulation | | | | Refuse | | | Concentrated | | | Refuse | | | |
| S.U. | 1237 | 1238 | 1243 | 1202 | 1236 | 2171 | 2173 | 2136 | 2238 | 2176 | 1075/76 | 1075/76 | 1075/76 | 1075/76 | 1030 | 1030 | 1030 | 1086 | 1080 | 1080 | 1080 | 1080 | 1080 | |
| Sample | 27 | 169 | 23 | 22 | 205 | 161 | 20 | 95 | 66 | 137 | 5 | 50 | 51 | 175 | 46 | 181 | 182 | 67 | 9 | 59 | 60 | 68 | 91 | |
| **Others** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* sp. (seed) | | | | | | 3 | | | | | | | | | | | | | 1 | | | | 1 | |
| *Chenopodium* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus* sp. (capsule frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola litoralis* (achene) | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Echium* sp. (nutlet) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* (mericarp) | | | | | | | | | | | | | | 1 | | | | | | | | | 1 | |
| *Galium* sp. (mericarp) | | | | | | | | | | | 1 | | | | | | | | | | 1 | | | |
| *Galium* sp. (mericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| Lamiaceae (nutlet) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* sp. (seed) | | | | 5 | | | | | | | 1 | | | | | | | | | | | | | |
| *Papaver* sp. (seed) | | | 1 | 2 | | | | | | | | | | | | | | | | | | | | |
| *Plantago lanceolata* (seed) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum aviculare* (achene) | | | | | | 62 | | | | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* (achene) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - lenticular type (achene) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - lenticular type (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - trigonal type (achene) | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene) | | | | | | 14 | | | | | | | | | | | | | | 1 | | | | |
| Polygonaceae (achene frag.) | | | | | | 46 | | | | | | | | | | | | | | | | | | |
| *Portulaca oleraceae* (seed) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ranunculus* sp. (achene) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| *Rumex acetosella* (achene) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus/crispus* (achene) | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| *Rumex crispus/obtusifolius* (achene) | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| *Rumex* sp. (achene) | 1 | 1 | | | | | | 5 | | | | | | | | 1 | | | | | 1 | 1 | | |
| *Rumex* sp. (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sambucus* sp. (stone) | 1 | | | | | | | | | | | | | | | | | | | | | | | |
| *Sambucus* sp. (stone frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sherardia arvensis* (mericarp) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* (seed) | | | | | | | | 1 | | | | | | | | | | | | | | | | |
| *Silene* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | | |
| *Solanum* sp. (seed) | | | | 1 | | 2 | | | | | | | | | | | | | | | | | | |
| *Spergula arvensis* (seed) | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Stellaria/Cerastium* (seed) | 1 | | | | | 4 | 2 | | | | | | | | | | | | | | | | | |
| *Viola* sp. (seed) | | | | 16 | | | | | | | | | | | | | | | | | | | | |
| Undetermined (flower bud frag.) | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (plant spine frag.) | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| Undetermined (peduncule frag.) | | | | | | 1 | | | | | | | | | 1 | | 1 | 1 | | | | | | |
| Undetermined (pericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (fruit/seed) | 1 | 1 | 2 | 7 | 1 | 1 | | | | | | | | | | | 1 | | | 1 | 2 | | 1 | |
| Undetermined (fruit/seed frag.) | 43 | 14 | 199 | 430 | 51 | 233 | 29 | 49 | 195 | | 17 | 102 | 89 | 192 | 165 | 94 | 186 | 71 | 100 | 72 | 127 | 174 | 54 | |

Table A4.3 - (continued).

| **Period** | Early Roman period | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Phase** | VIII-IX (1st-2nd centuries CE) | | | | | | | | | | | | | | | | | | | |
| **Sector** | | | | | | | | | | 1 | | | | | | | | | | |
| **Context** | | | | 3 | | | | | | | | | | 4 | | | | | | |
| **Sampled Context** | | | | Refuse | | | | | Concentrated | | | | | | Refuse | | | | | |
| **Volume (Litres)** | 1 | 5 | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 4.5 | 4.5 | 3 | 3 | 3 | 2.5 | 3.5 | 3.5 | 3 | 4 | 1 |
| **S.U.** | **1059** | **1059** | **1059** | **1081** | **1081** | **1081** | **1081** | **1081** | **1083** | **1027** | **1027** | **1027** | **1027** | **1027** | **1027** | **1027** | **1027** | **1027** | **1027** | **1027** |
| **Sample** | 111 | 177 | 178 | 49 | 55 | 56 | 57 | 58 | 14 | 7 | 8 | 37 | 38 | 40 | 43 | 45 | 47 | 48 | 69 | 110 |
| **Cereal (grains)** | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* | | | | | | | | | | | | | | | | 1 | | | | |
| *Hordeum vulgare* (frag.) | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* | | 1 | 3 | | 1 | | 4 | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (frag.) | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (longitudinal frag.) | | | | | | 2 | | | | | | | | | | | | | | |
| *Panicum miliaceum* | | | | 1 | 1 | 3 | 1 | 2 | 3 | 1 | 1 | | | | | | 1 | 2 | 1 | |
| *Panicum miliaceum* (frag.) | | | | | | | 1 | | | | | | | | | | | | | |
| *Setaria italica* | | | | | | | | | | | | | | | | | | 1 | | |
| *Setaria italica* (frag.) | | | | | | | | | | | | | 1 | | | | | | | |
| *Panicum/Setaria* | | | | | | | | | | | | | | | | | | | | |
| *Panicum/Setaria* (frag.) | | | | | | | | | | | | | | | | | | | | |
| Panicoideae | | | | 1 | | | 1 | | | | 2 | | | | 1 | 2 | | | | |
| Panicoideae (frag.) | | | | | | | 1 | | | | 1 | | | | | | | | | |
| *Triticum* sp. | | | | | | | | | | 1 | | | | | | | | | | |
| *Triticum* sp. (frag.) | | | | | | | | | | | | | | | | | | | | |
| Triticeae (with scutellum) | | | | | | | | | | 1 | | | 2 | | 1 | | | | | |
| Triticeae (without scutellum) | 1 | | 1 | 4 | | 6 | 1 | 2 | | | 2 | 1 | 1 | 1 | 2 | 1 | | 2 | | |
| Triticeae (embryo) | | | | | | | | | | | | | | | | | | | | |
| Triticeae/Panicoideae (agglomerated frag.) | | | | | | | | | | | | | | | | | | | | |
| **Cereal (chaff)** | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (rachis segment w/ 1 node) | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* (rachis segment with 2 nodes) | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis segment w/ 1 node) | | | | | | | | 1 | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | | | | 3 | | 1 | | 1 | 1 | | | 1 | 1 | | | 1 | | 1 | | |
| *Triticum aestivum/durum* (rachis internode frag.) | | | | | | | | | | | | | | | | | | | | |
| *Triticum dicoccum/spelta* (glume base) | | | | | | | | 1 | | | 1 | | | | | | | | | |
| *Triticum* sp. (rachis frag.) | | | | | | | | 1 | | | | | | | | | | | | |
| Triticeae (rachis internode frag.) | | | | | | | | | | | | | | | | | | | | |
| Triticeae (husks frag.) | | | | | | | | | | | | | | | | | | | | |
| Triticeae (rachis frag.) | | | | 7 | | 1 | | | 3 | | | | | | | | | 1 | | 3 |
| Triticeae (awn frag.) | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | | | 1 | | | | | | | | 1 | | | | | | | | | |
| *Avena* sp. (frag.) | | | | | | | | | | | | | | | | | | | | |
| *Digitaria sanguinalis* | | | | | | | | | | | | | | | | | | | | |
| *Digitaria* sp. (frag.) | | | | | | | | | | | | | | | | | | | | |
| *Lolium/Festuca* | | | | | | | | | | 1 | | | | | | | | | | |
| *Phalaris* sp. | | | | | | | | | | | | | | | | | | 1 | | |
| *Poa* sp. | | | | 1 | | | | | | | | 1 | | | 1 | | | | | |
| *Poa* sp. (frag.) | 1 | | | | | | | | | | | | | | | | | | | |
| *Setaria* sp. | | | | | | | | | | | | | | | | | | | | |
| Poaceae | | | | 1 | | | | | | | | 1 | | | | 1 | | | | |
| Poaceae (frag.) | | | | | 2 | | 1 | | | | | | | | 1 | | | | | |

Table A4.3 - (continued).

| Period | Early Roman period VIII-IX (1st-2nd centuries CE) | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | | | | | | | | | | | | | | | | | | | | |
| Sector | | | | | | | | | | 1 | | | | | | | | | | |
| Context | | | | 3 | | | | | Concentrated | | | | | 4 | | | | | | |
| Sampled Context | | | | Refuse | | | | | | | | | | | Refuse | | | | | |
| S.U. | 1059 | 1059 | 1059 | 1081 | 1081 | 1081 | 1081 | 1081 | 1083 | 1027 | 1027 | 1027 | 1027 | 1027 | 1027 | 1027 | 1027 | 1027 | 1027 | 1027 |
| Sample | 111 | 177 | 178 | 49 | 55 | 56 | 57 | 58 | 14 | 7 | 8 | 37 | 38 | 40 | 43 | 45 | 47 | 48 | 69 | 110 |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | | | | | |
| Poaceae (awn frag.) | | | | | | | | | | | | | | | | | | | | |
| Poaceae (husks frag.) | | | | | | | | | | | | | | | | | | | | |
| Poaceae (rachis frag.) | | | | | | | | | | | | | | 1 | | | | | | |
| **Fabaceae (seeds)** | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* (cotyledon) | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* (frag.) | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (seed) | | | | 1 | | | | | | | | 1 | | | | | | | | |
| *Vicia/Lathyrus* (cotyledon) | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (frag.) | | | | | | | | | | | | | | | | | | | | |
| Fabaceae – *Genista* type | | | | | | | | 2 | | 1 | | | | | 2 | 1 | | 2 | 1 | |
| Fabaceae – *Genista* type (frag.) | | | | 1 | | | | | | | | | | | | | 3 | | | |
| Fabaceae – *Melilotus* type | | | | | | | | | | | | | | | | | | | | |
| Fabaceae – *Trifolium* type | | | | 1 | | | | | | 1 | | | | | | | | 1 | | |
| Fabaceae (seed) | 2 | 1 | | 3 | | | | | | | | | | 1 | | | | | | |
| Fabaceae (cotyledon) | | | | | | | | | | | | | | | | | | | | |
| Fabaceae (seed frag.) | | | | 3 | | | | 1 | | | | | 1 | | | | | 1 | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | |
| *Corema album* (seed) | | | | | | | | 1 | | | | | | | | | | | | |
| *Corema album* (seed frag.) | | | | | | | | | | | | | | | | | | | | |
| *Corylus avellana* (pericarp frag.) | | | | | | | | | | | | | | | | | | | | |
| *Crataegus monogyna* (endocarp) | | | | | | | | | | | | | | | | | | | | |
| *Ficus carica* (seed) | | | | | | | | | | | | | | | | | | | | |
| *Olea europaea* (endocarp and seed) | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (acorn) | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon) | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon frag.) | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cupule) | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (pericarp base) | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (pericarp base frag.) | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (pericarp frag.) | | | | | | | | | | | | | | | | | | | | |
| *Rubus* sp. (seed) | | | | | | | | | | | 1 | | | | | | | | | |
| *Rubus* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* (seed) | | | | | | | | | | 1 | | | | | | | | | | |
| *Vitis vinifera* (pedicel) | | | | | | | | 1 | | | | | | | | | | | | |
| *Vitis vinifera* (frag.) | | | 1 | 7 | 1 | | | 1 | | 2 | | | | | | 2 | | 2 | | |
| Rosaceae (endocarp) | | | | | | | | | | | | | | | | | | | | |
| **Others** | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* (seed) | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* (seed frag.) | | | | | | | | | | | | | | | | | | | | |
| Apiaceae (achene frag.) | | | | | | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* type (cypsela) | 1 | | | | | | | | | | | | | | | | | | | |
| Asteraceae (cypsela) | 7 | | | | | | | | 6 | | | | | | | | | | | |
| Asteraceae (cypsela frag.) | | | | | | | | | 1 | | | | | | | | | | | |
| *Carex* sp. (achene) | | | | | | | | | | | | | | | | | | | | |
| Caryophyllaceae (seed) | | | | | | | | | | | | | | | | | | | | |
| Caryophyllaceae (seed frag.) | | | | | | | | | | | | | | | | | | | | |

Table A4.3 - (continued).

| Period | Early Roman period VIII-IX (1st-2nd centuries CE) | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | | | | | | | | | | | | | | | | | | | | |
| Sector | | | | | | | | | | 1 | | | | | | | | | | |
| Context | | | | 3 | | | | | | | | | | 4 | | | | | | |
| Sampled Context | | | | Refuse | | | | | Concentrated | | | | | | Refuse | | | | | |
| **S.U.** | **1059** | **1059** | **1059** | **1081** | **1081** | **1081** | **1081** | **1081** | **1083** | **1027** | **1027** | **1027** | **1027** | **1027** | **1027** | **1027** | **1027** | **1027** | **1027** | **1027** |
| **Sample** | 111 | 177 | 178 | 49 | 55 | 56 | 57 | 58 | 14 | 7 | 8 | 37 | 38 | 40 | 43 | 45 | 47 | 48 | 69 | 110 |
| **Others** | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* sp. (seed) | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae (seed frag.) | | | | | | | | | | | | | | | | | | | | |
| *Cistus* sp. (capsule frag.) | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola litoralis* (achene) | | | | | | | | | | | | | | | | | | | | |
| *Echium* sp. (nutlet) | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* (mericarp) | | | | | | | | | | | | | | | | | | | | |
| *Galium* sp. (mericarp) | | | | 1 | | | | | | | | | 1 | | | | | | | |
| *Galium* sp. (mericarp frag.) | | | | | | | | | | | | | | | | | | | | |
| Lamiaceae (nutlet) | | | | | | | | | | | | | | | | | | | | |
| *Linum* sp. (seed) | | | | | | | | | | | | | | | | | | | 1 | |
| *Malva* sp. (seed) | | | | | | | | | | | | | | | | | | | | |
| *Papaver* sp. (seed) | | | | | | | | | | | | | | | | | | | | |
| *Plantago lanceolata* (seed) | | | | | | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed) | | | | | | | | | | | | | | | | | | | | |
| *Polygonum aviculare* (achene) | | | | | | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* (achene) | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - lenticular type (achene) | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - lenticular type (achene frag.) | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - trigonal type (achene) | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene) | 1 | | | | | | | | | | | | | | | | | 1 | | |
| Polygonaceae (achene frag.) | | | | | | | | | | | | | | | | | | | | |
| *Portulaca oleraceae* (seed) | | | | | | | | | | | | | | | | | | | | |
| *Ranunculus* sp. (achene) | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | | | | | | | | | | | | | | | | | | | |
| *Rumex acetosella* (achene) | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus/crispus* (achene) | | | | | | | | | | | | | | | | | | | | |
| *Rumex crispus/obtusifolius* (achene) | | | | | | | | | | | | | | | | | | | | 1 |
| *Rumex* sp. (achene) | | | | | | | | | | | | | | | | | | | | |
| *Rumex* sp. (achene frag.) | | | | | | | | | | | | | | | | | | | | |
| *Sambucus* sp. (stone) | | | | | | | | | | | | | | | | | | | | |
| *Sambucus* sp. (stone frag.) | | | | | | | | | | | | | | | | | | | | |
| *Sherardia arvensis* (mericarp) | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* (seed) | | | | | | | | | | | | | | | | | | 1 | | |
| *Silene* sp. (seed) | | | | | | | | | | | | | | | | 1 | | | | |
| *Solanum* sp. (seed) | | | | | | | | | | | | | | | | | | | | |
| *Spergula arvensis* (seed) | | | | | | | | | | | | | | | | | | | | |
| *Stellaria/Cerastium* (seed) | | | | | | | | | | | | | | | | | | | | |
| *Viola* sp. (seed) | | | | | | | | | | | | | | | | | | | | |
| Undetermined (flower bud frag.) | | | | | | | | | | | | | | | | | | | | |
| Undetermined (plant spine frag.) | 1 | | | | | | | | | | | | | | | | | | | |
| Undetermined (peduncule frag.) | | | | 1 | | | | | | | | | | | | | | | | |
| Undetermined (pericarp frag.) | | | | | | | | | | | | | | | | | | | | |
| Undetermined (fruit/seed) | 6 | 2 | | 1 | | | | | 2 | | 7 | 4 | | | | | | | 1 | |
| Undetermined (fruit/seed frag.) | 47 | 21 | 50 | 196 | 43 | 44 | 86 | 46 | 102 | 12 | 30 | 51 | 13 | 51 | 13 | 52 | 17 | 17 | 19 | 3 |

Table A4.3 - (continued).

| Period | Early Roman period VIII-IX (1st-2nd centuries CE) | | | | | | | | | | | | | | | | | | | | Late Antiquity X (3rd-7th centuries CE) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | | | | | | | | | | | | | | | | | | | | | | | |
| Sector | | | | | | | | | 1 | | | | | | | 2 | | | | | 2 | | |
| Context | | | | 4 | | | | | | | 5 | | | 6 | N/A | | | | | | N/A | | |
| Sampled Context | | | | Refuse | | | | | | | Refuse | | | Concentrated | Hearth | Combustion | | N/A Stone | Concentrated | | Refuse | | |
| Volume (Litres) | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 4 | 5 | 4 | 4 | 4 | 4 | 5 | 4 | 2 | 1 | 1 | 5 | 4 | 2 | 0.1 | RM |
| S.U. | **1084** | **1084** | **1084** | **1084** | **1084** | **1084** | **1084** | **1084** | **1084** | **1085** | **1085** | **1085** | **1085** | **1077** | **1049** | **2065** | **2089** | **2044** | **2056** | **2056** | **2017** | **2158** | **2157** |
| Sample | 15 | 12 | 19 | 41 | 42 | 167 | 184 | 185 | 186 | 36 | 39 | 61 | 62 | 44 | 150 | 109 | 106 | 108 | 4 | 52 | 151 | 216 | 134 |
| **Cereal (grains)** | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* | | | | | | | | | | | | | | | | | 1 | | | | | | |
| *Hordeum vulgare* (frag.) | | | | | | | | | | | | | 1 | | | | | | | | | | |
| *Triticum aestivum/durum* | | | 1 | | | | 1 | 1 | | | 2 | | | 1 | | 2 | 1 | 1 | | | | | |
| *Triticum aestivum/durum* (frag.) | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (longitudinal frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* | | | | | 2 | 1 | | 2 | 1 | 1 | | 1 | 4 | | | | | 2 | | | 1 | | |
| *Panicum miliaceum* (frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* | | | | | | | 1 | | | | 1 | 1 | | | | | | | 2 | | | | |
| *Setaria italica* (frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum/Setaria* | | | | | | | | | 2 | | | | | | | | | 1 | | | | | |
| *Panicum/Setaria* (frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae | | | 1 | | | | 2 | 1 | 2 | | 1 | 2 | 1 | | | | | | | 1 | | | |
| Panicoideae (frag.) | | | | | 2 | | 1 | | | 2 | 1 | 2 | 1 | | | | | 1 | 2 | | 2 | | |
| *Triticum* sp. | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. (frag.) | | | | | | | | | | | | | | 2 | | | | | | 1 | | | |
| Triticeae (with scutellum) | 1 | | | | | | | | 1 | | | | 1 | | | | | | | | | | |
| Triticeae (without scutellum) | 2 | | 1 | | 1 | 2 | | 3 | | | 4 | | 2 | 2 | 1 | 1 | 2 | | 1 | | | | |
| Triticeae (embryo) | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae/Panicoideae (agglomerated frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| **Cereal (chaff)** | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* (rachis segment w/ 1 node) | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* (rachis segment w/ 2 nodes) | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis segment w/ 1 node) | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum/durum* (rachis node) | | | 1 | | | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | | 1 | | | |
| *Triticum aestivum/durum* (rachis internode frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum dicoccum/spelta* (glume base) | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* sp. (rachis frag.) | | | 1 | | | | 1 | 2 | | | | | | | | | | | | | 1 | | |
| Triticeae (rachis internode frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (husks frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae (rachis frag.) | | | 1 | | | 2 | 1 | | 1 | | | | | | | | | | | | | | |
| Triticeae (awn frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | | | | | | | | | | | 1 | | | | | | | | | | | | |
| *Avena* sp. (frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Digitaria sanguinalis* | | | | | | | | | | | | | | | | | | | | | | | |
| *Digitaria* sp. (frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Lolium/Festuca* | | | | | | | | | | | | | | 2 | | | | | | | | | |
| *Phalaris* sp. | | | | | | | | | | | | | | | | | 1 | | | | | | |
| *Poa* sp. | | | | | | | | | | | | | | | | | | | | | | | |
| *Poa* sp. (frag.) | | | | | | | | | | | | | | | | | | | | | 1 | | |
| *Setaria* sp. | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae | 1 | | | | 1 | | | | | 2 | | | | | | | 1 | | | | | | |
| Poaceae (frag.) | | | | | | | | | | | | | | | | | | | | | | | |

Table A4.3 - (continued).

| Period | Early Roman period VIII-IX (1st-2nd centuries CE) | | | | | | | | | | | | | | | | | | | | Late Antiquity X (3rd-7th centuries CE) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | | | | | | | | | | | | | | | | | | | | | | | |
| Sector | | | | | | | | 1 | | | | | | | | 2 | | | | | 2 | | |
| Context | | | | 4 | | | | | | 5 | | | | 6 | N/A | | | N/A | | | | N/A | |
| Sampled Context | | | | Refuse | | | | | | Refuse | | | | Concentrated | Hearth | Combustion | | Stone | Concentrated | | | Refuse | |
| S.U. | 1084 | 1084 | 1084 | 1084 | 1084 | 1084 | 1084 | 1084 | 1084 | 1085 | 1085 | 1085 | 1085 | 1077 | 1049 | 2065 | 2089 | 2044 | 2056 | 2056 | 2017 | 2158 | 2157 |
| Sample | 15 | 12 | 19 | 41 | 42 | 167 | 184 | 185 | 186 | 36 | 39 | 61 | 62 | 44 | 150 | 109 | 106 | 108 | 4 | 52 | 151 | 216 | 134 |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (awn frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (husks frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae (rachis frag.) | | | | | | | | 2 | 2 | | | | | | | | | | | 1 | | | |
| **Fabaceae (seeds)** | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* (cotyledon) | | | | | | | | | | | | | | | | | | | | | | | 2 |
| *Vicia faba* (frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus* (seed) | | | | | 1 | | | | | | | | | 1 | | | | | | | | | |
| *Vicia/Lathyrus* (cotyledon) | | | | | | | | | | | | | | | | | | 2 | | | | | |
| *Vicia/Lathyrus* (frag.) | | | | | 1 | | | | | | | | | | | | | | | | | | |
| Fabaceae – *Genista* type | | 1 | 1 | | | | | | | | | 1 | | | | | | | 2 | | | | |
| Fabaceae – *Genista* type (frag.) | | | | | | | | | | 1 | | | | | | | | | | | | | |
| Fabaceae – *Melilotus* type | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Fabaceae – *Trifolium* type | | | | | | | | | | | 1 | | | | | | | | | | | | |
| Fabaceae (seed) | 1 | | | | 1 | 1 | 1 | | | | | 1 | | 1 | | | | | 1 | 1 | 1 | | |
| Fabaceae (cotyledon) | | | | | | | | | 1 | | | | | | | | | | | | | | |
| Fabaceae (seed frag.) | | | | | | | | 2 | 1 | | 1 | | | | | | | | 1 | | 1 | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | |
| *Corema album* (seed) | | | | | | | | 2 | | | 1 | | | | | | | | | | 1 | | |
| *Corema album* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Corylus avellana* (pericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Crataegus monogyna* (endocarp) | | | | | | | | | | | | | | | | | | | | | | | |
| *Ficus carica* (seed) | | | | | | | | | | | | | | | | | | | | | | | |
| *Olea europaea* (endocarp and seed) | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (acorn) | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon) | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cotyledon frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (cupule) | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (pericarp base) | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (pericarp base frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* sp. (pericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Rubus* sp. (seed) | | | | | 1 | | | | | | 1 | | | | | | | | | | | | |
| *Rubus* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | | | 1 | |
| *Vitis vinifera* (seed) | | | | | | 1 | | | | | | | | | | | | 1 | | | | | |
| *Vitis vinifera* (pedicel) | | 1 | | | | | | | 1 | | | | | | | | | | | | | | |
| *Vitis vinifera* (frag.) | | 6 | 1 | | | | | | | 1 | | 4 | 5 | | | | | | 1 | | | | |
| Rosaceae (endocarp) | | | | | | | | | | | | | | | | | | | | | | | |
| **Others** | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* (seed) | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| Apiaceae (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* type (cypsela) | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae (cypsela) | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae (cypsela frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Carex* sp. (achene) | | | | | | | | | | | | | | | | | | | | | | | |
| Caryophyllaceae (seed) | | | | | | | | | | | | | | | | | | | | | | | |
| Caryophyllaceae (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | |

Table A4.3 - (continued).

| Period | Early Roman period VIII-IX (1st-2nd centuries CE) | | | | | | | | | | | | | | | | | | | | Late Antiquity X (3rd-7th centuries CE) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase | | | | | | | | | | | | | | | | | | | | | | | |
| Sector | 1 | | | | | | | | | | | | | | | 2 | | | | | 2 | | |
| Context | 4 | | | | | | | | | | 5 | | | 6 | N/A | | | | | | | | |
| Sampled Context | Refuse | | | | | | | | | | Refuse | | | Concentrated | Hearth | Combustion | | Stone | Concentrated | | Refuse | | |
| S.U. | 1084 | 1084 | 1084 | 1084 | 1084 | 1084 | 1084 | 1084 | 1084 | 1085 | 1085 | 1085 | 1085 | 1077 | 1049 | 2065 | 2089 | 2044 | 2056 | 2056 | 2017 | 2158 | 2157 |
| Sample | 15 | 12 | 19 | 41 | 42 | 167 | 184 | 185 | 186 | 36 | 39 | 61 | 62 | 44 | 150 | 109 | 106 | 108 | 4 | 52 | 151 | 216 | 134 |
| **Others** | | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* sp. (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae (seed frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus* sp. (capsule frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola litoralis* (achene) | | | | | | | | | | | | | | | | | | | | | | | |
| *Echium* sp. (nutlet) | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* (mericarp) | | | 1 | | | | | | | | | | | | | | | | | | | | |
| *Galium* sp. (mericarp) | | | | | | | | | | | | | | | | 1 | | | | | | | |
| *Galium* sp. (mericarp frag.) | | | | | | | | | | | | | | | | | 1 | | | | | | |
| Lamiaceae (nutlet) | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* sp. (seed) | | | 1 | | | | | | | | | | | | | | | | | | | | |
| *Papaver* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago lanceolata* (seed) | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum aviculare* (achene) | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* (achene) | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - lenticular type (achene) | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - lenticular type (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* - trigonal type (achene) | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene) | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Portulaca oleracea* (seed) | | | | | | | | | | | | | | | | | | | | | | | |
| *Ranunculus* sp. (achene) | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment) | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex acetosella* (achene) | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus/crispus* (achene) | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex crispus/obtusifolius* (achene) | | | | | | | | | | | | | | 1 | | | | | | 1 | | | |
| *Rumex* sp. (achene) | | | | | | | | | | | | | | | | 1 | 6 | | | | | | |
| *Rumex* sp. (achene frag.) | | | | | | | | | | | | | | | | 1 | | | | | | | |
| *Sambucus* sp. (stone) | | | | | | | | | | | | | | | | | | | | | | | |
| *Sambucus* sp. (stone frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| *Sherardia arvensis* (mericarp) | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* (seed) | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | |
| *Solanum* sp. (seed) | | | | | | | | | | | | | | | | | | | | | | | |
| *Spergula arvensis* (seed) | | | | | | | | | | | | | | | | | | | | | | | |
| *Stellaria/Cerastium* (seed) | | | | | | | | | | | | | | | 1 | | | | | | | | |
| *Viola* sp. (seed) | | 1 | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (flower bud frag.) | | | | | | | | | | | 1 | | | | | 5 | 2 | | | | | | |
| Undetermined (plant spine frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (peduncule frag.) | | | | | | | 1 | | | | | | | | | | | | | | | | |
| Undetermined (pericarp frag.) | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined (fruit/seed) | | | | | 2 | 2 | | | 1 | | 2 | | | | | | 4 | | | 1 | | | |
| Undetermined (fruit/seed frag.) | 24 | 74 | 313 | 20 | 135 | 80 | 63 | 65 | 98 | 19 | 47 | 51 | 60 | | 24 | 16 | 12 | 4 | 26 | 98 | 10 | 1 | 55 |

Table A4.3 - (continued).

# Attachment 5 - Crops on the edge of a cliff: Storage at Castro S. João das Arribas (Northwest Iberia) in the Late Antiquity (Supplementary material of Chapter 7)

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| **Volume** | 0.5 | 0.2 | 3 | 1 | N/A | 0.9 | 0.5 | 0.1 | 1.5 | 1.5 | 0.1 | 0.5 | 0.5 | 0.5 | 0.1 | N/A | N/A | 1 | N/A | N/A | 0.1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **S.U.** | 202 | 202 | 228 | 228 | 228 | 228 | 230 | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 234 | 238 | 242 | 203 | 205 | 205 |
| **Sample** | **6** | **8** | **4** | **15** | **21** | **22** | **16** | **121** | **13** | **14** | **23** | **24** | **25** | **26** | **29** | **20** | **28** | **5** | **12** | **10** | **17** |
| **Cereals (grain)** | | | | | | | | | | | | | | | | | | | | | |
| *Avena* sp. | | | | | | 1 | 1 | | | | | | | | | | | | | | |
| *Hordeum vulgare* | | | 4 | | | | 108 | | | | | | | | 52 | | | | | | 18 |
| *Hordeum vulgare* (frag.) | | | 4 | | | | 42 | | | | 1 | | | | 48 | | | | | | 11 |
| *Panicum miliaceum* | | | 135 | | | | 6 | | | | | | | | 2 | | | | | | |
| *Panicum miliaceum* (frag.) | | | 2 | | | | 2 | | | | | 1 | | | 1 | | | | | | |
| *Setaria italica* | | | | | | | | | | | | | | | | | | | | 9 | 1 |
| *Panicum/Setaria* | | | | | | | | | | | | | | | | | | | 1 | | |
| Panicoideae | | | 4 | | | | | | 1 | | | | | | | | | | | | |
| Panicoideae (frag.) | | | 5 | | | | 2 | | | 1 | | | | | 2 | | | | | | |
| Panicoideae (scutellum) | | | 839 | | | | 4 | | | 1 | | | | | 1 | | | | | | |
| *Secale cereale* | 3,121 | 478 | 594 | 13,124 | 22 | 5,935 | 11,832 | 1,542 | 83 | 16 | 1,529 | 15 | 1,497 | 285 | 7,831 | 1 | 5 | 2 | | 39 | 793 |
| *Secale cereale* (frag.) | 1,020 | 298 | 121 | 788 | 4 | 1,293 | 1,054 | 862 | 16 | | 644 | 4 | 758 | 50 | 969 | | 1 | | | 4 | 86 |
| *Secale cereale* (longitudinal frag.) | 94 | 23 | | 200 | | 111 | 76 | 54 | | | 29 | 1 | 54 | 1 | 33 | | | | 1 | | 4 |
| *Secale cereale* (agglomerate) | | | | | | 24 | | | | | 1 | | 22 | | | 1 | 1 | | | | 17 |
| *Secale cereale* (agglomerate frag.) | | | | | | 8 | | | | | 1 | | 2 | | | | | | | | |
| *Secale/Agrostemma* (agglomerate) | | | | | | | | | | | | | | | | | | | | | 9 |
| *Secale/Triticum aestivum/durum* (agglomerate) | | | | | | | | | | | | | | | | | 1 | | | | 21 |
| *Secale/Triticum aestivum/durum/Agrostemma* (agglomerate) | | | | | | | | | | | | | | | | | | | | | 3 |
| *Triticum aestivum/durum* | | | 10 | 2 | | 2 | 44 | | 19 | 16 | 3 | | | | 18 | | 1 | | | 29 | 318 |
| *Triticum aestivum/durum* (frag.) | 1 | | 7 | | | | 6 | | 17 | 7 | | | | | | | | | | 7 | 52 |
| *Triticum aestivum/durum* (longitudinal frag.) | | | 1 | | | | 5 | | 2 | 7 | | | | | | | | | | 3 | 7 |
| *Triticum aestivum/durum* (agglomerate) | | | | | | | | | | | | | | | | | | | | | 8 |
| *Triticum aestivum/durum/Agrostemma* (agglomerate) | | | | | | | | | | | | | | | | | | | | | 3 |
| *Triticum* sp. | | | 2 | | | | | | | | | | | | 2 | | | | | 2 | 7 |
| *Triticum* sp. (frag.) | | | 13 | | | | | | 2 | | | | | | 2 | | | | | 6 | 9 |
| Triticeae (with scutellum) | 1,044 | 136 | 3,205 | 8,659 | 13 | 10,979 | 9,907 | 277 | 431 | 225 | 502 | 7 | 2,237 | 42 | 4,973 | | 1 | | | 33 | 281 |
| Triticeae (without scutellum) | 1,968 | 1,373 | 2,451 | 2,069 | 92 | 2,244 | 1,520 | 1,966 | 1,004 | 1,615 | 1,459 | 151 | 1,088 | 120 | 1,464 | 9 | 13 | 3 | 9 | 169 | 749 |
| Triticeae (agglomerate) | | | | | | | | | | | | | | | | | | | | | 2 |
| Triticeae (agglomerate frag.) | | | | | | 37 | | | | | | | | | | | | | | | 2 |
| Triticeae/*Agrostemma* (agglomerate) | | | | | | | | | | | | | | | | | | | | | 1 |
| Triticeae/Charcoal (agglomerate frag.) | | | | | | 1 | | | | | | | | | | | | | | | |
| Triticeae (scutellum) | 968 | 192 | 3,514 | 12,984 | 7 | 12,437 | 6,915 | 405 | 180 | 265 | 927 | 6 | 8,021 | 4 | 1,537 | 2 | | | | 13 | 165 |
| Triticeae (embryo) | 3 | 2 | | 4 | | 10 | 8 | 6 | | 2 | 6 | | 3 | | 4 | | | | | 2 | |

Table A5.1 - Full Carpological results (units and fragments).

| S.U. | 202 | 202 | 228 | 228 | 228 | 228 | 230 | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 234 | 238 | 242 | 203 | 205 | 205 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample** | **6** | **8** | **4** | **15** | **21** | **22** | **16** | **121** | **13** | **14** | **23** | **24** | **25** | **26** | **29** | **20** | **28** | **5** | **12** | **10** | **17** |
| **Other Poaceae (grain and chaff)** | | | | | | | | | | | | | | | | | | | | | |
| *Bromus* sp. (grain) | 1 | | | | | | | 6 | | | | | | | | | | | | | |
| *Bromus* sp. (grain frag.) | 1 | | 1 | | | | 1 | 4 | | | | | | | | | | | | | |
| Poaceae (grain) | 1 | | | 1 | | | | 1 | | | 1 | | | | 1 | | | | | | 1 |
| Poaceae (grain frag.) | | | | 1 | | | 1 | | | | 1 | 1 | | | | | | | | | |
| Poaceae (rachis frag.) | | | | | | | | | | | | | | | | | | | | 1 | |
| Poaceae (scutellum) | | | 4 | | | | 1 | | | | | | | | | | | | | | |
| Poaceae (scutellum frag.) | | | 3 | | | | | | | | | | | | | | | | | | |
| **Fabaceae (seed)** | | | | | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus/Pisum* (cotyledon) | | | | 1 | | | | | | | | | | | | | | | | | |
| *Vicia/Lathyrus/Pisum* (seed frag.) | | | 1 | | | | | | | | | | | | | | | | | | |
| Fabaceae | | | | | | | | 3 | | | | | | | | | | | | | |
| **Fibre/Oil plant** | | | | | | | | | | | | | | | | | | | | | |
| *Linum usitatissimum* (seed) | | | | | | | | | | | | 136 | | 2 | | | | | | | |
| *Linum usitatissimum* (seed frag.) | | | | | | | | | | | | 96 | | 2 | | | | | | | |
| *Linum usitatissimum* (agglomerate) | | | | | | | | | | | | 3 | | | | | | | | | |
| **Other remains** | | | | | | | | | | | | | | | | | | | | | |
| *Agrostemma githago* (capsule frag.) | 1 | 1 | | | | | 1 | 2 | | | 1 | | | | | | | | | | 6 |
| *Agrostemma githago* (seed) | 99 | 27 | 9 | 914 | | 583 | 316 | 49 | 4 | 3 | 205 | | 5 | 2 | 8 | | | | 1 | 3 | 233 |
| *Agrostemma githago* (seed frag.) | 6 | 4 | 15 | 12 | | 13 | 10 | 10 | 4 | 7 | 66 | | 1 | | 13 | | | | | | 18 |
| Apiaceae (achene) | | | | | | | | 2 | | | | | | | | | | | | | |
| Apiaceae (achene frag.) | | | | | | | | 1 | | | | | | | | | | | | | |
| Caryophyllaceae (seed) | | | 1 | | | | | | | 2 | | | | | | | | | | 2 | 1 |
| Caryophyllaceae (seed frag.) | | 1 | | | | 1 | | | | | | | 2 | | | | | | | | |
| *Galium* sp. (mericarp) | | | 1 | | | | | | | | | 5 | | | | | | | | | |
| *Malva* sp. (seed) | | | 1 | | | | | | | | | | | | | | | | | | |
| Polygonaceae (achene) | | | | | | | | | | 1 | | | | | | | | | | | |
| *Polygonum* sp. (achene) | | | | | | | | 1 | | | | | | | | | | | | | |
| *Raphanus raphanistrum* (siliqua segment frag.) | | | | | | | | 1 | | | | | | | | | | | | | |
| *Rumex* sp. (achene) | | 1 | | | | | | | | | | | | | | | | | | | |
| *Veronica* sp. (seed) | 1 | | | | | | | | | | | | | | | | | | | | |
| Undetermined (leaf frag.) | | | | | | | | | | | 1 | | | | | | | | | | |
| Undetermined (seed/fruit) | | | 3 | 2 | | 1 | 1 | | | 1 | | 6 | 1 | | | | | | | | 1 |
| Undetermined (seed/fruit frag.) | 2,682 | 2,163 | 3,783 | 3,159 | 531 | 3,150 | 1,524 | 1,199 | 1,476 | 2,582 | 2,511 | 716 | 3,291 | 106 | 1,523 | 133 | 72 | 29 | 1 | 362 | 1,593 |

Table A5.1 - (continued).

# Attachment 6 - Crops on the Rocks: Production, Processing, and Storage at the Early Medieval Site of Senhora Do Barrocal (Municipality of Sátão, Central Portugal) (Supplementary material of Chapter 8)

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| Sample | Square | Campaign | S.U. | S.U. (description) | Structure | Occupation | Moment | Processing | Volume | Sample analysed |
|---|---|---|---|---|---|---|---|---|---|---|
| **126** | E5 | 2014 | 115 | Occupation/Circulation layer | Habitation structure 09 | Phase 1 | 1st | Handpicked | N/A | Yes |
| **138** | E6 | 2014 | 115 | Occupation/Circulation layer | Habitation structure 09 | Phase 1 | 1st | Handpicked | N/A | Yes |
| **139** | D6 | 2014 | 115 | Occupation/Circulation layer | Habitation structure 09 | Phase 1 | 1st | Handpicked | N/A | Yes |
| **142** | E6 | 2014 | 115 | Occupation/Circulation layer | Habitation structure 09 | Phase 1 | 1st | Handpicked | N/A | Yes |
| **143** | C6 | 2014 | 115 | Occupation/Circulation layer | Habitation structure 09 | Phase 1 | 1st | Handpicked | N/A | Yes |
| **151** | E6 | 2014 | 115 | Occupation/Circulation layer | Habitation structure 09 | Phase 1 | 1st | Handpicked | N/A | Yes |
| **544** | C6 | 2014 | 115 | Occupation/Circulation layer | Habitation structure 09 | Phase 1 | 1st | Handpicked | N/A | Yes |
| **546** | D6 | 2014 | 115 | Occupation/Circulation layer | Habitation structure 09 | Phase 1 | 1st | Handpicked | N/A | Yes |
| **137** | E4 | 2014 | 116 | Occupation/Circulation layer | Habitation structure 09 | Phase 1 | 1st | Handpicked | N/A | Yes |
| **140** | G4 | 2014 | 116 | Occupation/Circulation layer | Habitation structure 09 | Phase 1 | 1st | Handpicked | N/A | Yes |
| **144** | E5 | 2014 | 116 | Occupation/Circulation layer | Habitation structure 09 | Phase 1 | 1st | Handpicked | N/A | Yes |
| **158** | G5 | 2014 | 116 | Occupation/Circulation layer | Habitation structure 09 | Phase 1 | 1st | Handpicked | N/A | Yes |
| **214** | D2 | 2016 | 116 | Occupation/Circulation layer | Habitation structure 09 | Phase 1 | 1st | Handpicked | N/A | Yes |
| **548** | G4 | 2014 | 116 | Occupation/Circulation layer | Habitation structure 09 | Phase 1 | 1st | Handpicked | N/A | Yes |
| **549** | G5 | 2014 | 116 | Occupation/Circulation layer | Habitation structure 09 | Phase 1 | 1st | Handpicked | N/A | Yes |
| **123** | G6 | 2014 | 106 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **125** | F5 | 2014 | 106 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **129** | F4 | 2014 | 106 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **132** | D5 | 2014 | 106 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **209** | F1' | 2016 | 106 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **212** | E0 | 2016 | 106 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **213** | E0 | 2016 | 106 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **224** | F1' | 2016 | 106 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **225** | D0 | 2016 | 106 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **236** | F0 | 2016 | 106 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **248** | C0 | 2016 | 106 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **260** | F0 | 2016 | 106 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **261** | F1' | 2016 | 106 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **293** | D1 | 2016 | 106 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **294** | D1' | 2016 | 106 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **521** | B1'/C1' | 2016 | 106 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **1** | C4 | 2014 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | No data | Yes |
| **7** | B3/C3 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **8** | F1 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **18** | E1 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **25** | B3/C3 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **38** | H4 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **39** | D2 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **44** | C5 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **45** | B6/C6 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **63** | D1 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **65** | F1 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **66** | F1 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **78** | D1 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **79** | B6/C6 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **80** | C6 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **88** | C6 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **91** | B6/C6 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **92** | F1 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **93** | C3 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **94** | C1 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **95** | C3 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **99** | B6/C6 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **102** | B6/C6 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **105** | B6/C6 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **106** | B6/C6 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **107** | B6/C6 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **113** | C1 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **115** | B6/C6 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **120** | B6/C6 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **121** | F1 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **122** | C6 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **131** | B6/C6 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **133** | D3 | 2014 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **146** | C4 | 2014 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **148** | D4 | 2014 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **155** | D3 | 2014 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **157** | C6 | 2014 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **159** | C3 | 2014 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **162** | B6/C6 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **164** | C5 | 2014 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **168** | D3 | 2014 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **171** | B6/C6 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | No data | Yes |
| **172** | B6/C6 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | No data | Yes |
| **173** | C6 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | No data | Yes |
| **181** | B3/C3 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | No data | Yes |
| **182** | B6/C6 | 2015 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | No data | Yes |
| **183** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **184** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **185** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **186** | B7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **187** | E7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **188** | D8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **189** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **190** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **191** | C8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **192** | E1 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **193** | C9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **194** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **195** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **196** | D9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |

Table A6.1 - General Inventory.

| Sample | Square | Campaign | S.U. | S.U. (description) | Structure | Occupation | Moment | Processing | Volume | Sample analysed |
|---|---|---|---|---|---|---|---|---|---|---|
| **197** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **198** | C8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **199** | C8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **200** | B7/C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **201** | E1' | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **202** | C9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **203** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **204** | C8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **205** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **206** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **215** | D9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **218** | B7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **219** | C8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **222** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **230** | C9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **258** | C9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **259** | D7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **262** | C8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **264** | C9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **265** | D1' | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **266** | B7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **267** | B7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **276** | C8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **278** | E1' | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **279** | D0 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **280** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **281** | C8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **283** | C1' | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **284** | B7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **287** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **288** | E0 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **300** | C9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **301** | D8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **302** | D7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **303** | C9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **304** | B7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **305** | D9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **306** | B7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **307** | C8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **308** | C9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **309** | D7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **310** | B7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **311** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **312** | D8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **313** | D9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **314** | D8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **315** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **316** | C8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **317** | C8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **318** | D7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **319** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **320** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **321** | D7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **322** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **323** | C9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **324** | C8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **325** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **326** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **327** | B7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **328** | B8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **329** | C8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **330** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **331** | C8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **332** | D8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **333** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **334** | F9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **335** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **336** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **362** | B6/C6 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **364** | B7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **377** | B8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **378** | D7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **379** | B8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **380** | D9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **381** | C9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **382** | C8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **383** | D9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **384** | F8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **385** | D7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **386** | D8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **387** | B7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **388** | C8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **389** | D7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **390** | E1 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **391** | C9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **392** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **393** | C8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **394** | B7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **395** | E1 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **397** | D8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **399** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **402** | D7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **403** | B8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |

Table A6.1 - (continued).

| Sample | Square | Campaign | S.U. | S.U. (description) | Structure | Occupation | Moment | Processing | Volume | Sample analysed |
|---|---|---|---|---|---|---|---|---|---|---|
| **404** | B3/C3 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **406** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **407** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **408** | D7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **409** | B8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **410** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **411** | C9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **412** | F8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |
| **413** | D7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **414** | D7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **415** | B7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **416** | D7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **417** | C8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **418** | No data | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **419** | B7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **420** | D1' | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **421** | B8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **422** | D1' | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **423** | D1 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **424** | D1 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **425** | C7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **426** | B7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **427** | B7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **429** | E1' | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **430** | B8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **431** | F1' | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **432** | E8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **433** | D0 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **434** | C9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **435** | F0 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **436** | D9 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **437** | D0 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **438** | F0 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **439** | F1' | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **440** | F1' | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **441** | E0 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **442** | F0 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **443** | D1 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **444** | F1' | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **445** | C1 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **447** | B7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **448** | B7 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **518** | D1'/E1' | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **522** | C1' | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **536** | D4 | 2014 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **537** | D5 | 2014 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **538** | C3 | 2014 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **539** | C4 | 2014 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **540** | C5 | 2014 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **541** | D3 | 2014 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **542** | D3 | 2014 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **543** | C6 | 2014 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **551** | D3 | 2014 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **552** | B8 | 2016 | 107 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | No |
| **136** | F4 | 2014 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **145** | E6 | 2014 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **152** | G6 | 2014 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **154** | G5 | 2014 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **156** | G3 | 2014 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **160** | F5 | 2014 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **163** | G4 | 2014 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **166** | G6 | 2014 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **208** | F8 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **216** | G8 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **217** | F7 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **220** | E8 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **221** | F9 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **227** | F8 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **228** | D8 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **229** | D9 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **231** | G7 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **234** | E9 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **247** | E6 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **263** | E7 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **273** | D7 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **275** | F8 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **277** | E8 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **285** | G8 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **286** | F7 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **290** | G7 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **451** | D4 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **454** | D4 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **462** | D5 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **463** | D5 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **467** | F7 | 2016 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **545** | D6 | 2014 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **547** | G4 | 2014 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **550** | F5 | 2014 | 108 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **135** | D4 | 2014 | 109 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **161** | F4 | 2014 | 109 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **165** | F5 | 2014 | 109 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **56** | I4 | 2015 | 128 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **57** | H4 | 2015 | 128 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Handpicked | N/A | Yes |
| **530** | B8 | 2016 | 137 | Destruction layer | Habitation structure 09 | Phase 1 | 2nd | Floated | ≈ 10 | Yes |

Table A6.1 - (continued).

| Sample | Square | Campaign | S.U. | S.U. (description) | Structure | Occupation | Moment | Processing | Volume | Sample analysed |
|---|---|---|---|---|---|---|---|---|---|---|
| **527** | B8 | 2016 | 136 | Construction layer (level of preparation underneath the wall) | Wall 112 | Phase 2 | 3rd | Floated | ≈ 10 | Yes |
| **531** | B8 | 2016 | 136 | Construction layer (level of preparation underneath the wall) | Wall 112 | Phase 2 | 3rd | Floated | ≈ 10 | Yes |
| **534** | B8 | 2016 | 136 | Construction layer (level of preparation underneath the wall) | Wall 112 | Phase 2 | 3rd | Floated | ≈ 10 | Yes |
| **515** | A9/B9 | 2016 | 139 | Construction layer (level of preparation underneath the wall) | Wall 112 | Phase 2 | 3rd | Handpicked | N/A | Yes |
| **524** | A9/B9 | 2016 | 139 | Construction layer (level of preparation underneath the wall) | Wall 112 | Phase 2 | 3rd | Floated | ≈ 10 | Yes |
| **529** | A8/B8 | 2016 | 139 | Construction layer (level of preparation underneath the wall) | Wall 112 | Phase 2 | 3rd | Floated | ≈ 10 | Yes |
| **526** | A8 | 2016 | 140 | Construction layer (level of preparation underneath the wall) | Wall 112 | Phase 2 | 3rd | Floated | ≈ 10 | Yes |
| **12** | C6 | 2015 | 124 | Deposit related to a pottery vessel (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **70** | C6 | 2015 | 124 | Deposit related to a pottery vessel (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **75** | B6/C6 | 2015 | 124 | Deposit related to a pottery vessel (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **141** | B6/C6 | 2015 | 124 | Deposit related to a pottery vessel (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | No data | Yes |
| **22** | B0 | 2015 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **26** | C6 | 2015 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **59** | A0 | 2015 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **60** | A0 | 2015 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **61** | B0 | 2015 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **62** | A6 | 2015 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **72** | B7 | 2015 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | No data | Yes |
| **81** | A3/A4 | 2015 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **82** | C6 | 2015 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **84** | A6 | 2015 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **85** | A5 | 2015 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **86** | A5 | 2015 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **87** | A5 | 2015 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **114** | B3/A3 | 2015 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **169** | A3/A4 | 2015 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | No data | Yes |
| **174** | A4 | 2015 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **175** | A3 | 2015 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **233** | B7 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **235** | B6 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **237** | A4 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **238** | A4 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **240** | A4 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **253** | B7 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **292** | A5 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **337** | C8 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | Yes |
| **338** | B8 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **339** | B8 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **340** | A5 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | Yes |
| **342** | B7 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **343** | A6 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | Yes |
| **344** | B7 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **345** | B8 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **346** | B8 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **348** | B7 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | Yes |
| **349** | B7 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **350** | A5 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **351** | B5 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | Yes |
| **352** | A3/A4 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | Yes |
| **353** | B7 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **354** | A'4 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | Yes |
| **355** | B8 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | Yes |
| **357** | B7 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **359** | B7 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **360** | B7 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **361** | B8 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **363** | A5 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **365** | B6 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **366** | B7 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **368** | A5 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **369** | A5 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **370** | A4 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | Yes |
| **371** | A4 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **372** | A4 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **373** | A'4 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | Yes |
| **374** | B6 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | Yes |
| **375** | B8 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **376** | B8 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **428** | A'3 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **449** | B5 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **452** | B8 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **457** | C8 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **458** | A'4 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **465** | A6 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **466** | B6 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **469** | A7 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **470** | B6 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **471** | A5 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **473** | A6 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **474** | A9 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **475** | B6 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **476** | B7 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **477** | B8 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **478** | A'4 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **479** | B6 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **480** | B6 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **481** | B7 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **482** | A'4 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **483** | B6 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **484** | A6 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **485** | A6 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **486** | C1 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **487** | B6 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |

Table A6.1 - (continued).

| Sample | Square | Campaign | S.U. | S.U. (description) | Structure | Occupation | Moment | Processing | Volume | Sample analysed |
|---|---|---|---|---|---|---|---|---|---|---|
| **488** | A'3 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **491** | B5 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **492** | A4 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **493** | B6 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **496** | A5 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **497** | B6 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **498** | A4 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **499** | A5 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **500** | C1 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **501** | A'8 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **502** | A'8 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **503** | B6 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **504** | A6 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **505** | B5 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **506** | A5 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **507** | A8 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **508** | A6 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **509** | A'7 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **510** | A3 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **511** | A5 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **512** | A3 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **513** | A7 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **520** | B7 | 2016 | 125 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **271** | C0 | 2016 | 125A | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **55** | H5 | 2015 | 129 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **242** | B7 | 2016 | 130 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **243** | B7 | 2016 | 130 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **296** | B7 | 2016 | 130 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **297** | B7 | 2016 | 130 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **358** | B7 | 2016 | 130 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | Yes |
| **401** | B7 | 2016 | 130 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **405** | B7 | 2016 | 130 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | No |
| **460** | B7 | 2016 | 130 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **514** | B7 | 2016 | 130 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **533** | B8 | 2016 | 130 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | Yes |
| **398** | A5 | 2016 | 131 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | Yes |
| **400** | B6 | 2016 | 131 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Floated | ≈ 10 | Yes |
| **523** | B8 | 2016 | 134 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **519** | B9 | 2016 | 138 | Filling layer (debris within the wall) | Wall 112 | Phase 2 | 4th | Handpicked | N/A | Yes |
| **48** | C6 | 2015 | 126 | Clay layer | Hearth 1 | Phase 2 | 5th | Handpicked | N/A | Yes |
| **367** | B7 | 2016 | 126 | Clay layer | Hearth 1 | Phase 2 | 5th | Floated | No data | Yes |
| **446** | B7 | 2016 | 126 | Clay layer | Hearth 1 | Phase 2 | 5th | Handpicked | N/A | Yes |
| **246** | C7 | 2016 | 132 | Clay layer | Hearth 2 | Phase 2 | 5th | Handpicked | N/A | Yes |
| **274** | C7 | 2016 | 132 | Clay layer | Hearth 2 | Phase 2 | 5th | Handpicked | N/A | Yes |
| **298** | C7 | 2016 | 132 | Clay layer | Hearth 2 | Phase 2 | 5th | Floated | No data | No |
| **299** | C7 | 2016 | 132 | Clay layer | Hearth 2 | Phase 2 | 5th | Floated | No data | Yes |
| **525** | D1'/E1' | 2016 | 133 | Layer below granite millstone | Granite millstone | Phase 2 | 5th | Floated | No data | Yes |
| **124** | C5 | 2014 | 104 | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **127** | D6 | 2014 | 104 | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **147** | C6 | 2014 | 104 | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **153** | C5 | 2014 | 104 | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **167** | G4 | 2014 | 104 | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **516** | D1'/E1' | 2016 | 104 | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **517** | B1'/C1' | 2016 | 104 | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **528** | D1'/E1' | 2016 | 104 | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Floated | ≈ 10 | Yes |
| **532** | D1'/E1' | 2016 | 104 | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Floated | ≈ 10 | Yes |
| **17** | C3 | 2015 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **33** | E6 | 2015 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **41** | C1 | 2015 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **46** | C3 | 2015 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **50** | D2 | 2015 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **51** | C3 | 2015 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **68** | C3 | 2015 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **69** | C3 | 2015 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **83** | C3 | 2015 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **90** | C6 | 2015 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **96** | C6 | 2015 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **98** | D1 | 2015 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **109** | D6 | 2015 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **117** | D3 | 2015 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **118** | D3 | 2015 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **170** | C6 | 2015 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Floated | No data | Yes |
| **176** | C3 | 2015 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **178** | C6 | 2015 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **211** | D8 | 2016 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **232** | B7 | 2016 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **239** | B7 | 2016 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **241** | C8 | 2016 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **244** | G0 | 2016 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **245** | C7 | 2016 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **396** | C6 | 2016 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Floated | ≈ 10 | Yes |
| **453** | G7 | 2016 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **455** | E7 | 2016 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **456** | F7 | 2016 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **459** | F9 | 2016 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **464** | E7 | 2016 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **468** | E8 | 2016 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **489** | D8 | 2016 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **490** | D7 | 2016 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **494** | E9 | 2016 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **495** | E7 | 2016 | 104A | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **116** | C6 | 2015 | 104B | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **119** | C6 | 2015 | 104B | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |

Table A6.1 - (continued).

| Sample | Square | Campaign | S.U. | S.U. (description) | Structure | Occupation | Moment | Processing | Volume | Sample analysed |
|---|---|---|---|---|---|---|---|---|---|---|
| **255** | C7 | 2016 | 104B | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **256** | B7 | 2016 | 104B | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **268** | C9 | 2016 | 104B | Abandonment/destruction layer | Wall 112 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **4** | G2 | 2015 | 118 | Abandonment/destruction layer | Stone structure 123 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **9** | G1 | 2015 | 118 | Abandonment/destruction layer | Stone structure 123 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **19** | H2 | 2015 | 118 | Abandonment/destruction layer | Stone structure 123 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **23** | H2 | 2015 | 118 | Abandonment/destruction layer | Stone structure 123 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **24** | H5 | 2015 | 118 | Abandonment/destruction layer | Stone structure 123 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **27** | H5 | 2015 | 118 | Abandonment/destruction layer | Stone structure 123 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **28** | G5 | 2015 | 118 | Abandonment/destruction layer | Stone structure 123 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **31** | H6 | 2015 | 118 | Abandonment/destruction layer | Stone structure 123 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **32** | I2 | 2015 | 118 | Abandonment/destruction layer | Stone structure 123 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **35** | H1 | 2015 | 118 | Abandonment/destruction layer | Stone structure 123 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **40** | G1 | 2015 | 118 | Abandonment/destruction layer | Stone structure 123 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **52** | H1 | 2015 | 118 | Abandonment/destruction layer | Stone structure 123 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **58** | F3 | 2015 | 118 | Abandonment/destruction layer | Stone structure 123 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **67** | G5 | 2015 | 118 | Abandonment/destruction layer | Stone structure 123 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **73** | L5 | 2015 | 118 | Abandonment/destruction layer | Stone structure 123 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **112** | G2 | 2015 | 118 | Abandonment/destruction layer | Stone structure 123 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **177** | H5 | 2015 | 118 | Abandonment/destruction layer | Stone structure 123 | Phase 2 | 6th | Handpicked | N/A | Yes |
| **5** | D2 | 2015 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **6** | F1 | 2015 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **11** | C3 | 2015 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **13** | D2 | 2015 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **14** | D6 | 2015 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **20** | G3 | 2015 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **34** | C3 | 2015 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **47** | F6 | 2015 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **54** | H6 | 2015 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **64** | F2 | 2015 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **76** | E6 | 2015 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **77** | C6 | 2015 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **101** | G6 | 2015 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **103** | I4 | 2015 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **104** | C1 | 2015 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **108** | E1 | 2015 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **180** | C6 | 2015 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **252** | E1' | 2016 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **257** | D1' | 2016 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **269** | E1' | 2016 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **270** | E0 | 2016 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **272** | E1' | 2016 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **282** | C0 | 2016 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **289** | F1' | 2016 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **291** | F0 | 2016 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **295** | E1' | 2016 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Floated | No data | Yes |
| **450** | C9 | 2016 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **461** | C9 | 2016 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **535** | J3 | 2015 | 102 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **207** | D1' | 2016 | 103 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **210** | E0 | 2016 | 103 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **223** | F0 | 2016 | 103 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **226** | E0 | 2016 | 103 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **249** | F0 | 2016 | 103 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **250** | D0 | 2016 | 103 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **251** | D1' | 2016 | 103 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **254** | C1' | 2016 | 103 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **10** | I1 | 2015 | 120 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **15** | I1 | 2015 | 120 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **16** | I3 | 2015 | 120 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **30** | I4 | 2015 | 120 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **36** | C2 | 2015 | 120 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **97** | J4 | 2015 | 120 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **2** | M5 | 2015 | 121 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **3** | J3 | 2015 | 121 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **21** | L4 | 2015 | 121 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **29** | I4 | 2015 | 121 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **37** | L5 | 2015 | 121 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **42** | L3 | 2015 | 121 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **43** | L7 | 2015 | 121 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **49** | L6 | 2015 | 121 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **53** | J7 | 2015 | 121 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **71** | J5 | 2015 | 121 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **74** | J4 | 2015 | 121 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **89** | L4 | 2015 | 121 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **100** | L4 | 2015 | 121 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **110** | L7 | 2015 | 121 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **111** | L4 | 2015 | 121 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **179** | M4 | 2015 | 121 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Handpicked | N/A | Yes |
| **341** | M3 | 2015 | 121 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Floated | No data | Yes |
| **347** | M4 | 2016 | 121 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Floated | No data | Yes |
| **356** | M2 | 2015 | 121 | Abandonment/destruction layer | Possible Habitation structure | Phase 2 | 6th | Floated | No data | Yes |

Table A6.1 - (continued).

| Mesh | S.U. | 2 mm | | | 1 mm | | | 0.5 mm | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample | | Original weight (g) | Sorted (g) | % | Original weight (g) | Sorted (g) | % | Original weight (g) | Sorted (g) | % |
| **1** | 107 | Without subsampling | | | 8.09 | 1.93 | 23.9% | Without subsampling | | |
| **170** | 104A | Without subsampling | | | 12.81 | 6.24 | 48.7% | 3.85 | 1.94 | 50.4% |
| **171** | 107 | 98.87 | 24.96 | 25.2% | 36.12 | 9.13 | 25.3% | Without subsampling | | |
| **172** | 107 | 55.74 | 28.65 | 51.4% | 20.64 | 10.36 | 50.2% | Without subsampling | | |
| **181** | 107 | 20.47 | 9.93 | 48.5% | 12.58 | 5.97 | 47.5% | Without subsampling | | |
| **182** | 107 | 49.43 | 12.05 | 24.4% | 42.85 | 5.11 | 11.9% | 11.96 | 2.62 | 21.9% |
| **183** | 107 | 59.62 | 14.49 | 24.3% | 31.36 | 7.29 | 23.2% | 11.33 | 2.43 | 21.4% |
| **184** | 107 | 45.32 | 10.63 | 23.5% | 32.1 | 4.01 | 12.5% | 13.51 | 0.92 | 6.8% |
| **185** | 107 | 129.52 | 7.41 | 5.7% | 79.47 | 2.21 | 2.8% | 22.4 | 0.56 | 2.5% |
| **186** | 107 | 46.13 | 5.71 | 12.4% | 33.89 | 2.15 | 6.3% | 23.3 | 1.27 | 5.5% |
| **187** | 107 | 36.83 | 17.14 | 46.5% | 29.92 | 7.13 | 23.8% | 19.78 | 2.45 | 12.4% |
| **188** | 107 | 43.02 | 12.46 | 29.0% | 27.49 | 6.21 | 22.6% | 23.02 | 2.79 | 12.1% |
| **189** | 107 | 99.8 | 6.23 | 6.2% | 60.86 | 3.97 | 6.5% | 32.46 | 1.04 | 3.2% |
| **190** | 107 | 45.25 | 5.11 | 11.3% | 27.05 | 3.38 | 12.5% | 19.84 | 1.39 | 7.0% |
| **191** | 107 | 51.46 | 6.45 | 12.5% | 29.91 | 3.04 | 10.2% | 21.77 | 1.1 | 5.1% |
| **192** | 107 | 34.08 | 4.25 | 12.5% | 29.56 | 2.07 | 7.0% | 18.26 | 1.14 | 6.2% |
| **193** | 107 | 28.76 | 7.46 | 25.9% | 23.28 | 2.73 | 11.7% | 14.81 | 1.81 | 12.2% |
| **200** | 107 | 74.27 | 9.65 | 13.0% | 34.29 | 3.87 | 11.3% | 16.46 | 0.99 | 6.0% |
| **201** | 107 | 28.43 | 7.24 | 25.5% | 18.14 | 2.43 | 13.4% | 3.75 | 1.97 | 52.5% |
| **307** | 107 | 50.01 | 6.6 | 13.2% | 42.36 | 2.64 | 6.2% | 22.22 | 1.27 | 5.7% |
| **309** | 107 | 42.92 | 6.16 | 14.4% | 26.98 | 3.11 | 11.5% | 26.05 | 1.66 | 6.4% |
| **313** | 107 | 36.75 | 4.55 | 12.4% | 20.05 | 2.11 | 10.5% | 13.74 | 1.67 | 12.2% |
| **334** | 107 | 26.5 | 7.32 | 27.6% | 26.29 | 3.48 | 13.2% | 26.36 | 1.43 | 5.4% |
| **337** | 125 | 36.77 | 6.98 | 19.0% | 21.78 | 2.5 | 11.5% | 12.56 | 1.68 | 13.4% |
| **340** | 125 | 22.2 | 4.54 | 20.5% | 14.76 | 1.66 | 11.2% | 8.61 | 1.12 | 13.0% |
| **341** | 131 | Without subsampling | | | Without subsampling | | | 2.52 | 1.24 | 49.2% |
| **348** | 125 | 24.85 | 5.96 | 24.0% | 18.09 | 2.74 | 15.1% | 8.35 | 0.98 | 11.7% |
| **352** | 125 | 10.07 | No subsampling | | 35.78 | 5.07 | 14.2% | 27.2 | 3.2 | 11.8% |
| **355** | 125 | 10.46 | 5.58 | 53.3% | 9.1 | 2.12 | 23.3% | Without subsampling | | |
| **356** | 121 | Without subsampling | | | Without subsampling | | | 2.94 | 1.52 | 51.7% |
| **358** | 130 | 51.9 | 6.91 | 13.3% | 39.42 | 2.27 | 5.8% | 16.97 | 0.91 | 5.4% |
| **362** | 107 | 20.13 | 5.74 | 28.5% | 22.72 | 2.8 | 12.3% | 29.96 | 1.24 | 4.1% |
| **367** | 126 | Without subsampling | | | 5.58 | 2.57 | 46.1% | 4.8 | 1.33 | 27.7% |
| **370** | 125 | 21.58 | 4.95 | 22.9% | 12.5 | 3.15 | 25.2% | Without subsampling | | |
| **373** | 125 | 23.64 | 8.81 | 37.3% | 10.48 | 2.74 | 26.1% | 6.08 | 1.64 | 27.0% |
| **374** | 125 | 38.07 | 5.26 | 13.8% | 30.89 | 4.12 | 13.3% | 22.97 | 1.59 | 6.9% |
| **377** | 107 | 58.91 | 6.36 | 10.8% | 25.85 | 3.25 | 12.6% | 16.38 | 1.8 | 11.0% |
| **396** | 104A | 17.47 | 5.87 | 33.6% | 11.22 | 2.65 | 23.6% | 11.35 | 1.43 | 12.6% |
| **404** | 107 | 10.95 | 5.45 | 49.8% | 14.84 | 3.66 | 24.7% | 10.96 | 1.56 | 14.2% |
| **412** | 107 | 29.62 | 7.37 | 24.9% | 23.4 | 2.88 | 12.3% | 17.2 | 0.98 | 5.7% |
| **524** | 139 | 8.2 | 5.04 | 61.5% | 8.15 | 2.7 | 33.1% | 6.57 | 1.11 | 16.9% |
| **526** | 140 | 11.96 | 6.27 | 52.4% | 13.06 | 2.25 | 17.2% | 12.23 | 0.97 | 7.9% |
| **527** | 136 | 16.03 | 6.82 | 42.5% | 17.66 | 1.76 | 10.0% | 16.75 | 0.96 | 5.7% |
| **528** | 104 | 32.76 | 8.41 | 25.7% | 26.41 | 1.95 | 7.4% | 13.62 | 0.77 | 5.7% |
| **529** | 139 | 23.89 | 7.39 | 30.9% | 25.95 | 1.42 | 5.5% | 17.41 | 0.59 | 3.4% |
| **530** | 137 | 9.49 | 5.5 | 58.0% | 12.02 | 1.11 | 9.2% | 16.54 | 0.7 | 4.2% |
| **531** | 136 | 11.1 | 6.43 | 57.9% | 10.01 | 1.72 | 17.2% | 10.81 | 1.0 | 9.3% |
| **532** | 104 | 12.29 | 5.05 | 41.1% | 13.44 | 2.01 | 15.0% | 5.56 | 1.07 | 19.2% |
| **533** | 130 | 22.64 | 5.25 | 23.2% | 25.23 | 1.33 | 5.3% | 15.82 | 0.8 | 5.1% |
| **534** | 136 | 35.35 | 4.75 | 13.4% | 28.71 | 1.52 | 5.3% | 23.75 | 0.77 | 3.2% |

Table A6.2 - Subsampling strategy.

| | | Occupation | Phase 1 | | | | | | | Phase 2 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 1st | | 2nd | | | | | 3rd | | | 4th | | | | |
| | | Structure | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 |
| | | S.U. | 115 | 116 | 106 | 107 | 108 | 109 | 137 | 136 | 139 | 140 | 124 | 125 | 130 | 131 | 134 |
| **Cereal** | **Plant part** | | | | | | | | | | | | | | | | |
| *Avena* L. | Grain | | 42 | 1 | 9 | 36,609 | 16 | | 130 | 946 | 833 | 215 | 165 | 5,166 | 3,948 | 309 | 1 |
| *Hordeum vulgare* L. | Grain | | 22 | 2 | 48 | 7,248 | 9 | | 5 | 13 | 99 | 17 | 43 | 666 | 506 | 40 | |
| *Panicum miliaceum* L. | Grain | | | | 8 | 8,345 | | | 44 | 299 | 210 | 60 | 71 | 978 | 487 | 74 | |
| *Setaria italica* (L.) P.Beauv. | Grain | | | | | 123 | | | | | 6 | | 4 | 19 | | 6 | |
| *Setaria* P.Beauv. | Grain | | | | | 9 | | | | | | | | | | | |
| Panicoideae Link | Grain | | | | | 1,128 | | | | 17 | 30 | | 29 | 299 | 171 | 29 | |
| *Secale cereale* L. | Grain | | 84 | 6 | 204 | 34,204 | 25 | | 61 | 776 | 649 | 136 | 130 | 4,471 | 3,679 | 436 | 1 |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain | | 12 | 1 | 27 | 965 | 6 | | 4 | 22 | 25 | 6 | 9 | 498 | 38 | 107 | |
| *Triticum* L. | Grain | | | | | 4 | | | | | | | | 5 | | | |
| Triticeae Dumort. | Grain | | | 2 | 3 | 10,424 | | | 18 | 234 | 210 | 44 | 233 | 1,338 | 1,346 | 132 | |
| **Cereal (chaff)** | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. */ Avena strigosa* Schreb. | Floret base | | | | | 842 | | | 11 | 10 | 40 | | 4 | 127 | 173 | 25 | |
| *Hordeum vulgare* L. | Lemma base | | | | | 689 | | | | 31 | 3 | | | 96 | | 2 | |
| *Hordeum vulgare* L. | Rachis segment with 1 node | | | | | 48 | | | | | | | | | | | |
| *Panicum miliaceum* L. | Lemma/palea | | | | | 32 | | | | | 8 | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Lemma/palea | | | | | | | | | | 3 | | | | | 2 | |
| *Secale cereale* L. | Rachis segment with 1 node | | | | | 741 | | | | 131 | 48 | 13 | 19 | 213 | 406 | 5 | |
| *Secale cereale* L. | Rachis segment with 2 nodes | | | | | 18 | | | | 19 | | | 2 | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Rachis node | | | | | 122 | | | | | | | | | | | |
| **Other Poaceae** | | | | | | | | | | | | | | | | | |
| *Arrhenatherum elatius* subspec. *bulbosum* (Willd.) Schübl. & G.Martens | Pseudobulb | | | | | 1 | | | | | | | | | | | |
| *Festuca* L. */ Lolium* L. | Grain | | | | | 1,925 | | | | | | 6 | 33 | 212 | 318 | 11 | |
| *Poa* L. | Grain | | | | | | | | | 31 | | | | | 20 | | |
| Poaceae Barnhart | Grain | | | | | 1,553 | 1 | | | 159 | 113 | 2 | 6 | 123 | 344 | 7 | |
| Poaceae - *Bromus* L. type | Grain | | | | | | | | | | | | | | | | |
| **Other Poaceae (chaff)** | | | | | | | | | | | | | | | | | |
| *Festuca* L. */ Lolium* L. | Hulled grain | | | | | 52 | | | | | | | | 17 | | 1 | |
| Poaceae Barnhart | Hulled grain | | | | | 37 | | | | | | | | 1 | | | |
| Poaceae Barnhart | Spikelet base | | | | | | | | | | | | | 1 | | | |
| **Fabaceae** | | | | | | | | | | | | | | | | | |
| *Lathyrus cicera* L. */ Lathyrus sativus* L. | Seed | | | | | 71 | 1 | | | | | 2 | | 14 | | 1 | |
| *Lens culinaris* Medik. | Seed | | | | | 18 | | | | | | | | | | | |
| *Ornithopus* L. | Seed | | | | | 29 | | | | 11 | 6 | | | | | | |
| *Ornithopus* L. | Loment segment | | | | | 233 | | | | | | | | 9 | | | |
| *Pisum sativum* L. | Seed | | 1 | | 1 | 412 | 1 | | | | | | | 8 | | 2 | |
| *Vicia faba* L. | Seed | | 10 | | 1 | 238 | | | | | | | 1 | 18 | | 1 | |
| *Vicia* L. / *Lathyrus* L. | Seed | | | | 1 | 250 | | | | 8 | 9 | | | 39 | | 4 | |
| *Vicia* L. */ Lathyrus* L. /*Pisum* L. | Seed | | | | 1 | 272 | 1 | 1 | | | | | 1 | 58 | 4 | 8 | |
| Fabaceae Lindl. | Seed | | | | | 264 | | | | | 3 | | | 53 | 92 | 2 | |
| *Astragalus* L. | Seed | | | | | 2 | | | | | | | | | | | |
| *Genista* L. | Seed | | | | | | | | | | | | | | | | |
| *Medicago* L. | Seed | | | | | 18 | | | | | | | | | | | |
| *Trifolium* L. | Seed | | | | | 62 | | | | | | | | 9 | | | |

Table A6.3 - Fruits/seeds results per S.U., Moment and Phase (units only).

| | | Phase 1 | | | | | | | Phase 2 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Occupation** | | | | | | | | | | | | | | | | |
| **Moment** | | 1st | | 2nd | | | | | 3rd | | | 4th | | | | |
| **Structure** | | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 |
| **S.U.** | | 115 | 116 | 106 | 107 | 108 | 109 | 137 | 136 | 139 | 140 | 124 | 125 | 130 | 131 | 134 |
| **Fruits** | **Plant part** | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit | | | | 2 | | | | | | | | | | | |
| *Prunus avium* L. / *Prunus cerasus* L. | Endocarp | | | | 2 | | | | | | | | | | | |
| *Pyrus* L. | Seed | | | | | | | | | | | | 1 | | | |
| *Rubus* L. | Seed | | | | 36 | | | | | | | | | | | |
| *Vitis vinifera* L. | Seed | 1 | | | 101 | | | | 24 | | | | | 8 | | |
| *Vitis vinifera* L. | Pedicel | | | | 7 | | | | 7 | 3 | | | | 17 | | |
| *Vitis vinifera* L. | Drupe with seed | | | | | | | | | | | | | | | 2 |
| **Oil/Fiber plant** | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated | | | | 6 | | | | | | | | | | | |
| **Other remains** | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* L. | Seed | | | | 8 | | | | | | | | | | | |
| *Agrostemma githago* L. | Seed | | | | 674 | | | | | | | | 74 | 47 | 9 | |
| Asteraceae Bercht. & J.Presl | Cypsela | | | | 20 | | | | | | | | | 19 | 1 | |
| Asteraceae - *Chrysanthemum* L. type | Cypsela | | | | 165 | | | | | 30 | 19 | 2 | 1 | 36 | 1 | |
| Caryophyllaceae Juss. | Seed | | | | 70 | | | | | | | | 23 | 5 | | |
| *Chenopodium* L. | Seed | | | | 69 | | | | | | | | 9 | 1 | 1 | |
| Chenopodiaceae Vent | Seed | | | | | | | | | | | | | | | |
| *Corrigiola* L. | Achene | | | | 8 | | | | | | | | | | | |
| *Euphorbia* L. | Seed | | | | 4 | | | | | | | | | | | |
| *Galium aparine* L. | Mericarp | | | | 14 | | | | | | | | | | | |
| *Galium* L. | Mericarp | | | | 8 | | | 24 | | | | | | | | |
| *Malva* L. | Seed | | | | 5 | | | | | | | | 7 | | | |
| Papaveraceae Juss. | Seed | | | | 16 | | | | | | | | | | | |
| *Polygonum persicaria* L. | Achene | | | | 18 | | | | | | | 4 | | | | |
| *Polygonum lapathifolium* L. | Achene | | | | | | | | | | 6 | | | | | |
| *Polygonum* L. - lenticular type | Achene | | | | | | | | | | | | | | | |
| *Polygonum* L. - trigonal type | Achene | | | | | | | | | | | | 4 | | | |
| Polygonaceae Juss. | Achene | | | | 81 | | | | | | | | 1 | | | |
| *Plantago lanceolata* L. | Seed | | | | 1 | | | | | | | | | | | |
| *Plantago* L. | Seed | | | | | | | | | | | 1 | | | | |
| *Ranunculus* L. | Achene | | | | 10 | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Seed | | | | | | | | | | | 1 | 14 | | | |
| *Raphanus raphanistrum* L. | Siliqua segment | | | | 26 | | | | | | | 1 | 8 | | | |
| *Rumex bucephalophorus* L. | Achene | | | | 5 | | | | | | | | | | | |
| *Rumex conglomeratus* Murray / *Rumex crispus* L. | Achene | | | | | | | | | | | | | | | |
| *Rumex* L. | Achene | | | | 69 | | | | | | | | | | | |
| *Sherardia arvensis* L. | Mericarp | | | | 26 | | | | | | | | | | | |
| *Silene gallica* L. | Seed | | | | 115 | | | | | | | | | | | |
| *Silene* L. | Seed | | | | 8 | | | | | | | | | | | |
| *Spergula arvensis* L. | Seed | | | | 33 | | | | | | | | | | | |
| *Stellaria* L. / *Cerastium* L. | Seed | | | | | | | | 7 | | 10 | | | 9 | | |
| *Urtica* L. | Achene | | | | 19 | | | | | | | | | | | |
| *Veronica* L. | Seed | | | | 26 | | | | | | | 1 | | | | |
| *Viola* L. | Seed | | | | 53 | | | | | | | | | | | |
| Undetermined | Seed/fruit | | | | 42 | | | | | | | | 7 | 3 | 1 | |
| | **Total** | **172** | **12** | **303** | **108,735** | **60** | **1** | **297** | **2745** | **2328** | **536** | **760** | **14,587** | **11,677** | **1,217** | **4** |
| | **Total per Phase** | | | | **109,580** | | | | | | | | **45,266** | | | |

Table A6.3 - (continued).

| Occupation | | Phase 2 | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Moment | | 5th | | | 6th | | | | | | |
| Structure | | H1 | H2 | GM | W112 | | | SS123 | PHS | PHS | |
| S.U. | | 126 | 132 | 133 | 104 | 104A | 104B | 118 | 102 | 121 | |
| **Cereal** | **Plant part** | | | | | | | | | | |
| *Avena* L. | Grain | 20 | 1 | 1 | 1,050 | 1,076 | 143 | | 143 | 1 | **50,825** |
| *Hordeum vulgare* L. | Grain | 9 | 5 | | 324 | 221 | 284 | | 134 | | **9695** |
| *Panicum miliaceum* L. | Grain | 11 | 7 | 2 | 1,490 | 128 | | | 3 | 20 | **12,237** |
| *Setaria italica* (L.) P.Beauv. | Grain | | | | | | | | | | **158** |
| *Setaria* P.Beauv. | Grain | | | | | | | | | | **9** |
| Panicoideae Link | Grain | 2 | 1 | | 179 | 42 | 2 | | | 5 | **1934** |
| *Secale cereale* L. | Grain | 10 | 4 | 1 | 1,989 | 439 | 565 | 1 | 362 | 4 | **48,237** |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain | 2 | 1 | | 67 | 21 | 26 | 1 | 14 | 3 | **1,855** |
| *Triticum* L. | Grain | | | | | | | | | | **9** |
| Triticeae Dumort. | Grain | 8 | 2 | | 745 | 416 | 58 | 1 | 91 | 1 | **15,306** |
| **Cereal (chaff)** | | | | | | | | | | | |
| *Avena sativa* L. */ Avena strigosa* Schreb. | Floret base | | | | | 54 | 10 | | 2 | | **1,298** |
| *Hordeum vulgare* L. | Lemma base | | | | | 19 | 17 | | 4 | | **861** |
| *Hordeum vulgare* L. | Rachis segment with 1 node | | | | | 4 | | | | | **52** |
| *Panicum miliaceum* L. | Lemma/palea | | | | | | | | | | **40** |
| *Setaria italica* (L.) P.Beauv. | Lemma/palea | | | | | | | | | | **5** |
| *Secale cereale* L. | Rachis segment with 1 node | 2 | | 1 | 16 | 76 | 1 | | | 1 | **1,673** |
| *Secale cereale* L. | Rachis segment with 2 nodes | | | | | | | | | | **39** |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Rachis node | | | | | 4 | | | | | **126** |
| **Other Poaceae** | | | | | | | | | | | |
| *Arrhenatherum elatius* subspec. *bulbosum* (Willd.) Schübl. & G.Martens | Pseudobulb | | | | | | | | | | **1** |
| *Festuca* L. */ Lolium* L. | Grain | 11 | | | 5 | 39 | | | 4 | 1 | **2,565** |
| *Poa* L. | Grain | | | | | | | | | | **51** |
| Poaceae Barnhart | Grain | | 2 | | 445 | 45 | | | 3 | 2 | **2,805** |
| Poaceae - *Bromus* L. type | Grain | | | | | 1 | | | | | **1** |
| **Other Poaceae (chaff)** | | | | | | | | | | | |
| *Festuca* L. */ Lolium* L. | Hulled grain | | | | | | | | 1 | | **71** |
| Poaceae Barnhart | Hulled grain | | | | 25 | | | | | | **63** |
| Poaceae Barnhart | Spikelet base | | | | | | | | | | **1** |
| **Fabaceae** | | | | | | | | | | | |
| *Lathyrus cicera* L. */ Lathyrus sativus* L. | Seed | | | | | | | | | | **89** |
| *Lens culinaris* Medik. | Seed | | | | | 1 | | | | | **19** |
| *Ornithopus* L. | Seed | | | | | 2 | | | 1 | 2 | **51** |
| *Ornithopus* L. | Loment segment | 4 | | | | | | | | 2 | **248** |
| *Pisum sativum* L. | Seed | | | | | 1 | 3 | | 2 | | **431** |
| *Vicia faba* L. | Seed | | | | | 1 | 7 | | 9 | | **286** |
| *Vicia* L. / *Lathyrus* L. | Seed | | 2 | | 12 | 4 | 2 | | 1 | | **332** |
| *Vicia* L. */ Lathyrus* L. */Pisum* L. | Seed | 1 | | | | 4 | 1 | | 3 | | **355** |
| Fabaceae Lindl. | Seed | 2 | | | 52 | 18 | | | 1 | 3 | **490** |
| *Astragalus* L. | Seed | | | | | | | | | | **2** |
| *Genista* L. | Seed | | | 1 | 39 | | | | | | **40** |
| *Medicago* L. | Seed | | | | | | | | | | **18** |
| *Trifolium* L. | Seed | | | | 35 | | | | | | **106** |

Table A6.3 - (continued).

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Occupation** | Phase 2 | | | | | | | | | **Total** |
| | **Moment** | 5th | | | 6th | | | | | | |
| | **Structure** | H1 | H2 | GM | W112 | | | SS123 | PHS | PHS | |
| | **S.U.** | 126 | 132 | 133 | 104 | 104A | 104B | 118 | 102 | 121 | |
| **Fruits** | **Plant part** | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit | | | | | | | | | | **2** |
| *Prunus avium* L. / *Prunus cerasus* L. | Endocarp | | | | | | | | 1 | | **3** |
| *Pyrus* L. | Seed | | | | | | | | | | **1** |
| *Rubus* L. | Seed | 2 | | | | | | | | | **38** |
| *Vitis vinifera* L. | Seed | | | | 4 | | 1 | | | | **139** |
| *Vitis vinifera* L. | Pedicel | | | | | 1 | | | | | **35** |
| *Vitis vinifera* L. | Drupe with seed | | | | | | | | | | **2** |
| **Oil/Fiber plant** | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated | | | | | | | | | | **6** |
| **Other remains** | | | | | | | | | | | |
| *Anagallis arvensis* L. | Seed | | | | | | | | | | **8** |
| *Agrostemma githago* L. | Seed | 2 | | | | 6 | | | | | **812** |
| Asteraceae Bercht. & J.Presl | Cypsela | | | | | | | | | | **40** |
| Asteraceae - *Chrysanthemum* L. type | Cypsela | | | | | 2 | | | | | **256** |
| Caryophyllaceae Juss. | Seed | | 1 | | | | | | 1 | | **100** |
| *Chenopodium* L. | Seed | | | | | | | | | | **80** |
| Chenopodiaceae Vent | Seed | | | | 35 | | | | | | **35** |
| *Corrigiola* L. | Achene | | | | | | | | | | **8** |
| *Euphorbia* L. | Seed | | | | | | | | | | **4** |
| *Galium aparine* L. | Mericarp | | | | | | | | | | **14** |
| *Galium* L. | Mericarp | | | | | 1 | | | | | **33** |
| *Malva* L. | Seed | | | | | | | | | | **12** |
| Papaveraceae Juss. | Seed | | | | | | | | | | **16** |
| *Polygonum persicaria* L. | Achene | | | | | 2 | | | | | **24** |
| *Polygonum lapathifolium* L. | Achene | | | | | | | | | | **6** |
| *Polygonum* L. - lenticular type | Achene | | | | 18 | | | | | | **18** |
| *Polygonum* L. - trigonal type | Achene | | | | 23 | | | | | | **27** |
| Polygonaceae Juss. | Achene | | | | | | | | | | **82** |
| *Plantago lanceolata* L. | Seed | | | | | | | | | | **1** |
| *Plantago* L. | Seed | | | | | | | | | | **1** |
| *Ranunculus* L. | Achene | | | | | | | | | | **10** |
| *Raphanus raphanistrum* L. | Seed | | | | | | | | 6 | | **21** |
| *Raphanus raphanistrum* L. | Siliqua segment | | | | | | | | 41 | | **76** |
| *Rumex bucephalophorus* L. | Achene | | | | | | | | | | **5** |
| *Rumex conglomeratus* Murray / *Rumex crispus* L. | Achene | | | | 18 | | | | | | **18** |
| *Rumex* L. | Achene | | | | | 2 | | | | | **71** |
| *Sherardia arvensis* L. | Mericarp | | | | | | | | | | **26** |
| *Silene gallica* L. | Seed | | | | 35 | | | | 1 | | **151** |
| *Silene* L. | Seed | | | | | | | | | | **8** |
| *Spergula arvensis* L. | Seed | | | | | | | | | | **33** |
| *Stellaria* L. / *Cerastium* L. | Seed | | | | 55 | | | | | | **81** |
| *Urtica* L. | Achene | | | | | | | | | | **19** |
| *Veronica* L. | Seed | | | | | | | | 1 | | **28** |
| *Viola* L. | Seed | | | | | | | | | | **53** |
| Undetermined | Seed/fruit | | 2 | | | 1 | | | 3 | | **59** |
| | **Total** | **86** | **28** | **6** | **6,661** | **2,631** | **1,120** | **3** | **832** | **45** | **154,846** |
| | **Total per Phase** | **45,266** | | | | | | | | | |

Table A6.3 - (continued).

| | | Phase | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 1st | 1st | 1st | 1st | 1st | 1st | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| | | Structure | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| | | S.U. | 115 | 115 | 115 | 116 | 116 | 116 | 106 | 106 | 106 | 106 | 106 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |
| | | Square | C6 | C6 | D6 | G5 | G4 | G5 | F1' | E0 | E0 | F0 | F0 | C4 | B3/C3 | F1 | E1 | B3/C3 | B6/C6 | D1 | B6/C6 | C6 | C6 | F1 | C3 | C1 | C3 | B6/C6 | B6/C6 | B6/C6 | B6/C6 | B6/C6 | B6/C6 |
| | | Sample | 143 | 544 | 546 | 158 | 548 | 549 | 209 | 212 | 213 | 236 | 260 | 1 | 7 | 8 | 18 | 25 | 45 | 78 | 79 | 80 | 88 | 92 | 93 | 94 | 95 | 99 | 102 | 105 | 106 | | |
| **Cereal** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grain | | 11 | 31 | | | 1 | 1 | | | 7 | | | 177 | 4 | 8 | | 17 | 48 | 2 | 1 | 3 | 12 | | 24 | | 6 | 60 | 143 | | 2 | | |
| *Avena* L. | Grain frag. | | | 5 | | | | | | | 6 | | | 54 | 1 | | | 2 | 3 | | | 1 | 2 | | | | 3 | 1 | 6 | | | | |
| *Avena* L. / *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | |
| *Avena* L. / *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| *Hordeum vulgare* L. | Grain | | 7 | 15 | | | 2 | | | | 19 | 1 | | 201 | 1 | 9 | | 1 | 196 | 1 | | 3 | 8 | 5 | 2 | | | 86 | 164 | | | | |
| *Hordeum vulgare* L. | Grain frag. | | 2 | 2 | | | | | | | 9 | | | 146 | | 2 | | | 18 | | | | 1 | | | | | 8 | 8 | | | | |
| *Hordeum vulgare* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / Fabaceae Lindl. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / Charcoal remain | Grain and charcoal agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain | | | | | | | | | | | | 8 | 115 | | | | | 1 | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria* P.Beauv. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae Link | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae Link | Grain frag. | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| Panicoideae Link | Scutellum | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Grain | 1 | 37 | 46 | | 5 | 1 | 10 | 3 | 183 | 4 | 3 | 125 | 51 | 28 | | 67 | 201 | 15 | 6 | 3 | 33 | 9 | 77 | 1 | 21 | 256 | 424 | 1 | | | |
| *Secale cereale* L. | Grain longitudinal frag. | | | | | | | | | 1 | | | | | | | | | | | | | | | | | 3 | 5 | | | | |
| *Secale cereale* L. | Grain frag. | | 7 | 4 | | 1 | | 1 | | 16 | | | 28 | 4 | | | 3 | 7 | 2 | | | 3 | | 9 | | 1 | 7 | 18 | | | | |
| *Secale cereale* L. / *Agrostemma githago*L. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain | | 3 | 9 | | 1 | | | | 26 | 1 | | 23 | 18 | 11 | | 10 | 14 | 4 | 1 | | 5 | 1 | 9 | | 4 | 19 | 13 | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain longitudinal frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain frag. | | | | | | | | | 1 | | | 3 | | | | | | | | | 1 | | | | | | | | | | | |
| *Triticum* L. | Grain | | | | | | | | | | | | | 1 | 1 | | 2 | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grain with scutellum | | | | | 2 | | | | 2 | | 1 | 3 | 8 | 5 | | 9 | 25 | 2 | 1 | 1 | 3 | 2 | 14 | 1 | 4 | 27 | 28 | | | | |
| Triticeae Dumort. | Grain without scutellum | | | 12 | | 4 | 1 | | | 25 | 1 | | 259 | 4 | 6 | | 14 | 80 | 3 | 2 | 1 | 15 | | 27 | | 7 | 31 | 38 | | | | |
| Triticeae Dumort. | Embryo | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | |
| Triticeae Dumort. | Scutellum | | | | | | | | | | | | | | | | 1 | 49 | | | | | | | | | 3 | 24 | | | | | |

Table A6.4 - Fruits/seeds results per Sample.

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Phase** | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Moment** | | 1st | 1st | 1st | 1st | 1st | 1st | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| **Structure** | | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| **S.U.** | | 115 | 115 | 115 | 116 | 116 | 116 | 106 | 106 | 106 | 106 | 106 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |
| **Square** | | C6 | C6 | D6 | G5 | G4 | G5 | F1' | E0 | E0 | F0 | F0 | C4 | B3/C3 | F1 | E1 | B3/C3 | B6/C6 | D1 | B6/C6 | C6 | C6 | F1 | C3 | C1 | C3 | B6/C6 | B6/C6 | B6/C6 | B6/C6 | B6/C6 |
| **Sample** | | 143 | 544 | 546 | 158 | 548 | 549 | 209 | 212 | 213 | 236 | 260 | 1 | 7 | 8 | 18 | 25 | 45 | 78 | 79 | 80 | 88 | 92 | 93 | 94 | 95 | 99 | 102 | 105 | 106 |
| **Cereal (grain and chaff)** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grain | | | | | | | | | | | | 1 | | | | 2 | 8 | | | | | | | | | 2 | 5 | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base | | | | | | | | | | | | 1 | | | | | 3 | | | | | | | | | | 2 | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grain with husks | | | | | | | | | 1 | | | | | | | | | | | 2 | | 1 | | | | 4 | 36 | | |
| *Avena* L. | Grain frag. with husks | | | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | 1 | 1 | | |
| *Avena* L. | Husks frag. | | | | | | | | | | | | 1 | | | | | 4 | | | | | | | | | | 1 | | |
| *Avena* L. | Awn frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Hulled grain | | | | | | | | | | | | 2 | | | | | 142 | | | | | | | | | 8 | 40 | | |
| *Hordeum vulgare* L. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base | | | | | | | | | | | | | | | | | 23 | | | | | | | | | 2 | 17 | | |
| *Hordeum vulgare* L. | Lemma base frag. | | | | | | | | | | | | | | | | | 17 | | | | | | | | | | 3 | | |
| *Hordeum vulgare* L. | Grain with husks | | | | | | | 2 | | 24 | 2 | | | | | | | 606 | 6 | | 1 | 3 | | | | 1 | 87 | 395 | | |
| *Hordeum vulgare* L. | Grain frag. with husks | | | | | | | 1 | | | | | | | | | | 6 | 1 | | | | | | | | | 6 | | |
| *Hordeum vulgare* L. | Rachis segment with 1 node | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Husks frag. | | | | | | | | | | | | | | | | | 860 | | | | | | | | | | 46 | | |
| *Hordeum vulgare* L. | Awn frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain with husks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain frag. with husks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Husks frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain with husks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis segment with 1 node | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis segment with 2 nodes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Rachis node | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Rachis frag. | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | 1 |
| Triticeae Dumort. | Husks frag. | | | | | | | | 1 | | | | | | | | | | | | | | | | | | 97 | 179 | | |
| Triticeae Dumort. | Awn frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Arrhenatherum elatius* subspec. *bulbosum* (Willd.) Schübl. & G.Martens | Pseudobulb | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Poa* L. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Poa* L. | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Grain | | | | | | | | | | | | 30 | | | | | 1 | | | | | | | | | | | | |
| Poaceae Barnhart | Grain frag. | | | | | | | | | | | | 80 | | | | | | | | | | | | | | | | | |
| Poaceae - *Bromus* L. type | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae - *Vulpia* C.C.Gmel. type | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Embryo | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Scutellum | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grain and chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Spikelet base | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Husks frag. | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |

Table A6.4 - (continued).

| | | Phase | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 1st | 1st | 1st | 1st | 1st | 1st | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| | | Structure | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| | | S.U. | 115 | 115 | 115 | 116 | 116 | 116 | 106 | 106 | 106 | 106 | 106 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |
| | | Square | C6 | C6 | D6 | G5 | G4 | G5 | F1' | E0 | E0 | F0 | F0 | C4 | B3/C3 | F1 | E1 | B3/C3 | B6/C6 | D1 | B6/C6 | C6 | C6 | F1 | C3 | C1 | C3 | B6/C6 | B6/C6 | B6/C6 | B6/C6 | B6/C6 | B6/C6 |
| | | Sample | 143 | 544 | 546 | 158 | 548 | 549 | 209 | 212 | 213 | 236 | 260 | 1 | 7 | 8 | 18 | 25 | 45 | 78 | 79 | 80 | 88 | 92 | 93 | 94 | 95 | 99 | 102 | 105 | 106 | | |
| **Fabaceae** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lathyrus cicera* L. / *Lathyrus sativus* L. | Seed | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Lens culinaris* Medik. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Loment segment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Loment segment frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed | | | | | | | | | | 1 | | | 77 | | | | | | | | | | 1 | | | | 2 | | | | |
| *Pisum sativum* L. | Cotyledon | | | | 2 | | | | | | | | | 103 | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed frag. | | | | | | | | | | | | | 21 | | | | | | | | | | | | | | | | | | |
| *Vicia faba* L. | Seed | | | 1 | 8 | | | | 1 | | | | | 21 | | | | | 2 | | | | | | | | | 11 | 1 | | | |
| *Vicia faba* L. | Cotyledon | | | | 1 | | | | | | | | | 3 | | | | | | | | | | | | | | | 1 | | | |
| *Vicia faba* L. | Seed frag. | | | 2 | 3 | | | | 2 | | | | | 14 | | | | | | | | | | | | | | 8 | 5 | | | |
| *Vicia* L. / *Lathyrus* L. | Seed | | | | | | | | | | | | 1 | | | 1 | | | | | | | | | | 1 | | 2 | 2 | | | |
| *Vicia* L. / *Lathyrus* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Seed | | | | | | | | | | | 1 | | | 2 | | | | | | | | | | 1 | 1 | | 2 | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Cotyledon | | | | | | | | | | | | | | | 2 | | | | | | | | 1 | 1 | | | 1 | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Seed frag. | | | | | | | | | | | 5 | | | 3 | 4 | | | | | | 1 | 1 | 1 | | | 4 | 2 | | | | |
| Fabaceae Lindl. | Seed | | | | | | | | | | | | | 5 | | | | | | | | | | | | | | | | | | |
| Fabaceae Lindl. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae Lindl. | Seed frag. | | | | | | | | | | 2 | | | 346 | | | | | | | | | | | | | | | | | | |
| Fabaceae Lindl. | Pericarp frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Astragalus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Genista* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Medicago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Trifolium* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit frag. | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | 3 | | | |
| *Quercus* L. | Cotyledon frag. | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Half bract | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Bract frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium* L. / *Prunus cerasus* L. | Endocarp | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pyrus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rubus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seed | | | 1 | | | | | | | | | | | | | | | 1 | | | 1 | | | | | 3 | 1 | | | | |
| *Vitis vinifera* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Pedicel | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe with seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Oil/Fiber plant** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | **Moment** | 1st | 1st | 1st | 1st | 1st | 1st | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| | **Structure** | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| | **S.U.** | 115 | 115 | 115 | 116 | 116 | 116 | 106 | 106 | 106 | 106 | 106 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |
| | **Square** | C6 | C6 | D6 | G5 | G4 | G5 | F1' | E0 | E0 | F0 | F0 | C4 | B3/C3 | F1 | E1 | B3/C3 | B6/C6 | D1 | B6/C6 | C6 | C6 | F1 | C3 | C1 | C3 | B6/C6 | B6/C6 | B6/C6 | B6/C6 |
| | **Sample** | 143 | 544 | 546 | 158 | 548 | 549 | 209 | 212 | 213 | 236 | 260 | 1 | 7 | 8 | 18 | 25 | 45 | 78 | 79 | 80 | 88 | 92 | 93 | 94 | 95 | 99 | 102 | 105 | 106 |
| **Other remains** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Agrostemma githago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Agrostemma githago* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae Bercht. & J.Presl | Cypsela | | | | | | | | | | | | 4 | | | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* L. type | Cypsela | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Caryophyllaceae Juss. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Caryophyllaceae Juss. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Euphorbia* L. | Seed | | | | | | | | | | | | | | | | | 4 | | | | | | | | | | | | |
| *Galium aparine* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* L. | Seed | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| Papaveraceae Juss. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum persicaria* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - lenticular type | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - trigonal type | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago lanceolata* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ranunculus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex bucephalophorus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus* Murray / *Rumex crispus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sherardia arvensis* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Spergula arvensis* L. | Seed | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | |
| *Stellaria* L. / *Cerastium* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Urtica* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Veronica* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Viola* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Flower bud | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Peduncle | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | |
| Undetermined | Plant spine frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Seed/fruit | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| Undetermined | Seed/fruit frag. | | 2 | 3 | 1 | | | | 23 | 8 | | | 146 | 38 | 7 | | 29 | 196 | 7 | 13 | 3 | 64 | 3 | 32 | | 51 | 48 | 129 | 1 | 11 |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Phase** | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Moment** | | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| **Structure** | | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| **S.U.** | | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |
| **Square** | | B6/C6 | C1 | B6/C6 | B6/C6 | F1 | C6 | B6/C6 | D3 | C4 | C6 | C3 | B6/C6 | C5 | D3 | B6/C6 | B6/C6 | C6 | B3/C3 | B6/C6 | C7 | C7 | C7 | B7 | E7 | D8 | C7 | C7 | C8 | | |
| **Sample** | | 107 | 113 | 115 | 120 | 121 | 122 | 131 | 133 | 146 | 157 | 159 | 162 | 164 | 168 | 171 | 172 | 173 | 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | | |
| **Cereal** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grains agglomerated | | | | | | | | | | | | | | | 4 | | | | | | | | | | | | | | | |
| *Avena* L. | Grain | 120 | | 1 | | 4 | 85 | 56 | | | | | 111 | | | 1,363 | 1,169 | 6 | 885 | 1,411 | 1,581 | 1,556 | 7,721 | 709 | 125 | 25 | 2,419 | 499 | 104 | | |
| *Avena* L. | Grain frag. | 13 | | 1 | | | 12 | 4 | | | | | 8 | | | 165 | 199 | | 349 | 64 | 151 | 132 | 101 | 44 | 11 | | 51 | 29 | 8 | | |
| *Avena* L. / *Hordeum vulgare* L. | Grains agglomerated | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | 4 | | | | | | 4 | | | | | | | | | |
| *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grain | 17 | | | | 13 | 25 | 46 | | | | | 145 | | | 325 | 322 | | 65 | 192 | 16 | 56 | 36 | 24 | 4 | | 160 | 36 | | | |
| *Hordeum vulgare* L. | Grain frag. | 4 | | | | | 5 | 1 | | | | | 13 | | | 29 | 69 | | 16 | 20 | 1 | 3 | | 6 | 2 | | 4 | | | | |
| *Hordeum vulgare* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / Fabaceae Lindl. | Grain and seed agglomerated | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / Charcoal remain | Grain and charcoal agglomerated | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | 8 | | 57 | 4 | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated frag. | | | | | | | | | | | | | | | | | | | | | | | 17 | | | | | | | |
| *Panicum miliaceum* L. | Grain | 1 | | | | | | | 1 | | | | 3 | | | 20 | 22 | 3 | | 190 | 52 | 95 | | 357 | 8 | 96 | 169 | 8 | 168 | | |
| *Panicum miliaceum* L. | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | 3 | 1 | | | | | | |
| *Panicum miliaceum* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain | | | | | | | | | | | | | | | | | | | | | | | 16 | | 4 | | 8 | | | |
| *Setaria* P.Beauv. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae Link | Grain | 2 | | | | | 1 | 1 | | | | | | | | 5 | | | 15 | 64 | 4 | 29 | 72 | 231 | | 4 | | | 10 | | |
| Panicoideae Link | Grain frag. | | | | | | | | | | | | | | | 3 | 2 | 3 | 20 | 4 | 1 | | | 39 | | 7 | | | 7 | | |
| Panicoideae Link | Scutellum | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | 2 | | | | | | | | | | | | | | 16 | | | | |
| *Secale cereale* L. | Grain | 323 | | | | 28 | 167 | 236 | 1 | | | | 546 | 1 | | 738 | 580 | | 332 | 454 | 1,988 | 2,322 | 10,070 | 434 | 88 | 76 | 3,369 | 653 | 188 | | |
| *Secale cereale* L. | Grain longitudinal frag. | 8 | | | | 5 | 6 | 1 | | | | | 13 | | | 16 | 6 | | | | 33 | 123 | 332 | 8 | 8 | | 157 | 18 | 10 | | |
| *Secale cereale* L. | Grain frag. | 14 | | | | 2 | 12 | 3 | | | | | 15 | | | 29 | 22 | | 13 | 5 | 30 | 102 | 55 | 32 | 3 | 2 | 37 | 17 | 5 | | |
| *Secale cereale* L. / *Agrostemma githago* L. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain | 8 | | | 1 | 2 | 13 | 9 | | | | | 18 | | | 24 | 18 | | 31 | 16 | 12 | 8 | 123 | 48 | 2 | | 48 | | 8 | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain longitudinal frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain frag. | | | | | | | 1 | | | | | | | | | | | 1 | | 1 | | | 2 | | | | | | | |
| *Triticum* L. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grain with scutellum | 53 | | | 1 | 5 | 39 | 24 | | | | | 61 | | | 470 | 375 | 18 | 348 | 573 | 568 | 715 | 1,593 | 335 | 52 | 11 | 1,207 | 234 | 156 | | |
| Triticeae Dumort. | Grain without scutellum | 110 | | 1 | | 5 | 89 | 25 | | 1 | 1 | | 144 | | | 676 | 761 | 168 | 1,029 | 563 | 1,266 | 1,520 | 735 | 413 | 125 | 77 | 621 | 232 | 85 | | |
| Triticeae Dumort. | Embryo | 1 | | | | | | | | | | | 2 | | | | 1 | | | 1 | 1 | | 1 | | | | | | | | |
| Triticeae Dumort. | Scutellum | 19 | | | | 1 | 8 | 11 | | | | | 59 | | | 29 | 30 | 2 | 9 | 58 | 37 | 96 | 160 | | 2 | | 219 | 29 | 20 | | |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Phase** | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Moment** | | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| **Structure** | | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| **S.U.** | | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |
| **Square** | | B6/C6 | C1 | B6/C6 | B6/C6 | F1 | C6 | B6/C6 | D3 | C4 | C6 | C3 | B6/C6 | C5 | D3 | B6/C6 | B6/C6 | C6 | B3/C3 | B6/C6 | C7 | C7 | C7 | B7 | E7 | D8 | C7 | C7 | C7 | C8 | | |
| **Sample** | | 107 | 113 | 115 | 120 | 121 | 122 | 131 | 133 | 146 | 157 | 159 | 162 | 164 | 168 | 171 | 172 | 173 | 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | | | |
| **Cereal (grain and chaff)** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grain | 2 | | | | | 3 | 5 | | | | | 8 | | | 32 | 32 | | 6 | | 21 | 12 | 141 | 16 | | | 62 | 8 | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grains agglomerated | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base | 9 | | | | | | 3 | | | | | 7 | | | 3 | 33 | | 2 | 17 | 21 | 15 | 112 | | | | 46 | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base frag. | 1 | | | | | | 2 | | | | | | | | | 1 | | | 1 | | | | | | | | | | | | |
| *Avena* L. | Grain with husks | 73 | | | | 1 | 11 | 23 | | | | | 28 | | | 372 | 198 | | 70 | 188 | 224 | 306 | 1,905 | 167 | 23 | 4 | 666 | 97 | 8 | | | | |
| *Avena* L. | Grain frag. with husks | 4 | | | | | 2 | | | | | | | | | 11 | 10 | | 8 | 2 | 8 | 12 | 17 | 6 | | | 11 | 4 | | | | | |
| *Avena* L. | Husks frag. | 14 | | | | | | 3 | | | | | | | | 4 | 10 | | | 5 | | | | | | | | | | | | |
| *Avena* L. | Awn frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Hulled grain | 21 | | | | | 3 | 37 | | | | | 89 | | | 24 | 62 | | | 57 | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Hulled grains agglomerated | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base | 6 | | | | | 1 | 7 | | | | | 34 | | | 11 | 4 | | | 35 | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base frag. | | | | | | | 3 | | | | | 11 | | | 1 | | | | 4 | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grain with husks | 149 | | 2 | 3 | | 43 | 298 | | | | | 581 | | | 329 | 387 | | 49 | 472 | 4 | 34 | | 8 | 2 | | 64 | 18 | | | | |
| *Hordeum vulgare* L. | Grain frag. with husks | 3 | | | | | 1 | 9 | | | | | 13 | | | 16 | 23 | | 7 | 5 | 1 | 1 | 18 | 3 | | | 1 | | | | | |
| *Hordeum vulgare* L. | Rachis segment with 1 node | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Husks frag. | 47 | | | | | 7 | 102 | | | | | 530 | | | 45 | 21 | | 3 | 24 | | | 1 | | | | | | | | | |
| *Hordeum vulgare* L. | Awn frag. | 1 | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | 16 | | | | | | | | |
| *Panicum miliaceum* L. | Grain with husks | | | | | | | | | | | | | | | 75 | 52 | | 154 | 76 | 22 | 56 | 72 | 944 | 38 | 35 | 123 | 24 | 187 | | | |
| *Panicum miliaceum* L. | Grain frag. with husks | | | | | | | | | | | | | | | | | | | | | 7 | | 19 | 1 | 1 | | 1 | 4 | | | |
| *Panicum miliaceum* L. | Husks frag. | | | | | | | | | | | | | | | | | | | | | | | 22 | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain with husks | | | | | | | | | | | | | | | | | | | | | 15 | | 32 | | | | | | | | |
| *Secale cereale* L. | Rachis segment with 1 node | 3 | | | | | | 1 | | | | | | | | 35 | 8 | 1 | | 39 | 13 | 83 | | 34 | 8 | 4 | 15 | 8 | | | | |
| *Secale cereale* L. | Rachis segment with 2 nodes | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis frag. | | | | | | | | | | | | | | | 1 | | 3 | | 3 | 2 | | 1 | | | 1 | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Rachis node | | | | | | | | | | | | | | | | | | | 8 | | 8 | | 47 | 38 | 4 | | | | | | |
| *Triticum* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | 2 | 1 | | | | | | | | | | |
| Triticeae Dumort. | Rachis frag. | 2 | | | | | | | | | | 1 | | | | 1 | | | | | | 3 | 1 | 1 | | 1 | 1 | | | | | |
| Triticeae Dumort. | Husks frag. | 214 | | | | 23 | | 192 | | | | 355 | | | | 35 | 151 | | 5 | 99 | 7 | 2 | 11 | | | | 2 | 2 | | | | |
| Triticeae Dumort. | Awn frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Arrhenatherum elatius* subspec. *bulbosum* (Willd.) Schübl. & G.Martens | Pseudobulb | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Grain | | | | | | | 1 | | | | | | | | | 2 | | | 12 | 256 | 92 | 676 | 32 | 20 | 8 | 107 | 40 | | | | |
| *Festuca* L. / *Lolium* L. | Grain frag. | | | | | | | | | | | | | | | | | | | 2 | 8 | 1 | 1 | | | | 1 | | | | | |
| *Poa* L. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Poa* L. | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Grain | | | | | | | | | | | | | | | 9 | | | | 61 | | 205 | 304 | 100 | | 17 | 217 | 57 | 40 | | | |
| Poaceae Barnhart | Grain frag. | | | | | | | | | | | | | | | 2 | | | | 2 | | 5 | 5 | 7 | 3 | | 7 | | 1 | | | |
| Poaceae - *Bromus* L. type | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae - *Vulpia* C.C.Gmel. type | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Embryo | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Scutellum | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grain and chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | 36 | | | | | | | | | |
| Poaceae Barnhart | Hulled grain | | | | | | | | | | | | | | | 1 | | | | | | | 36 | | | | | | | | | |
| Poaceae Barnhart | Spikelet base | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Husks frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A6.4 - (continued).

| | | Phase | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| | | Structure | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| | | S.U. | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |
| | | Square | B6/C6 | C1 | B6/C6 | B6/C6 | F1 | C6 | B6/C6 | D3 | C4 | C6 | C3 | B6/C6 | C5 | D3 | B6/C6 | B6/C6 | C6 | B3/C3 | B6/C6 | C7 | C7 | C7 | B7 | E7 | D8 | C7 | C7 | C8 | |
| | | Sample | 107 | 113 | 115 | 120 | 121 | 122 | 131 | 133 | 146 | 157 | 159 | 162 | 164 | 168 | 171 | 172 | 173 | 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | |
| **Fabaceae** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lathyrus cicera* L. / *Lathyrus sativus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | 24 | | | | | | |
| *Lens culinaris* Medik. | Seed | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | |
| *Ornithopus* L. | Seed | | | | | | | | | | | | | | | | | | | | | 4 | 8 | | | | | | | | |
| *Ornithopus* L. | Loment segment | | | | | | | | | | | | | | | | | | | | | | | 152 | | | | | 8 | | |
| *Ornithopus* L. | Loment segment frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed | | | | | 3 | | | | | | | | 1 | | | | | | | | 8 | | 52 | | | | | | | |
| *Pisum sativum* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* L. | Seed | 4 | | | | | 2 | 2 | | | | | | 13 | | | 8 | 2 | | | 4 | | 4 | | | 4 | | 16 | | | |
| *Vicia faba* L. | Cotyledon | | | | | | | | | | | | | 3 | | | | | | | | | | | | | | | | | |
| *Vicia faba* L. | Seed frag. | 1 | | | | | 9 | 5 | | | | | | 14 | | | 1 | | | 3 | | | | | 3 | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed | | | | | | 1 | | | | | | | | | | 16 | 12 | | 6 | | 8 | 4 | 35 | 8 | 4 | | 32 | | | 10 |
| *Vicia* L. / *Lathyrus* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. /*Pisum* L. | Seed | 1 | | | | 8 | | 2 | | | | | | 5 | | | | | | | | 8 | 9 | 18 | 24 | | | | | | |
| *Vicia* L. / *Lathyrus* L. /*Pisum* L. | Cotyledon | 2 | | | | | | | | | | | | | | | | | | 6 | 8 | | | | 57 | 2 | 7 | | | | |
| *Vicia* L. / *Lathyrus* L. /*Pisum* L. | Seed frag. | | | | | | 20 | | | | | | | 17 | | | 1 | 3 | | 11 | 5 | 1 | 2 | 4 | 43 | 2 | 2 | 8 | 2 | | |
| Fabaceae Lindl. | Seed | | | | | | | | | | | | | | | | | | | | | 5 | 29 | | 73 | 4 | | | | | 20 |
| Fabaceae Lindl. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae Lindl. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Fabaceae Lindl. | Pericarp frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Astragalus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Genista* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Medicago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | 18 | | | | | | |
| *Trifolium* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | 18 | | | | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit frag. | | 1 | | | | | | | | | | 1 | | | | | | | 2 | | | 1 | | | | | | | | |
| *Quercus* L. | Cotyledon frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Half bract | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Bract frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium* L. / *Prunus cerasus* L. | Endocarp | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pyrus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rubus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | 36 | | | | | | | |
| *Vitis vinifera* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seed | | | | | | | 2 | | | | | 6 | | | | | | | 2 | 4 | | 4 | | | | | | | | 24 |
| *Vitis vinifera* L. | Seed frag. | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | |
| *Vitis vinifera* L. | Pedicel | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe with seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Oil/Fiber plant** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A6.4 - (continued).

| | | Phase | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| | | Structure | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| | | S.U. | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |
| | | Square | B6/C6 | C1 | B6/C6 | B6/C6 | F1 | C6 | B6/C6 | D3 | C4 | C6 | C3 | B6/C6 | C5 | D3 | B6/C6 | B6/C6 | C6 | B3/C3 | B6/C6 | C7 | C7 | C7 | B7 | E7 | D8 | C7 | C7 | B8 | C7 | C7 | C8 |
| | | Sample | 107 | 113 | 115 | 120 | 121 | 122 | 131 | 133 | 146 | 157 | 159 | 162 | 164 | 168 | 171 | 172 | 173 | 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | | | |
| **Other remains** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Agrostemma githago* L. | Seed | | | | | | | | | | | | | | | | 36 | 14 | | 6 | | 87 | 37 | 193 | 16 | 4 | 9 | 47 | 9 | | | | |
| *Agrostemma githago* L. | Seed frag. | | | | | | | | | | | | | | | | 4 | 1 | | | | 2 | 2 | 1 | | | | 2 | 1 | | | | |
| Asteraceae Bercht. & J.Presl | Cypsela | | | | | | | | | | | | | | | | | | | | | | 15 | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* L. type | Cypsela | | | | | | | | | | | | | | | | 1 | | | | 14 | 5 | 8 | 76 | | | | 31 | | | | | |
| Caryophyllaceae Juss. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | 8 | | | | | | |
| Caryophyllaceae Juss. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* L. | Seed | | | | | | | | | | | | | | | | | | | | | 5 | | | | | | | | | | | 20 |
| Chenopodiaceae Vent | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | |
| *Corrigiola* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Euphorbia* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp frag. | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | |
| *Malva* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | | | | |
| Papaveraceae Juss. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum persicaria* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - lenticular type | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - trigonal type | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | 29 | 30 | | | |
| Polygonaceae Juss. | Achene frag. | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | 1 | | | | |
| *Plantago lanceolata* L. | Seed | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | |
| *Plantago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ranunculus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment | | | | | | | | | | | | | | | | | | | | | | | | 18 | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex bucephalophorus* L. | Achene | | | | | | | | | | | | | | | | | | | | | 5 | | | | | | | | | | | |
| *Rumex conglomeratus* Murray / *Rumex crispus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* L. | Achene | | | | | | | | | | | | | | | | 4 | 6 | | 6 | | | | 36 | 16 | 4 | | | 14 | | | | |
| *Sherardia arvensis* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* L. | Seed | | | | | | | | | | | | | | | | | | | | | | 15 | 40 | | | | | | | | | 20 |
| *Silene* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Spergula arvensis* L. | Seed | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | 31 | | | | | |
| *Stellaria* L. / *Cerastium* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Urtica* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | 8 | | | | | | |
| *Veronica* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | 18 | | | | | | | | |
| *Viola* L. | Seed | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | 14 | | | | 20 |
| Undetermined | Flower bud | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | |
| Undetermined | Peduncle | | | | | | | | | | | | | | | | | | | | 1 | | 1 | | 1 | | | | | | | | |
| Undetermined | Plant spine frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Seed/fruit | | | | | | | | | | | | | | | | 1 | 1 | | | 2 | 3 | | | | | | | 4 | | | | 3 |
| Undetermined | Seed/fruit frag. | 394 | 1 | 1 | 10 | 21 | 350 | 129 | 2 | | 5 | 8 | 404 | | 1 | 706 | 332 | 75 | 340 | 697 | 714 | 1,116 | 562 | 773 | 172 | 92 | 603 | 308 | 93 | | | |

Table A6.4 – (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Phase** | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Moment** | | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| **Structure** | | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| **S.U.** | | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |
| **Square** | | E1 | C9 | B7/C7 | E1´ | D9 | B7 | C7 | C9 | C9 | C8 | C9 | B7 | B7 | C7 | B7 | C7 | C8 | D7 | D9 | F9 | C8 | B6/C6 | B8 | B3/C3 | F8 | B7 | D1' | B8 | D1 | C7 | |
| **Sample** | | 192 | 193 | 200 | 201 | 215 | 218 | 222 | 230 | 258 | 262 | 264 | 266 | 267 | 280 | 284 | 287 | 307 | 309 | 313 | 334 | 276 | 362 | 377 | 404 | 412 | 419 | 420 | 421 | 424 | 425 | |
| **Cereal** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grains agglomerated | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grain | 3,572 | 174 | 1,284 | 594 | | 5 | | | | | | | | | | 1 | 1314 | 18 | 26 | 12 | 1 | 204 | 1,885 | 383 | 16 | | 2 | 9 | 3 | 1 | |
| *Avena* L. | Grain frag. | 23 | 12 | 113 | 135 | | 2 | | | | | | | | | | | 101 | | 2 | 3 | | 17 | 129 | 161 | 2 | 1 | 2 | | | | |
| *Avena* L. / *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | | | | | |
| *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grain | 48 | 46 | 62 | 185 | | | | | | | | 1 | | | | 2 | 98 | | | 8 | | | | 6 | 4 | | 5 | | 2 | | |
| *Hordeum vulgare* L. | Grain frag. | 7 | 7 | 6 | 60 | | | | | | | | | | | | | 10 | | 8 | 2 | | | | 3 | 1 | | | | | 1 | |
| *Hordeum vulgare* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / Fabaceae Lindl. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / Charcoal remain | Grain and charcoal agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated | | 54 | | | 1 | | | 1 | | | | | | | | | | | | | | | 9 | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated frag. | | 78 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain | 154 | 791 | 157 | 269 | | | | | | | 1 | | | | | | 261 | | 122 | 38 | | 16 | 127 | 191 | 16 | | | | | | |
| *Panicum miliaceum* L. | Grain frag. | | 58 | 3 | 12 | | | | | | | | | | | 1 | | | | | 1 | | 3 | 6 | 11 | 1 | | | | | | |
| *Panicum miliaceum* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain | | | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria* P.Beauv. | Grain | | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae Link | Grain | 16 | 327 | 51 | 80 | | | | | | | | | | | | | 32 | | 19 | | | 64 | 32 | 43 | | | | | | | |
| Panicoideae Link | Grain frag. | 7 | 191 | 21 | 25 | | | | | 3 | | | | | | | | 20 | 2 | 9 | 1 | | 7 | 26 | 18 | 3 | | | 1 | | | |
| Panicoideae Link | Scutellum | | 8 | | 2 | | | | | | | | | | | | | | | | | | | | 15 | | | | | | | |
| *Secale cereale* L. | Grains agglomerated | | | 23 | | | 6 | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| *Secale cereale* L. | Grain | 383 | 437 | 1,714 | 1,404 | | 50 | | | 15 | | 1 | 3 | | | 3 | 38 | 1,729 | | 73 | | 10 | 169 | 2,073 | 267 | 28 | 2 | 72 | 16 | 33 | | |
| *Secale cereale* L. | Grain longitudinal frag. | 8 | 9 | | 47 | | | | | | | | | | | | | 106 | | | | | 15 | 138 | 2 | | | 2 | 1 | | | |
| *Secale cereale* L. | Grain frag. | 26 | 33 | 115 | 231 | | 4 | | | 1 | | 1 | | | | | 1 | 75 | 6 | 2 | 2 | 1 | 20 | 63 | 67 | 1 | | 8 | | 8 | | |
| *Secale cereale* L. / *Agrostemma githago* L. | Grain and seed agglomerated | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain | 72 | 16 | 38 | 79 | | | | | 1 | | | | | | | | 15 | | | | | 7 | 28 | 28 | 4 | | 2 | | 12 | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain longitudinal frag. | | | | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain frag. | 3 | 1 | | 6 | | | | | | | | | | | | | | | | | | | | 6 | | | | | 1 | | |
| *Triticum* L. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grain with scutellum | 283 | 241 | 134 | 104 | | 1 | | | | | | | | | 2 | 1 | 451 | | 26 | 12 | | 69 | 457 | 105 | | | 1 | | 2 | 1 | |
| Triticeae Dumort. | Grain without scutellum | 284 | 530 | 994 | 971 | | 8 | 1 | | | | | | | | 6 | 2 | 514 | 41 | 49 | 31 | 1 | 196 | 805 | 971 | 18 | | 22 | 8 | 18 | 5 | |
| Triticeae Dumort. | Embryo | | | 2 | 1 | | | | | | | | 1 | | | | 1 | | | | | | 1 | 2 | | | | | | | | |
| Triticeae Dumort. | Scutellum | 32 | 17 | 50 | 2 | | 1 | | | | | | | | | | | 105 | | | | | 153 | 246 | 78 | | | | 2 | | | |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | **Moment** | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| | **Structure** | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| | **S.U.** | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |
| | **Square** | E1 | C9 | B7/C7 | E1´ | D9 | B7 | C7 | C9 | C9 | C8 | C9 | B7 | B7 | C7 | B7 | C7 | C8 | D7 | D9 | F9 | C8 | B6/C6 | B8 | B3/C3 | F8 | B7 | D1' | B8 | D1 | C7 | |
| | **Sample** | 192 | 193 | 200 | 201 | 215 | 218 | 222 | 230 | 258 | 262 | 264 | 266 | 267 | 280 | 284 | 287 | 307 | 309 | 313 | 334 | 276 | 362 | 377 | 404 | 412 | 419 | 420 | 421 | 424 | 425 | |
| **Cereal (grain and chaff)** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grain | | | 33 | | | 1 | | | | | | | | | | | 16 | | | | | | 17 | 4 | | | 1 | 1 | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base | | | 9 | | | | | | | | | | | | | 1 | 16 | | | | | 81 | 16 | | | | | 1 | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base frag. | | | | | | | | | | | | | | | | | | | | | | 2 | 1 | | | 1 | | | | | |
| *Avena* L. | Grain with husks | 103 | 55 | 263 | 56 | | 7 | | | | 1 | | | | | 2 | 2 | 325 | | | | | 46 | 430 | 30 | 4 | | 3 | | 2 | | |
| *Avena* L. | Grain frag. with husks | 1 | 5 | 21 | 10 | | | | | | | | | | | | | 8 | | | | | 4 | 19 | 3 | | 1 | | 1 | | | |
| *Avena* L. | Husks frag. | | | | | | 1 | | | | | | | | | | 4 | | | | | | 3 | 5 | | | 2 | | 4 | | 1 | |
| *Avena* L. | Awn frag. | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Hulled grain | | | | | | 1 | | | | | | 1 | | | | | | | | | | 12 | | | | | | | | | |
| *Hordeum vulgare* L. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base | | | | | | | | | | | | | | | | | | | | | | 48 | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base frag. | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| *Hordeum vulgare* L. | Grain with husks | 104 | 66 | 8 | 55 | | 3 | | | 3 | | | | | | 1 | 1 | 53 | | | | | 32 | 9 | | | 1 | 3 | | 5 | | |
| *Hordeum vulgare* L. | Grain frag. with husks | 1 | 4 | | 4 | | | | | 1 | | | | | | | | 1 | | | | 1 | 3 | | | | | 3 | | 1 | | |
| *Hordeum vulgare* L. | Rachis segment with 1 node | | | | | | | | | | | | | | | | | | | | | | 48 | | | | | | | | | |
| *Hordeum vulgare* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | |
| *Hordeum vulgare* L. | Husks frag. | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | |
| *Hordeum vulgare* L. | Awn frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | 16 | | | | | | | | |
| *Panicum miliaceum* L. | Grain with husks | 57 | 1,822 | 137 | 112 | | | | | 3 | | | | | | | | 197 | 17 | 94 | | | 33 | 298 | 89 | | | | 1 | | | |
| *Panicum miliaceum* L. | Grain frag. with husks | | 115 | 7 | 3 | | | | | 3 | | 7 | | | | | | 6 | 1 | 3 | | | 4 | 20 | 8 | | | | | | | |
| *Panicum miliaceum* L. | Husks frag. | | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain with husks | 14 | 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis segment with 1 node | 16 | 25 | 52 | | | | | | | | | | | | | | 137 | | | | | | 253 | | | | | 3 | | | |
| *Secale cereale* L. | Rachis segment with 2 nodes | | | | | | | | | | | | | | | | | | | | | | | 16 | | | | | 1 | | | |
| *Secale cereale* L. | Rachis frag. | | | 3 | | | | | | | | | | | | | | 2 | | | | | | 3 | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Rachis node | | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* L. | Rachis frag. | | 3 | 1 | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | |
| Triticeae Dumort. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | 7 | | | | | | | | |
| Triticeae Dumort. | Husks frag. | | 3 | | | | 11 | | | 2 | | | | | | 4 | 4 | | | | | | 13 | 21 | | | | | | | 1 | |
| Triticeae Dumort. | Awn frag. | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| **Other Poaceae** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Arrhenatherum elatius* subspec. *bulbosum* (Willd.) Schübl. & G.Martens | Pseudobulb | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Grain | 75 | 26 | 116 | 68 | | | | | | | | | | | | | 185 | 9 | | | | 16 | 143 | 39 | | | | | | | |
| *Festuca* L. / *Lolium* L. | Grain frag. | | | 2 | 13 | | | | | | | | | | | | | | | 1 | | | | 2 | 8 | | | | | | | |
| *Poa* L. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Poa* L. | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Grain | 61 | 16 | 52 | 102 | | | | | | | | | | | | | | 36 | 10 | | | | 149 | 42 | 8 | | | 2 | | | |
| Poaceae Barnhart | Grain frag. | | 4 | 11 | 70 | | | | | | | | | | | | | 2 | 1 | 3 | 1 | | | 8 | 8 | | | | | | | |
| Poaceae - *Bromus* L. type | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae - *Vulpia* C.C.Gmel. type | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Embryo | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Scutellum | | | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grain and chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | 16 | | | | | | | | |
| Poaceae Barnhart | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Spikelet base | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| Poaceae Barnhart | Husks frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A6.4 - (continued).

| | | Phase | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| | | Structure | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| | | S.U. | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |
| | | Square | E1 | C9 | B7/C7 | E1´ | D9 | B7 | C7 | C9 | C9 | C8 | C9 | B7 | B7 | C7 | B7 | C7 | C8 | D7 | D9 | F9 | C8 | B6/C6 | B8 | B3/C3 | F8 | B7 | D1' | B8 | D1 | C7 | | |
| | | Sample | 192 | 193 | 200 | 201 | 215 | 218 | 222 | 230 | 258 | 262 | 264 | 266 | 267 | 280 | 284 | 287 | 307 | 309 | 313 | 334 | 276 | 362 | 377 | 404 | 412 | 419 | 420 | 421 | 424 | 425 | | |
| **Fabaceae** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lathyrus cicera* L. / *Lathyrus sativus* L. | Seed | | | | 8 | | | | | 1 | | | | | | | | 23 | | | | | | 9 | | | | | | | | | | |
| *Lens culinaris* Medik. | Seed | | 8 | | 4 | | | | | | | | | | | | | | | | | | 4 | | | | | | | | | | | |
| *Ornithopus* L. | Seed | | 8 | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Loment segment | 16 | | 17 | | | | | | | | | | | | | | | | | | | | 40 | | | | | | | | | | |
| *Ornithopus* L. | Loment segment frag. | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | |
| *Pisum sativum* L. | Seed | | 4 | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| *Pisum sativum* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* L. | Seed | | | | | | | | | 2 | | | | | | | 1 | | | | | | | 28 | | | | | | 1 | | | |
| *Vicia faba* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* L. | Seed frag. | | 7 | 1 | 1 | | | | | | | | | | | | | 1 | | | | | | 1 | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed | | | 9 | 24 | | | | | | | | | | | | | 69 | | | | | | | 4 | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Cotyledon | | | | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed frag. | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. /*Lathyrus* L. / *Pisum* L. | Seed | 22 | 8 | | 8 | | | | | 1 | | | | | | | | | | | | | | 37 | 2 | | | | | | | | | |
| *Vicia* L. /*Lathyrus* L. / *Pisum* L. | Cotyledon | | 31 | 8 | 12 | | | | | | | | | | | | | 15 | | | | | 4 | | 22 | | | | | | | | | |
| *Vicia* L. /*Lathyrus* L. / *Pisum* L. | Seed frag. | 4 | 18 | 9 | 6 | | | | | | | | | | | | | 30 | | | 4 | | 2 | 6 | 29 | | | | | | | | | |
| Fabaceae Lindl. | Seed | 16 | 8 | | 14 | | | | | | | | | | | | | 36 | | | 18 | | | 28 | 4 | | | | | | | | | |
| Fabaceae Lindl. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae Lindl. | Seed frag. | | 2 | | | | | | | | | | | | | | 1 | | | | 2 | | | | | | | | | | | | | |
| Fabaceae Lindl. | Pericarp frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Astragalus* L. | Seed | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Genista* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Medicago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Trifolium* L. | Seed | | 8 | | | | | | | | | | | | | | | 36 | | | | | | | | | | | | | | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit frag. | | | | | | | | | 3 | | | | | | | | | | | | | 3 | | | | | | | | | | | |
| *Quercus* L. | Cotyledon frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Half bract | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Bract frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium* L. / *Prunus cerasus* L. | Endocarp | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| *Pyrus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rubus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | 8 | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seed | | | | | | | | | | | | | | | | | | 7 | 16 | | | | 19 | | | | | | | | | | |
| *Vitis vinifera* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| *Vitis vinifera* L. | Pedicel | | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe with seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Oil/Fiber plant** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A6.4 - (continued).

| | | Phase | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| | | Structure | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| | | S.U. | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |
| | | Square | E1 | C9 | B7/C7 | E1´ | D9 | B7 | C7 | C9 | C9 | C8 | C9 | B7 | B7 | C7 | B7 | C7 | C8 | D7 | D9 | F9 | C8 | B6/C6 | B8 | B3/C3 | F8 | B7 | D1' | B8 | D1 | C7 | | |
| | | Sample | 192 | 193 | 200 | 201 | 215 | 218 | 222 | 230 | 258 | 262 | 264 | 266 | 267 | 280 | 284 | 287 | 307 | 309 | 313 | 334 | 276 | 362 | 377 | 404 | 412 | 419 | 420 | 421 | 424 | 425 | | |
| **Other remains** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | 8 | | | | | | | | | | | | | |
| *Agrostemma githago* L. | Seed | | 9 | 81 | 4 | | | | | | | | | | | | | | 31 | | | | | 7 | 53 | 4 | 26 | | | | | | |
| *Agrostemma githago* L. | Seed frag. | | | 2 | | | | | | | | | | | | | | | | | | | | | 6 | | | | | | | | | |
| Asteraceae Bercht. & J.Presl | Cypsela | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* L. type | Cypsela | | 8 | 9 | | | | | | | | | | | | | | | | | 8 | | | | | 4 | | | | | | | | |
| Caryophyllaceae Juss. | Seed | 16 | | | 10 | | | | | | | | | | | | | | 36 | | | | | | | | | | | | | | | |
| Caryophyllaceae Juss. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* L. | Seed | | | | 4 | | | | | | | | | | | | | | | | | | | | 40 | | | | | | | | | |
| Chenopodiaceae Vent | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | |
| *Cistus ladanifer* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola* L. | Achene | | | | | | | | | | | | | | | | | | | | 8 | | | | | | | | | | | | | |
| *Euphorbia* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* L. | Mericarp | 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp | | | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Papaveraceae Juss. | Seed | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum persicaria* L. | Achene | | | 18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - lenticular type | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - trigonal type | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene | | | | 2 | | | | | | | | | | | | | | | | | | | | 20 | | | | | | | | | |
| Polygonaceae Juss. | Achene frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago lanceolata* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ranunculus* L. | Achene | | | | | | | | | | | | | | | | | | | | 10 | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment | | | | | | | | | | | | | | | | | | 8 | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex bucephalophorus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus* Murray / *Rumex crispus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* L. | Achene | 32 | | | 23 | | | | | | | | | | | | | | | | | 8 | | | | 8 | 18 | | | | | | | |
| *Sherardia arvensis* L. | Mericarp | | | | | | | | | | | | | | | | | | | | 10 | | | | | | | | | | | | | |
| *Silene gallica* L. | Seed | | 25 | | | | | | | | | | | | | | | | | | | | | | | 15 | | | | | | | | |
| *Silene* L. | Seed | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Spergula arvensis* L. | Seed | | | | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Stellaria* L. / *Cerastium* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Urtica* L. | Achene | | | | 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Veronica* L. | Seed | | | | | | | | | | | | | | | | | | | | 8 | | | | | | | | | | | | | |
| *Viola* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | 18 | | | | | | | |
| Undetermined | Flower bud | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | |
| Undetermined | Peduncle | | | | | | | | | | | | | | | | | | | | | | 1 | 2 | | | | | | | | | | |
| Undetermined | Plant spine frag. | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | |
| Undetermined | Seed/fruit | 1 | 7 | | 2 | | | | | | | | | | | | | | 1 | 1 | 11 | 2 | | | | 1 | | | | | | | | |
| Undetermined | Seed/fruit frag. | 356 | 1,463 | 910 | 3,100 | 34 | 11 | 16 | 2 | 2 | 6 | 2 | 31 | 14 | 742 | 37 | 54 | 46 | 1 | 351 | 834 | 1,305 | 28 | 19 | 31 | 21 | 26 | 80 | | | | | |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | **Moment** | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| | **Structure** | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| | **S.U.** | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 108 | 108 | 108 | 108 | 108 | 108 | 108 |
| | **Square** | E1' | B8 | F1' | D0 | F0 | D9 | F0 | F1' | F1' | E0 | F0 | D1 | F1' | B7 | B7 | C1' | D4 | D5 | C3 | C4 | C5 | D3 | D3 | C6 | D3 | E6 | G3 | G8 | D7 | D4 | D5 |
| | **Sample** | 429 | 430 | 431 | 433 | 435 | 436 | 438 | 439 | 440 | 441 | 442 | 443 | 444 | 447 | 448 | 522 | 536 | 537 | 538 | 539 | 540 | 541 | 542 | 543 | 551 | 145 | 156 | 216 | 273 | 451 | 463 |
| **Cereal** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grain | | 18 | | 3 | | | | | | | | | | | | | | | 89 | | 9 | | 69 | 248 | | | | | 3 | | | | | |
| *Avena* L. | Grain frag. | | 20 | | | | | | 1 | | | | | | | | | | | 2 | | 1 | | 14 | 17 | | | | | | | | | | |
| *Avena* L. / *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grain | | | | 5 | 7 | | | 4 | | | 1 | | | | | | | | 23 | 29 | 32 | | 31 | 91 | | | | | | | | | | |
| *Hordeum vulgare* L. | Grain frag. | | | | 1 | 2 | | | 3 | | | | | | | | | | 1 | 4 | 6 | 8 | | 6 | 3 | | | | | 1 | | | | | |
| *Hordeum vulgare* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / Fabaceae Lindl. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / Charcoal remain | Grain and charcoal agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain | | 3 | 1 | 1 | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain frag. | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria* P.Beauv. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae Link | Grain | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae Link | Grain frag. | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae Link | Scutellum | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Grain | | 10 | | 61 | 29 | | | 13 | | 1 | 5 | | | | 1 | | | 5 | 222 | 6 | 35 | | 156 | 605 | | | | | 5 | | 1 | | | |
| *Secale cereale* L. | Grain longitudinal frag. | | 1 | | | | | | | | | | | | | | | | | 18 | | | | | 5 | | | | | | | | | | |
| *Secale cereale* L. | Grain frag. | 1 | 4 | | 10 | 2 | | | 1 | | | | | | | | | | | 29 | 1 | 2 | | 67 | 37 | | | | | | | | | | |
| *Secale cereale* L. / *Agrostemma githago* L. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain | | | | 3 | 5 | | | | | | | | | | | | | 2 | 35 | 12 | 16 | 1 | 20 | 34 | | | | | 2 | | 1 | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain longitudinal frag. | | | | | | | | | | | | | | | | | | | 4 | | | | 3 | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain frag. | | | | | | | | | | | | | | | | | | | 1 | 3 | 3 | | 8 | 1 | | | | | | | | | | |
| *Triticum* L. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grain with scutellum | | 7 | | | | | | | | | | | | | | | | | | | 2 | | | 1 | | | | | | | | | | |
| Triticeae Dumort. | Grain without scutellum | 8 | 121 | | 5 | | | | 2 | | | 1 | | | | 1 | | | | 11 | | 20 | | 20 | 36 | | | | | | | | | | |
| Triticeae Dumort. | Embryo | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Scutellum | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | **Moment** | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| | **Structure** | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| | **S.U.** | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 108 | 108 | 108 | 108 | 108 | 108 | 108 |
| | **Square** | E1' | B8 | F1' | D0 | F0 | D9 | F0 | F1' | F1' | E0 | F0 | D1 | F1' | B7 | B7 | C1' | D4 | D5 | C3 | C4 | C5 | D3 | D3 | C6 | D3 | E6 | G3 | G8 | D7 | D4 | D5 | |
| | **Sample** | 429 | 430 | 431 | 433 | 435 | 436 | 438 | 439 | 440 | 441 | 442 | 443 | 444 | 447 | 448 | 522 | 536 | 537 | 538 | 539 | 540 | 541 | 542 | 543 | 551 | 145 | 156 | 216 | 273 | 451 | 463 | |
| **Cereal (grain and chaff)** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grain | | | | | | | | | | | | | | | | | | | 1 | | | | 1 | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base | | 1 | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grain with husks | | 5 | | 2 | 1 | | | 1 | | | | | | | | | | | | | | | 1 | | | | | | | 1 | | |
| *Avena* L. | Grain frag. with husks | | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Husks frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Awn frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | |
| *Hordeum vulgare* L. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grain with husks | | | | 3 | 2 | | | 1 | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | |
| *Hordeum vulgare* L. | Grain frag. with husks | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Rachis segment with 1 node | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Husks frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Awn frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain with husks | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain frag. with husks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Husks frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain with husks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis segment with 1 node | | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis segment with 2 nodes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Rachis node | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Husks frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Awn frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Arrhenatherum elatius* subspec. *bulbosum* (Willd.) Schübl. & G.Martens | Pseudobulb | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Grain | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Poa* L. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Poa* L. | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Grain | | 11 | | | | | | | | | | | | | | | | | | | | 5 | | 1 | | | | | | | | |
| Poaceae Barnhart | Grain frag. | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae - *Bromus* L. type | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae - *Vulpia* C.C.Gmel. type | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Embryo | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Scutellum | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grain and chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Spikelet base | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Rachis frag. | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Husks frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A6.4 - (continued).

| | | Phase | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| | | Structure | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| | | S.U. | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 108 | 108 | 108 | 108 | 108 | 108 |
| | | Square | E1' | B8 | F1' | D0 | F0 | D9 | F0 | F1' | F1' | E0 | F0 | D1 | F1' | B7 | B7 | C1' | D4 | D5 | C3 | C4 | C5 | D3 | D3 | C6 | D3 | E6 | G3 | G8 | D7 | D4 | D5 | |
| | | Sample | 429 | 430 | 431 | 433 | 435 | 436 | 438 | 439 | 440 | 441 | 442 | 443 | 444 | 447 | 448 | 522 | 536 | 537 | 538 | 539 | 540 | 541 | 542 | 543 | 551 | 145 | 156 | 216 | 273 | 451 | 463 | |
| **Fabaceae** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lathyrus cicera* L. / *Lathyrus sativus* L. | Seed | | | | | 2 | | | | | | | | | | | | | | | 1 | | | | | 2 | | | | | | | | |
| *Lens culinaris* Medik. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Loment segment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Loment segment frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed | | | | | 1 | | | 3 | | | | | | | | | | 1 | 1 | 40 | 24 | 17 | | 54 | 2 | | | | | | | | |
| *Pisum sativum* L. | Cotyledon | | | | | | | | | | | | | | | | | | 1 | 2 | 33 | 12 | 24 | | 45 | | | | | | | | | |
| *Pisum sativum* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | 22 | 4 | 4 | | 22 | | | | | | | | | |
| *Vicia faba* L. | Seed | | | | | | 1 | | | | | | | | | | | | | 2 | 7 | 26 | 14 | | 11 | 26 | | | | | | | | |
| *Vicia faba* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | 3 | 36 | | | | 2 | | | | | | | | |
| *Vicia faba* L. | Seed frag. | | | | | | | | | | | | | | | | | | | 1 | 3 | | 7 | | 7 | 5 | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Seed | | | | | 5 | | | 11 | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Cotyledon | | | | | 1 | 2 | | 3 | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Seed frag. | | | | | 3 | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae Lindl. | Seed | | 1 | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | |
| Fabaceae Lindl. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae Lindl. | Seed frag. | | 1 | | | | | | | | | | | | | | | | | | 6 | 37 | 14 | | 18 | | | | | | | | | |
| Fabaceae Lindl. | Pericarp frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Astragalus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Genista* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Medicago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Trifolium* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* L. | Cotyledon frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Half bract | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Bract frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium* L. / *Prunus cerasus* L. | Endocarp | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | |
| *Pyrus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rubus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seed | | | | | | | | 1 | | | | | | | | | | | | | | | | | 2 | | | | | | | | |
| *Vitis vinifera* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Pedicel | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe with seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Oil/Fiber plant** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated | | | | | | | 4 | | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated frag. | | | | | | | 98 | | 3 | | | | | | | | | | | | | | | | | | | | | | | | |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Phase** | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Moment** | | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| **Structure** | | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| **S.U.** | | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 108 | 108 | 108 | 108 |
| **Square** | | E1' | B8 | F1' | D0 | F0 | D9 | F0 | F1' | F1' | E0 | F0 | D1 | F1' | B7 | B7 | C1' | D4 | D5 | C3 | C4 | C5 | D3 | D3 | C6 | D3 | E6 | G3 | G8 | D7 | D4 | D5 | | |
| **Sample** | | 429 | 430 | 431 | 433 | 435 | 436 | 438 | 439 | 440 | 441 | 442 | 443 | 444 | 447 | 448 | 522 | 536 | 537 | 538 | 539 | 540 | 541 | 542 | 543 | 551 | 145 | 156 | 216 | 273 | 451 | 463 | | |
| **Other remains** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Agrostemma githago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Agrostemma githago* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae Bercht. & J.Presl | Cypsela | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* L. type | Cypsela | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Caryophyllaceae Juss. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Caryophyllaceae Juss. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Euphorbia* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Papaveraceae Juss. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum persicaria* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - lenticular type | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - trigonal type | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago lanceolata* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ranunculus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex bucephalophorus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus* Murray / *Rumex crispus* | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sherardia arvensis* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Spergula arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Stellaria* L. / *Cerastium* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Urtica* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Veronica* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Viola* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Flower bud | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Peduncle | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Plant spine frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Seed/fruit | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Seed/fruit frag. | 21 | 458 | 9 | 22 | | | 5 | 32 | | | 1 | | | | | | | | | | 2 | | | | | 1 | 1 | | | | | |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | **Moment** | 2nd | 2nd | 2nd | 2nd | 2nd | 3rd | 3rd | 3rd | 3rd | 3rd | 3rd | 3rd | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th |
| | **Structure** | HS9 | HS9 | HS9 | HS9 | HS9 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 |
| | **S.U.** | 108 | 108 | 108 | 109 | 137 | 136 | 136 | 136 | 139 | 139 | 139 | 140 | 124 | 124 | 124 | 124 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 |
| | **Square** | D6 | G4 | F5 | F5 | B8 | B8 | B8 | B8 | A9/B9 | A9/B9 | A8/B8 | A8 | C6 | C6 | B6/C6 | B6/C6 | A0 | A6 | B7 | A3/A4 | C6 | A6 | A5 | A5 | A5 |
| | **Sample** | 545 | 547 | 550 | 165 | 530 | 527 | 531 | 534 | 515 | 524 | 529 | 526 | 12 | 70 | 75 | 141 | 60 | 62 | 72 | 81 | 82 | 84 | 85 | 86 | 87 |
| **Cereal** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grain | 12 | | | | 117 | 177 | 114 | 565 | | 26 | 549 | 211 | | | 67 | 93 | | | 5 | 7 | 1 | 5 | 2 | 1 | 15 |
| *Avena* L. | Grain frag. | | | | | 7 | 13 | 8 | 15 | | 7 | 35 | 17 | | | 23 | 47 | | | 1 | 1 | 1 | | 1 | | |
| *Avena* L. / *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grain | 7 | | | | 5 | 2 | 4 | 7 | 1 | 2 | 74 | 13 | | 1 | 31 | 1 | | | 1 | 1 | 1 | 1 | 4 | 1 | 10 |
| *Hordeum vulgare* L. | Grain frag. | | | | | | 1 | 2 | | | 1 | 3 | | | | 3 | 1 | | | 1 | 1 | | | | | |
| *Hordeum vulgare* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / Fabaceae Lindl. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / Charcoal remain | Grain and charcoal agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated | | | | | | | 4 | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain | | | | | 11 | 72 | 18 | 94 | | 48 | 91 | 29 | | | 1 | 58 | | | 1 | 1 | | | | | |
| *Panicum miliaceum* L. | Grain frag. | | | | | | 1 | | | | 2 | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain | | | | | | | | | | 3 | | | | | | 4 | | | | | | | | | |
| *Setaria* P.Beauv. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae Link | Grain | | | | | | 10 | 6 | 1 | | | 30 | | | | | 29 | | | | | | | | | |
| Panicoideae Link | Grain frag. | | | | | | 9 | | 4 | | 12 | 2 | 5 | | | | 12 | | | | | | | | | |
| Panicoideae Link | Scutellum | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| *Secale cereale* L. | Grain | 19 | | | | 60 | 132 | 120 | 511 | 1 | 41 | 592 | 136 | | 2 | 118 | 9 | | | 9 | 33 | 13 | 5 | 5 | 7 | 95 |
| *Secale cereale* L. | Grain longitudinal frag. | | | | | 2 | | 4 | 22 | | | 29 | | | | | 2 | | | | | | | | | |
| *Secale cereale* L. | Grain frag. | 7 | | | | 11 | 21 | 14 | 13 | 1 | 3 | 59 | 15 | | | 27 | 1 | | | | 3 | | | | | 2 |
| *Secale cereale* L. / *Agrostemma githago* L. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain | 2 | | | | 4 | | | 22 | | 2 | 23 | 6 | | | 9 | | | | | 7 | 2 | 2 | 1 | 5 | 23 |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain longitudinal frag. | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain frag. | | | | | | | 1 | | | 1 | | 1 | | | 1 | | | | | | | | | | |
| *Triticum* L. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grain with scutellum | | | | | 18 | 35 | 41 | 147 | 3 | 2 | 204 | 38 | | 1 | 99 | 111 | | | 6 | 3 | 1 | | 1 | | 8 |
| Triticeae Dumort. | Grain without scutellum | | | | | 36 | 55 | 113 | 88 | | 49 | 194 | 128 | | 3 | 587 | 1,411 | | | 28 | 12 | 2 | 2 | 1 | | 9 |
| Triticeae Dumort. | Embryo | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Scutellum | | | | | | | 11 | | 1 | | | 6 | | | 6 | 16 | | | | | 1 | | | | 2 |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | **Moment** | 2nd | 2nd | 2nd | 2nd | 2nd | 3rd | 3rd | 3rd | 3rd | 3rd | 3rd | 3rd | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th |
| | **Structure** | HS9 | HS9 | HS9 | HS9 | HS9 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 |
| | **S.U.** | 108 | 108 | 108 | 109 | 137 | 136 | 136 | 136 | 139 | 139 | 139 | 140 | 124 | 124 | 124 | 124 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 |
| | **Square** | D6 | G4 | F5 | F5 | B8 | B8 | B8 | B8 | A9/B9 | A9/B9 | A8/B8 | A8 | C6 | C6 | B6/C6 | B6/C6 | A0 | A6 | B7 | A3/A4 | C6 | A6 | A5 | A5 | A5 |
| | **Sample** | 545 | 547 | 550 | 165 | 530 | 527 | 531 | 534 | 515 | 524 | 529 | 526 | 12 | 70 | 75 | 141 | 60 | 62 | 72 | 81 | 82 | 84 | 85 | 86 | 87 |
| **Cereal (grain and chaff)** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grain | | | | | | | | | | | 40 | | | | 1 | 1 | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base | | | | | 11 | 10 | | | | | | | | | | 2 | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grain with husks | | | | | 13 | 7 | 23 | 60 | | 6 | 212 | 4 | | 2 | 1 | | | | | 5 | | | | | 2 |
| *Avena* L. | Grain frag. with husks | | | | | | | 1 | | | | 7 | 1 | | | 1 | | | | | | | | | | |
| *Avena* L. | Husks frag. | | | | | | 1 | | | | | | | | | 2 | | | | | | | | | | |
| *Avena* L. | Awn frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Hulled grain | | | | | | | | | | | 3 | | | | | | | | | | | | | | 1 |
| *Hordeum vulgare* L. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base | | | | | | | | 31 | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grain with husks | | | | | | | | | | | 19 | 4 | | | 10 | | | | | | 1 | | | | 2 |
| *Hordeum vulgare* L. | Grain frag. with husks | | | | | | | | | | | | | | 1 | 3 | | | | | | | | | | |
| *Hordeum vulgare* L. | Rachis segment with 1 node | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Rachis frag. | | | | | 1 | | | | | | | | | | | 1 | | | | | | | | | |
| *Hordeum vulgare* L. | Husks frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Awn frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Hulled grain | | | | | | | | | | 8 | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain with husks | | | | | 33 | 70 | 41 | | | 45 | 18 | 31 | | | | 12 | | | | | | | | | |
| *Panicum miliaceum* L. | Grain frag. with husks | | | | | | 1 | | 6 | | 2 | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Husks frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Hulled grain | | | | | | | | | | 3 | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain with husks | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis segment with 1 node | | | | | | 37 | 32 | 62 | | | 48 | 13 | | | | 19 | | | | | | | | | |
| *Secale cereale* L. | Rachis segment with 2 nodes | | | | | | | | 19 | | | | | | | | 2 | | | | | | | | | |
| *Secale cereale* L. | Rachis frag. | | | | | | | | | | | | | | | | 9 | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Rachis node | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* L. | Rachis frag. | | | | | | | | | | | | | | | | 2 | | | | | | | | | |
| Triticeae Dumort. | Rachis frag. | | | | | | | | | | | | | | | | 4 | | | | | | | | | |
| Triticeae Dumort. | Husks frag. | | | | | | 1 | | | | | | | | | 3 | | | | | | | | | | 2 |
| Triticeae Dumort. | Awn frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Arrhenatherum elatius* subspec. *bulbosum* (Willd.) Schübl. & G.Martens | Pseudobulb | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Grain | | | | | | | | | | | | 6 | | | | 33 | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Grain frag. | | | | | | | | | | | | | | | | 3 | | | | | | | | | |
| *Poa* L. | Grain | | | | | | | | 31 | | | | | | | | | | | | | | | | | |
| *Poa* L. | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Grain | 1 | | | | | 10 | 18 | 131 | | 6 | 107 | 2 | | | | 6 | | | 3 | | | | | | |
| Poaceae Barnhart | Grain frag. | | | | | | 3 | | 1 | | 1 | 5 | 2 | | | | 10 | | | 3 | | | | | | |
| Poaceae - *Bromus* L. type | Grain | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae - *Vulpia* C.C.Gmel. type | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Embryo | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Scutellum | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grain and chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Hulled grain | | | | | | | | | | | | | | | | | | | 1 | | | | | | |
| Poaceae Barnhart | Spikelet base | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Husks frag. | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Phase** | | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| **Moment** | | 2nd | 2nd | 2nd | 2nd | 2nd | 3rd | 3rd | 3rd | 3rd | 3rd | 3rd | 3rd | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th |
| **Structure** | | HS9 | HS9 | HS9 | HS9 | HS9 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 |
| **S.U.** | | 108 | 108 | 108 | 109 | 137 | 136 | 136 | 136 | 139 | 139 | 139 | 140 | 124 | 124 | 124 | 124 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 |
| **Square** | | D6 | G4 | F5 | F5 | B8 | B8 | B8 | B8 | A9/B9 | A9/B9 | A8/B8 | A8 | C6 | C6 | B6/C6 | B6/C6 | A0 | A6 | B7 | A3/A4 | C6 | A6 | A5 | A5 | A5 |
| **Sample** | | 545 | 547 | 550 | 165 | 530 | 527 | 531 | 534 | 515 | 524 | 529 | 526 | 12 | 70 | 75 | 141 | 60 | 62 | 72 | 81 | 82 | 84 | 85 | 86 | 87 |
| **Fabaceae** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lathyrus cicera* L. / *Lathyrus sativus* L. | Seed | 1 | | | | | | | | | | | 2 | | | | | | | | | | | | | |
| *Lens culinaris* Medik. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Seed | | | | | | | 11 | | | 6 | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Loment segment | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Loment segment frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* L. | Seed | | | | | | | | | | | | | | | 1 | | | | | | | | | | 1 |
| *Vicia faba* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| *Vicia faba* L. | Seed frag. | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed | | | | | | | 8 | | | 2 | 7 | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Seed | | | | | | | | | | | | | | | 1 | | | | | | | 1 | 2 | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Cotyledon | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Seed frag. | | | | | 1 | | | | | 2 | | | 1 | | 15 | 1 | | | 4 | | | | 1 | | |
| Fabaceae Lindl. | Seed | | | | | | | | | | | 3 | | | | | | | | 1 | | | | | | |
| Fabaceae Lindl. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae Lindl. | Seed frag. | | | | | | 1 | | 1 | | 2 | 2 | 1 | | | | 1 | | | | | | | | | |
| Fabaceae Lindl. | Pericarp frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Astragalus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Genista* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Medicago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Trifolium* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* L. | Cotyledon frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Half bract | | | 1 | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Bract frag. | | 1 | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium* L. / *Prunus cerasus* L. | Endocarp | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pyrus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rubus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seed | | | | | | | 2 | 22 | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seed frag. | | | | | | 1 | | | | 2 | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Pedicel | | | | | | | | 7 | | | 3 | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe with seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Oil/Fiber plant** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated frag. | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A6.4 - (continued).

| | | Phase | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 2nd | 2nd | 2nd | 2nd | 2nd | 3rd | 3rd | 3rd | 3rd | 3rd | 3rd | 3rd | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th |
| | | Structure | HS9 | HS9 | HS9 | HS9 | HS9 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 |
| | | S.U. | 108 | 108 | 108 | 109 | 137 | 136 | 136 | 136 | 139 | 139 | 139 | 140 | 124 | 124 | 124 | 124 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 |
| | | Square | D6 | G4 | F5 | F5 | B8 | B8 | B8 | B8 | A9/B9 | A9/B9 | A8/B8 | A8 | C6 | C6 | B6/C6 | B6/C6 | A0 | A6 | B7 | A3/A4 | C6 | A6 | A5 | A5 | A5 |
| | | Sample | 545 | 547 | 550 | 165 | 530 | 527 | 531 | 534 | 515 | 524 | 529 | 526 | 12 | 70 | 75 | 141 | 60 | 62 | 72 | 81 | 82 | 84 | 85 | 86 | 87 |
| **Other remains** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Agrostemma githago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Agrostemma githago* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae Bercht. & J.Presl | Cypsela | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* L. type | Cypsela | | | | | | | | | | | | 30 | 19 | | | | 2 | | | | | | | | | |
| Caryophyllaceae Juss. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Caryophyllaceae Juss. | Seed frag. | | | | | | | | | | | | 1 | | | | | | | | | | | | | | |
| *Chenopodium* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Euphorbia* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp | | | | | | 24 | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Papaveraceae Juss. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum persicaria* L. | Achene | | | | | | | | | | | | | | | | | 4 | | | | | | | | | |
| *Polygonum lapathifolium* L. | Achene | | | | | | | | | | | | | 6 | | | | | | | | | | | | | |
| *Polygonum* L. - lenticular type | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - trigonal type | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago lanceolata* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* L. | Seed | | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| *Ranunculus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Seed | | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment | | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex bucephalophorus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus* Murray / *Rumex crispus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* L. | Achene | | | | | | | | | | | | 30 | | | | | 3 | | | | | | | | | |
| *Sherardia arvensis* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Spergula arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Stellaria* L. / *Cerastium* L. | Seed | | | | | | | | | 7 | | | | 10 | | | | | | | | | | | | | |
| *Urtica* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Veronica* L. | Seed | | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| *Viola* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Flower bud | | | | | | | | | | | | | | | | | 1 | | | 1 | | | | | | |
| Undetermined | Peduncle | | | | | | | | | | | | | | | | | 7 | | | | | | | | | |
| Undetermined | Plant spine frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Seed/fruit | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Seed/fruit frag. | | | | | 27 | 106 | 108 | 88 | | 72 | 168 | 115 | | 428 | 1,546 | 1 | 1 | 83 | 16 | 65 | 8 | 1 | | 44 | |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th | 2 4th |
| | **Moment** | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th |
| | **Structure** | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 |
| | **S.U.** | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 |
| | **Square** | A3/A4 | A4 | A3 | B7 | B6 | A4 | B7 | C8 | A5 | A6 | B7 | B5 | A3/A4 | A'4 | B8 | A4 | A'4 | B6 | A'3 | B8 | A'4 | B6 | A7 | A5 | B6 |
| | **Sample** | 169 | 174 | 175 | 233 | 235 | 240 | 253 | 337 | 340 | 343 | 348 | 351 | 352 | 354 | 355 | 370 | 373 | 374 | 428 | 452 | 458 | 466 | 469 | 471 | 475 |
| **Cereal** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grain | 1 | 3 | 7 | | | | | 495 | 300 | 26 | 984 | 18 | 7 | 21 | 317 | 492 | 120 | 764 | | 121 | | | 3 | | 1 |
| *Avena* L. | Grain frag. | | | | | | | | 48 | 39 | 9 | 101 | 14 | 1 | 10 | 39 | 50 | 31 | 80 | | 10 | | | | | |
| *Avena* L. / *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grain | | | | | | | | 16 | 15 | 2 | 19 | 4 | | | 8 | 13 | 26 | 7 | | 1 | | | | | 1 |
| *Hordeum vulgare* L. | Grain frag. | | | | | | | | 5 | 2 | 4 | 5 | 2 | 1 | | 4 | 2 | 12 | 1 | | | | | | | |
| *Hordeum vulgare* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / Fabaceae Lindl. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / Charcoal remain | Grain and charcoal agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | 5 | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain | 2 | | | | | | 1 | 105 | 106 | 5 | 92 | 3 | | 8 | 39 | 83 | 12 | 23 | | | | | | | |
| *Panicum miliaceum* L. | Grain frag. | 1 | | | | | | | | 2 | | | 1 | | 1 | | 7 | 1 | 1 | | | | | | | |
| *Panicum miliaceum* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | 2 | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria* P.Beauv. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae Link | Grain | 1 | | 2 | | | | | 49 | 71 | 2 | 50 | 3 | | 2 | 13 | 12 | 26 | 59 | | | | | | | |
| Panicoideae Link | Grain frag. | | | | | | | | 19 | 1 | 4 | 15 | 7 | | 2 | 12 | 15 | 5 | 4 | | | | | | | |
| Panicoideae Link | Scutellum | | | | | | | | | | | 9 | | | | | | | | | | | | | | |
| *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | 4 | | | | | | | | | | | | | | |
| *Secale cereale* L. | Grain | | 14 | 46 | | 2 | 1 | 13 | 343 | 295 | 41 | 975 | 16 | 1 | 21 | 179 | 585 | 124 | 643 | 1 | 224 | 1 | 1 | 38 | | 25 |
| *Secale cereale* L. | Grain longitudinal frag. | | | | | | | | 22 | 33 | 9 | | 1 | | | 10 | 39 | 3 | 102 | | 1 | | | | | |
| *Secale cereale* L. | Grain frag. | | | | | | 1 | | 26 | 34 | 7 | 45 | 9 | | 5 | 27 | 35 | 19 | 46 | | 27 | | | 6 | | 2 |
| *Secale cereale* L. / *Agrostemma githago* L. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain | | 9 | 6 | | | | | 5 | 113 | 2 | 17 | 4 | | 4 | 4 | 145 | 35 | 16 | | 1 | | | | | 2 |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain longitudinal frag. | | | | | | | | | 5 | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain frag. | | 1 | | | | | | | 4 | | 1 | 1 | | 1 | | 2 | 1 | | | 1 | 1 | | | | |
| *Triticum* L. | Grain | | | | | | | | | 5 | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grain with scutellum | 4 | 2 | 6 | | | | | 122 | 91 | 12 | 234 | 7 | 7 | 1 | 42 | 171 | 42 | 268 | | 24 | | | 4 | | |
| Triticeae Dumort. | Grain without scutellum | 67 | 4 | 6 | | | | | 307 | 151 | 202 | 589 | 99 | 7 | 51 | 197 | 498 | 224 | 447 | | 127 | 1 | | 5 | 1 | 7 |
| Triticeae Dumort. | Embryo | | | | | | | | | | | 1 | 1 | | | | | 1 | | | | | | | | |
| Triticeae Dumort. | Scutellum | | | 1 | | | | | 16 | 15 | 2 | 41 | 1 | | 1 | 1 | 31 | 7 | 96 | | | | | 1 | | 1 |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | **Moment** | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th |
| | **Structure** | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 |
| | **S.U.** | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 |
| | **Square** | A3/A4 | A4 | A3 | B7 | B6 | A4 | B7 | C8 | A5 | A6 | B7 | B5 | A3/A4 | A'4 | B8 | A4 | A'4 | B6 | A'3 | B8 | A'4 | B6 | A7 | A5 | B6 |
| | **Sample** | 169 | 174 | 175 | 233 | 235 | 240 | 253 | 337 | 340 | 343 | 348 | 351 | 352 | 354 | 355 | 370 | 373 | 374 | 428 | 452 | 458 | 466 | 469 | 471 | 475 |
| **Cereal (grain and chaff)** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grain | | | | | | | | | | 3 | 30 | 1 | | | 4 | 8 | 3 | 7 | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base | | | | | | | | | | | | | | | 30 | | 7 | 15 | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base frag. | | | | | | | | | | | | | | | | | 1 | | | 1 | | | | | |
| *Avena* L. | Grain with husks | | | 2 | | | | 1 | 74 | 60 | 17 | 437 | 6 | | 8 | 64 | 175 | 57 | 238 | | 79 | | | 3 | | |
| *Avena* L. | Grain frag. with husks | | | 1 | | | | | 4 | 1 | 7 | 19 | 2 | | 2 | 5 | 7 | 4 | 14 | | 6 | | | | | |
| *Avena* L. | Husks frag. | | | | | | | | | | 4 | 6 | | | | | 4 | 5 | | | | | | | | |
| *Avena* L. | Awn frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Hulled grain | | | | | | | | | | | 4 | | | | | | | | | | | | 5 | | |
| *Hordeum vulgare* L. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base | | | | | | | | | | | | | | | | | 3 | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grain with husks | | | | | | | | 10 | 10 | 7 | 71 | 2 | | 2 | 4 | 9 | 34 | | | | | | 27 | | 1 |
| *Hordeum vulgare* L. | Grain frag. with husks | | | | | | | | | | 2 | 3 | | | | | | | 2 | | | | | 3 | | |
| *Hordeum vulgare* L. | Rachis segment with 1 node | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Husks frag. | | | | | | | | | | 1 | | | | | | | 1 | | | | | | | | |
| *Hordeum vulgare* L. | Awn frag. | | | | | | | | | | | 1 | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain with husks | | | | | | | | 61 | 95 | 5 | 70 | 1 | | 5 | 117 | 121 | 15 | | | | | | | | |
| *Panicum miliaceum* L. | Grain frag. with husks | | | | | | | | 3 | 7 | 1 | 3 | 4 | | 1 | 7 | 12 | | | | | | | | | |
| *Panicum miliaceum* L. | Husks frag. | | | | | 1 | | | | | | | | | | | 1 | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain with husks | | | | | | | | | 18 | | | | | 1 | | | | | | | | | | | |
| *Secale cereale* L. | Rachis segment with 1 node | 2 | | | | | | | 25 | | | 117 | | | 1 | 1 | 26 | 4 | 37 | | | | | | | |
| *Secale cereale* L. | Rachis segment with 2 nodes | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis frag. | | | | | | | | | | 1 | 1 | 1 | | | | | 2 | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Rachis node | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Rachis frag. | | | | | | | | | | 1 | 4 | | | | 2 | | | | | | | | | | |
| Triticeae Dumort. | Husks frag. | | | | | | | | 2 | | 9 | 4 | 1 | | | 1 | 11 | 1 | 1 | | 3 | | | 3 | | 1 |
| Triticeae Dumort. | Awn frag. | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | |
| **Other Poaceae** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Arrhenatherum elatius* subspec. *bulbosum* (Willd.) Schübl. & G.Martens | Pseudobulb | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Grain | | 1 | | | | | | | 10 | 3 | 87 | 2 | | 3 | 12 | 27 | 34 | 30 | | | | | | | 1 |
| *Festuca* L. / *Lolium* L. | Grain frag. | | | | | | | | | | 1 | | | | | 3 | 2 | 1 | | | | | | | | |
| *Poa* L. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Poa* L. | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Grain | 2 | 1 | 1 | | | | | 17 | 49 | | 43 | | | | | 4 | | | | 2 | | | | | |
| Poaceae Barnhart | Grain frag. | 1 | | | | | | | 2 | | | 7 | | 12 | | 3 | 24 | 9 | 6 | | | | | | | |
| Poaceae - *Bromus* L. type | Grain | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae - *Vulpia* C.C.Gmel. type | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Embryo | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Scutellum | | | | | | | | | | 1 | | | | | | | | | | | | | | | |
| **Other Poaceae (grain and chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Hulled grain | | | | | | | | | | | 13 | 1 | | 1 | 1 | | | | | | | | | | |
| Poaceae Barnhart | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Spikelet base | | | | | | | | | | | | | | 1 | | | | | | | | | | | |
| Poaceae Barnhart | Rachis frag. | | | | | | | | | | | 1 | | | | | | | | | | | | | | |
| Poaceae Barnhart | Husks frag. | | | | | | | | | 1 | | | | | | | | | | | | | | | | |

Table A6.4 - (continued).

| | | Phase | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th |
| | | Structure | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 |
| | | S.U. | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 |
| | | Square | A3/A4 | A4 | A3 | B7 | B6 | A4 | B7 | C8 | A5 | A6 | B7 | B5 | A3/A4 | A'4 | B8 | A4 | A'4 | B6 | A'3 | B8 | A'4 | B6 | A7 | A5 | B6 |
| | | Sample | 169 | 174 | 175 | 233 | 235 | 240 | 253 | 337 | 340 | 343 | 348 | 351 | 352 | 354 | 355 | 370 | 373 | 374 | 428 | 452 | 458 | 466 | 469 | 471 | 475 |
| **Fabaceae** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lathyrus cicera* L. / *Lathyrus sativus* L. | Seed | | | | | | | | 5 | 5 | | | | | | | | | 3 | | | | | | | | |
| *Lens culinaris* Medik. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Loment segment | | | | | | | | | | | | | | | | 9 | | | | | | | | | | |
| *Ornithopus* L. | Loment segment frag. | | | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| *Pisum sativum* L. | Seed | | | | | | | | | | | | | | | | | | 5 | | | | | | | | |
| *Pisum sativum* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* L. | Seed | | | | | 1 | | | 5 | | | | | | | | | | | | | | | | | | |
| *Vicia faba* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* L. | Seed frag. | | | | | | | | 4 | | | | | | | | 1 | | 2 | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed | | | 2 | | | | | 16 | | | | | | | | | 17 | 3 | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Seed | | | | | 1 | | | 5 | 20 | | | | 2 | | | | | 5 | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Cotyledon | | | | | | | | 5 | 5 | | | | | | | | 8 | | | | 1 | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Seed frag. | | | | | | | | 20 | 1 | 7 | 2 | 2 | | | | 5 | 2 | 49 | 2 | | | | | | | |
| Fabaceae Lindl. | Seed | 1 | | | | | | | | | 1 | | | | | | 4 | 12 | | 29 | | | | | | | |
| Fabaceae Lindl. | Cotyledon | | | | | | | | | 9 | | | | | | | | | | | | | | | | | |
| Fabaceae Lindl. | Seed frag. | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | |
| Fabaceae Lindl. | Pericarp frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Astragalus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Genista* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Medicago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Trifolium* L. | Seed | | | | | | | | | | | 9 | | | | | | | | | | | | | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* L. | Cotyledon frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Half bract | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Bract frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium* L. / *Prunus cerasus* L. | Endocarp | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pyrus* L. | Seed | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| *Rubus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seed frag. | | | | | | | | | | | | | | | | | | | 1 | | | | | | | |
| *Vitis vinifera* L. | Pedicel | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe with seed | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Oil/Fiber plant** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A6.4 - (continued).

| | | Phase | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th |
| | | Structure | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 |
| | | S.U. | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 |
| | | Square | A3/A4 | A4 | A3 | B7 | B6 | A4 | B7 | C8 | A5 | A6 | B7 | B5 | A3/A4 | A'4 | B8 | A4 | A'4 | B6 | A'3 | B8 | A'4 | B6 | A7 | A5 | B6 |
| | | Sample | 169 | 174 | 175 | 233 | 235 | 240 | 253 | 337 | 340 | 343 | 348 | 351 | 352 | 354 | 355 | 370 | 373 | 374 | 428 | 452 | 458 | 466 | 469 | 471 | 475 |
| **Other remains** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Agrostemma githago* L. | Seed | | | | | | | | | 5 | 1 | 20 | 1 | | | 6 | 8 | 3 | 30 | | | | | | | | | |
| *Agrostemma githago* L. | Seed frag. | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | |
| Asteraceae Bercht. & J.Presl | Cypsela | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* L. type | Cypsela | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| Caryophyllaceae Juss. | Seed | | | | | | | | 5 | 9 | | 9 | | | | | | | | | | | | | | | | |
| Caryophyllaceae Juss. | Seed frag. | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* L. | Seed | 1 | | | | | | | | 8 | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Euphorbia* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* L. | Seed | | | | | | | | | | | 7 | | | | | | | | | | | | | | | | |
| Papaveraceae Juss. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum persicaria* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - lenticular type | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - trigonal type | Achene | | | | | | | | | | | | | | | | | 4 | | | | | | | | | | |
| Polygonaceae Juss. | Achene | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago lanceolata* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ranunculus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Seed | | | | | | | | 14 | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment | | | | | | | | | | | | | | | | 8 | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex bucephalophorus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus* Murray / *Rumex crispus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* L. | Achene | | | | | | | | | | | | | | | 4 | | | 8 | | | | | | | | | |
| *Sherardia arvensis* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Spergula arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Stellaria* L. / *Cerastium* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Urtica* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Veronica* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Viola* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Flower bud | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| Undetermined | Peduncle | | | | | | | | | | 1 | 1 | | | 1 | 1 | | 1 | 1 | | | | | | | | | |
| Undetermined | Plant spine frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Seed/fruit | 3 | | | | | | | | 1 | | | | | | | 1 | | 1 | | | | | 1 | | | | |
| Undetermined | Seed/fruit frag. | 533 | 7 | 16 | 1 | 1 | 6 | 2 | 457 | 308 | 258 | 581 | 95 | 54 | 139 | 97 | 321 | 551 | 162 | | 58 | 1 | | 12 | | 15 | | |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | **Moment** | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th |
| | **Structure** | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 |
| | **S.U.** | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 130 | 130 | 130 |
| | **Square** | B7 | B8 | A´4 | B6 | B6 | B7 | A'4 | B6 | A6 | A6 | A'3 | B6 | A5 | B6 | A5 | A'8 | B6 | A6 | A'7 | A3 | A5 | A7 | B7 | B7 | B7 | B7 | B7 |
| | **Sample** | 476 | 477 | 478 | 479 | 480 | 481 | 482 | 483 | 484 | 485 | 488 | 493 | 496 | 497 | 499 | 501 | 503 | 508 | 509 | 510 | 511 | 513 | 520 | 242 | 243 | 358 |
| **Cereal** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grain | 14 | | 4 | | | | 11 | | 17 | | | 2 | 1 | | 3 | 5 | 2 | 4 | 3 | | 1 | | 3 | | 10 | 1,892 |
| *Avena* L. | Grain frag. | 3 | | 1 | | | | | | 1 | | | | | | | | | | 1 | | | | | | 4 | 150 |
| *Avena* L. / *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Secale cereale* L. | Grains agglomerated | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grain | 35 | | | | | | | | | | | | 1 | | | | 3 | 2 | | 1 | | 1 | | | 4 | 152 |
| *Hordeum vulgare* L. | Grain frag. | 5 | | | | | | | | | 1 | | | | | | | | 1 | | | | 1 | | | 2 | 15 |
| *Hordeum vulgare* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grains agglomerated | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / Fabaceae Lindl. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / Charcoal remain | Grain and charcoal agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | 2 | 123 | |
| *Panicum miliaceum* L. | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| *Panicum miliaceum* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria* P.Beauv. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae Link | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | 112 | |
| Panicoideae Link | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | | 6 | |
| Panicoideae Link | Scutellum | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Grains agglomerated | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Grain | 245 | | 14 | | | | 141 | | 44 | 4 | | 2 | 10 | 7 | 27 | 7 | 16 | 42 | 23 | 1 | | 2 | 5 | | 80 | 2,744 |
| *Secale cereale* L. | Grain longitudinal frag. | 1 | | | | | | | | | | | | | | | | | | 2 | | | 1 | | | | 163 |
| *Secale cereale* L. | Grain frag. | 15 | 2 | | | | | 8 | | 2 | | | | | | 3 | 3 | 1 | 1 | 5 | | | | | | 8 | 109 |
| *Secale cereale* L. / *Agrostemma githago*L. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain | 5 | 6 | | | | | 43 | | 12 | | | | 6 | | 9 | 2 | | 6 | 1 | | | 1 | | | 1 | 15 |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain longitudinal frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain frag. | | | | | | | 3 | | | | | | 1 | | | | | 1 | | | | | | | | 3 | |
| *Triticum* L. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grain with scutellum | 13 | | | | | | 7 | | 5 | | | | 1 | | | 1 | 1 | | 1 | | | | | | 3 | 651 |
| Triticeae Dumort. | Grain without scutellum | 56 | | | | 1 | | 19 | | 2 | 11 | 1 | 9 | 8 | | 12 | 2 | | 1 | 15 | | | | 4 | | 14 | 757 |
| Triticeae Dumort. | Embryo | | | | | | | 2 | | | | | 1 | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Scutellum | 20 | | | | 1 | | 4 | | 1 | 2 | | | 2 | | 1 | 1 | 1 | 1 | 1 | | | | 1 | | 1 | 259 | |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | **Moment** | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th |
| | **Structure** | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 |
| | **S.U.** | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 130 | 130 | 130 |
| | **Square** | B7 | B8 | A´4 | B6 | B6 | B7 | A'4 | B6 | A6 | A6 | A'3 | B6 | A5 | B6 | A5 | A'8 | B6 | A6 | A'7 | A3 | A5 | A7 | B7 | B7 | B7 | B7 |
| | **Sample** | 476 | 477 | 478 | 479 | 480 | 481 | 482 | 483 | 484 | 485 | 488 | 493 | 496 | 497 | 499 | 501 | 503 | 508 | 509 | 510 | 511 | 513 | 520 | 242 | 243 | 358 |
| **Cereal (grain and chaff)** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grain | 14 | | | | | 1 | | | | | | | | | | | | | | | | | 1 | | 4 | 60 |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base | | | | | | 1 | | | | | | | | | | | | | | | | | 2 | | | 72 |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base frag. | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Avena* L. | Grain with husks | 54 | | 2 | | | | 8 | | 3 | | | | | | 2 | | 3 | 2 | 1 | 1 | | 2 | 1 | | 10 | 1,104 |
| *Avena* L. | Grain frag. with husks | | | | | | | | | | | | | | | | | | | 1 | | | | | | | 21 |
| *Avena* L. | Husks frag. | 15 | | | | | | | | | | | | | | | | | | | | | | | | | 3 |
| *Avena* L. | Awn frag. | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Hordeum vulgare* L. | Hulled grain | 75 | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| *Hordeum vulgare* L. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base | 7 | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base frag. | 5 | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| *Hordeum vulgare* L. | Grain with husks | 182 | | | 2 | | | 5 | | 6 | 2 | | | 1 | 1 | 3 | 1 | 9 | 9 | 2 | | | 1 | 1 | | 7 | 248 |
| *Hordeum vulgare* L. | Grain frag. with husks | 5 | | | | | | | | | 1 | | 1 | | | | | 1 | 2 | | | | | | | | 2 |
| *Hordeum vulgare* L. | Rachis segment with 1 node | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Husks frag. | 16 | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| *Hordeum vulgare* L. | Awn frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain with husks | | | | | | | | | | | | | | | | | | | | | | | | | | 87 |
| *Panicum miliaceum* L. | Grain frag. with husks | | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| *Panicum miliaceum* L. | Husks frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain with husks | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis segment with 1 node | | | | | | | | | | | | | | | | | | | | | | | | | | 324 |
| *Secale cereale* L. | Rachis segment with 2 nodes | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | | 12 |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Rachis node | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Triticeae Dumort. | Husks frag. | 180 | | | | 1 | 3 | 1 | | 5 | | | | | 1 | | 4 | | | 3 | | | | | | 5 | 2 |
| Triticeae Dumort. | Awn frag. | 2 | | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Arrhenatherum elatius* subspec. *bulbosum* (Willd.) Schübl. & G.Martens | Pseudobulb | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Grain | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | 318 |
| *Festuca* L. / *Lolium* L. | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| *Poa* L. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Poa* L. | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | 185 |
| Poaceae Barnhart | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | 1 | | | 9 |
| Poaceae - *Bromus* L. type | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae - *Vulpia* C.C.Gmel. type | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Embryo | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Scutellum | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grain and chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| Poaceae Barnhart | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Spikelet base | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Rachis frag. | | | | | | 1 | | | | | | | | | | | | | | | | | 1 | | | |
| Poaceae Barnhart | Husks frag. | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | **Moment** | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th |
| | **Structure** | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 |
| | **S.U.** | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 130 | 130 | 130 |
| | **Square** | B7 | B8 | A´4 | B6 | B6 | B7 | A'4 | B6 | A6 | A6 | A'3 | B6 | A5 | B6 | A5 | A'8 | B6 | A6 | A'7 | A3 | A5 | A7 | B7 | B7 | B7 | B7 | B7 | B7 |
| | **Sample** | 476 | 477 | 478 | 479 | 480 | 481 | 482 | 483 | 484 | 485 | 488 | 493 | 496 | 497 | 499 | 501 | 503 | 508 | 509 | 510 | 511 | 513 | 520 | 242 | 243 | 358 |
| **Fabaceae** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lathyrus cicera* L. / *Lathyrus sativus* L. | Seed | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | |
| *Lens culinaris* Medik. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Loment segment | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Loment segment frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | |
| *Pisum sativum* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* L. | Seed | | | | 3 | | | | 1 | | | | | | | | | | 6 | | | | | | | | | |
| *Vicia faba* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Seed | | | | | | | 1 | | | | | | | | | | | 4 | | | | 1 | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Cotyledon | | | | | | | 5 | | | | | | | | | | | 2 | | | | 2 | | | | | 8 |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Seed frag. | | | | | | | | | | | | | | | | | | 1 | | | | 1 | | | | | 4 |
| Fabaceae Lindl. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | 72 |
| Fabaceae Lindl. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae Lindl. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae Lindl. | Pericarp frag. | | | | 44 | | | | | | | | | | | | | | 52 | | | | | | | | | |
| *Astragalus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Genista* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Medicago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Trifolium* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* L. | Cotyledon frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Half bract | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Bract frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium* L. / *Prunus cerasus* L. | Endocarp | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pyrus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rubus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | 8 |
| *Vitis vinifera* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Pedicel | | | | | | | | | | | | | | | | | | | | | | | | | | | 17 |
| *Vitis vinifera* L. | Drupe with seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Oil/Fiber plant** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | **Moment** | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th |
| | **Structure** | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 |
| | **S.U.** | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 130 | 130 | 130 |
| | **Square** | B7 | B8 | A´4 | B6 | B6 | B7 | A'4 | B6 | A6 | A6 | A'3 | B6 | A5 | B6 | A5 | A'8 | B6 | A6 | A'7 | A3 | A5 | A7 | B7 | B7 | B7 | B7 | B7 | B7 | B7 |
| | **Sample** | 476 | 477 | 478 | 479 | 480 | 481 | 482 | 483 | 484 | 485 | 488 | 493 | 496 | 497 | 499 | 501 | 503 | 508 | 509 | 510 | 511 | 513 | 520 | 242 | 243 | 358 | | |
| **Other remains** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Agrostemma githago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | 47 |
| *Agrostemma githago* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| Asteraceae Bercht. & J.Presl | Cypsela | | | | | | | | | | | | | | | | | | | | | | | | | | | | 19 |
| Asteraceae - *Chrysanthemum* L. type | Cypsela | | | | | | | | | | | | | | | | | | | | | | | | | | | | 36 |
| Caryophyllaceae Juss. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Caryophyllaceae Juss. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| Chenopodiaceae Vent | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Euphorbia* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Papaveraceae Juss. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum persicaria* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - lenticular type | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - trigonal type | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago lanceolata* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ranunculus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex bucephalophorus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus* Murray / *Rumex crispus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sherardia arvensis* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Spergula arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Stellaria* L. / *Cerastium* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Urtica* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Veronica* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Viola* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Flower bud | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Peduncle | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Undetermined | Plant spine frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Seed/fruit | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| Undetermined | Seed/fruit frag. | 105 | 4 | 1 | 7 | 266 | 26 | 14 | 23 | 7 | 13 | 19 | 10 | 6 | 11 | 14 | 1 | 5 | 5 | 2 | 13 | 996 | | | | | | | |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Phase** | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| **Moment** | | 4th | 4th | 4th | 4th | 4th | 4th | 5th | 5th | 5th | 5th | 5th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th |
| **Structure** | | W112 | W112 | W112 | W112 | W112 | W112 | H1 | H1 | H2 | H2 | GM | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 |
| **S.U.** | | 130 | 130 | 130 | 131 | 131 | 134 | 126 | 126 | 132 | 132 | 133 | 104 | 104 | 104 | 104 | 104 | 104A | 104A | 104A | 104A | 104A | 104A |
| **Square** | | B7 | B7 | B8 | A5 | B6 | B8 | C6 | B7 | C7 | C7 | D1'/E1' | C6 | C5 | D1'/E1' | D1'/E1' | D1'/E1' | C6 | C6 | D3 | C6 | C3 | B7 | B7 |
| **Sample** | | 460 | 514 | 533 | 398 | 400 | 523 | 48 | 367 | 274 | 299 | 525 | 147 | 153 | 516 | 528 | 532 | 90 | 96 | 118 | 170 | 176 | 232 | 239 |
| **Cereal** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grain | | | 721 | 160 | 19 | 1 | | 20 | | 1 | | | | | 732 | 236 | | 188 | | 514 | | | 1 |
| *Avena* L. | Grain frag. | | 1 | 29 | 111 | 8 | 1 | | 1 | | 4 | 3 | | | | 38 | 22 | | 4 | | 208 | | | |
| *Avena* L. / *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Panicum miliaceum* L. | Grains agglomerated | | | | 1 | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grain | 1 | | 60 | 9 | 7 | | | 8 | | 1 | | | | | 230 | 57 | | 60 | | 38 | | | |
| *Hordeum vulgare* L. | Grain frag. | | | 6 | 5 | 5 | | | 6 | | | 1 | | | | 39 | 15 | | 6 | | 18 | | | |
| *Hordeum vulgare* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | 1 | | | | | | |
| *Hordeum vulgare* L. / *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / Fabaceae Lindl. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / Charcoal remain | Grain and charcoal agglomerated | | | 4 | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated | | | | 1 | 1 | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated frag. | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain | | | 180 | 22 | 3 | | | 9 | | 4 | 2 | | | | 555 | 422 | | | | 34 | | | |
| *Panicum miliaceum* L. | Grain frag. | | | | 6 | | | | 3 | | 1 | 1 | | | | 4 | 11 | | | | | | | |
| *Panicum miliaceum* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain | | | | 3 | | | | | | | | | | | | | | | | | | | |
| *Setaria* P.Beauv. | Grain | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae Link | Grain | | | 59 | 25 | 4 | | | 2 | | 1 | | | | | 115 | 64 | | | | 24 | | | |
| Panicoideae Link | Grain frag. | | | 1 | 54 | 12 | | | 5 | | 6 | | | | | 5 | 22 | | | | 9 | | | |
| Panicoideae Link | Scutellum | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Grains agglomerated | | | | | | | | 1 | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Grain | 1 | | 746 | 242 | 185 | 1 | | 9 | | 2 | 1 | | | | 1,363 | 591 | | 245 | | 66 | | | 4 |
| *Secale cereale* L. | Grain longitudinal frag. | | | 51 | 10 | 8 | | | | | 3 | | | | | 49 | 20 | | 13 | | 4 | | | |
| *Secale cereale* L. | Grain frag. | | | 29 | 61 | 31 | | | 3 | 1 | 4 | 1 | | | | 176 | 80 | | 13 | | 22 | | | |
| *Secale cereale* L. / *Agrostemma githago* L. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain | | | 22 | 93 | 11 | | | 2 | | 1 | | | | | 47 | 20 | | 9 | | 3 | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain longitudinal frag. | | | | 6 | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain frag. | | | | 27 | 1 | | | | | | | | | | 8 | 1 | | | | | | | |
| *Triticum* L. | Grain | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grain with scutellum | | | 432 | 50 | 29 | | | 4 | | 2 | | | | | 382 | 211 | | 41 | | 234 | | | 1 |
| Triticeae Dumort. | Grain without scutellum | | | 216 | 813 | 243 | | | 47 | | 23 | 7 | 1 | 1 | | 513 | 500 | | 53 | | 1,248 | | | 6 |
| Triticeae Dumort. | Embryo | | | | 1 | 4 | | | | | | | | | | 1 | | | 1 | | 1 | | | |
| Triticeae Dumort. | Scutellum | | | | 25 | 28 | | | 4 | | | | | | | 124 | 28 | | 7 | | 56 | | | |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | **Moment** | 4th | 4th | 4th | 4th | 4th | 4th | 5th | 5th | 5th | 5th | 5th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th |
| | **Structure** | W112 | W112 | W112 | W112 | W112 | W112 | H1 | H1 | H2 | H2 | GM | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 |
| | **S.U.** | 130 | 130 | 130 | 131 | 131 | 134 | 126 | 126 | 132 | 132 | 133 | 104 | 104 | 104 | 104 | 104 | 104A | 104A | 104A | 104A | 104A | 104A | 104A |
| | **Square** | B7 | B7 | B8 | A5 | B6 | B8 | C6 | B7 | C7 | C7 | D1'/E1' | C6 | C5 | D1'/E1' | D1'/E1' | D1'/E1' | C6 | C6 | D3 | C6 | C3 | B7 | B7 |
| | **Sample** | 460 | 514 | 533 | 398 | 400 | 523 | 48 | 367 | 274 | 299 | 525 | 147 | 153 | 516 | 528 | 532 | 90 | 96 | 118 | 170 | 176 | 232 | 239 |
| **Cereal (grain and chaff)** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grain | | | 17 | 4 | 7 | | | | | | | | | | | | | 5 | | 8 | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base | | | 20 | 3 | 11 | | | | | | | | | | | | | 4 | | 16 | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base frag. | | | | 1 | | | | | | | | | | | 1 | | | | | | | | |
| *Avena* L. | Grain with husks | | | 130 | 83 | 35 | | | | | 1 | | | | | 70 | 12 | | 28 | | 92 | | | 1 |
| *Avena* L. | Grain frag. with husks | | | 2 | 17 | 5 | | | | | | | | | | 2 | | | 2 | | 11 | | | |
| *Avena* L. | Husks frag. | | | | 8 | 21 | | | | | | | | | | | | | 25 | | 1 | | | |
| *Avena* L. | Awn frag. | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Hulled grain | | | | 2 | | | | | | | | | | | | | | 6 | | 2 | | | |
| *Hordeum vulgare* L. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base | | | | | | | | | | | | | | | | | | 1 | | 10 | | | |
| *Hordeum vulgare* L. | Lemma base frag. | | | | 2 | 4 | | | | | | | | | | | | | | | 5 | | | |
| *Hordeum vulgare* L. | Grain with husks | | | 30 | 17 | 5 | | | 1 | | 4 | | | | | 27 | 10 | | 62 | | 10 | | | |
| *Hordeum vulgare* L. | Grain frag. with husks | | | 2 | 3 | 2 | | | | | | | | | | | 3 | | 3 | | 10 | | | |
| *Hordeum vulgare* L. | Rachis segment with 1 node | | | | | | | | | | | | | | | | | | | | 4 | | | |
| *Hordeum vulgare* L. | Rachis frag. | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Husks frag. | | | | | | | | | | | | | | | | | | 4 | | 1 | | | |
| *Hordeum vulgare* L. | Awn frag. | | | | | | | | | | | | | | | | | | | | 8 | | | |
| *Panicum miliaceum* L. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain with husks | | | 95 | 46 | | | | 2 | | 3 | | | | | 393 | 120 | | | | 51 | | | |
| *Panicum miliaceum* L. | Grain frag. with husks | | | 1 | 13 | 6 | | | | | 3 | | | | | 5 | 2 | | | | 5 | | | |
| *Panicum miliaceum* L. | Husks frag. | | | | 1 | 2 | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Hulled grain | | | | 2 | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain with husks | | | | 1 | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis segment with 1 node | | | 82 | 3 | 2 | | | 2 | | | 1 | | | | | 16 | | | | 49 | | | |
| *Secale cereale* L. | Rachis segment with 2 nodes | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis frag. | | | 2 | 1 | 6 | | | | | | | | | | 5 | | | | | 2 | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Rachis node | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Rachis frag. | | | 1 | | | | | | | | | | | | | 1 | | | | 2 | | | |
| Triticeae Dumort. | Husks frag. | | | | 4 | 46 | | | | | | | | | | 2 | | | 255 | | 18 | | | |
| Triticeae Dumort. | Awn frag. | | | | 4 | 4 | | | | | | | | | | | | | | | | | | |
| **Other Poaceae** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Arrhenatherum elatius* subspec. *bulbosum* (Willd.) Schübl. & G.Martens | Pseudobulb | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Grain | | | | 10 | 1 | | | 11 | | | | | | | | 5 | | | | 22 | | | |
| *Festuca* L. / *Lolium* L. | Grain frag. | | | | | | | | 1 | | | | | | | | | | | | | | | |
| *Poa* L. | Grain | | | 20 | | | | | | | | | | | | | | | | | | | | |
| *Poa* L. | Grain frag. | | | 1 | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Grain | | | 159 | 7 | | | | | | 2 | | | | | 326 | 119 | | | | 20 | | | |
| Poaceae Barnhart | Grain frag. | | | 1 | 2 | 1 | | | 1 | | | 1 | | | | 12 | 12 | | | | 9 | | | |
| Poaceae - *Bromus* L. type | Grain | | | | | | | | | | | | | | | | | | | | 1 | | | |
| Poaceae - *Vulpia* C.C.Gmel. type | Grain frag. | | | | 1 | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Embryo | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Scutellum | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grain and chaff)** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Hulled grain | | | | 1 | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Hulled grain | | | | | | | | | | | | | | | 18 | 7 | | | | | | | |
| Poaceae Barnhart | Spikelet base | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Husks frag. | | | | | | | | | | | | | | | | | | | | | | | |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | **Moment** | 4th | 4th | 4th | 4th | 4th | 4th | 5th | 5th | 5th | 5th | 5th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th |
| | **Structure** | W112 | W112 | W112 | W112 | W112 | W112 | H1 | H1 | H2 | H2 | GM | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 |
| | **S.U.** | 130 | 130 | 130 | 131 | 131 | 134 | 126 | 126 | 132 | 132 | 133 | 104 | 104 | 104 | 104 | 104 | 104A | 104A | 104A | 104A | 104A | 104A | 104A |
| | **Square** | B7 | B7 | B8 | A5 | B6 | B8 | C6 | B7 | C7 | C7 | D1'/E1' | C6 | C5 | D1'/E1' | D1'/E1' | D1'/E1' | C6 | C6 | D3 | C6 | C3 | B7 | B7 |
| | **Sample** | 460 | 514 | 533 | 398 | 400 | 523 | 48 | 367 | 274 | 299 | 525 | 147 | 153 | 516 | 528 | 532 | 90 | 96 | 118 | 170 | 176 | 232 | 239 |
| **Fabaceae** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | |
| *Lathyrus cicera* L. / *Lathyrus sativus* L. | Seed | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Lens culinaris* Medik. | Seed | | | | | | | | | | | | | | | | | | 1 | | | | | |
| *Ornithopus* L. | Seed | | | | | | | | | | | | | | | | | | | | 2 | | | |
| *Ornithopus* L. | Loment segment | | | | | | | | 4 | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Loment segment frag. | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed | | | | | 2 | | | | | | | | | | | | | 1 | | | | | |
| *Pisum sativum* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* L. | Seed | | | | | 1 | | | | | | | | | | | | | 1 | | | | | |
| *Vicia faba* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* L. | Seed frag. | | | | | 1 | | | | | | | | | | | | | 2 | | 1 | | | |
| *Vicia* L. / *Lathyrus* L. | Seed | | | | | 4 | | | | | 2 | | | | | 12 | | | 1 | | | | | |
| *Vicia* L. / *Lathyrus* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Seed | | | | 3 | 2 | | | 1 | | | | | | | | | | | | 4 | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Cotyledon | | | | | 5 | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Seed frag. | | | | 2 | 35 | | | | | 2 | | | | | | | | 7 | | 7 | | | |
| Fabaceae Lindl. | Seed | | | 20 | 2 | | | | 2 | | | | | | | 45 | 7 | | | | | | | |
| Fabaceae Lindl. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae Lindl. | Seed frag. | | | 1 | | 2 | | | | | 2 | | | | | 4 | 4 | | 1 | | | | | |
| Fabaceae Lindl. | Pericarp frag. | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Astragalus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | |
| *Genista* L. | Seed | | | | | | | | | | | 1 | | | | 32 | 7 | | | | | | | |
| *Medicago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | |
| *Trifolium* L. | Seed | | | | | | | | | | | | | | | 35 | | | | | | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit frag. | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* L. | Cotyledon frag. | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Half bract | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Bract frag. | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium* L. / *Prunus cerasus* L. | Endocarp | | | | | | | | | | | | | | | | | | | | | | | |
| *Pyrus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | |
| *Rubus* L. | Seed | | | | | | | | 2 | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seed | | | | | | | | | | | | | | | 4 | | | | | | | | |
| *Vitis vinifera* L. | Seed frag. | | 1 | | | | | | | | | 1 | | | | | | | | | | | | |
| *Vitis vinifera* L. | Pedicel | | | | | | | | | | | | | | | | | | | | 1 | | | |
| *Vitis vinifera* L. | Drupe with seed | | | | | | 2 | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe frag. | | | | | | 1 | | | | | | | | | | | | | | | | | |
| **Oil/Fiber plant** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated frag. | | | | | | | | | | | | | | | | | | | | | | | |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | **Moment** | 4th | 4th | 4th | 4th | 4th | 4th | 5th | 5th | 5th | 5th | 5th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th |
| | **Structure** | W112 | W112 | W112 | W112 | W112 | W112 | H1 | H1 | H2 | H2 | GM | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 |
| | **S.U.** | 130 | 130 | 130 | 131 | 131 | 134 | 126 | 126 | 132 | 132 | 133 | 104 | 104 | 104 | 104 | 104 | 104A | 104A | 104A | 104A | 104A | 104A | 104A | 104A | 104A |
| | **Square** | B7 | B7 | B8 | A5 | B6 | B8 | C6 | B7 | C7 | C7 | D1'/E1' | C6 | C5 | D1'/E1' | D1'/E1' | D1'/E1' | C6 | C6 | D3 | C6 | C3 | B7 | B7 |
| | **Sample** | 460 | 514 | 533 | 398 | 400 | 523 | 48 | 367 | 274 | 299 | 525 | 147 | 153 | 516 | 528 | 532 | 90 | 96 | 118 | 170 | 176 | 232 | 239 |
| **Other remains** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Agrostemma githago* L. | Seed | | | | 3 | 6 | | | 2 | | | | | | | | | | | | 6 | | | | | |
| *Agrostemma githago* L. | Seed frag. | | | | | 1 | | | | | | | | | | | | | | | 4 | | | | | |
| Asteraceae Bercht. & J.Presl | Cypsela | | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* L. type | Cypsela | | | | | 1 | | | | | | | | | | | | | | | 2 | | | | | |
| Caryophyllaceae Juss. | Seed | 1 | | 4 | | | | | | | 1 | | | | | | | | | | | | | | | |
| Caryophyllaceae Juss. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* L. | Seed | | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed | | | | | | | | | | | | | | | 35 | | | | | | | | | | |
| Chenopodiaceae Vent | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* L. | Capsule frag. | | | | | | | | | | 1 | | | | | | | | | | | | | | | |
| *Cistus* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Euphorbia* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp | | | | | | | | | | | | | | | | | | | 1 | | | | | | |
| *Galium* L. | Mericarp frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| Papaveraceae Juss. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum persicaria* L. | Achene | | | | | | | | | | | | | | | | | | | | 2 | | | | | |
| *Polygonum lapathifolium* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - lenticular type | Achene | | | | | | | | | | | | | | | 18 | | | | | | | | | | |
| *Polygonum* L. - trigonal type | Achene | | | | | | | | | | | | | | | 18 | 5 | | | | | | | | | |
| Polygonaceae Juss. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene frag. | | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| *Plantago lanceolata* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ranunculus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex bucephalophorus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus* Murray / *Rumex crispus* L. | Achene | | | | | | | | | | | | | | | 18 | | | | | | | | | | |
| *Rumex* L. | Achene | | | | | 1 | | | 4 | | | | | | | | | | | | 2 | | | | | |
| *Sherardia arvensis* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* L. | Seed | | | | | | | | | | | | | | | 35 | | | | | | | | | | |
| *Silene* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Spergula arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Stellaria* L. / *Cerastium* L. | Seed | | 9 | | | | | | | | | | | | | 45 | 10 | | | | | | | | | |
| *Urtica* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Veronica* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Viola* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Flower bud | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Peduncle | | | | 1 | | | | | | | | | | | | | | | | 1 | | | | | |
| Undetermined | Plant spine frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Seed/fruit | | 1 | | 1 | | | | | | 2 | | | | | | | | | | | | | | | |
| Undetermined | Seed/fruit frag. | 6 | 213 | | 640 | 1,446 | 1 | 2 | 97 | | 207 | 9 | 1 | 2 | 1 | 1,211 | 899 | | 183 | 1 | 1,371 | 1 | 1 | 6 | | |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | **Moment** | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th |
| | **Structure** | W112 | W112 | W112 | W112 | W112 | SS123 | SS123 | SS123 | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS |
| | **S.U.** | 104A | 104B | 104B | 104B | 104B | 118 | 118 | 118 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 121 | 121 | 121 | |
| | **Square** | C6 | C6 | C6 | C7 | B7 | H5 | L5 | H5 | C3 | F2 | C6 | I4 | C6 | E1' | E1' | C9 | M3 | M4 | M2 | |
| | **Sample** | 396 | 116 | 119 | 255 | 256 | 24 | 73 | 177 | 11 | 64 | 77 | 103 | 180 | 272 | 295 | 461 | 341 | 347 | 356 | |
| **Cereal** | **Plant part** | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grain | 172 | 100 | | | | | | | | | | | 99 | 1 | 12 | | 1 | | | |
| *Avena* L. | Grain frag. | 19 | 8 | 1 | | | | | | | | | | 19 | | 7 | | | | 2 | |
| *Avena* L. / *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grain | 30 | 72 | | | | | | | | | | | 63 | | | | | | | |
| *Hordeum vulgare* L. | Grain frag. | 4 | 9 | 1 | | | | | | | | | | 16 | | | | | | | |
| *Hordeum vulgare* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / Fabaceae Lindl. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / Charcoal remain | Grain and charcoal agglomerated | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated frag. | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain | 9 | | | | | | | | | | | | 2 | | | | 2 | 1 | 10 | |
| *Panicum miliaceum* L. | Grain frag. | | | | | | | | | | | | | | | 1 | | | | | |
| *Panicum miliaceum* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain | | | | | | | | | | | | | | | | | | | | |
| *Setaria* P.Beauv. | Grain | | | | | | | | | | | | | | | | | | | | |
| Panicoideae Link | Grain | 18 | 1 | 1 | | | | | | | | | | | | | | 5 | | | |
| Panicoideae Link | Grain frag. | 6 | | | | | | | | | | | | | | | | 1 | | 7 | |
| Panicoideae Link | Scutellum | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Grains agglomerated | | 2 | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Grain | 113 | 557 | 3 | | | | | 1 | | | | | 347 | | 12 | 3 | | | 3 | |
| *Secale cereale* L. | Grain longitudinal frag. | 3 | 6 | | | | | | | | | | | | | | | | | 2 | |
| *Secale cereale* L. | Grain frag. | 16 | 10 | | | 1 | | | | | | | | 17 | 1 | 4 | | | | | |
| *Secale cereale* L. / *Agrostemma githago*L. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain | 9 | 26 | | | | | | 1 | | | | | 14 | | | | 1 | 1 | 1 | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain longitudinal frag. | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain frag. | | | | | | | | | | | | | | | | | 1 | | | |
| *Triticum* L. | Grain | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grains agglomerated | | | | | | | | | 1 | | | | | | | | | | | |
| Triticeae Dumort. | Grain with scutellum | 64 | 35 | 1 | | | | | 1 | | | | | 67 | | 5 | | | | 1 | |
| Triticeae Dumort. | Grain without scutellum | 245 | 74 | 5 | 1 | | | | | | | 1 | | 246 | | 124 | | 3 | 4 | 38 | |
| Triticeae Dumort. | Embryo | | | | | | | | | | | | | 1 | | 1 | | | | | |
| Triticeae Dumort. | Scutellum | 13 | 22 | | | | | | | | | | | 18 | | | | | | | |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | **Moment** | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th |
| | **Structure** | W112 | W112 | W112 | W112 | W112 | SS123 | SS123 | SS123 | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS |
| | **S.U.** | 104A | 104B | 104B | 104B | 104B | 118 | 118 | 118 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 121 | 121 | 121 |
| | **Square** | C6 | C6 | C6 | C7 | B7 | H5 | L5 | H5 | C3 | F2 | C6 | I4 | C6 | E1' | E1' | C9 | M3 | M4 | M2 |
| | **Sample** | 396 | 116 | 119 | 255 | 256 | 24 | 73 | 177 | 11 | 64 | 77 | 103 | 180 | 272 | 295 | 461 | 341 | 347 | 356 |
| **Cereal (grain and chaff)** | **Plant part** | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grain | 18 | 4 | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base | 3 | 6 | | | | | | | | | | | 1 | | 1 | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base frag. | | 2 | | | | | | | | | | | 2 | | | | | | |
| *Avena* L. | Grain with husks | 49 | 39 | | | | | | | | | | | 27 | | 4 | | | | |
| *Avena* L. | Grain frag. with husks | 3 | | | | | | | | | | | | 2 | | 1 | | | | |
| *Avena* L. | Husks frag. | 2 | 4 | | | | | | | | | | | 1 | | | | | | |
| *Avena* L. | Awn frag. | | | | | | | | | | | | 6 | | | | | | | |
| *Hordeum vulgare* L. | Hulled grain | | 17 | | | | | | | | | | | 2 | | | | | | |
| *Hordeum vulgare* L. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base | | | | | | | | | | | | | 2 | | | | | | |
| *Hordeum vulgare* L. | Lemma base frag. | 1 | | | | | | | | | | | | | | 2 | | | | |
| *Hordeum vulgare* L. | Grain with husks | 12 | 194 | 1 | | | | | | | | | | 69 | | | | | | |
| *Hordeum vulgare* L. | Grain frag. with husks | 1 | 5 | 1 | | | | | | | | | | 1 | | | | | | |
| *Hordeum vulgare* L. | Rachis segment with 1 node | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Husks frag. | 1 | 15 | | | | | | | | | | | 1 | | | | | | |
| *Hordeum vulgare* L. | Awn frag. | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Hulled grain | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain with husks | 34 | | | | | | | | | | | | | | 1 | | 3 | 2 | 2 |
| *Panicum miliaceum* L. | Grain frag. with husks | 4 | | | | | | | | | | | | | | | | | | 1 |
| *Panicum miliaceum* L. | Husks frag. | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Hulled grain | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain with husks | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis segment with 1 node | 27 | 1 | | | | | | | | | | | | | | | | 1 | |
| *Secale cereale* L. | Rachis segment with 2 nodes | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis frag. | | | | | | | | | | | | | | | 4 | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Rachis node | 4 | | | | | | | | | | | | | | | | | | |
| *Triticum* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Rachis frag. | | 1 | | | | | | | | | | | 2 | | 2 | | | | |
| Triticeae Dumort. | Husks frag. | 9 | 151 | | | | | | | | | | | 18 | | 1 | | | | |
| Triticeae Dumort. | Awn frag. | 2 | | | | | | | | | | | | | | | | | | |
| **Other Poaceae** | | | | | | | | | | | | | | | | | | | | |
| *Arrhenatherum elatius* subspec. *bulbosum* (Willd.) Schübl. & G.Martens | Pseudobulb | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Grain | 17 | | | | | | | | | | | | | | 4 | | | 1 | |
| *Festuca* L. / *Lolium* L. | Grain frag. | | | | | | | | | | | | | | | 2 | | | | |
| *Poa* L. | Grain | | | | | | | | | | | | | | | | | | | |
| *Poa* L. | Grain frag. | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Grain | 25 | | | | | | | | | | | 1 | 1 | | | | | | 2 |
| Poaceae Barnhart | Grain frag. | 1 | | | | | | | | | | | | | | | | 2 | | |
| Poaceae - *Bromus* L. type | Grain | | | | | | | | | | | | | | | | | | | |
| Poaceae - *Vulpia* C.C.Gmel. type | Grain frag. | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Embryo | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Scutellum | | | | | | | | | | | | | | | 1 | | | | |
| **Other Poaceae (grain and chaff)** | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Hulled grain | | | | | | | | | | | | | | | 1 | | | | |
| Poaceae Barnhart | Hulled grain | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Spikelet base | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Rachis frag. | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Husks frag. | | | | | | | | | | | | | | | | | | | |

Table A6.4 - (continued).

| | | Phase | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th |
| | | Structure | W112 | W112 | W112 | W112 | W112 | SS123 | SS123 | SS123 | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS |
| | | S.U. | 104A | 104B | 104B | 104B | 104B | 118 | 118 | 118 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 121 | 121 | 121 |
| | | Square | C6 | C6 | C6 | C7 | B7 | H5 | L5 | H5 | C3 | F2 | C6 | I4 | C6 | E1' | E1' | C9 | M3 | M4 | M2 |
| | | Sample | 396 | 116 | 119 | 255 | 256 | 24 | 73 | 177 | 11 | 64 | 77 | 103 | 180 | 272 | 295 | 461 | 341 | 347 | 356 |
| **Fabaceae** | **Plant part** | | | | | | | | | | | | | | | | | | | | |
| *Lathyrus cicera* L. / *Lathyrus sativus* L. | Seed | | | | | | | | | | | | | | | | | | | | |
| *Lens culinaris* Medik. | Seed | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Seed | | | | | | | | | | | 1 | | | | | | | 2 | | |
| *Ornithopus* L. | Loment segment | | | | | | | | | | | | | | | | | | 2 | | |
| *Ornithopus* L. | Loment segment frag. | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed | | 3 | | | | | | | | | | | | 2 | | | | | | |
| *Pisum sativum* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* L. | Seed | | 7 | | | | | | | | | | | | 9 | | | | | | |
| *Vicia faba* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* L. | Seed frag. | 1 | 16 | | | | | | | 4 | | 1 | | 11 | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed | 3 | 2 | | | | | | | | | | | 1 | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Seed | | 1 | | | | | | | | | | | 2 | | | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Cotyledon | | | | | | | | | | | | | 2 | | | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Seed frag. | 9 | 12 | 3 | | | 2 | | | 2 | | 4 | | 1 | | 1 | | 1 | | | |
| Fabaceae Lindl. | Seed | 18 | | | | | | | | | | | | 1 | | | | 2 | 1 | | |
| Fabaceae Lindl. | Cotyledon | | | | | | | | | | | | | | | | | | | | |
| Fabaceae Lindl. | Seed frag. | | | | | | | | | | | | | | | | | | | | |
| Fabaceae Lindl. | Pericarp frag. | | | | | | | | | | | | | | | | | | | | |
| *Astragalus* L. | Seed | | | | | | | | | | | | | | | | | | | | |
| *Genista* L. | Seed | | | | | | | | | | | | | | | | | | | | |
| *Medicago* L. | Seed | | | | | | | | | | | | | | | | | | | | |
| *Trifolium* L. | Seed | | | | | | | | | | | | | | | | | | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit frag. | | | | | | | | | | | | | | 1 | | | | | | |
| *Quercus* L. | Cotyledon frag. | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Half bract | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Bract frag. | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium* L. / *Prunus cerasus* L. | Endocarp | | | | | | | | | | | | | | 1 | | | | | | |
| *Pyrus* L. | Seed | | | | | | | | | | | | | | | | | | | | |
| *Rubus* L. | Seed | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seed | 1 | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Pedicel | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe with seed | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe frag. | | | | | | | | | | | | | | | | | | | | |
| **Oil/Fiber plant** | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated frag. | | | | | | | | | | | | | | | | | | | | |

Table A6.4 - (continued).

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | **Moment** | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th |
| | **Structure** | W112 | W112 | W112 | W112 | W112 | SS123 | SS123 | SS123 | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS |
| | **S.U.** | 104A | 104B | 104B | 104B | 104B | 118 | 118 | 118 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 121 | 121 | 121 | |
| | **Square** | C6 | C6 | C6 | C7 | B7 | H5 | L5 | H5 | C3 | F2 | C6 | I4 | C6 | E1' | E1' | C9 | M3 | M4 | M2 | |
| | **Sample** | 396 | 116 | 119 | 255 | 256 | 24 | 73 | 177 | 11 | 64 | 77 | 103 | 180 | 272 | 295 | 461 | 341 | 347 | 356 | |
| **Other remains** | **Plant part** | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | |
| *Agrostemma githago* L. | Seed | | | | | | | | | | | | | | | | | | | | |
| *Agrostemma githago* L. | Seed frag. | 1 | | | | | | | | | | | | | | | | | | | |
| Asteraceae Bercht. & J.Presl | Cypsela | | | | | | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* L. type | Cypsela | | | | | | | | | | | | | | | | | | | | |
| Caryophyllaceae Juss. | Seed | | | | | | | | | | | | | | | 1 | | | | | |
| Caryophyllaceae Juss. | Seed frag. | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* L. | Seed | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed frag. | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | |
| *Cistus* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola* L. | Achene | | | | | | | | | | | | | | | | | | | | |
| *Euphorbia* L. | Seed | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* L. | Mericarp | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp frag. | | | | | | | | | | | | | | | | | | | | |
| *Malva* L. | Seed | | | | | | | | | | | | | | | | | | | | |
| Papaveraceae Juss. | Seed | | | | | | | | | | | | | | | | | | | | |
| *Polygonum persicaria* L. | Achene | | | | | | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* L. | Achene | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - lenticular type | Achene | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - trigonal type | Achene | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene frag. | | | | | | | | | | | | | | | | | | | | |
| *Plantago lanceolata* L. | Seed | | | | | | | | | | | | | | | | | | | | |
| *Plantago* L. | Seed | | | | | | | | | | | | | | | | | | | | |
| *Ranunculus* L. | Achene | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Seed | | | | | | | | | | | | 6 | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment | | | | | | | | | | | | 41 | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment frag. | | | | | | | | | | | | 3 | | | | | | | | |
| *Rumex bucephalophorus* L. | Achene | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus* Murray / *Rumex crispus* L. | Achene | | | | | | | | | | | | | | | | | | | | |
| *Rumex* L. | Achene | | | | | | | | | | | | | | | | | | | | |
| *Sherardia arvensis* L. | Mericarp | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* L. | Seed | | | | | | | | | | 1 | | | | | | | | | | |
| *Silene* L. | Seed | | | | | | | | | | | | | | | | | | | | |
| *Spergula arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | |
| *Stellaria* L. / *Cerastium* L. | Seed | | | | | | | | | | | | | | | | | | | | |
| *Urtica* L. | Achene | | | | | | | | | | | | | | | | | | | | |
| *Veronica* L. | Seed | | | | | | | | | | | | | | | 1 | | | | | |
| *Viola* L. | Seed | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Flower bud | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Peduncle | | | | | | | | | | | | | | | 2 | | 1 | | | |
| Undetermined | Plant spine frag. | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Seed/fruit | 1 | | | | | | | | | | | 2 | | | 1 | | | | | |
| Undetermined | Seed/fruit frag. | 450 | 306 | 8 | 10 | 3 | 1 | | | 3 | | 5 | 39 | 339 | | 734 | | 21 | 17 | 62 | |

Table A6.4 - (continued).

| | | Phase | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 1st | 1st | 1st | 1st | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| | | Structure | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| | | S.U. | 115 | 115 | 116 | 116 | 106 | 106 | 106 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |
| | | Square | C6 | D6 | G4 | G5 | E0 | F1' | F0 | B3/C3 | B6/C6 | B7/C7 | B8 | C1' | C1 | C4 | C5 | C8 | C9 | D0 | D1' | D1 | D3 | D4 | D5 | D7 | D8 | D9 |
| **Cereal** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grains agglomerated | | | | | | | | | | 4 | 1 | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grain | 11 | 31 | | 1 | 7 | 1 | | 1,408 | 5,043 | 15,776 | 1,912 | | | 177 | 9 | 1,419 | 174 | 3 | 2 | 5 | 69 | | | 18 | 25 | 26 |
| *Avena* L. | Grain frag. | | 5 | | | 6 | | | 518 | 513 | 624 | 149 | | | 54 | 1 | 109 | 12 | | 2 | | 14 | | | | | 2 |
| *Avena* L. / *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | 2 | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | 4 | 4 | 9 | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grain | 7 | 15 | | 2 | 19 | | 1 | 98 | 1,620 | 393 | | | | 230 | 32 | 98 | 46 | 5 | 5 | 3 | 31 | | | | | |
| *Hordeum vulgare* L. | Grain frag. | 2 | 2 | | | 9 | | | 23 | 179 | 21 | | | | 152 | 8 | 10 | 7 | 1 | | | 6 | | 1 | | | 8 |
| *Hordeum vulgare* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / Fabaceae Lindl. | Grain and seed agglomerated | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare/* Charcoal remain (agglomerate) | Grain and charcoal agglomerated | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | | | 65 | 9 | | | | | | 55 | | | | | | | | | 1 |
| *Panicum miliaceum* L. | Grains agglomerated frag. | | | | | | | | | | 17 | | | | | | | 78 | | | | | | | | | |
| *Panicum miliaceum* L. | Grain | | | | | | | 8 | 191 | 256 | 838 | 130 | | | 115 | 1 | 429 | 792 | 1 | | | 1 | | | | 96 | 122 |
| *Panicum miliaceum* L. | Grain frag. | | | | | | | | 11 | 3 | 7 | 6 | | | | | | 58 | | | | | | | | | |
| *Panicum miliaceum* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain | | | | | | | | | | 24 | 1 | | | | | | | | | | | | | | 4 | |
| *Setaria* P.Beauv. | Grain | | | | | | | | | | | | | | | | | 9 | | | | | | | | | |
| Panicoideae Link | Grain | | | | | | | | 58 | 137 | 387 | 32 | | | | | 42 | 327 | | | | | | | | 4 | 19 |
| Panicoideae Link | Grain frag. | | | | | | | 1 | 38 | 19 | 61 | 29 | | | | | 27 | 194 | | | | | | | 2 | 7 | 9 |
| Panicoideae Link | Scutellum | | | | | | | | 15 | | | | | | | | | 8 | | | | | | | | | |
| *Secale cereale* L. | Grains agglomerated | | | | | | | | | 2 | 45 | | | | | | | | | | 1 | | | | | | |
| *Secale cereale* L. | Grain | 38 | 46 | 5 | 1 | 186 | 10 | 7 | 1,037 | 4,742 | 20,646 | 2,099 | 1 | 1 | 131 | 36 | 1,927 | 453 | 61 | 72 | 48 | 157 | | 5 | | 76 | 73 |
| *Secale cereale* L. | Grain longitudinal frag. | | | | | 1 | | | 20 | 78 | 671 | 140 | | | | | 116 | 9 | | 2 | | | | | | | |
| *Secale cereale* L. | Grain frag. | 7 | 4 | 1 | | 16 | 1 | | 126 | 192 | 393 | 67 | | | 29 | 2 | 81 | 35 | 10 | 8 | 10 | 67 | | | 6 | 2 | 2 |
| *Secale cereale* L. / *Agrostemma githago*L. | Grain and seed agglomerated | | | | | | | | | | 1 | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain | 3 | 9 | 1 | | 26 | | 1 | 135 | 200 | 277 | 28 | | | 35 | 16 | 23 | 17 | 3 | 2 | 16 | 21 | | 2 | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain longitudinal frag. | | | | | | | | 4 | | | | | | | | | | | | | 3 | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain frag. | | | | | 1 | | | 8 | 3 | 3 | | | | 6 | 3 | | 1 | | | 1 | 8 | | | | | |
| *Triticum* L. | Grain | | | | | | | | 3 | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grain with scutellum | | | 2 | | 2 | | 1 | 488 | 1,769 | 4,791 | 464 | | 1 | 3 | 2 | 607 | 241 | | 1 | 4 | | | | | 11 | 26 |
| Triticeae Dumort. | Grain without scutellum | | 12 | 4 | 1 | 25 | | 1 | 2,063 | 2,937 | 5,803 | 934 | 1 | | 260 | 20 | 600 | 530 | 5 | 22 | 22 | 20 | | | 41 | 77 | 49 |
| Triticeae Dumort. | Embryo | | | | | | | | | 7 | 6 | 2 | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Scutellum | | | | | | | | 88 | 445 | 592 | 249 | | | | | 125 | 17 | | | | | | | | | |

Table A6.5 - Fruits/Seeds results per Square and S.U.

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Phase** | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Moment** | | 1st | 1st | 1st | 1st | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| **Structure** | | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| **S.U.** | | 115 | 115 | 116 | 116 | 106 | 106 | 106 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |
| **Square** | | C6 | D6 | G4 | G5 | E0 | F1' | F0 | B3/C3 | B6/C6 | B7/C7 | B8 | C1' | C1 | C4 | C5 | C8 | C9 | D0 | D1' | D1 | D3 | D4 | D5 | D7 | D8 | D9 |
| **Cereal (grain and chaff)** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grain | | | | | | | | 13 | 97 | 294 | 18 | | | 1 | | 16 | | | 1 | | 1 | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grains agglomerated | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base | | | | | | | | 2 | 159 | 204 | 18 | | | 1 | | 16 | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base frag. | | | | | | | | | 7 | 1 | 1 | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grain with husks | | | | | 1 | | | 100 | 981 | 3,639 | 435 | | | | | 334 | 55 | 2 | 3 | 2 | 1 | | | | 4 | | | |
| *Avena* L. | Grain frag. with husks | | | | | | | | 11 | 37 | 80 | 23 | | | | | 8 | 5 | | | | | | | | | | | |
| *Avena* L. | Husks frag. | | | | | | | | | 44 | 8 | 9 | | | 1 | | | | | | | | | | | | | | |
| *Avena* L. | Awn frag. | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Hulled grain | | | | | | | | | 496 | 2 | | | | 2 | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Hulled grains agglomerated | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base | | | | | | | | | 188 | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base frag. | | | | | | | | | 40 | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grain with husks | | | | | 24 | 2 | 2 | 50 | 3,388 | 142 | 9 | | | | | 53 | 69 | 3 | 3 | 11 | | | | | | | | |
| *Hordeum vulgare* L. | Grain frag. with husks | | | | | | 1 | | 7 | 85 | 24 | | | | | | 2 | 5 | 2 | 3 | 2 | | | | | | | | |
| *Hordeum vulgare* L. | Rachis segment with 1 node | | | | | | | | | 48 | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Rachis frag. | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Husks frag. | | | | | | | | 3 | 1,684 | 1 | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Awn frag. | | | | | | | | | 3 | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Hulled grain | | | | | | | | | | 16 | 16 | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain with husks | | | | | | | | 243 | 236 | 1,378 | 300 | | | | | 384 | 1,825 | | | | | | | 17 | 35 | 94 | | |
| *Panicum miliaceum* L. | Grain frag with husks | | | | | | | | 8 | 4 | 34 | 20 | | | | | 10 | 125 | | | | | | | 1 | 1 | 3 | | |
| *Panicum miliaceum* L. | Husks frag. | | | | | | | | | | 22 | | | | | | | 4 | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain with husks | | | | | | | | | | 47 | | | | | | | 25 | | | | | | | | | | | |
| *Secale cereale* L. | Rachis segment with 1 node | | | | | | | | | 87 | 205 | 259 | | | | | 137 | 25 | | | | | | | | 4 | | | |
| *Secale cereale* L. | Rachis segment with 2 nodes | | | | | | | | | 1 | | 17 | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis frag. | | | | | | | | | 7 | 6 | 3 | | | | | 2 | | | | | | | | | 1 | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Rachis node | | | | | | | | | 8 | 55 | | | | | | | 17 | | | | | | | | 4 | | | |
| *Triticum* L. | Rachis frag. | | | | | | | | | | 4 | | | | | | 2 | 3 | | | | | | | | | | | |
| Triticeae Dumort. | Rachis frag. | | | | | | | | | 6 | 6 | 7 | | | | | | | | | | | | | | 1 | | | |
| Triticeae Dumort. | Husks frag. | | | | | 1 | | | 5 | 1,358 | 44 | 21 | | | | | | 5 | | | | | | | | | | | |
| Triticeae Dumort. | Awn frag. | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Arrhenatherum elatius* subspec. *bulbosum* (Willd.) Schübl. & G.Martens | Pseudobulb | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Grain | | | | | | | | 39 | 33 | 1,319 | 143 | | | | | 185 | 26 | | | | | | | 9 | 8 | | | |
| *Festuca* L. / *Lolium* L. | Grain frag. | | | | | | | | 8 | 2 | 13 | 2 | | | | | | | | | | | | | | | 1 | | |
| *Poa* L. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Poa* L. | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Grain | | | | | | | | 42 | 72 | 935 | 162 | | | 30 | | 40 | 16 | | 5 | | | | | 36 | 17 | 10 | | |
| Poaceae Barnhart | Grain frag. | | | | | | | | 8 | 4 | 35 | 16 | | | 80 | | 3 | 4 | | | | | | | 1 | | 3 | | |
| Poaceae - *Bromus* L. type | Grain | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae - *Vulpia* C.C.Gmel. type | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Embryo | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Scutellum | | | | | | | | | | 17 | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grain and chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Hulled grain | | | | | | | | | | 36 | 16 | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Hulled grain | | | | | | | | | 1 | 36 | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Spikelet base | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Rachis frag. | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Husks frag. | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | |

Table A6.5 - (continued).

| | | Phase | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 1st | 1st | 1st | 1st | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| | | Structure | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| | | S.U. | 115 | 115 | 116 | 116 | 106 | 106 | 106 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |
| | | Square | C6 | D6 | G4 | G5 | E0 | F1' | F0 | B3/C3 | B6/C6 | B7/C7 | B8 | C1' | C1 | C4 | C5 | C8 | C9 | D0 | D1' | D1 | D3 | D4 | D5 | D7 | D8 | D9 |
| **Fabaceae** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lathyrus cicera* L. / *Lathyrus sativus* L. | Seed | | | | | | | | 2 | 2 | 24 | 9 | | | | | 23 | 1 | | | | | | | | | | |
| *Lens culinaris* Medik. | Seed | | | | | | | | 2 | 4 | | | | | | | | 8 | | | | | | | | | | |
| *Ornithopus* L. | Seed | | | | | | | | | | 21 | | | | | | | 8 | | | | | | | | | | |
| *Ornithopus* L. | Loment segment | | | | | | | | | | 177 | 40 | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Loment segment frag. | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed | | | | | | 1 | | 40 | 5 | 60 | | | | 101 | 17 | | 4 | | | 1 | 54 | 1 | 1 | | | | |
| *Pisum sativum* L. | Cotyledon | | | 2 | | | | | 33 | | | | | | 115 | 24 | | | | | | 45 | 1 | 2 | | | | |
| *Pisum sativum* L. | Seed frag. | | | | | | | | 22 | | | | | | 25 | 4 | | | | | | 22 | | | | | | |
| *Vicia faba* L. | Seed | | 1 | 8 | | | | 1 | 7 | 75 | 21 | 28 | | | 47 | 14 | | 2 | | | 1 | 11 | | 2 | | | | 1 |
| *Vicia faba* L. | Cotyledon | | | 1 | | | | | 3 | 6 | | | | | 39 | | | | | | | | | | | | | |
| *Vicia faba* L. | Seed frag. | | 2 | 3 | | | | 2 | 6 | 48 | 4 | 1 | | | 14 | 7 | 1 | 7 | | | | 7 | | 1 | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed | | | | | | | | 11 | 33 | 96 | | | | | | 79 | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Seed | | | | | | | 1 | 6 | 10 | 59 | 37 | | | | | | 9 | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Cotyledon | | | | | | | | 29 | 15 | 65 | | | | | | 15 | 31 | | | | | | | | 7 | | 2 |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Seed frag. | | | | | | | 5 | 44 | 55 | 69 | 6 | | | | | 30 | 18 | | | | | | | | 2 | | |
| Fabaceae Lindl. | Seed | | | | | | | | 4 | 2 | 107 | 29 | | | 5 | | 56 | 8 | | | | | | | | | | |
| Fabaceae Lindl. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae Lindl. | Seed frag. | | | | | | 2 | | 6 | | 2 | 1 | | | 383 | 14 | | 2 | | | | 18 | | | | | | |
| Fabaceae Lindl. | Pericarp frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Astragalus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Genista* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Medicago* L. | Seed | | | | | | | | | | 18 | | | | | | | | | | | | | | | | | |
| *Trifolium* L. | Seed | | | | | | | | | | 18 | | | | | | 36 | 8 | | | | | | | | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit frag. | | | | | | | | 2 | 9 | 4 | | | | | | | | | | | | | | | | | |
| *Quercus* L. | Cotyledon frag. | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Half bract | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Bract frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium* L. / *Prunus cerasus* L. | Endocarp | | | | | | | | | | | | | | | | | | | 1 | | 1 | | | | | | |
| *Pyrus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rubus* L. | Seed | | | | | | | | | | 36 | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seeds agglomerated | | | | | | | | | | | | | | | | 8 | | | | | | | | | | | |
| *Vitis vinifera* L. | Seed | | 1 | | | | | | 2 | 20 | 4 | 19 | | | | | 24 | | | | | | | | 7 | | 16 | |
| *Vitis vinifera* L. | Seed frag. | | | | | | | | 1 | | | 1 | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Pedicel | | | | | | | | 2 | 1 | | | | | | | | 4 | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe with seed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Oil/Fiber plant** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A6.5 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | **Moment** | 1st | 1st | 1st | 1st | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| | **Structure** | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| | **S.U.** | 115 | 115 | 116 | 116 | 106 | 106 | 106 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |
| | **Square** | C6 | D6 | G4 | G5 | E0 | F1' | F0 | B3/C3 | B6/C6 | B7/C7 | B8 | C1' | C1 | C4 | C5 | C8 | C9 | D0 | D1' | D1 | D3 | D4 | D5 | D7 | D8 | D9 |
| **Other remains** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 8 |
| *Agrostemma githago* L. | Seed | | | | | | | | 10 | 57 | 470 | 53 | | | | | 31 | 9 | | | | | | | | 9 | | | | |
| *Agrostemma githago* L. | Seed frag. | | | | | | | | | 5 | 10 | 6 | | | | | | | | | | | | | | | | | | |
| Asteraceae Bercht. & J.Presl | Cypsela | | | | | | | | | | 15 | 1 | | | 4 | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* L. type | Cypsela | | | | | | | | 4 | 15 | 129 | 1 | | | | | | 8 | | | | | | | | | | | | 8 |
| Caryophyllaceae Juss. | Seed | | | | | | | | | | | | | | | | 36 | | | | | | | | | 8 | | | | |
| Caryophyllaceae Juss. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* L. | Seed | | | | | | | | | | 5 | 40 | | | | | 20 | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed frag. | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus* L. | Capsule frag. | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 8 |
| *Euphorbia* L. | Seed | | | | | | | | | 4 | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp frag. | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| *Malva* L. | Seed | | | | | | | | | | | | | | 1 | | | | | | | | | | | 4 | | | | |
| Papaveraceae Juss. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum persicaria* L. | Achene | | | | | | | | | | 18 | | | | | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - lenticular type | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - trigonal type | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene | | | | | | | | | | 29 | 20 | | | | | 30 | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene frag. | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | | |
| *Plantago lanceolata* L. | Seed | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| *Plantago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ranunculus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 10 |
| *Raphanus raphanistrum* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment | | | | | | | | | | 18 | | | | | | 8 | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment frag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex bucephalophorus* L. | Achene | | | | | | | | | | 5 | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus* Murray / *Rumex crispus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* L. | Achene | | | | | | | | 14 | 10 | 66 | | | | | | | | | | | | | | | | | | | |
| *Sherardia arvensis* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 10 |
| *Silene gallica* L. | Seed | | | | | | | | 15 | | 55 | | | | | | 20 | 25 | | | | | | | | | | | | |
| *Silene* L. | Seed | | | | | | | | | | | | | | | | | 8 | | | | | | | | | | | | |
| *Spergula arvensis* L. | Seed | | | | | | | | | 2 | 31 | | | | | | | | | | | | | | | | | | | |
| *Stellaria* L. / *Cerastium* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Urtica* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | 8 | | | | |
| *Veronica* L. | Seed | | | | | | | | | | 18 | | | | | | | | | | | | | | | | | | | 8 |
| *Viola* L. | Seed | | | | | | | | | 1 | 14 | | | | | | 20 | | | | | | | | | | | | | |
| Undetermined | Flower bud | | | | | | | | | | 1 | | | | | | | | | | | | | | 1 | | | | | |
| Undetermined | Peduncle | | | | | | | | | 3 | 2 | 2 | | | | | | | | | | | | | | | | | | |
| Undetermined | Plant spine frag. | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Seed/fruit | | | | | | | | 1 | 4 | 7 | 1 | | | 1 | | 4 | 7 | | | | | | | 1 | | | | | 11 |
| Undetermined | Seed/fruit frag. | 2 | 3 | | 1 | 23 | | 8 | 1,803 | 3,921 | 5,185 | 1,313 | | 1 | 146 | | 836 | 1,481 | 9 | 31 | 33 | 3 | | | 37 | 92 | 54 | | |

Table A6.5 - (continued).

| | | Phase | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 3rd | 3rd | 3rd | 3rd | 4th |
| | | Structure | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | W112 | W112 | W112 | W112 | W112 |
| | | S.U. | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 109 | 136 | 139 | 139 | 140 | 124 |
| | | Square | E1' | E0 | E1 | E7 | F1' | F0 | F1 | F8 | F9 | D4 | D5 | D6 | D7 | E6 | F5 | G3 | G4 | G8 | F5 | B8 | A8/B8 | A9/B9 | A8 | B6/C6 |
| **Cereal** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grain | 594 | | 3,572 | 125 | | | 12 | 16 | 12 | 3 | | 12 | | | | | | | | 117 | 856 | 549 | 26 | 211 | 160 |
| *Avena* L. | Grain frag. | 135 | | 23 | 11 | 1 | | | 2 | 3 | | | | | | | | | | | 7 | 36 | 35 | 7 | 17 | 70 |
| *Avena* L. / *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grain | 185 | | 48 | 4 | 4 | 8 | 27 | 4 | 8 | | | 7 | | | | | | | | 5 | 13 | 74 | 3 | 13 | 33 |
| *Hordeum vulgare* L. | Grain frag. | 60 | | 7 | 2 | 3 | 2 | 2 | 1 | 2 | 1 | | | | | | | | | | | 3 | 3 | 1 | | 4 |
| *Hordeum vulgare* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. /Fabaceae Lindl. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare*/ Charcoal remain (agglomerate) | Grain and charcoal agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated | | | | 4 | | | | | | | | | | | | | | | | | 4 | | | | |
| *Panicum miliaceum* L. | Grains agglomerated frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain | 269 | | 154 | 8 | 1 | | | 16 | 38 | | | | | | | | | | | 11 | 184 | 91 | 48 | 29 | 59 |
| *Panicum miliaceum* L. | Grain frag. | 13 | | | 1 | | | | 1 | 1 | | | | | | | | | | | | 1 | | 2 | | |
| *Panicum miliaceum* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain | 8 | | | | | | | | | | | | | | | | | | | | | | 3 | | 4 |
| *Setaria* P.Beauv. | Grain | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae Link | Grain | 80 | | 16 | | | 1 | | | | | | | | | | | | | | | 17 | 30 | | | 29 |
| Panicoideae Link | Grain frag. | 25 | | 7 | | | | | 3 | 1 | | | | | | | | | | | | 13 | 2 | 12 | 5 | 12 |
| Panicoideae Link | Scutellum | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Grain | 1,404 | 1 | 383 | 88 | 13 | 34 | 65 | 28 | | 5 | 1 | 19 | | | | | | | | 60 | 763 | 592 | 42 | 136 | 129 |
| *Secale cereale* L. | Grain longitudinal frag. | 47 | | 8 | 8 | | | 5 | | | | | | | | | | | | | 2 | 26 | 29 | | | 2 |
| *Secale cereale* L. | Grain frag. | 232 | | 26 | 3 | 1 | 2 | 2 | 1 | 2 | | | 7 | | | | | | | | 11 | 48 | 59 | 4 | 15 | 28 |
| *Secale cereale* L. / *Agrostemma githago* L. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain | 79 | | 72 | 2 | | 5 | 14 | 4 | | 2 | 1 | 2 | | | | | | | | 4 | 22 | 23 | 2 | 6 | 9 |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain longitudinal frag. | 20 | | | | | | | | | | | 1 | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain frag. | 6 | | 3 | | | | | | | | | | | | | | | | | | 1 | | 1 | 1 | 1 |
| *Triticum* L. | Grain | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grain with scutellum | 104 | | 283 | 52 | | | 12 | | 12 | | | | | | | | | | | 18 | 223 | 204 | 5 | 38 | 211 |
| Triticeae Dumort. | Grain without scutellum | 979 | | 284 | 125 | 2 | | 11 | 18 | 31 | | | | | | | | | | | 36 | 256 | 194 | 49 | 128 | 2,001 |
| Triticeae Dumort. | Embryo | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Scutellum | 2 | | 32 | 2 | | | 1 | | | | | | | | | | | | | | 11 | | 1 | 6 | 22 |

Table A6.5 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| | **Moment** | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 3rd | 3rd | 3rd | 3rd | 4th |
| | **Structure** | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | W112 | W112 | W112 | W112 | W112 | W112 |
| | **S.U.** | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 109 | 137 | 136 | 139 | 139 | 140 | 124 |
| | **Square** | E1' | E0 | E1 | E7 | F1' | F0 | F1 | F8 | F9 | D4 | D5 | D6 | D7 | E6 | F5 | G3 | G4 | G8 | F5 | B8 | B8 | A8/B8 | A9/B9 | A8 | B6/C6 |
| **Cereal (grain and chaff)** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | 40 | | | 2 |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base | | | | | | | | | | | | | | | | | | | | 11 | 10 | | | | 2 |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grain with husks | 56 | | 103 | 23 | 1 | 1 | 2 | 4 | | 1 | | | | | | | | | | 13 | 90 | 212 | 6 | 4 | 3 |
| *Avena* L. | Grain frag. with husks | 10 | | 1 | | | | | | | | | | | | | | | | | | 1 | 7 | | 1 | 1 |
| *Avena* L. | Husks frag. | | | | | | | | | | | | | | | | | | | | | 1 | | | | 2 |
| *Avena* L. | Awn frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | 3 | | | |
| *Hordeum vulgare* L. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base | | | | | | | | | | | | | | | | | | | | | 31 | | | | |
| *Hordeum vulgare* L. | Lemma base frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grain with husks | 55 | | 104 | 2 | 1 | 2 | | | | 1 | 1 | | | | | | | | | | | 19 | | 4 | 10 |
| *Hordeum vulgare* L. | Grain frag. with husks | 4 | | 1 | | | | | | | | | | | | | | | | | | | | | | 4 |
| *Hordeum vulgare* L. | Rachis segment with 1 node | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | 1 | | | | | 1 |
| *Hordeum vulgare* L. | Husks frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Awn frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | 8 | | |
| *Panicum miliaceum* L. | Grain with husks | 112 | | 57 | 38 | | 1 | | | | | | | | | | | | | | 33 | 111 | 18 | 45 | 31 | 12 |
| *Panicum miliaceum* L. | Grain frag with husks | 3 | | | 1 | | | | | | | | | | | | | | | | | 7 | | 2 | | |
| *Panicum miliaceum* L. | Husks frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | 3 | | |
| *Setaria italica* (L.) P.Beauv. | Grain with husks | | | 14 | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis segment with 1 node | | | 16 | 8 | | | | | | | | | | | | | | | | | 131 | 48 | | 13 | 19 |
| *Secale cereale* L. | Rachis segment with 2 nodes | | | | | | | | | | | | | | | | | | | | | 19 | | | | 2 |
| *Secale cereale* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | 9 |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Rachis node | | | | 38 | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| Triticeae Dumort. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | 4 |
| Triticeae Dumort. | Husks frag. | | | | | | | | | | | | | | | | | | | | | 1 | | | | 3 |
| Triticeae Dumort. | Awn frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Arrhenatherum elatius* subspec. *bulbosum* (Willd.) Schübl. & G.Martens | Pseudobulb | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Grain | 68 | | 75 | 20 | | | | | | | | | | | | | | | | | | | | 6 | 33 |
| *Festuca* L. / *Lolium* L. | Grain frag. | 13 | | | | | | | | | | | | | | | | | | | | | | | | 3 |
| *Poa* L. | Grain | | | | | | | | | | | | | | | | | | | | | 31 | | | | |
| *Poa* L. | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Grain | 102 | | 61 | | | | | 8 | | | 1 | | | | | | | | | | 159 | 107 | 6 | 2 | 6 |
| Poaceae Barnhart | Grain frag. | 70 | | | 3 | | | | | 1 | | | | | | | | | | | | 4 | 5 | 1 | 2 | 10 |
| Poaceae - *Bromus* L. type | Grain | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae - *Vulpia* C.C.Gmel. type | Grain frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Embryo | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Scutellum | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Other Poaceae (grain and chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Spikelet base | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Husks frag. | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A6.5 - (continued).

| | | Phase | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 3rd | 3rd | 3rd | 3rd | 4th |
| | | Structure | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | W112 | W112 | W112 | W112 | W112 |
| | | S.U. | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 109 | 136 | 139 | 139 | 140 | 124 |
| | | Square | E1' | E0 | E1 | E7 | F1' | F0 | F1 | F8 | F9 | D4 | D5 | D6 | D7 | E6 | F5 | G3 | G4 | G8 | F5 | B8 | A8/B8 | A9/B9 | A8 | B6/C6 |
| **Fabaceae** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lathyrus cicera* L. / *Lathyrus sativus* L. | Seed | | 8 | | | | | 2 | | | | | | 1 | | | | | | | | | | | 2 | |
| *Lens culinaris* Medik. | Seed | | 4 | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Seed | | | | | | | | | | | | | | | | | | | | | 11 | | 6 | | |
| *Ornithopus* L. | Loment segment | | | | 16 | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Loment segment frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed | | 8 | | | | 3 | 1 | 4 | | | | | 1 | | | | | | | | | | | | |
| *Pisum sativum* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* L. | Seed | | | | | 4 | | | | | | | | | | | | | | | | | | | | 1 |
| *Vicia faba* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* L. | Seed frag. | | 1 | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Vicia* L. / *Lathyrus* L. | Seed | | 24 | | | 4 | | | 1 | | | | | | | | | | | | | 8 | 7 | 2 | | |
| *Vicia* L. / *Lathyrus* L. | Cotyledon | | 4 | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed frag. | | 1 | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Seed | | 8 | | 22 | | 11 | 5 | 8 | | | | | | | | | | | | | | | | | 1 |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Cotyledon | | 12 | | | 2 | 3 | 1 | 3 | | | | | | 1 | | | | | | 1 | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Seed frag. | | 6 | | 4 | 2 | 2 | 3 | 5 | | 4 | | | | | | | | | | | 1 | | 2 | | 17 |
| Fabaceae Lindl. | Seed | | 14 | | 16 | 4 | | | | | 18 | | | | | | | | | | | | 3 | | | |
| Fabaceae Lindl. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae Lindl. | Seed frag. | | | | | | | | | | 2 | | | | | | | | | | | 2 | 2 | 2 | 1 | 1 |
| Fabaceae Lindl. | Pericarp frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Astragalus* L. | Seed | | 2 | | | | | | | | | | | | | | | | | | | | | | | |
| *Genista* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Medicago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Trifolium* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* L. | Cotyledon frag. | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Half bract | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Bract frag. | | | | | | | | | | | | | | | | | 1 | | | | | | | | |
| *Prunus avium* L. / *Prunus cerasus* L. | Endocarp | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pyrus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rubus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seed | | | | | | 1 | | | | | | | | | | | | | | | 24 | | | | |
| *Vitis vinifera* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | 1 | | 2 | | |
| *Vitis vinifera* L. | Pedicel | | | | | | | | | | | | | | | | | | | | | 7 | 3 | | | |
| *Vitis vinifera* L. | Drupe with seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Oil/Fiber plant** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated | | | | | | 2 | 4 | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated frag. | | | | | | 3 | 98 | | | | | | | | | | | | | | | | | | |

Table A6.5 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 |
| | **Moment** | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 3rd | 3rd | 3rd | 3rd | 4th |
| | **Structure** | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | W112 | W112 | W112 | W112 | W112 |
| | **S.U.** | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 109 | 137 | 136 | 139 | 139 | 140 | 124 |
| | **Square** | E1' | E0 | E1 | E7 | F1' | F0 | F1 | F8 | F9 | D4 | D5 | D6 | D7 | E6 | F5 | G3 | G4 | G8 | F5 | B8 | B8 | A8/B8 | A9/B9 | A8 | B6/C6 |
| **Other remains** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Agrostemma githago* L. | Seed | 4 | | | 4 | | | | 26 | | | | | | | | | | | | | | | | | |
| *Agrostemma githago* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae Bercht. & J.Presl | Cypsela | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* L. type | Cypsela | | | | | | | | | | | | | | | | | | | | | | 30 | | 19 | 2 |
| Caryophyllaceae Juss. | Seed | 10 | | 16 | | | | | | | | | | | | | | | | | | | | | | |
| Caryophyllaceae Juss. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| *Chenopodium* L. | Seed | 4 | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Euphorbia* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* L. | Mericarp | | | 14 | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp | 8 | | | | | | | | | | | | | | | | | | | 24 | | | | | |
| *Galium* L. | Mericarp frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| Papaveraceae Juss. | Seed | | | 16 | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum persicaria* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | 4 |
| *Polygonum lapathifolium* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | 6 | |
| *Polygonum* L. - lenticular type | Achene | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - trigonal type | Achene | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago lanceolata* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Ranunculus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Raphanus raphanistrum* L. | Siliqua segment | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Raphanus raphanistrum* L. | Siliqua segment frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex bucephalophorus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus* Murray / *Rumex crispus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* L. | Achene | 23 | | 32 | 4 | | | | 18 | 8 | | | | | | | | | | | | | 30 | | | 3 |
| *Sherardia arvensis* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Spergula arvensis* L. | Seed | 16 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Stellaria* L. / *Cerastium* L. | Seed | | | | | | | | | | | | | | | | | | | | | 7 | | | 10 | |
| *Urtica* L. | Achene | 11 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Veronica* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Viola* L. | Seed | | | | | | | | 18 | | | | | | | | | | | | | | | | | |
| Undetermined | Flower bud | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Undetermined | Peduncle | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| Undetermined | Plant spine frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Seed/fruit | 2 | | 1 | | | | | | 2 | | | | | | | | | | | | | | | | |
| Undetermined | Seed/fruit frag. | 3,121 | | 356 | 172 | 38 | 22 | 31 | 28 | 46 | | | 1 | | | 1 | | | | | 27 | 302 | 168 | 72 | 115 | 1,974 |

Table A6.5 - (continued).

| | | Phase | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 5th | 5th | 5th | 5th |
| | | Structure | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | H1 | H1 | H2 | GM |
| | | S.U. | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 130 | 130 | 131 | 131 | 134 | 126 | 126 | 132 | 133 |
| | | Square | A'3 | A'4 | A'7 | A'8 | A0 | A3/A4 | A5 | A6 | A7 | B5 | B6 | B7 | B8 | C6 | C8 | B7 | B8 | A5 | B6 | B8 | B7 | C6 | C7 | D1'/E1' |
| **Cereal** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grain | | 156 | 3 | 5 | | 517 | 323 | 52 | 3 | 18 | 769 | 1,006 | 438 | 1 | 495 | 1,902 | 721 | 160 | 19 | 1 | 20 | | | 1 |
| *Avena* L. | Grain frag. | | 42 | 1 | | | 52 | 40 | 10 | | 14 | 80 | 105 | 49 | 1 | 48 | 155 | 29 | 111 | 8 | 1 | 1 | | 4 | 3 |
| *Avena* L. / *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | 1 | | | | | | |
| *Avena* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | 1 | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grain | | 26 | | | | 15 | 31 | 5 | 1 | 4 | 11 | 55 | 9 | 1 | 16 | 157 | 60 | 9 | 7 | | 8 | | 1 | |
| *Hordeum vulgare* L. | Grain frag. | | 12 | | | | 4 | 2 | 6 | 1 | 2 | 1 | 11 | 4 | | 5 | 17 | 6 | 5 | 5 | | 6 | | | 1 |
| *Hordeum vulgare* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grains agglomerated | | | | | | | | | | | | 1 | | | | | | | | | | | | |
| *Hordeum vulgare* L. /Fabaceae Lindl. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare*/ Charcoal remain (agglomerate) | Grain and charcoal agglomerated | | | | | | | | | | | | | | | | | 4 | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | | | | | | | | 5 | | | 1 | 1 | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated frag. | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain | | 20 | | | | 86 | 106 | 5 | | 3 | 23 | 94 | 39 | | 105 | 125 | 180 | 22 | 3 | | 9 | | 4 | 2 |
| *Panicum miliaceum* L. | Grain frag. | | 2 | | | | 8 | 2 | | | 1 | 1 | | | | | 1 | | 6 | | | 3 | | 1 | 1 |
| *Panicum miliaceum* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | 2 | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain | | | | | | | | | | | | | | | | | | 3 | | | | | | |
| *Setaria* P.Beauv. | Grain | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae Link | Grain | | 28 | | | | 15 | 71 | 2 | | 3 | 59 | 50 | 13 | | 49 | 112 | 59 | 25 | 4 | | 2 | | 1 | |
| Panicoideae Link | Grain frag. | | 7 | | | | 15 | 1 | 4 | | 7 | 4 | 15 | 12 | | 19 | 6 | 1 | 54 | 12 | | 5 | | 6 | |
| Panicoideae Link | Scutellum | | | | | | | | | | | | 9 | | | | | | | | | | | | |
| *Secale cereale* L. | Grains agglomerated | | | | | | | 1 | | | | | 5 | | | | | | | | | 1 | | | |
| *Secale cereale* L. | Grain | 1 | 301 | 23 | 7 | | 681 | 439 | 136 | 40 | 16 | 696 | 1,247 | 403 | 13 | 343 | 2,825 | 746 | 242 | 185 | 1 | 9 | | 2 | 1 |
| *Secale cereale* L. | Grain longitudinal frag. | | 3 | 2 | | | 39 | 33 | 9 | 1 | 1 | 102 | 1 | 11 | | 22 | 163 | 51 | 10 | 8 | | | | 3 | |
| *Secale cereale* L. | Grain frag. | | 34 | 5 | 3 | | 39 | 39 | 10 | 6 | 9 | 49 | 60 | 54 | | 26 | 117 | 29 | 61 | 31 | | 3 | | 5 | 1 |
| *Secale cereale* L. / *Agrostemma githago* L. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain | | 88 | 1 | 2 | | 167 | 157 | 22 | 1 | 4 | 18 | 22 | 5 | 2 | 5 | 16 | 22 | 93 | 11 | | 2 | | 1 | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain longitudinal frag. | | | | | | | 5 | | | | | | | | | | | 6 | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain frag. | | 6 | | | | 3 | 5 | 1 | | 1 | | 1 | 1 | | | 3 | | 27 | 1 | | | | | |
| *Triticum* L. | Grain | | | | | | | 5 | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grain with scutellum | | 50 | 1 | 1 | | 193 | 101 | 17 | 4 | 7 | 269 | 253 | 66 | 1 | 122 | 654 | 432 | 50 | 29 | | 4 | | 2 | |
| Triticeae Dumort. | Grain without scutellum | 1 | 295 | 15 | 2 | | 594 | 182 | 218 | 5 | 99 | 463 | 678 | 324 | 2 | 307 | 771 | 216 | 813 | 243 | | 47 | | 23 | 7 |
| Triticeae Dumort. | Embryo | | 3 | | | | | | | | 1 | 1 | 1 | | | | | | 1 | 4 | | | | | |
| Triticeae Dumort. | Scutellum | | 12 | 1 | 1 | | 32 | 20 | 6 | 1 | 1 | 98 | 63 | 1 | 1 | 16 | 260 | | 25 | 28 | | 4 | | | |

Table A6.5 - (continued).

| | Phase | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Moment | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 5th | 5th | 5th | 5th |
| | Structure | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | H1 | H1 | H2 | GM |
| | S.U. | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 130 | 130 | 131 | 131 | 126 | 126 | 132 | 133 |
| | Square | A'3 | A'4 | A'7 | A'8 | A0 | A3/A4 | A5 | A6 | A7 | B5 | B6 | B7 | B8 | C6 | C8 | B7 | B8 | A5 | B6 | B7 | C6 | C7 | D1'/E1' |
| **Cereal (grain and chaff)** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grain | | 3 | | | | 8 | | 3 | | 1 | 7 | 46 | 4 | | | 64 | 17 | 4 | 7 | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base | | 7 | | | | | | | | | 15 | 3 | 30 | | | 72 | 20 | 3 | 11 | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base frag. | | 1 | | | | | | | | | | 1 | 1 | | | 1 | | 1 | | | | | |
| *Avena* L. | Grain with husks | | 75 | 1 | | | 183 | 64 | 22 | 5 | 6 | 241 | 493 | 143 | | 74 | 1,114 | 130 | 83 | 35 | | | 1 | |
| *Avena* L. | Grain frag. with husks | | 6 | 1 | | | 8 | 1 | 7 | | 2 | 14 | 19 | 11 | | 4 | 21 | 2 | 17 | 5 | | | | |
| *Avena* L. | Husks frag. | | 5 | | | | 4 | | 4 | | | | 21 | | | | 3 | | 8 | 21 | | | | |
| *Avena* L. | Awn frag. | | | | | | | | | | | | | | | | 1 | | | | | | | |
| *Hordeum vulgare* L. | Hulled grain | | | | | | | 1 | | 5 | | | 80 | | | | | | 2 | | | | | |
| *Hordeum vulgare* L. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base | | 3 | | | | | | | | | | 7 | | | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base frag. | | | | | | | | | | | | 5 | | | | 2 | | 2 | 4 | | | | |
| *Hordeum vulgare* L. | Grain with husks | | 41 | 2 | 1 | | 9 | 16 | 24 | 28 | 2 | 13 | 254 | 4 | 1 | 10 | 255 | 30 | 17 | 5 | | 1 | | 4 |
| *Hordeum vulgare* L. | Grain frag. with husks | | | | | | | | 5 | 3 | | 4 | 8 | | | | 2 | 2 | 3 | 2 | | | | |
| *Hordeum vulgare* L. | Rachis segment with 1 node | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | 1 | | | | |
| *Hordeum vulgare* L. | Husks frag. | | 1 | | | | | | 1 | | | | 16 | | | | 1 | | | | | | | |
| *Hordeum vulgare* L. | Awn frag. | | | | | | | | | | | | 1 | | | | | | | | | | | |
| *Panicum miliaceum* L. | Hulled grain | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain with husks | | 20 | | | | 121 | 95 | 5 | | 1 | | 70 | 117 | | 61 | 87 | 95 | 46 | | | 2 | | 3 |
| *Panicum miliaceum* L. | Grain frag with husks | | 1 | | | | 12 | 7 | 1 | | 4 | | 3 | 7 | | 3 | 2 | 1 | 13 | 6 | | | | 3 |
| *Panicum miliaceum* L. | Husks frag. | | | | | | 1 | | | | | 1 | | | | | | | 1 | 2 | | | | |
| *Setaria italica* (L.) P.Beauv. | Hulled grain | | | | | | | | | | | | | | | | | | 2 | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain with husks | | 1 | | | | | 18 | | | | | | | | | | | 1 | | | | | |
| *Secale cereale* L. | Rachis segment with 1 node | | 5 | | | | 28 | | | | | 37 | 117 | 1 | | 25 | 324 | 82 | 3 | 2 | | 2 | | 1 |
| *Secale cereale* L. | Rachis segment with 2 nodes | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis frag. | | 2 | | | | | | 1 | | 1 | | 1 | | | | 12 | 2 | 1 | 6 | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Rachis node | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Rachis frag. | | | | | | | | 1 | | | | 4 | 2 | | | 1 | 1 | | | | | | |
| Triticeae Dumort. | Husks frag. | | 2 | | | | 11 | 3 | 14 | 6 | 1 | 7 | 187 | 4 | | 2 | 7 | | 4 | 46 | | | | |
| Triticeae Dumort. | Awn frag. | | 1 | | | | 1 | | | | | | 3 | | | | | | 4 | 4 | | | | |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Arrhenatherum elatius* subspec. *bulbosum* (Willd.) Schübl. & G.Martens | Pseudobulb | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Grain | | 38 | | | | 28 | 10 | 3 | | 2 | 31 | 88 | 12 | | | 318 | | 10 | 1 | | 11 | | |
| *Festuca* L. / *Lolium* L. | Grain frag. | | 1 | | | | 2 | | 1 | | | | | 3 | | | 7 | | | | | 1 | | |
| *Poa* L. | Grain | | | | | | | | | | | | | | | | | 20 | | | | | | |
| *Poa* L. | Grain frag. | | | | | | | | | | | | | | | | | 1 | | | | | | |
| Poaceae Barnhart | Grain | | | | | | 8 | 49 | | | | | 46 | 2 | | 17 | 185 | 159 | 7 | | | | 2 | |
| Poaceae Barnhart | Grain frag. | | 9 | | | | 37 | | | | | 6 | 11 | 3 | | 2 | 9 | 1 | 2 | 1 | | 1 | | 1 |
| Poaceae - *Bromus* L. type | Grain | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae - *Vulpia* C.C.Gmel. type | Grain frag. | | | | | | | | | | | | | | | | | | 1 | | | | | |
| Poaceae Barnhart | Embryo | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Scutellum | | | | | | | | 1 | | | | | | | | | | | | | | | |
| **Other Poaceae (grain and chaff)** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Hulled grain | | 1 | | | | | | | | 1 | | 14 | 1 | | | | | 1 | | | | | |
| Poaceae Barnhart | Hulled grain | | | | | | | | | | | | 1 | | | | | | | | | | | |
| Poaceae Barnhart | Spikelet base | | 1 | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Rachis frag. | | | | | | | | | | | | 3 | | | | | | | | | | | |
| Poaceae Barnhart | Husks frag. | | | | | | | 1 | | | | | | | | | | | | | | | | |

Table A6.5 - (continued).

| | | Phase | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 5th | 5th | 5th | 5th | 5th |
| | | Structure | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | H1 | H1 | H2 | GM |
| | | S.U. | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 130 | 130 | 131 | 131 | 134 | 126 | 126 | 132 | 133 |
| | | Square | A'3 | A'4 | A'7 | A'8 | A0 | A3/A4 | A5 | A6 | A7 | B5 | B6 | B7 | B8 | C6 | C8 | B7 | B8 | A5 | B6 | B8 | B7 | C6 | C7 | D1'/E1' |
| **Fabaceae** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lathyrus cicera* L. / *Lathyrus sativus* L. | Seed | | | 3 | | | | | 6 | | | | | | | | 5 | | | | 1 | | | | | |
| *Lens culinaris* Medik. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Loment segment | | | | | | | | | | | | | | 9 | | | | | | | 4 | | | | |
| *Ornithopus* L. | Loment segment frag. | | | | | | | | | | | | | | 1 | | | | | | | | | | | |
| *Pisum sativum* L. | Seed | | | 5 | | | | | | 3 | | | | | | | | | | | 2 | | | | | |
| *Pisum sativum* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* L. | Seed | | | | | | | | 1 | 6 | | | 5 | | | | 5 | | | | 1 | | | | | |
| *Vicia faba* L. | Cotyledon | | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| *Vicia faba* L. | Seed frag. | | | 2 | | | | | | | | | | | 1 | 1 | 4 | | | | 1 | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed | | | 3 | | | | 19 | 1 | | | | | | | | 16 | | | | 4 | | | 2 | | |
| *Vicia* L. / *Lathyrus* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. /*Pisum* L. | Seed | | | 6 | | | | | 22 | 5 | 1 | 2 | 1 | | | | 5 | | | 3 | 2 | | 1 | | | |
| *Vicia* L. / *Lathyrus* L. /*Pisum* L. | Cotyledon | | | 5 | | | | 8 | 5 | 2 | 2 | | | | 1 | | 5 | 8 | | | 5 | | | | | |
| *Vicia* L. / *Lathyrus* L. /*Pisum* L. | Seed frag. | | | 49 | | | | 2 | 2 | 8 | 1 | 2 | 2 | 6 | 5 | | 20 | 4 | | 2 | 35 | | | 2 | | |
| Fabaceae Lindl. | Seed | | | | | | | 13 | | 1 | | | 29 | 1 | 4 | | | 72 | 20 | 2 | | | 2 | | | |
| Fabaceae Lindl. | Cotyledon | | | | | | | | 9 | | | | | | | | | | | | | | | | | |
| Fabaceae Lindl. | Seed frag. | | | | | | | | | | | | 1 | 1 | | | | | 1 | | 2 | | | 2 | | |
| Fabaceae Lindl. | Pericarp frag. | | | | | | | | | 52 | | | 44 | | | | | | | | 1 | | | | | |
| *Astragalus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Genista* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Medicago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Trifolium* L. | Seed | | | | | | | | | | | | | 9 | | | | | | | | | | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Quercus* L. | Cotyledon frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Half bract | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Bract frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium* L. / *Prunus cerasus* L. | Endocarp | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pyrus* L. | Seed | | | | | | | | | | | | | 1 | | | | | | | | | | | | |
| *Rubus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | 2 | | | |
| *Vitis vinifera* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seed | | | | | | | | | | | | | | | | | 8 | | | | | | | | |
| *Vitis vinifera* L. | Seed frag. | | | | | | | | 1 | | | | | | | | | | 1 | | | | | | | 1 |
| *Vitis vinifera* L. | Pedicel | | | | | | | | | | | | | | | | | 17 | | | | | | | | |
| *Vitis vinifera* L. | Drupe with seed | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| *Vitis vinifera* L. | Drupe frag. | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| **Oil/Fiber plant** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated frag. | | | | | | | | | | | | | | | | | | | | | | | | | |

Table A6.5 - (continued).

| | | Phase | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 5th | 5th | 5th | 5th | 5th |
| | | Structure | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | H1 | H1 | H2 | GM | |
| | | S.U. | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 130 | 130 | 131 | 131 | 134 | 126 | 126 | 132 | 133 |
| | | Square | A'3 | A'4 | A'7 | A'8 | A0 | A3/A4 | A5 | A6 | A7 | B5 | B6 | B7 | B8 | C6 | C8 | B7 | B8 | A5 | B6 | B8 | B7 | C6 | C7 | D1'/E1' |
| **Other remains** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Agrostemma githago* L. | Seed | | | 3 | | | | 8 | 5 | 1 | | 1 | 30 | 20 | 6 | | | 47 | | 3 | 6 | | 2 | | | |
| *Agrostemma githago* L. | Seed frag. | | | 1 | | | | | | | | | 1 | | | | | 2 | | | 1 | | | | | |
| Asteraceae Bercht. & J.Presl | Cypsela | | | | | | | | | | | | | | | | | 19 | | | 1 | | | | | |
| Asteraceae - *Chrysanthemum* L. type | Cypsela | | | | | | | 1 | | | | | | | | | | 36 | | | 1 | | | | | |
| Caryophyllaceae Juss. | Seed | | | | | | | | 9 | | | | | 9 | | | 5 | 1 | 4 | | | | | 1 | | |
| Caryophyllaceae Juss. | Seed frag. | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| *Chenopodium* L. | Seed | | | | | | | 1 | 8 | | | | | | | | | 1 | | | 1 | | | | | |
| Chenopodiaceae Vent | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| *Cistus* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Euphorbia* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* L. | Seed | | | | | | | | | | | | | 7 | | | | | | | | | | | | |
| Papaveraceae Juss. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum persicaria* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - lenticular type | Achene | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - trigonal type | Achene | | | 4 | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago lanceolata* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ranunculus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Seed | | | | | | | | | | | | | | | | 14 | | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment | | | | | | | 8 | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex bucephalophorus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus* Murray / *Rumex crispus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* L. | Achene | | | | | | | | | | | | 8 | | 4 | | | | | | 1 | | 4 | | | |
| *Sherardia arvensis* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Spergula arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Stellaria* L. / *Cerastium* L. | Seed | | | | | | | | | | | | | | | | | | 9 | | | | | | | |
| *Urtica* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Veronica* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Viola* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Flower bud | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | |
| Undetermined | Peduncle | | 2 | | | | | | | 1 | | | 1 | 1 | 1 | | | 1 | | 1 | | | | | | |
| Undetermined | Plant spine frag. | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Seed/fruit | | | | | | | 4 | 1 | | 1 | | 1 | | | | | 2 | 1 | 1 | | | | | 2 | |
| Undetermined | Seed/fruit frag. | | 718 | 14 | 10 | 1 | 953 | 386 | 315 | 17 | 95 | 198 | 1,043 | 159 | 65 | 457 | 1,017 | 213 | 640 | 1,446 | 1 | 97 | 2 | 207 | 9 | |

Table A6.5 - (continued).

| | | Phase | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th |
| | | Structure | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS |
| | | S.U. | 104 | 104 | 104 | 104A | 104A | 104A | 104A | 104B | 104B | 104B | 118 | 118 | 102 | 102 | 102 | 102 | 102 | 102 | 121 | 121 | 121 | 121 | 121 |
| | | Square | C5 | C6 | D1'/E1' | B7 | C3 | C6 | D3 | B7 | C6 | C7 | H5 | L5 | C3 | C6 | C9 | E1' | F2 | I4 | M2 | M3 | M4 | M2 | M3 |
| **Cereal** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grain | | | 968 | 1 | | 874 | | | 100 | | | | | 99 | | 13 | | | | | 1 | | | |
| *Avena* L. | Grain frag. | | | 60 | | | 231 | | | 9 | | | | | 19 | | 7 | | | | 2 | | | | |
| *Avena* L. / *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Grain | | | 287 | | | 128 | | | 72 | | | | | 63 | | | | | | | | | | |
| *Hordeum vulgare* L. | Grain frag. | | | 54 | | | 28 | | | 10 | | | | | 16 | | | | | | | | | | |
| *Hordeum vulgare* L. / *Secale cereale* L. | Grains agglomerated | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. / Fabaceae Lindl. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare*/ Charcoal remain (agglomerate) | Grain and charcoal agglomerated | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grains agglomerated frag. | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain | | | 977 | | | 43 | | | | | | | | 2 | | | | | | 10 | 2 | 1 | | |
| *Panicum miliaceum* L. | Grain frag. | | | 15 | | | | | | | | | | | | | 1 | | | | | | | | |
| *Panicum miliaceum* L. / *Secale cereale* L. | Grains agglomerated | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain | | | | | | | | | | | | | | | | | | | | | | | | |
| *Setaria* P.Beauv. | Grain | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae Link | Grain | | | 179 | | | 42 | | | 2 | | | | | | | | | | | | 5 | | | |
| Panicoideae Link | Grain frag. | | | 27 | | | 15 | | | | | | | | | | | | | | 7 | 1 | | | |
| Panicoideae Link | Scutellum | | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Grains agglomerated | | | | | | | | | 2 | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Grain | | | 1,954 | 4 | | 424 | | | 560 | | | 1 | | 347 | 3 | 12 | | | | 3 | | | | |
| *Secale cereale* L. | Grain longitudinal frag. | | | 69 | | | 20 | | | 6 | | | | | | | | | | | 2 | | | | |
| *Secale cereale* L. | Grain frag. | | | 256 | | | 51 | | 1 | 10 | | | | | 17 | | 5 | | | | | | | | |
| *Secale cereale* L. / *Agrostemma githago* L. | Grain and seed agglomerated | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain | | | 67 | | | 21 | | | 26 | | | 1 | | 14 | | | | | | 1 | 1 | 1 | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain longitudinal frag. | | | | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain frag. | | | 9 | | | | | | | | | | | | | | | | | | 1 | | | |
| *Triticum* L. | Grain | | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grains agglomerated | | | | | | | | | | | | | | | | | | 1 | | | | | | |
| Triticeae Dumort. | Grain with scutellum | | | 593 | 1 | | 339 | | | 36 | | | 1 | | 67 | | 5 | | | | 1 | | | | |
| Triticeae Dumort. | Grain without scutellum | 1 | 1 | 1,013 | 6 | | 1,546 | | | 79 | 1 | | | | 247 | | 124 | | | | 38 | 3 | 4 | | |
| Triticeae Dumort. | Embryo | | | 1 | | | 2 | | | | | | | | 1 | | 1 | | | | | | | | |
| Triticeae Dumort. | Scutellum | | | 152 | | | 76 | | | 22 | | | | | 18 | | | | | | | | | | |

Table A6.5 - (continued).

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Phase** | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | **Moment** | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th |
| | **Structure** | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | SS123 | SS123 | PHS | PHS | PHS | PHS | PHS | PHS | PHS |
| | **S.U.** | 104 | 104 | 104 | 104A | 104A | 104A | 104A | 104B | 104B | 104B | 118 | 118 | 102 | 102 | 102 | 102 | 102 | 121 | 121 | 121 |
| | **Square** | C5 | C6 | D1'/E1' | B7 | C3 | C6 | D3 | B7 | C6 | C7 | H5 | L5 | C3 | C6 | C9 | E1' | F2 | I4 | M2 | M3 | M4 |
| **Cereal (grain and chaff)** | **Plant part** | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grain | | | | | | 31 | | | 4 | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base | | | | | | 23 | | | 6 | | | | | 1 | | 1 | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base frag. | | | 1 | | | | | | 2 | | | | | 2 | | | | | | | |
| *Avena* L. | Grain with husks | | | 82 | 1 | | 169 | | | 39 | | | | | 27 | | 4 | | | | | |
| *Avena* L. | Grain frag. with husks | | | 2 | | | 16 | | | | | | | | 2 | | 1 | | | | | |
| *Avena* L. | Husks frag. | | | | | | 28 | | | 4 | | | | | 1 | | | | | | | |
| *Avena* L. | Awn frag. | | | | | | | | | | | | | | | | | | 6 | | | |
| *Hordeum vulgare* L. | Hulled grain | | | | | | 8 | | | 17 | | | | | 2 | | | | | | | |
| *Hordeum vulgare* L. | Hulled grains agglomerated | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base | | | | | | 11 | | | | | | | | 2 | | | | | | | |
| *Hordeum vulgare* L. | Lemma base frag. | | | | | | 6 | | | | | | | | | | 2 | | | | | |
| *Hordeum vulgare* L. | Grain with husks | | | 37 | | | 84 | | | 195 | | | | | 69 | | | | | | | |
| *Hordeum vulgare* L. | Grain frag. with husks | | | 3 | | | 14 | | | 6 | | | | | 1 | | | | | | | |
| *Hordeum vulgare* L. | Rachis segment with 1 node | | | | | | 4 | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Husks frag. | | | | | | 6 | | | 15 | | | | | 1 | | | | | | | |
| *Hordeum vulgare* L. | Awn frag. | | | | | | 8 | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Hulled grain | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Grain with husks | | | 513 | | | 85 | | | | | | | | | | 1 | | | 2 | 3 | 2 |
| *Panicum miliaceum* L. | Grain frag with husks | | | 7 | | | 9 | | | | | | | | | | | | | 1 | | |
| *Panicum miliaceum* L. | Husks frag. | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Hulled grain | | | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Grain with husks | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis segment with 1 node | | | 16 | | | 76 | | | 1 | | | | | | | | | | | | 1 |
| *Secale cereale* L. | Rachis segment with 2 nodes | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis frag. | | | 5 | | | 2 | | | | | | | | | | 4 | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Rachis node | | | | | | 4 | | | | | | | | | | | | | | | |
| *Triticum* L. | Rachis frag. | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Rachis frag. | | | 1 | | | 2 | | | 1 | | | | | 2 | | 2 | | | | | |
| Triticeae Dumort. | Husks frag. | | | 2 | | | 282 | | | 151 | | | | | 18 | | 1 | | | | | |
| Triticeae Dumort. | Awn frag. | | | | | | 2 | | | | | | | | | | | | | | | |
| **Other Poaceae (grains)** | | | | | | | | | | | | | | | | | | | | | | |
| *Arrhenatherum elatius* subspec. *bulbosum* (Willd.) Schübl. & G.Martens | Pseudobulb | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Grain | | | 5 | | | 39 | | | | | | | | | | 4 | | | | | 1 |
| *Festuca* L. / *Lolium* L. | Grain frag. | | | | | | | | | | | | | | | | 2 | | | | | |
| *Poa* L. | Grain | | | | | | | | | | | | | | | | | | | | | |
| *Poa* L. | Grain frag. | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Grain | | | 445 | | | 45 | | | | | | | | 1 | | | | 1 | 2 | | |
| Poaceae Barnhart | Grain frag. | | | 24 | | | 10 | | | | | | | | | | | | | | 2 | |
| Poaceae - *Bromus* L. type | Grain | | | | | | 1 | | | | | | | | | | | | | | | |
| Poaceae - *Vulpia* C.C.Gmel. type | Grain frag. | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Embryo | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Scutellum | | | | | | | | | | | | | | | | 1 | | | | | |
| **Other Poaceae (grain and chaff)** | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Hulled grain | | | | | | | | | | | | | | | | 1 | | | | | |
| Poaceae Barnhart | Hulled grain | | | 25 | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Spikelet base | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Rachis frag. | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Husks frag. | | | | | | | | | | | | | | | | | | | | | |

Table A6.5 - (continued).

| | | Phase | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th |
| | | Structure | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | SS123 | SS123 | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS |
| | | S.U. | 104 | 104 | 104 | 104A | 104A | 104A | 104A | 104B | 104B | 104B | 118 | 118 | 102 | 102 | 102 | 102 | 102 | 102 | 121 | 121 | 121 | 121 |
| | | Square | C5 | C6 | D1'/E1' | B7 | C3 | C6 | D3 | B7 | C6 | C7 | H5 | L5 | C3 | C6 | C9 | E1' | F2 | I4 | M2 | M3 | M4 | |
| **Fabaceae** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | |
| *Lathyrus cicera* L. / *Lathyrus sativus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | |
| *Lens culinaris* Medik. | Seed | | | | | | | 1 | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Seed | | | | | | | 2 | | | | | | | | | | | 1 | | | 2 | | |
| *Ornithopus* L. | Loment segment | | | | | | | | | | | | | | | | | | | | | 2 | | |
| *Ornithopus* L. | Loment segment frag. | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed | | | | | | | 1 | | | 3 | | | | 2 | | | | | | | | | |
| *Pisum sativum* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisum sativum* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* L. | Seed | | | | | | | 1 | | | 7 | | | | 9 | | | | | | | | | |
| *Vicia faba* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia faba* L. | Seed frag. | | | | | | | 4 | | | 16 | | | 4 | 12 | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed | | | | 12 | | | 4 | | | 2 | | | | 1 | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Seed | | | | | | | 4 | | | 1 | | | | 2 | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Cotyledon | | | | | | | | | | | | | | 2 | | | | | | | | | |
| *Vicia* L. / *Lathyrus* L. / *Pisum* L. | Seed frag. | | | | | | | 23 | | | 15 | | 2 | 2 | 5 | | 1 | | | | | 1 | | |
| Fabaceae Lindl. | Seed | | | | 52 | | | 18 | | | | | | | 1 | | | | | | | 2 | 1 | |
| Fabaceae Lindl. | Cotyledon | | | | | | | | | | | | | | | | | | | | | | | |
| Fabaceae Lindl. | Seed frag. | | | | 8 | | | 1 | | | | | | | | | | | | | | | | |
| Fabaceae Lindl. | Pericarp frag. | | | | | | | | | | | | | | | | | | | | | | | |
| *Astragalus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | |
| *Genista* L. | Seed | | | | 39 | | | | | | | | | | | | | | | | | | | |
| *Medicago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | |
| *Trifolium* L. | Seed | | | | 35 | | | | | | | | | | | | | | | | | | | |
| **Fruits** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit | | | | | | | | | | | | | | | | | | | | | | | |
| *Castanea sativa* Mill. | Fruit frag. | | | | | | | | | | | | | | 1 | | | | | | | | | |
| *Quercus* L. | Cotyledon frag. | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Half bract | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus pinea* L. / *Pinus pinaster* Aiton | Bract frag. | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium* L. / *Prunus cerasus* L. | Endocarp | | | | | | | | | | | | | | 1 | | | | | | | | | |
| *Pyrus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | |
| *Rubus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seed | | | | 4 | | | | | | 1 | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Pedicel | | | | | | | | 1 | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe with seed | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Drupe frag. | | | | | | | | | | | | | | | | | | | | | | | |
| **Oil/Fiber plant** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated | | | | | | | | | | | | | | | | | | | | | | | |
| *Linum* L. | Seeds agglomerated frag. | | | | | | | | | | | | | | | | | | | | | | | |

Table A6.5 - (continued).

| | | Phase | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Moment | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th | 6th |
| | | Structure | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS | PHS |
| | | S.U. | 104 | 104 | 104 | 104A | 104A | 104A | 104A | 104B | 104B | 104B | 118 | 118 | 102 | 102 | 102 | 102 | 102 | 102 | 121 | 121 | 121 |
| | | Square | C5 | C6 | D1'/E1' | B7 | C3 | C6 | D3 | B7 | C6 | C7 | H5 | L5 | C3 | C6 | C9 | E1' | F2 | I4 | M2 | M3 | M4 |
| **Other remains** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | | | |
| *Agrostemma githago* L. | Seed | | | | | | | 6 | | | | | | | | | | | | | | | |
| *Agrostemma githago* L. | Seed frag. | | | | | | | 5 | | | | | | | | | | | | | | | |
| Asteraceae Bercht. & J.Presl | Cypsela | | | | | | | | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* L. type | Cypsela | | | | | | | 2 | | | | | | | | | | | | | | | |
| Caryophyllaceae Juss. | Seed | | | | | | | | | | | | | | | | | 1 | | | | | |
| Caryophyllaceae Juss. | Seed frag. | | | | | | | | | | | | | | | | | | | | | | |
| *Chenopodium* L. | Seed | | | | | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed | | | | 35 | | | | | | | | | | | | | | | | | | |
| Chenopodiaceae Vent | Seed frag. | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus ladanifer* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | |
| *Cistus* L. | Capsule frag. | | | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola* L. | Achene | | | | | | | | | | | | | | | | | | | | | | |
| *Euphorbia* L. | Seed | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp | | | | | | | | 1 | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp frag. | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* L. | Seed | | | | | | | | | | | | | | | | | | | | | | |
| Papaveraceae Juss. | Seed | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum persicaria* L. | Achene | | | | | | | 2 | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* L. | Achene | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - lenticular type | Achene | | | | 18 | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - trigonal type | Achene | | | | 23 | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene frag. | | | | 1 | | | | | | | | | | | | | | | | | | |
| *Plantago lanceolata* L. | Seed | | | | | | | | | | | | | | | | | | | | | | |
| *Plantago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | |
| *Ranunculus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Seed | | | | | | | | | | | | | | | | | | | 6 | | | |
| *Raphanus raphanistrum* L. | Siliqua segment | | | | | | | | | | | | | | | | | | | 41 | | | |
| *Raphanus raphanistrum* L. | Siliqua segment frag. | | | | | | | | | | | | | | | | | | | 3 | | | |
| *Rumex bucephalophorus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus* Murray / *Rumex crispus* L. | Achene | | | | 18 | | | | | | | | | | | | | | | | | | |
| *Rumex* L. | Achene | | | | | | | 2 | | | | | | | | | | | | | | | |
| *Sherardia arvensis* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* L. | Seed | | | | 35 | | | | | | | | | | | | | | 1 | | | | |
| *Silene* L. | Seed | | | | | | | | | | | | | | | | | | | | | | |
| *Spergula arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | | | |
| *Stellaria* L. / *Cerastium* L. | Seed | | | | 55 | | | | | | | | | | | | | | | | | | |
| *Urtica* L. | Achene | | | | | | | | | | | | | | | | | | | | | | |
| *Veronica* L. | Seed | | | | | | | | | | | | | | | | | 1 | | | | | |
| *Viola* L. | Seed | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Flower bud | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Peduncle | | | | | | | 1 | | | | | | | | | | 2 | | | | 1 | |
| Undetermined | Plant spine frag. | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Seed/fruit | | | | | | | 1 | | | | | | | | | | 1 | | 2 | | | |
| Undetermined | Seed/fruit frag. | 2 | 1 | 2,111 | 7 | 1 | 2,004 | 1 | 3 | 314 | 10 | 1 | 3 | 344 | 734 | 39 | 62 | 21 | 17 | | | | |

Table A6.5 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Volume (L) ≈** | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | **Campaign** | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| | **Phase** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | **Moment** | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| | **Structure** | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| | **S.U.** | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 137 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |
| | **Square** | B3/C3 | B6/C6 | B7 | B7/C7 | C7 | C7 | C7 | C7 | C7 | B8 | B8 | C8 | C8 | C9 | D7 | D8 | D9 | E7 | E1 | E1´ | F8 | F9 | |
| | **Sample** | 404 | 362 | 186 | 200 | 183 | 184 | 185 | 189 | 190 | 377 | 530 | 191 | 307 | 193 | 309 | 188 | 313 | 187 | 192 | 201 | 412 | 334 | |
| **Cereal** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grain | 417 | 250 | 892 | 1,580 | 1,826 | 1,878 | 9,767 | 3,147 | 604 | 2,341 | 130 | 112 | 1,655 | 229 | 18 | 29 | 26 | 148 | 3,675 | 650 | 20 | 12 | |
| *Hordeum vulgare* L. | Grain | 6 | 44 | 32 | 70 | 20 | 90 | 36 | 224 | 54 | 9 | 5 | | 151 | 112 | | | | 6 | 152 | 240 | 4 | 8 | |
| *Panicum miliaceum* L. | Grain | 280 | 49 | 1374 | 294 | 74 | 159 | 72 | 292 | 32 | 450 | 44 | 355 | 458 | 2,667 | 17 | 131 | 216 | 50 | 211 | 381 | 16 | 38 | |
| *Setaria italica* (L.) P.Beauv. | Grain | | | 48 | | | 15 | | | 8 | | | | | 25 | | 4 | | | 14 | 8 | | | |
| *Setaria* P.Beauv. | Grain | | | | | | | | | | | | | | 9 | | | | | | | | | |
| Panicoideae Link | Grain | 58 | 64 | 231 | 51 | 4 | 29 | 72 | | | 32 | | 10 | 32 | 335 | | 4 | 19 | | 16 | 82 | | | |
| *Secale cereale* L. | Grain | 268 | 177 | 438 | 1,737 | 2,005 | 2,388 | 10,236 | 3,464 | 662 | 2,151 | 61 | 193 | 1,782 | 442 | | 76 | 73 | 92 | 387 | 1,428 | 28 | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain | 28 | 7 | 48 | 38 | 12 | 8 | 123 | 48 | | 28 | 4 | 8 | 15 | 16 | | | | 2 | 72 | 89 | 4 | | |
| *Triticum* L. | Grain | | | | | | | | | | | | | | | | | | | | | | | |
| Triticeae Dumort. | Grain | 183 | 222 | 335 | 184 | 605 | 811 | 1,753 | 1,426 | 263 | 703 | 18 | 176 | 556 | 258 | | 11 | 26 | 54 | 315 | 106 | | 12 | |
| **Cereal (grain and chaff)** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base | 4 | 81 | 16 | 42 | 42 | 27 | 253 | 108 | 8 | 33 | 11 | | 32 | | | | | | | | | | |
| *Hordeum vulgare* L. | Lemma base | | 60 | | | | | | | | | | | | | | | | | | | | | |
| *Hordeum vulgare* L. | Rachis segment with 1 node | | 48 | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Lemma/palea | | | 16 | | | | | | | 16 | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Lemma/palea | | | | | | | | | | | | | | | | | | | | | | | |
| *Secale cereale* L. | Rachis segment with 1 node | | | 34 | 52 | 13 | 83 | | 15 | 8 | 253 | | | 137 | 25 | | 4 | | 8 | 16 | | | | |
| *Secale cereale* L. | Rachis segment with 2 nodes | | | | | | | | | | 16 | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Rachis node | | | 47 | | | 8 | | | | | | | | 17 | | 4 | | 38 | | | | | |
| **Other Poaceae** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Arrhenatherum elatius* subspec. *bulbosum* (Willd.) Schübl. & G.Martens | Pseudobulb | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Grain | 39 | 16 | 32 | 116 | 256 | 92 | 676 | 107 | 40 | 143 | | | 185 | 26 | 9 | 8 | | 20 | 75 | 68 | | | |
| *Poa* L. | Grain | | | | | | | | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Grain | 42 | | 100 | 69 | | 205 | 304 | 217 | 57 | 149 | | 40 | | 16 | 36 | 17 | 10 | | 61 | 102 | 8 | | |
| **Other Poaceae (graind and chaff)** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Hulled grain | | | | | | | 36 | | | 16 | | | | | | | | | | | | | |
| Poaceae Barnhart | Hulled grain | | | | | | | 36 | | | | | | | | | | | | | | | | |
| Poaceae Barnhart | Spikelet base | | | | | | | | | | | | | | | | | | | | | | | |
| **Fabaceae** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lathyrus cicera* L. / *Lathyrus sativus* L. | Seed | | | 24 | | | | | | | 9 | | | 23 | | | | | | | 8 | | | |
| *Lens culinaris* Medik. | Seed | | 4 | | | | | | | | | | | | 8 | | | | | | 4 | | | |
| *Ornithopus* L. | Seed | | | | 9 | 4 | 8 | | | | | | | | 8 | | | | | | | | | |
| *Ornithopus* L. | Loment segment | | | | 17 | | | 152 | | 8 | 40 | | | | | | | | | 16 | | | | |
| *Pisum sativum* L. | Seed | | | | | 8 | | 52 | | | | | | | 4 | | | | | | 8 | | | |
| *Vicia faba* L. | Seed | | | | | | 4 | | 16 | | 28 | | | | | | | | 4 | | | | | |
| *Vicia* L. / *Lathyrus* L. | Seed | 4 | | 8 | 9 | 8 | 4 | 35 | 32 | | | | 10 | 69 | | | | | 4 | | 26 | | | |
| *Vicia* L. / *Lathyrus* L. /*Pisum* L. | Seed | 13 | 2 | 53 | 4 | 8 | 9 | 18 | | | 37 | | | 8 | 24 | | 4 | | 1 | 22 | 14 | | | |
| Fabaceae Lindl. | Seed | 4 | | 73 | | 5 | 29 | | | | 28 | | 20 | 36 | 8 | | | | 4 | 16 | 14 | | 18 | |
| *Astragalus* L. | Seed | | | | | | | | | | | | | | | | | | | | 2 | | | |
| *Genista* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | |
| *Medicago* L. | Seed | | | 18 | | | | | | | | | | | | | | | | | | | | |
| *Trifolium* L. | Seed | | | 18 | | | | | | | | | | 36 | 8 | | | | | | | | | |

Table A6.6 - Fruits/seeds per litre (units and only samples from 2016 campaign).

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Volume (L) ≈** | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | **Campaign** | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| | **Phase** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | **Moment** | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd | 2nd |
| | **Structure** | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 | HS9 |
| | **S.U.** | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 137 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |
| | **Square** | B3/C3 | B6/C6 | B7 | B7/C7 | C7 | C7 | C7 | C7 | C7 | B8 | B8 | C8 | C8 | C9 | D7 | D8 | D9 | E7 | E1 | E1´ | F8 | F9 | |
| | **Sample** | 404 | 362 | 186 | 200 | 183 | 184 | 185 | 189 | 190 | 377 | 530 | 191 | 307 | 193 | 309 | 188 | 313 | 187 | 192 | 201 | 412 | 334 | |
| **Fruits** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | |
| *Rubus* L. | Seed | | | | | | | 36 | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seed | | | | | | 4 | | | | 19 | | 24 | 8 | | 7 | | 16 | | | | | | |
| *Vitis vinifera* L. | Pedicel | | | | | | | | | | | | | | 4 | | | | | | | | | |
| **Other remains** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* L. | Seed | | | | | | | | | | | | | | | | | 8 | | | | | | |
| *Agrostemma githago* L. | Seed | 4 | 7 | 16 | 81 | 87 | 37 | 193 | 47 | 9 | 53 | | | 31 | 9 | | 9 | | 4 | | 4 | 26 | | |
| Asteraceae Bercht. & J.Presl | Cypsela | | | | | | 15 | | | | | | | | | | | | | | | | | |
| Asteraceae - *Chrysanthemum* L. type | Cypsela | 4 | | | 9 | 5 | 8 | 76 | 31 | | | | | | 8 | | | 8 | | | | | | |
| Caryophyllaceae Juss. | Seed | | | | | | | | | | | | | 36 | | | 8 | | | 16 | 10 | | | |
| *Chenopodium* L. | Seed | | | | | 5 | | | | | 40 | | 20 | | | | | | | | 4 | | | |
| Chenopodiaceae Vent | Seed | | | | | | | | | | | | | | | | | | | | | | | |
| *Corrigiola* L. | Achene | | | | | | | | | | | | | | | | | 8 | | | | | | |
| *Galium aparine* L. | Mericarp | | | | | | | | | | | | | | | | | | | 14 | | | | |
| *Galium* L. | Mericarp | | | | | | | | | | | 24 | | | | | | | | | 8 | | | |
| *Malva* L. | Seed | | | | | | | | | | | | | | | | 4 | | | | | | | |
| Papaveraceae Juss. | Seed | | | | | | | | | | | | | | | | | | | 16 | | | | |
| *Polygonum persicaria* L. | Achene | | | | 18 | | | | | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - lenticular type | Achene | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - trigonal type | Achene | | | | | | | | | | | | | | | | | | | | | | | |
| Polygonaceae Juss. | Achene | | | | | | | | | 29 | 20 | | 30 | | | | | | | | 2 | | | |
| *Ranunculus* L. | Achene | | | | | | | | | | | | | | | | | 10 | | | | | | |
| *Raphanus raphanistrum* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment | | | 18 | | | | | | | | | | 8 | | | | | | | | | | |
| *Rumex bucephalophorus* L. | Achene | | | | | 5 | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus* Murray / *Rumex crispus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex* L. | Achene | 8 | | 16 | | | | 36 | | 14 | | | | | | | | | 4 | 32 | 23 | 18 | 8 | |
| *Sherardia arvensis* L. | Mericarp | | | | | | | | | | | | | | | | | 10 | | | 16 | | | |
| *Silene gallica* L. | Seed | 15 | | | | | 15 | 40 | | | | | 20 | | 25 | | | | | | | | | |
| *Silene* L. | Seed | | | | | | | | | | | | | | 8 | | | | | | | | | |
| *Spergula arvensis* L. | Seed | | | | | | | | 31 | | | | | | | | | | | | | | | |
| *Stellaria* L. / *Cerastium* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | |
| *Urtica* L. | Achene | | | | | | | | | | | | | | | | 8 | | | | 11 | | | |
| *Veronica* L. | Seed | | | 18 | | | | | | | | | | | | | | 8 | | | | | | |
| *Viola* L. | Seed | | | | | | | | | 14 | | | 20 | | | | | | | | | 18 | | |
| Undetermined | Seed/fruit | 1 | | | | 3 | | | | 4 | | | 3 | 1 | 7 | 1 | | 11 | | 1 | 2 | | 2 | |
| | **Total** | **1,378** | **1,031** | **3,905** | **4,380** | **4,995** | **5,926** | **24,002** | **9,205** | **1,814** | **6,614** | **297** | **1,041** | **5,259** | **4,298** | **88** | **321** | **449** | **439** | **5,127** | **3,310** | **142** | **98** | |
| | **Units per litre (Sample)** | 137.8 | 103.1 | 390.5 | 438 | 499.5 | 592.6 | 2400.2 | 920.5 | 181.4 | 661.4 | 29.7 | 104.1 | 525.9 | 429.8 | 8.8 | 32.1 | 44.9 | 43.9 | 512.7 | 331 | 14.2 | 9.8 | |
| | **Units per litre (Square)** | 137.8 | 103.1 | 390.5 | 438 | | | 918.8 | | | 345.6 | | 315 | | 429.8 | 8.8 | 32.1 | 44.9 | 43.9 | 512.7 | 331 | 14.2 | 9.8 | |

Table A6.6 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volume (L) ≈** | | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| **Campaign** | | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| **Phase** | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| **Moment** | | 3rd | 3rd | 3rd | 3rd | 3rd | 3rd | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 6th | 6th | 6th |
| **Structure** | | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 |
| **S.U.** | | 136 | 136 | 136 | 139 | 139 | 140 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 130 | 130 | 131 | 131 | 104 | 104 | 104A |
| **Square** | | B8 | B8 | B8 | A8/B8 | A9/B9 | A8 | A3/A4 | A'4 | A'4 | A4 | A5 | A6 | B5 | B6 | B7 | B8 | C8 | B7 | B8 | A5 | B6 | D1'/E1' | D1'/E1' | C6 |
| **Sample** | | 527 | 531 | 534 | 529 | 524 | 526 | 352 | 354 | 373 | 370 | 340 | 343 | 351 | 374 | 348 | 355 | 337 | 358 | 533 | 398 | 400 | 528 | 532 | 396 |
| **Cereal** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena* L. | Grain | 184 | 137 | 625 | 801 | 32 | 215 | 7 | 29 | 180 | 675 | 360 | 46 | 25 | 1,009 | 1,451 | 385 | 569 | 3,056 | 868 | 248 | 61 | 802 | 248 | 239 |
| *Hordeum vulgare* L. | Grain | 2 | 4 | 7 | 96 | 2 | 17 | | 2 | 60 | 22 | 25 | 9 | 6 | 7 | 94 | 12 | 26 | 400 | 94 | 28 | 12 | 257 | 67 | 42 |
| *Panicum miliaceum* L. | Grain | 142 | 63 | 94 | 109 | 101 | 60 | | 13 | 27 | 204 | 201 | 10 | 4 | 23 | 162 | 158 | 171 | 210 | 275 | 70 | 4 | 948 | 542 | 43 |
| *Setaria italica* (L.) P.Beauv. | Grain | | | | | 6 | | | 1 | | | 18 | | | | | | | | | 6 | | | | | |
| *Setaria* P.Beauv. | Grain | | | | | | | | | | | | | | | | | | | | | | | | |
| Panicoideae Link | Grain | 10 | 6 | 1 | 30 | | | | 2 | 26 | 12 | 71 | 2 | 3 | 59 | 59 | 13 | 49 | 112 | 59 | 25 | 4 | 115 | 64 | 18 |
| *Secale cereale* L. | Grain | 132 | 122 | 522 | 607 | 41 | 136 | 1 | 21 | 126 | 605 | 312 | 46 | 17 | 694 | 979 | 186 | 354 | 2,826 | 772 | 247 | 189 | 1,388 | 601 | 115 |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Grain | | | 22 | 23 | 2 | 6 | | 4 | 35 | 145 | 116 | 2 | 4 | 16 | 17 | 4 | 5 | 15 | 22 | 96 | 11 | 47 | 20 | 9 |
| *Triticum* L. | Grain | | | | | | | | | | | 5 | | | | | | | | | | | | | |
| Triticeae Dumort. | Grain | 35 | 52 | 147 | 204 | 2 | 44 | 7 | 2 | 49 | 202 | 106 | 14 | 8 | 364 | 275 | 43 | 138 | 910 | 432 | 75 | 57 | 506 | 239 | 77 |
| **Cereal (grain and chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Avena sativa* L. / *Avena strigosa* Schreb. | Floret base | 10 | | | 40 | | | | | 10 | 8 | | 3 | 1 | 22 | 30 | 34 | | 132 | 37 | 7 | 18 | | | 21 |
| *Hordeum vulgare* L. | Lemma base | | | 31 | 3 | | | | | 3 | | | | | | 4 | | | | | 2 | | | | |
| *Hordeum vulgare* L. | Rachis segment with 1 node | | | | | | | | | | | | | | | | | | | | | | | | |
| *Panicum miliaceum* L. | Lemma/palea | | | | | 8 | | | | | | | | | | | | | | | | | | | |
| *Setaria italica* (L.) P.Beauv. | Lemma/palea | | | | | 3 | | | | | | | | | | | | | | | 2 | | | | |
| *Secale cereale* L. | Rachis segment with 1 node | 37 | 32 | 62 | 48 | | 13 | | 1 | 4 | 26 | | | | 37 | 117 | 1 | 25 | 324 | 82 | 3 | 2 | | 16 | 27 |
| *Secale cereale* L. | Rachis segment with 2 nodes | | | 19 | | | | | | | | | | | | | | | | | | | | | |
| *Triticum aestivum* L. / *Triticum durum* Desf. / *Triticum turgidum* L. | Rachis node | | | | | | | | | | | | | | | | | | | | | | | | 4 |
| **Other Poaceae** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Arrhenatherum elatius* subspec. *bulbosum* (Willd.) Schübl. & G.Martens | Pseudobulb | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Grain | | | | | | 6 | | 3 | 34 | 27 | 10 | 3 | 2 | 30 | 87 | 12 | | 318 | | 10 | 1 | | 5 | 17 |
| *Poa* L. | Grain | | | 31 | | | | | | | | | | | | | | | | 20 | | | | | |
| Poaceae Barnhart | Grain | 10 | 18 | 131 | 107 | 6 | 2 | | | | 4 | 49 | 1 | | | 43 | | 17 | 185 | 159 | 7 | | 326 | 119 | 25 |
| **Other Poaceae (graind and chaff)** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Festuca* L. / *Lolium* L. | Hulled grain | | | | | | | 1 | | | | | | 1 | | 13 | 1 | | | | 1 | | | | |
| Poaceae Barnhart | Hulled grain | | | | | | | | | | | | | | | | | | | | | | 18 | 7 | |
| Poaceae Barnhart | Spikelet base | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| **Fabaceae** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lathyrus cicera* L. / *Lathyrus sativus* L. | Seed | | | | | | 2 | | | 3 | | 5 | | | | | | 5 | | | | 1 | | | |
| *Lens culinaris* Medik. | Seed | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Seed | | 11 | | | 6 | | | | | | | | | | | | | | | | | | | |
| *Ornithopus* L. | Loment segment | | | | | | | | | | | | | | | | 9 | | | | | | | | |
| *Pisum sativum* L. | Seed | | | | | | | | | 5 | | | | | | | | | | | | 2 | | | |
| *Vicia faba* L. | Seed | | | | | | | | | | | | | | | | | 5 | | | | 1 | | | |
| *Vicia* L. / *Lathyrus* L. | Seed | | 8 | | 7 | 2 | | | | 3 | 17 | | | | | | | 16 | | | | 4 | 12 | | 3 |
| *Vicia* L. / *Lathyrus* L. /*Pisum* L. | Seed | | | | | | | | | 5 | 4 | 23 | | 2 | | | | 8 | 4 | | 3 | 5 | | | |
| Fabaceae Lindl. | Seed | | | | 3 | | | | | | 12 | 5 | 1 | | 29 | | 4 | | 72 | 20 | 2 | | 45 | 7 | 18 |
| *Astragalus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | |
| *Genista* L. | Seed | | | | | | | | | | | | | | | | | | | | | | 32 | 7 | |
| *Medicago* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | |
| *Trifolium* L. | Seed | | | | | | | | | | | | | | | 9 | | | | | | | 35 | | |

Table A6.6 - (continued).

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volume (L) ≈** | | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| **Campaign** | | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| **Phase** | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| **Moment** | | 3rd | 3rd | 3rd | 3rd | 3rd | 3rd | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 4th | 6th | 6th | 6th |
| **Structure** | | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 | W112 |
| **S.U.** | | 136 | 136 | 136 | 139 | 139 | 140 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 130 | 130 | 131 | 131 | 104 | 104 | 104A |
| **Square** | | B8 | B8 | B8 | A8/B8 | A9/B9 | A8 | A3/A4 | A'4 | A'4 | A4 | A5 | A6 | B5 | B6 | B7 | B8 | C8 | B7 | B8 | A5 | B6 | D1'/E1' | D1'/E1' | C6 |
| **Sample** | | 527 | 531 | 534 | 529 | 524 | 526 | 352 | 354 | 373 | 370 | 340 | 343 | 351 | 374 | 348 | 355 | 337 | 358 | 533 | 398 | 400 | 528 | 532 | 396 |
| **Fruits** | **Plant part** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rubus* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vitis vinifera* L. | Seed | | 2 | 22 | | | | | | | | | | | | | | | 8 | | | | 4 | | |
| *Vitis vinifera* L. | Pedicel | | | 7 | 3 | | | | | | | | | | | | | | 17 | | | | | | |
| **Other remains** | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagallis arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | |
| *Agrostemma githago* L. | Seed | | | | | | | | | 3 | 8 | 5 | 1 | 1 | 30 | 20 | 6 | | 47 | | 3 | 6 | | | |
| Asteraceae Bercht. & J.Presl | Cypsela | | | | | | | | | | | | | | | | | | 19 | | | 1 | | | |
| Asteraceae - *Chrysanthemum* L. type | Cypsela | | | | 30 | | 19 | | | | | | | | | | | | 36 | | | 1 | | | |
| Caryophyllaceae Juss. | Seed | | | | | | | | | | | 9 | | | | 9 | | 5 | | 4 | | | | | |
| *Chenopodium* L. | Seed | | | | | | | | | | | 8 | | | | | | | | | | 1 | | | |
| Chenopodiaceae Vent | Seed | | | | | | | | | | | | | | | | | | | | | | 35 | | |
| *Corrigiola* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium aparine* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | |
| *Galium* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malva* L. | Seed | | | | | | | | | | | | | | | 7 | | | | | | | | | |
| Papaveraceae Juss. | Seed | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum persicaria* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | |
| *Polygonum lapathifolium* L. | Achene | | | | | | 6 | | | | | | | | | | | | | | | | | | |
| *Polygonum* L. - lenticular type | Achene | | | | | | | | | | | | | | | | | | | | | | 18 | | |
| *Polygonum* L. - trigonal type | Achene | | | | | | | | | 4 | | | | | | | | | | | | | 18 | 5 | |
| Polygonaceae Juss. | Achene | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ranunculus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | |
| *Raphanus raphanistrum* L. | Seed | | | | | | | | | | | | | | | | | 14 | | | | | | | |
| *Raphanus raphanistrum* L. | Siliqua segment | | | | | | | | | | 8 | | | | | | | | | | | | | | |
| *Rumex bucephalophorus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rumex conglomeratus* Murray / *Rumex crispus* L. | Achene | | | | | | | | | | | | | | | | | | | | | | 18 | | |
| *Rumex* L. | Achene | | | | 30 | | | | | | | | | | 8 | | 4 | | | | | 1 | | | |
| *Sherardia arvensis* L. | Mericarp | | | | | | | | | | | | | | | | | | | | | | | | |
| *Silene gallica* L. | Seed | | | | | | | | | | | | | | | | | | | | | | 35 | | |
| *Silene* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | |
| *Spergula arvensis* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | |
| *Stellaria* L. / *Cerastium* L. | Seed | | | 7 | | | 10 | | | | | | | | | | | | | 9 | | | 45 | 10 | |
| *Urtica* L. | Achene | | | | | | | | | | | | | | | | | | | | | | | | |
| *Veronica* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | |
| *Viola* L. | Seed | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | Seed/fruit | | | | | | | | | | 1 | 1 | | | 1 | | | | 2 | 1 | 1 | | | | 1 |
| **Total** | | **562** | **455** | **1,728** | **2,141** | **211** | **536** | **15** | **80** | **577** | **1,980** | **1,329** | **138** | **74** | **2,329** | **3,376** | **872** | **1,407** | **8,693** | **2,854** | **836** | **382** | **4,704** | **1,957** | **659** |
| **Units per litre (Sample)** | | 56.2 | 45.5 | 172.8 | 214.1 | 21.1 | 53.6 | 1.5 | 8.0 | 57.7 | 198 | 132.9 | 13.8 | 7.4 | 232.9 | 337.6 | 87.2 | 140.7 | 869.3 | 285.4 | 83.6 | 38.2 | 470.4 | 195.7 | 65.9 |
| **Units per litre (Square)** | | | 915 | | 214.1 | 21.1 | 53.6 | 1.5 | | 32.9 | 198 | 132.9 | 13.8 | 7.4 | 232.9 | 337.6 | 87.2 | 140.7 | 869.3 | 285.4 | 83.6 | 38.2 | 333.1 | | 65.9 |

Table A6.6 - (continued).

| **Moment** | 1 | | | | | | | | | 2 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **S.U.** | 115 | | | | | 116 | | | | 106 | | | | | | | | | | | |
| **Square** | E5 | D6 | C6 | E6 | E4 | G4 | E5 | G5 | D2 | B1'/C1' | C0 | D0 | D1 | D1' | D5 | E0 | F0 | F1' | F4 | F5 | G6 |
| *Acer* L. | | | | | | | | | | | | | | | | | | | | | |
| *Alnus* Mill. | | | | | | | | | | | | | | | | | | | | | |
| *Arbutus unedo* L. | | | | | | | | | 4 | 10 | 1 | 1 | 1 | 3 | | 15 | 9 | 16 | | | |
| *Castanea sativa* Mill. | | 3 | 9 | 3 | 2 | 31 | 9 | 18 | | 1 | | 3 | | | | 11 | 7 | 3 | | | |
| *Castanea sativa* Mill. / *Quercus* L. | | 2 | 1 | 1 | | 9 | 2 | 7 | | | | 4 | | | | 3 | 12 | 8 | | | |
| *Cistus* L. | | | | | | | | | | 1 | | | | | | | | | | | |
| *Erica australis* L. / *Erica arborea* L. | | 3 | 1 | 1 | | 10 | 4 | 7 | | 4 | | 1 | | | | 4 | 10 | 4 | 4 | | |
| *Erica scoparia* L. / *Erica umbellata* L. | | | | | | | | | | | | | | | | | | 2 | | | |
| *Erica* L. | | | | | | 3 | | 2 | | | | | | | | 5 | 6 | 7 | | 1 | |
| Fabaceae Lindl. | | | | | | 3 | | | | | | | | | | 2 | | | | | |
| *Frangula alnus* Mill. | | | | | | | | | | | | | | | | | | | | | |
| *Fraxinus* L. | | | | | | 1 | | | | | | | | | | | | | | | |
| *Pistacia* L. | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium* L. / *Prunus cerasus* L. | | | | | | | | | | | | | | | | | | | | | |
| *Prunus* L. | 2 | 5 | 3 | 2 | 2 | 25 | 3 | 23 | | | | | | | | | | | | 1 | |
| *Quercus* L. | | | | 1 | 2 | | | 1 | | | | | 1 | | | 3 | 7 | | | | |
| *Quercus* L. - deciduous | | 2 | | 6 | 2 | 9 | | 18 | | 51 | 2 | 29 | 5 | 2 | 4 | 22 | 40 | 31 | 1 | | 5 |
| *Quercus* L. - evergreen | | | | | | 3 | | | | | | 1 | | | | 5 | 2 | 1 | | 1 | |
| *Rhamnus* L. / *Phillyrea* L. | | | | | | | | | | 1 | | | | | | | | | | | |
| Rosaceae subfam. Maloideae C.Weber | | | | | | | | | | | | | | | | | | | | | |
| *Salix* L. | | | | | | | | | | | | | | | | | | | | | |
| *Salix* L. / *Populus* L. | | | | | | | | | | | | | | | | | | | | | |
| *Taxus baccata* L. | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | | | | | 1 | 1 | | | | | | | | | | | | | | | |
| Dicotyledon | | | | 1 | 2 | 10 | 1 | 10 | | 2 | | 1 | | | | 21 | 12 | 14 | 3 | 1 | |
| Monocotyledon | | | | | | | | | | | | | | | | | | | | | |
| Bark | | | | | | | | | | | | | | | | | | | | | |
| **Total** | 2 | 15 | 14 | 15 | 11 | 105 | 19 | 86 | 4 | 70 | 3 | 40 | 7 | 5 | 4 | 91 | 105 | 86 | 8 | 4 | 5 |

Table A6.7- Charcoal results (Phase 1).

| Moment<br>S.U.<br>Square | B3/C3 | B6/C6 | B7 | B8 | C1 | C1' | C3 | C4 | C5 | C6 | C7 | C8 | C9 | D0 | D1 | D1' | 2<br>107<br>D1'/E1' | D2 | D3 | D4 | D7 | D8 | D9 | E0 | E1 | E1' | E7 | E8 | F0 | F1 | F1' | F8 | F9 | H4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Acer* L. | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | |
| *Alnus* Mill. | | 1 | 42 | | | | | | | 1 | 20 | | 1 | | | 2 | | | | | | | | | | | | | | | | | | |
| *Arbutus unedo* L. | 8 | 43 | 20 | 11 | 5 | 42 | 1 | | 1 | 1 | 55 | 24 | 34 | 14 | 5 | 20 | | | | | 24 | 14 | 16 | 7 | 33 | 12 | 28 | 6 | 6 | | 12 | 16 | 2 | |
| *Castanea sativa* Mill. | 101 | 656 | 100 | 194 | 14 | 68 | 30 | 2 | 27 | 102 | 368 | 206 | 57 | 25 | 61 | 8 | 35 | | 152 | 21 | 80 | 70 | 139 | 20 | 100 | 7 | 27 | 1 | 34 | 43 | 66 | 49 | 30 | |
| *Castanea sativa* Mill. / *Quercus* L. | 44 | 288 | 55 | 55 | 22 | 1 | 2 | | | 31 | 239 | 23 | 29 | 9 | 14 | 7 | | | 15 | 5 | 15 | 17 | 30 | | 43 | 5 | 28 | 4 | 11 | | 15 | 8 | 2 | |
| *Cistus* L. | | 1 | | | | 4 | | | | | | | | | | | 3 | | | | | | | | 14 | | | | | | | | | |
| *Erica australis* L. / *Erica arborea* L. | 10 | 89 | 7 | 9 | 8 | 14 | 9 | | 3 | 14 | 49 | 15 | 28 | 8 | 1 | 13 | | 3 | | 1 | 11 | 6 | 10 | 1 | 10 | 5 | 27 | | 4 | 2 | 4 | 24 | 24 | |
| *Erica scoparia* L. / *Erica umbellata* L. | 1 | 5 | | 1 | | | | | | | 1 | 2 | | | | | | | | | 1 | 2 | 1 | | 2 | | 5 | | | | 1 | | 3 | |
| *Erica* L. | 14 | 85 | 16 | 7 | 7 | 19 | 2 | | | 15 | 27 | 8 | 11 | 11 | | 6 | | | 1 | | 7 | 2 | 12 | 2 | 8 | 7 | 22 | | 5 | 1 | 16 | 8 | 10 | |
| Fabaceae Lindl. | 6 | 43 | 12 | 6 | | 7 | 2 | | | 10 | 10 | 2 | | 1 | | 5 | | | 3 | | 2 | | 4 | 2 | 5 | | 2 | | | | 2 | 2 | | |
| *Frangula alnus* Mill. | | | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Fraxinus* L. | | 4 | | | 1 | | | | | | 2 | 1 | | | | | | | 1 | | 3 | | | | | | 1 | | | | 1 | | | |
| *Pistacia* L. | | 2 | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium* L. / *Prunus cerasus* L. | 1 | 5 | | | | 1 | | | | | | 10 | | | | | | | | | | | 19 | | | | | | | | | 8 | |
| *Prunus* L. | | 93 | | | 3 | | 13 | 1 | 4 | 26 | | | | | 4 | | | 1 | 7 | | | | 2 | | | | | | 5 | | | 3 | 1 |
| *Quercus* L. | 8 | 22 | 6 | 4 | 8 | | 9 | | 5 | 2 | 12 | 4 | 3 | 7 | 1 | 12 | | | 1 | | 5 | 3 | 2 | 1 | 2 | 5 | 17 | 1 | | | | 4 | 4 | |
| *Quercus* L. - deciduous | 59 | 123 | 15 | 21 | 98 | 165 | 25 | 4 | 3 | 28 | 68 | 34 | 7 | 17 | 5 | 142 | 4 | | 17 | | 32 | 28 | 45 | 21 | 73 | 17 | 9 | 1 | 7 | 3 | 8 | 20 | 43 | 3 |
| *Quercus* L. - evergreen | 7 | 11 | 3 | | 2 | 3 | 18 | 3 | 5 | 1 | 2 | 4 | 2 | 1 | 2 | 6 | | | 8 | | | | 2 | 3 | 6 | 1 | 2 | | | 2 | 3 | 1 | 2 | |
| *Rhamnus* L. / *Phillyrea* L. | | 2 | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rosaceae subfam. Maloideae C.Weber | | 3 | | | | | | | | | | | | | | | | | | | | | 4 | | | | | | | | | | | |
| *Salix* L. | | | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Salix* L. / *Populus* L. | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Taxus baccata* L. | 4 | 41 | | | | | | | 4 | 3 | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | | 7 | 1 | 6 | | | | 2 | | 1 | 11 | | | | | | | | 1 | | | | | | | | | | 1 | | | | | |
| Dicotyledon | 39 | 161 | 42 | 56 | 41 | 21 | 4 | 1 | 3 | 23 | 120 | 33 | 23 | 13 | 8 | 18 | | | 11 | | 35 | 8 | 46 | 9 | 30 | 14 | 32 | | 6 | | 18 | 18 | 19 | |
| Monocotyledon | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bark | | | | | | | | | | | | | | | | | | | | | | | | | 14 | 1 | | | | | 1 | | | |
| **Total** | 302 | 1,685 | 319 | 371 | 209 | 350 | 115 | 13 | 56 | 258 | 984 | 366 | 196 | 106 | 101 | 239 | 42 | 4 | 217 | 27 | 215 | 150 | 332 | 66 | 342 | 74 | 200 | 13 | 74 | 56 | 147 | 150 | 150 | 4 |

Table A6.7- (continued).

| Moment | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S.U. | 108 | | | | | | | | | | | | | | | | | | | | 109 | | | 128 | | 137 | Total |
| Square | D4 | D5 | D7 | D8 | D9 | E6 | E7 | E8 | E9 | F4 | F5 | F7 | F8 | F9 | G3 | G4 | G5 | G6 | G7 | G8 | D4 | F4 | F5 | I4 | H4 | B8 | |
| *Acer* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| *Alnus* Mill. | | | | | | | | | | | | | | | | | | | | | | | | | | | 67 |
| *Arbutus unedo* L. | 2 | 3 | 10 | | | 5 | 5 | 10 | 10 | | | 7 | 5 | | | | | | | 1 | | | | | | 15 | 593 |
| *Castanea sativa* Mill. | 17 | 1 | 22 | | 4 | 4 | 2 | 3 | 16 | 1 | 50 | 9 | 6 | | 1 | 20 | 25 | 13 | | 1 | 7 | 56 | 56 | | 4 | 55 | 3,366 |
| *Castanea sativa* Mill. / *Quercus* L. | 8 | 4 | 1 | | | | 1 | | 8 | | 1 | 2 | 5 | | 1 | | 7 | 9 | 2 | 2 | | | 6 | | | | 1123 |
| *Cistus* L. | | | | | | | | | | | | | | | | | | | | | | | | | | 8 | 31 |
| *Erica australis* L. / *Erica arborea* L. | 6 | 1 | 1 | | | 7 | 3 | 13 | 8 | 1 | 7 | 2 | | 2 | | 18 | 24 | 7 | 4 | 1 | | 4 | 6 | | | | 577 |
| *Erica scoparia* L. / *Erica umbellata* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | 27 |
| *Erica* L. | 4 | | 6 | | | | 1 | 7 | 8 | | 2 | 3 | 3 | 3 | | 2 | | 7 | | | | | 3 | | | 12 | 414 |
| Fabaceae Lindl. | 1 | | 1 | | | 1 | | | 1 | | 4 | 1 | 3 | | | 2 | 5 | 1 | | | | | | | | 1 | 152 |
| *Frangula alnus* Mill. | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| *Fraxinus* L. | | | | | | | | | | | | | | | | | 3 | | 1 | | | | | | | | 19 |
| *Pistacia* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 |
| *Prunus avium* L. / *Prunus cerasus* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | 44 |
| *Prunus* L. | | | | | | 6 | | | | | 16 | | | | 3 | 20 | 53 | 22 | | | | 5 | 10 | 1 | | | 365 |
| *Quercus* L. | | | | | | | | | | | | | 1 | | | | 1 | | | | | | | | | | 165 |
| *Quercus* L. - deciduous | 4 | 1 | 4 | | 1 | 8 | 10 | 3 | 4 | | 14 | 6 | 10 | | 9 | 18 | 17 | 21 | 1 | 2 | | 19 | 7 | 1 | | 48 | 1,582 |
| *Quercus* L. - evergreen | | | | 1 | | | 3 | | | | 3 | 1 | 2 | | | 1 | 3 | 1 | | | | 1 | | | | 3 | 132 |
| *Rhamnus* L. / *Phillyrea* L. | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| Rosaceae subfam. Maloideae C.Weber | | | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| *Salix* L. | | | | | | | | | | | | | 5 | | | | | | | 1 | | | | | | | 8 |
| *Salix* L. / *Populus* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Taxus baccata* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | 52 |
| Undetermined | | | | | | | | | | | | | | | | | | | | | | | | | | | 32 |
| Dicotyledon | 9 | | 8 | | | 7 | 3 | 9 | 5 | | 2 | 8 | 8 | | | 3 | 12 | 10 | 1 | 3 | | 8 | 12 | | | 8 | 1,046 |
| Monocotyledon | 1 | | | | | | | | | | 1 | | | | | | | | | | | | | | | | 3 |
| Bark | | | | | | | | | | | | | | | | | | | | | | | | | | | 16 |
| **Total** | 55 | 10 | 53 | 1 | 5 | 38 | 28 | 45 | 60 | 2 | 100 | 39 | 48 | 5 | 14 | 84 | 150 | 91 | 9 | 11 | 7 | 93 | 100 | 2 | 4 | 150 | 9,836 |

Table A6.7- (continued).

| **Moment** | 3 | | | | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **S.U.** | 136 | 139 | | 140 | 124 | 124 | | | | | | | | | | | 125 | | | | | | | | | | 125A | 129 | 130 | | | 131 | | 134 | 138 |
| **Square** | B8 | A9/B9 | A8/B8 | A8 | C6 | B6/C6 | A0 | A3 | A'3 | A3/A4 | A4 | A'4 | A5 | A6 | A7 | A8 | A'8 | A9 | B0 | B3/A3 | B5 | B6 | B7 | B8 | C1 | C6 | C8 | C0 | H5 | B7 | B8 | A5 | B6 | B8 | B9 |
| *Acer* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| *Alnus* Mill. | | | | | 1 | | | | | | | 1 | | | | | | 2 | | | | | 33 | | | | | | | 10 | | | | | |
| *Arbutus unedo* L. | 55 | 6 | 12 | 6 | | | | 2 | 3 | 2 | 19 | 6 | 14 | 4 | | | 1 | | | | 1 | 3 | 2 | 12 | | | 36 | | | 7 | 4 | 1 | 1 | 13 | 2 |
| *Castanea sativa* Mill. | 228 | 61 | 48 | 33 | 54 | 8 | 13 | 2 | 5 | | 62 | 59 | 277 | 132 | | | 3 | 40 | | 2 | 90 | 116 | 165 | 138 | 1 | 11 | 57 | 4 | | 79 | 75 | 103 | 60 | 133 | 1 |
| *Castanea sativa* Mill. /*Quercus* L. | | | | | 6 | 23 | 2 | 3 | 3 | 1 | 20 | 24 | 19 | 20 | | | | | | 4 | | 7 | 26 | 26 | | 1 | 38 | 2 | | 14 | | 1 | 12 | | |
| *Cistus* L. | 17 | 8 | 19 | 17 | | | | | | | | | 2 | | | | | | | | | | 2 | | | | | | | | 5 | | | 2 | |
| *Erica australis* L. / *Erica arborea* L. | 19 | 1 | | | 3 | 4 | 1 | | | | 15 | 11 | 7 | 3 | | 1 | | 2 | 2 | 13 | 5 | 6 | 18 | 5 | | 1 | 8 | 4 | 1 | 13 | | | | 6 | |
| *Erica scoparia* L. / *Erica umbellata* L. | 2 | | | | | | | | | 1 | | | 3 | | | | | | | | | | | | | | 2 | | | | | | | |
| *Erica* L. | 17 | 5 | 5 | | 3 | | | | 1 | 1 | 4 | 4 | 3 | 3 | | | | | | 11 | | 1 | 7 | 2 | | | 12 | | | 11 | 9 | 1 | 1 | | |
| Fabaceae Lindl. | 9 | | | 1 | 4 | 1 | | 2 | | | 10 | | 4 | 2 | | | | 1 | | 2 | 3 | 3 | 17 | 6 | | | 6 | | | 12 | 5 | 1 | 2 | 2 | |
| *Fraxinus* L. | 1 | | 1 | 1 | | | | | | | 1 | 1 | | 2 | | | | | | 1 | | | 5 | 1 | | | 1 | | | 1 | 1 | | | | |
| *Olea europaea* L. | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Pinus* L. | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium* L. / *Prunus cerasus* L. | 3 | 18 | 4 | | | | | | | | | | | | | | | | | | 1 | 1 | 6 | | | | | | | 2 | | 5 | | 3 | 9 |
| cf. *Prunus* L. | 1 | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | |
| *Prunus* L. | 2 | 16 | | | 8 | 15 | 23 | | | | | | 1 | | | | | | 1 | 35 | | 1 | 2 | | | | 11 | | | 1 | | 1 | | | |
| *Quercus* L. | | | | | 4 | | | 1 | | | 1 | 6 | | | | | | | | 4 | | | | 1 | | | | | | 1 | | | | | |
| *Quercus* L. - deciduous | 167 | 44 | 49 | 51 | 8 | 7 | 17 | 1 | 4 | | 19 | 23 | 64 | 1 | | 2 | 5 | | 9 | 31 | 5 | 16 | 20 | 28 | 5 | | 47 | 53 | 2 | 12 | 44 | | 1 | 36 | 2 |
| *Quercus* L. - evergreen | | 1 | 2 | | | 2 | | | | | 1 | | | | | | | | | | | 1 | 2 | 3 | | | 1 | | | 2 | | | | |
| *Rhamnus* L. / *Phillyrea* L. | 2 | | | | | | | | | | | | 1 | | | | | | | | | | 1 | | | | | | | | 1 | | 1 | | |
| Rosaceae subfam. Maloideae C.Weber | | | 2 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | |
| *Salix* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | 1 | | |
| *Taxus baccata* L. | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | | | | | 3 | | | | | | | | | | | | | | | | | 1 | 3 | | | | | | | | | | | | |
| Dicotyledon | 27 | 14 | 8 | 7 | 6 | 20 | 16 | 1 | 5 | 5 | 50 | 41 | 41 | 45 | 1 | | 4 | 4 | | 6 | 3 | 21 | 38 | 31 | 1 | 1 | 39 | | | 23 | 5 | 10 | 11 | 2 | 1 |
| Monocotyledon | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | 2 | | | | | | | | |
| **Total** | 550 | 175 | 150 | 116 | 100 | 80 | 72 | 12 | 21 | 10 | 202 | 176 | 437 | 213 | 1 | 3 | 13 | 49 | 12 | 110 | 108 | 177 | 348 | 254 | 7 | 14 | 260 | 63 | 3 | 188 | 150 | 123 | 89 | 199 | 15 |

Table A6.8 - Charcoal results (Phase 2).

| Moment | 5 | | | | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S.U. | 126 | | 132 | 133 | 102 | | | | | | | | | | | | | | | | | | 103 | | | | | | 104 | | | | | | | |
| Square | C6 | B7 | C7 | D1'/E1' | C1 | C3 | C6 | C9 | D1' | D2 | D6 | E0 | E1 | E1' | E6 | F0 | F1 | F1' | F2 | F6 | G3 | G6 | H6 | I4 | C1' | D0 | D1' | E0 | F0 | B1'/C1' | C5 | C6 | D1´/E1´ | D6 | G4 |
| *Acer* L. | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Alnus* Mill. | | | | | | | 16 | 1 | 2 | 3 | 1 | 3 | | 3 | | 1 | | | | 2 | | | | | 1 | 1 | 3 | 2 | 13 | 1 | | | 26 | | |
| *Arbutus unedo* L. | 1 | 15 | 13 | | 4 | | 39 | 9 | 4 | | | 3 | | 8 | 25 | 2 | 2 | | 3 | 4 | | 7 | 2 | | 2 | 3 | 3 | 1 | 6 | | | 2 | 56 | | 2 |
| *Castanea sativa* Mill. | 4 | 15 | 13 | | | | 72 | | 2 | | | 5 | | 16 | 4 | | | 1 | | | | 3 | | | | | 2 | 7 | 4 | | | 2 | | | 9 |
| *Castanea sativa* Mill. / *Quercus* L. | | 20 | 22 | | | | 3 | | | | | | | | | | | | | | | | | | | | | | | | | 31 | | |
| *Cistus* L. | | | | | | | 20 | | 3 | 1 | 3 | | | 2 | 23 | | | | | 6 | 1 | 12 | 4 | | | | 1 | 2 | 5 | | 9 | 1 | | | 5 |
| *Erica australis* L. / *Erica arborea* L. | 3 | 23 | 20 | | | | | | | | | | | | | | | | | | | | | | 1 | | 1 | | | | | 5 | | |
| *Erica scoparia* L. / *Erica umbellata* L. | | | | | | | | | | | | | 1 | | | | | | | | | 3 | 4 | | | 2 | | 1 | 1 | | | 5 | | |
| *Erica* L. | 3 | 20 | 19 | 5 | | | 31 | | 3 | 1 | | | | | | | | | | | | | 1 | 38 | | | | 3 | | | | 16 | | 2 |
| Fabaceae Lindl. | | | 5 | 2 | | | 8 | | | | | | | 1 | 1 | | | 1 | 2 | | | | 2 | | | | | | | | | 2 | | |
| *Fraxinus* L. | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Olea europaea* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium* L. / *Prunus cerasus* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf. *Prunus* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus* L. | 2 | | 1 | | 3 | 5 | 19 | | | | | | | | 16 | | | | | 4 | | 19 | 4 | | | | | | | 1 | 4 | | | 2 |
| *Quercus* L. | | 3 | 6 | | | | 4 | | | 2 | 2 | | | | | | | | | | | | | | | | 2 | 3 | | | | | | | |
| *Quercus* L. - deciduous | 3 | 32 | 7 | 6 | 90 | 5 | 33 | | 16 | 10 | 4 | 16 | | 21 | 21 | | | 2 | | 6 | | 51 | 11 | | 11 | 7 | 7 | 12 | 18 | 3 | 9 | 5 | 77 | 1 | 16 |
| *Quercus* L. - evergreen | | | 1 | | | | 1 | | | | | 1 | | | 3 | | | | | | | | 2 | | | | | 2 | 2 | | | | | |
| *Rhamnus* L. / *Phillyrea* L. | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Rosaceae subfam. Maloideae C.Weber | | | | | | | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | |
| *Salix* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Taxus baccata* L. | | | | | | | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dicotyledon | 1 | 27 | 44 | 5 | 2 | | 38 | 4 | 1 | 1 | | 9 | | 8 | 7 | | | | 2 | 5 | | 5 | | 4 | | 4 | 7 | 3 | 4 | | 1 | | 35 | | 10 |
| Monocotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Total** | 18 | 156 | 151 | 19 | 100 | 10 | 287 | 14 | 32 | 18 | 10 | 38 | 1 | 59 | 100 | 3 | 2 | 4 | 7 | 27 | 1 | 100 | 28 | 42 | 15 | 17 | 24 | 33 | 56 | 6 | 20 | 14 | 254 | 1 | 46 |

Table A6.8 - (continued).

| **Moment** | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **S.U.** | 118 | | | | | | | | | | | 120 | | | | | | | | | 121 | | | | | | | | |
| **Square** | F3 | G1 | G2 | G5 | H1 | H2 | H5 | H6 | I2 | L5 | I1 | I3 | I4 | C2 | J4 | I4 | J3 | J4 | J5 | J7 | L3 | L4 | L5 | L6 | L7 | M2 | M3 | M4 | M5 |
| *Acer* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Alnus* Mill. | | | | | | | | | | | | | | | | | | 1 | | | | 1 | | | | | | | |
| *Arbutus unedo* L. | | | | | 1 | | | 1 | | | | 2 | | | | | 7 | | | | 1 | | | | 1 | 13 | 1 | 6 | 3 |
| *Castanea sativa* Mill. | 2 | | | 14 | 1 | 6 | 10 | | | 45 | | | 15 | 1 | 24 | 11 | 1 | 38 | 10 | 1 | 1 | 53 | | 2 | 3 | 9 | 28 | 6 | |
| *Castanea sativa* Mill. / *Quercus* L. | | | | 2 | | | | | | 7 | | | | | 5 | | | 6 | | | 7 | 12 | | | | 25 | 7 | 9 | |
| *Cistus* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Erica australis* L. / *Erica arborea* L. | 6 | 4 | | 7 | 1 | 2 | 3 | 1 | | 6 | | | 1 | 1 | 1 | | | 2 | 1 | 1 | | 12 | | | 1 | 9 | 16 | 9 | |
| *Erica scoparia* L. / *Erica umbellata* L. | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Erica* L. | | | | 2 | | | | | | 1 | | | | | | | | | | | | 2 | | | | 14 | 5 | 6 | 1 |
| Fabaceae Lindl. | | 1 | | 1 | | | | | | | | | 1 | | | | | | | | | | | | | 2 | 1 | 1 | |
| *Fraxinus* L. | | | | | | | | | | | | | | | | | | | | | | 1 | | | | 1 | 1 | 1 | |
| *Olea europaea* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pinus* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus avium* L. / *Prunus cerasus* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | 14 | 6 | |
| cf. *Prunus* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Prunus* L. | 1 | 1 | | 12 | 1 | 4 | 11 | | | 12 | | | 4 | | 4 | | | 9 | 6 | 2 | 4 | 37 | | | 1 | | 1 | | |
| *Quercus* L. | | | | | | | | | | 1 | | | | | | | | 1 | | | | 1 | | | | 3 | 4 | 5 | 2 |
| *Quercus* L. - deciduous | | 2 | 45 | 28 | 8 | 15 | 8 | 1 | 2 | 26 | 5 | | 11 | 1 | 27 | 1 | 3 | 42 | 12 | 5 | 11 | 133 | 1 | 6 | 11 | 15 | 43 | 13 | 12 |
| *Quercus* L. - evergreen | | | | 2 | | | | | | | | | | | | | | | | | | 4 | | | | | 4 | 2 | |
| *Rhamnus* L. / *Phillyrea* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rosaceae subfam. Maloideae C.Weber | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Salix* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Taxus baccata* L. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | | | | 1 | | | | | | 1 | | | | | | | 1 | | | | | 1 | | | | | | | |
| Dicotyledon | | | | 9 | 2 | 2 | 4 | | | 1 | | | | | 3 | | | 1 | | 1 | | 8 | | | | 41 | 25 | 43 | |
| Monocotyledon | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Total** | 9 | 8 | 45 | 79 | 14 | 29 | 36 | 3 | 2 | ## | 5 | 2 | 32 | 3 | 64 | 12 | 12 | 100 | 29 | 10 | 24 | 265 | 1 | 8 | 17 | 132 | 150 | 107 | 18 |

Table A6.8 - (continued).

| **Moment** | 6 | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **S.U.** | 104A | | | | | | | | | | | | | | | | | | | | 104B | | | | Total |
| **Square** | B7 | C1 | C3 | C6 | C7 | C8 | D1 | D2 | D3 | D6 | D7 | D8 | E6 | E7 | E8 | E9 | F7 | F9 | G0 | G7 | C6 | C7 | B7 | C9 | |
| *Acer* L. | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Alnus* Mill. | | | | | 1 | | 1 | | | | | | | | | | | | | | | | | | 52 |
| *Arbutus unedo* L. | 1 | | 1 | 3 | 5 | 5 | | | | | 3 | 1 | | 2 | | | | | | 2 | | 2 | 1 | 9 | 391 |
| *Castanea sativa* Mill. | | 6 | 26 | 159 | 4 | | 20 | | 177 | 7 | 2 | 1 | 1 | 37 | | | | | 5 | | 101 | 4 | 28 | 1 | 3,139 |
| *Castanea sativa* Mill. / *Quercus* L. | | | 16 | 29 | | 1 | 10 | 1 | 9 | 2 | 1 | | | 4 | | | | | | | 15 | | | 5 | 594 |
| *Cistus* L. | | | 1 | | | | | | | | | | | | | | | | | | | | | | 107 |
| *Erica australis* L. / *Erica arborea* L. | 1 | | 3 | 19 | 3 | 2 | 5 | 1 | 4 | | 3 | | | 3 | 2 | | | | | | 6 | 2 | | 1 | 432 |
| *Erica scoparia* L. / *Erica umbellata* L. | | | | | | 1 | | | | | | | | | | | | | | | | | | | 17 |
| *Erica* L. | | | 4 | 19 | 5 | 1 | | 1 | 1 | | | | | 2 | | | | | | | 2 | 3 | 1 | | 270 |
| Fabaceae Lindl. | | | 1 | 6 | | | 2 | 2 | | | | | | | | | | | | | 2 | | | | 193 |
| *Fraxinus* L. | | | | 2 | | | | | | | | | | | | | | | | | | | | | 26 |
| *Olea europaea* L. | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Pinus* L. | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| *Prunus avium* L. / *Prunus cerasus* L. | | | | 5 | | | | | | | | | | | | | | | | | | | | | 77 |
| cf. *Prunus* L. | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| *Prunus* L. | | | 3 | 18 | | | 9 | | 2 | 7 | | | 3 | | | | | | | | 18 | | | | 355 |
| *Quercus* L. | | | 2 | 3 | | | | 1 | | | | | | | | | | | | | | | | | 75 |
| *Quercus* L. - deciduous | 2 | | 52 | 20 | 15 | 12 | 66 | 14 | 7 | 1 | 6 | 2 | | 8 | 1 | 1 | 1 | | | | 11 | | | 9 | 1,988 |
| *Quercus* L. - evergreen | | | 2 | 2 | | | | | | | | | | | | | | | | | | | | 7 | 50 |
| *Rhamnus* L. / *Phillyrea* L. | | | | | | | | | | | | | | | | | | | | | | | | | 8 |
| Rosaceae subfam. Maloideae C.Weber | | | | 3 | | | | | | | | | | | | | | | | | | | | | 6 |
| *Salix* L. | | | | | | | | | | | | | | | | | | | | | | | | | 4 |
| *Taxus baccata* L. | | | | 2 | | | | | | | | | | | | | | | | | 12 | | | | 15 |
| Undetermined | | | | | | | | | | | | | | | | | | | | | | | | | 15 |
| Dicotyledon | | | 11 | 36 | 1 | 2 | 6 | 4 | | | | | | 20 | | | | 2 | | | 3 | 4 | | | 943 |
| Monocotyledon | | | | | | | | | | | | | | | | | | | | | | | | | 3 |
| **Total** | 4 | 6 | 122 | 326 | 34 | 24 | 119 | 24 | 200 | 17 | 15 | 4 | 4 | 76 | 3 | 1 | 1 | 2 | 5 | 2 | 170 | 15 | 30 | 32 | 8,765 |

Table A6.8 - (continued).

| Taxon | Total Identified | Tree ring curvature | | | | Vitrification | Radial cracks |
|---|---|---|---|---|---|---|---|
| | | Undetermined | Weak | Moderate | Strong | | |
| | | % | % | % | % | % | % |
| *Acer* L. | 3 | 100 | | | | | |
| *Alnus* Mill. | 119 | 0.8 | 86.6 | 12.6 | | 6.7 | 0.8 |
| *Arbutus unedo* L. | 984 | 12.9 | 29.9 | 51.8 | 5.4 | 2.2 | 8.4 |
| *Castanea sativa* Mill. | 6,505 | 16 | 79.7 | 4 | 0.3 | 1.5 | 5.9 |
| *Castanea sativa* Mill. / *Quercus* L. | 1717 | 4.7 | 88.8 | 5.5 | 1.0 | 9.6 | 8 |
| *Cistus* L. | 138 | 65.2 | 1.4 | 5.1 | 26.8 | 7.2 | 18.8 |
| *Erica australis* L. / *Erica arborea* L. | 1,009 | 7.7 | 36.7 | 48.5 | 7.1 | 12.2 | 30.6 |
| *Erica scoparia* L. / *Erica umbellata* L. | 44 | 25 | 15.9 | 50 | 9.1 | 9.1 | 13.6 |
| *Erica* L. | 684 | 11.7 | 20.9 | 42 | 25.4 | 26.5 | 29.8 |
| Fabaceae Lindl. | 345 | 4.9 | 11.3 | 34.5 | 49.3 | 4.1 | 29.9 |
| *Frangula alnus* Mill. | 2 | | 100 | | | | |
| *Fraxinus* L. | 45 | 13.3 | 75.6 | 11.1 | | 2.2 | 8.9 |
| *Olea europaea* L. | 1 | | 100 | | | | 100 |
| *Pistacia* L. | 3 | | 66.7 | 33.3 | | | |
| *Pinus* L. | 1 | 100 | | | | | |
| *Prunus avium* L. / *Prunus cerasus* L. | 121 | 21.5 | 58.7 | 19 | 0.8 | 7.4 | 4.1 |
| *Prunus* L. | 722 | 15 | 51.7 | 30.1 | 3.3 | 7.9 | 10.2 |
| *Quercus* L. | 240 | 8.8 | 67.5 | 20.8 | 2.9 | 12.1 | 15.8 |
| *Quercus* L. - deciduous | 3,570 | 24.6 | 67.6 | 6.4 | 0.9 | 5.7 | 27.3 |
| *Quercus* L. - evergreen | 182 | 11.5 | 70.3 | 14.8 | 3.3 | 3.8 | 13.2 |
| *Rhamnus* L. / *Phillyrea* L. | 15 | 13.3 | 6.7 | 53.3 | 26.7 | | |
| Rosaceae subfam. Maloideae C.Weber | 13 | 15.4 | 76.9 | 7.7 | | | |
| *Salix* L. | 12 | | 66.7 | 25 | 8.3 | | |
| *Salix* L. / *Populus* L. | 1 | | 100 | | | | |
| *Taxus baccata* L. | 67 | 1.5 | 43.3 | 44.8 | 10.4 | | 1.5 |
| Dicotyledon | 1,989 | 89.6 | 4.8 | 1.6 | 4 | 67.5 | 35.2 |
| Undetermined | 47 | 91.5 | | | 8.5 | 89.4 | 12.8 |
| Monocotyledon | 6 | 66.7 | | | 33.3 | 100 | |

Table A6.9 - Tree ring curvature, vitrification, and radial cracks per taxon.

| Macroscopic observations | | | | | Microscopic observation under SEM | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S.U. | Sample | Square | Texture | Visible inclusions | Matrix appearance | Type of Voids | Average void size (mm) | Percentage of voids | Average Particle size (mm) | Avarage number of Particles | Barley | Wheat | Rye/Oats | Indeterminate cereal | Pulses | Root/tuber parenchyma | Type of Parcticles |
| 130 | 460 | B7 | Porous and homogeneous | Bran cell tissue | Semi-porous | Channel voids, micropores | 0.25 | 19% | 0.8 | 3 | x | x | x | x | | | Barley grain fragment with visible multiple-celled aleurone layer and bran epidermis. Scattered patches of bran epidermis both barley and non-barley. Scattered patches of single-celled aleurone layers in cross-section view. Large fragments of pulses with visible palisade testa layer. |
| 130 | 460_1 | B7 | Porous and homogeneous | None | Porous | Closed voids, micropores and channel voids | 0.1 | 14% | 0.65 | 6 | x | x | | x | x | | Barley grain fragment with visible multiple-celled aleurone layer and bran epidermis. Scattered patches of bran epidermis both barley and non-barley. Scattered patches of single-celled aleurone layers in cross-section view. |
| 125 | 481 | B7 | Porous and homogeneous | Bran cell tissue | Highly porous | Channel voids and micropores | 0.15 | 35% | 0.15 | 1 | | | | x | | | Small bran fragment |
| 104B | 119 | C6 | Porous and homogeneous | None | Semi-porous | Channel voids | 0.2 | 16% | 0.5 | 2 | | | | | | x | Parenchyma tissue |
| 107 | 425 | C7 | Semiporous and heterogeneous | Particles agglomeration | Semi-porous | Channel voids | 0.3 | 13% | 0.6 | 2 | x | x | | x | | x | Bran epidermis fragments. Multiple-celled aleurone layer fragments. |

| Average void size | Average porosity % | Average particle size | Average number of particles |
|---|---|---|---|
| **0.2** | **19.26%** | **0.54** | **2.8** |

Table A6.10 - Analysed charred food products.

# Attachment 7 - The introduction and spread of rye in the Iberian Peninsula (Chapter 9)

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Chapter submitted in “PloS One”.

| Site | Town/Municipality | Parish/District/Province | Iberian Sector | Country | Type of remain | Number/Abundance | Period | Number (Fig. 9.1) | References |
|---|---|---|---|---|---|---|---|---|---|
| Carrer dels Bafart (INT-46) | Lleida | Lleida | Northeast | Spain | Grain | 7 | Late Antiquity (Late Roman) | 7 | Alonso, 2005 |
| Vilauba | Camós | Girona | Northeast | Spain | Grain | 4<br>11 | Late Antiquity (Late Roman)<br>Late Antiquity (Visigothic) | 2 | Buxó, 1999; Colominas et al., 2019<br>Colominas et al., 2019 |
| Els Mallols | Cerdanyola del Vallès | Barcelona | Northeast | Spain | Grain | 1 | Late Antiquity | 4 | Alonso, 2008 |
| Can Gelats | Aiguaviva | Girona | Northeast | Spain | Grain | N/A | Late Antiquity | 1 | Alonso et al., 2014 |
| Camp Vermell | Sant Julià de Lòria | Sant Julià de Lòria | Northeast | Andorra | Grain | 97<br>2 | Late Antiquity (Visigothic)<br>Medieval | 5 | Alonso et al., 2010 |
| Bovalar | Serós | Lleida | Northeast | Spain | Grain | More or less abundantly | Late Antiquity (Visigothic) | 8 | Cubero, 1994; Alonso, 2005; Alonso et al., 2014 |
| Los Pozos de Bureta | Bureta | Zaragoza | Northeast | Spain | Grain<br>Chaff | 20<br>5 | Late Antiquity (Visigothic) | 12 | Treasure, 2020 |
| Roc d´ Enclar | Santa Coloma | Andorra-a-Velha | Northeast | Andorra | Grain | Abundant | Late Antiquity (Visigothic) | 6 | Buxó, 2005 |
| Las Sillas | Lalueza | Huesca | Northeast | Spain | Grain/Chaff | 82 | Medieval (Islamic) | 9 | Peña-Chocarro et al., 2019 |
| La Mora Encantada | Bulbuente | Zaragoza | Northeast | Spain | Grain<br>Chaff | 22<br>79 | Medieval (Islamic) | 15 | Treasure, 2020 |
| El Quemao | Sarrión | Turuel | Northeast | Spain | Grain<br>Chaff | 64<br>119 | Medieval (Islamic) | 10 | Treasure, 2020 |
| Cabezo de la Cisterna | Alba del Campo | Turuel | Northeast | Spain | Grain<br>Chaff | 5<br>6 | Medieval (Islamic) | 11 | Treasure, 2020 |
| l'Esquerda | Les Masies de Roda | Barcelona | Northeast | Spain | Grain | ±10 | Medieval | 3 | Cubero et al., 2008 |
| Palacio de Bulbuente | Bulbuente | Zaragoza | Northeast | Spain | Grain<br>Chaff | 1,045<br>368 | Medieval (Christian) | 14 | Treasure, 2020 |
| Casa Conventual de Ambel | Bulbuente | Zaragoza | Northeast | Spain | Grain | 1 | Medieval (Christian) | 13 | Treasure, 2020 |
| Gasteiz | Vitoria-Gasteiz | Álava | Northern | Spain | Grain | 155 | Medieval | 16 | Pérez-Díaz et al., 2015 |
| Gózquez | San Martín de la Vega | Madrid | Central | Spain | Grain<br>Chaff | 36<br>47 | Late Antiquity (Visigothic) | 17 | Vigil-Escalera et al., 2014 |
| Melque | S. Martín de Montalbán | Toledo | Central | Spain | Grain | 70 | Medieval (Islamic) | 18 | Caballero Zoreda et al., 1999 |
| Albalat | Romangordo | Cáceres | Central | Spain | Grain<br>Chaff | 1 cf.<br>136 | Medieval (Islamic) | 19 | Ros et al., 2018 |
| Castelo de Silves | Silves | Faro | Southern | Spain | Grain | Rare | Medieval (Islamic) | 33 | Pais, 1996 |
| Senhora do Barrocal | Sátão | Viseu | Western | Portugal | Grain<br>Chaff | 48,237<br>1,712 | Medieval | 25 | Seabra et al., 2022b |
| São Gens | Celorico da Beira | Guarda | Western | Portugal | Grain | 27 | Medieval | 24 | Oliveira et al., 2017 |
| Convento de São Francisco de Santarém | Santarém | Santarém | Western | Portugal | Grain | 27 | Medieval | 36 | Queiroz, 2001 |
| Quinta da Torrinha | Góis | Coimbra | Western | Portugal | Grain | 6 | Medieval | 27 | Queiroz and van Leeuwaarden, 2004 |
| Casa Romana (Roman house) of the Castro de São Domingos | Lousada | Porto | Northwest | Portugal | Grain<br>Chaff<br>Grain<br>Chaff | 6<br>6<br>3<br>43 | Iron Age<br><br>Late Antiquity<br> | 31 | Seabra et al., 2023 |
| Castelo Pequeno de Santigoso | A Mezquita | Ourense | Northwest | Spain | Grain<br>Chaff | 2,555<br>513 | Iron Age | 23 | Unpublished |
| Crastoeiro | Mondim de Basto | Vila Real | Northwest | Portugal | Grain<br>Chaff | 624<br>7 | Iron Age/Early Roman | 26 | Seabra et al., 2018 |
| Cruito | Baião | Porto | Northwest | Portugal | Grain | 13 | Late Iron Age/Early Roman | 28 | Pinto da Silva, 1990 |
| Freixo/Tongobriga | Marco de Canaveses | Porto | Northwest | Portugal | Grain<br>Grain<br>Grain<br>Grain | 4<br>1<br>10<br>28 | Iron Age/Early Roman<br>Late Antiquity (Late Roman)<br>Late Antiquity<br> | 30 | López-Dóriga, 2020, Unpublished<br>López-Dóriga, 2020 |
| Castro de Guifões | Matosinhos | Porto | Northwest | Portugal | Chaff | 14 | Late Antiquity | 38 | Seabra et al., 2020 |
| Cabeço da Grincha | Mogadouro | Bragança | Northwest | Portugal | Grain | 1 | Roman | 21 | Tereso et al., 2020 |
| Castro de Astariz | Ourense | Galiza | Northwest | Spain | Grain | 1 | Late Antiquity (Late Roman) | 29 | Unpublished |
| Monte Mozinho | Penafiel | Porto | Northwest | Portugal | Grain<br>Grain<br>Chaff | 47<br>505<br>1,171 | Late Antiquity (Late Roman)<br>Late Antiquity | 32 | Tereso et al., 2013<br>Tereso et al., 2013; Vaz et al., 2017a |
| Castelo de Crestuma | Vila Nova de Gaia | Porto | Northwest | Portugal | Grain | 11 | Late Antiquity | 34 | Unpublished |
| Castro S. João das Arribas | Miranda do Douro | Bragança | Northwest | Portugal | Grain | 49,186 | Late Antiquity | 20 | Seabra et al., 2022a |
| Quinta de Crestelos | Mogadouro | Bragança | Northwest | Portugal | Grain<br>Grain | 6<br>1 | Late Antiquity<br>Medieval | 22 | Tereso et al., 2018 |
| Ponte do Burgo | Pontevedra | Pontevedra | Northwest | Spain | Chaff | 4 | Medieval | 37 | Teira-Brión et al., 2023 |
| A Rocha Forte | Santiago de Compostela | Pontevedra | Northwest | Spain | Grain | 5 | Medieval | 35 | Teira-Brión, 2013; López-Costas and Teira-Brión, 2014 |

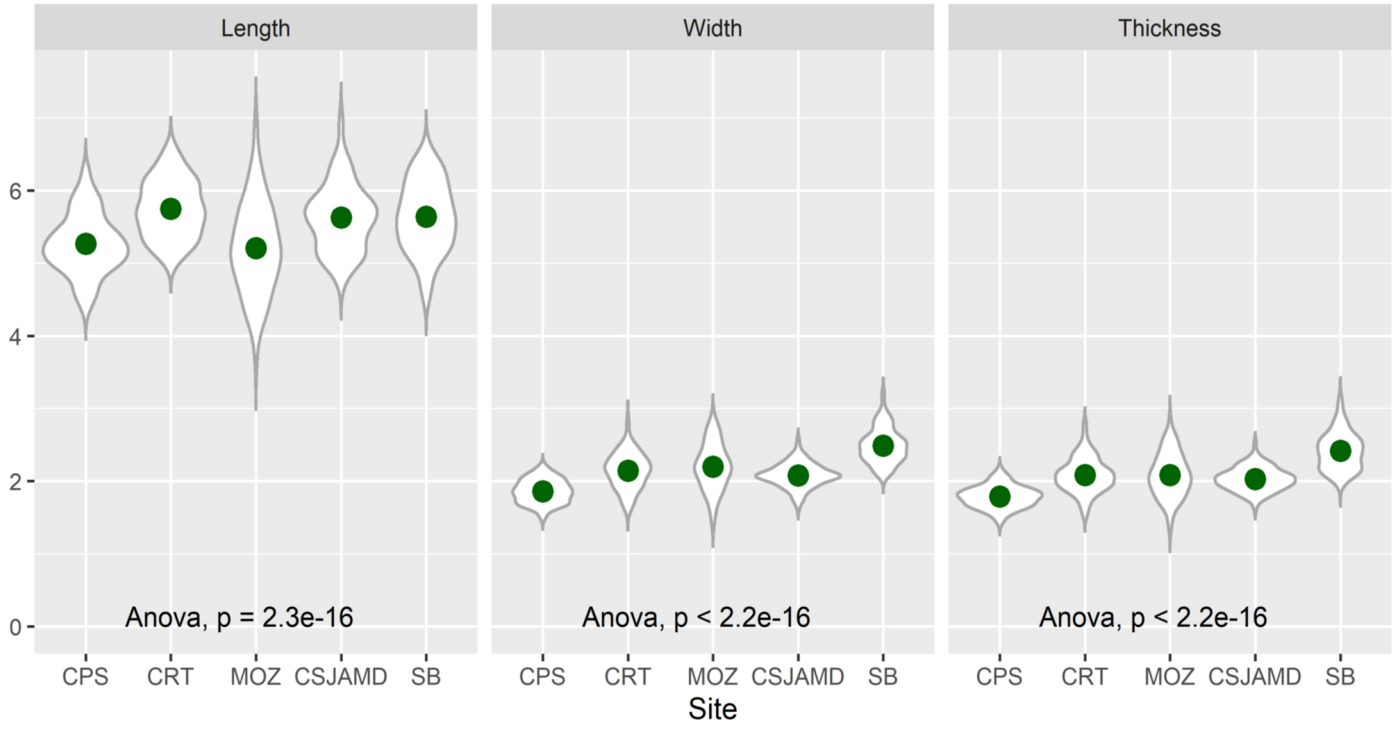
Table A7.1 - Sites with macroremains of rye in Iberian Peninsula until the Late Medieval period (15th century CE), and the amount of both grains and chaff remains recovered in each one of them.

| Site | Abbreviation | Coordinates | Period | Grains | Chaff | Total | Nº fruits/seeds (units) per period | Rye % | Predominant cereal | Other cereals | References |
|---|---|---|---|---|---|---|---|---|---|---|---|
| "Casa Romana" (Roman house) of the Castro de São Domingos | CDCR | 41°16'31.50"N 8°17'45.35"W | Iron Age | 6 | 6 | 12 | 2,183 | 0.5 | Broomcorn millet (26.7%) | Naked wheat (14.5%), Foxtail millet (3.1%), Spelt (1.3%), Oat (1.2%), Hulled barley (<1%) | Seabra et al., 2023 |
| | | | Late Antiquity | 3 | 43 | 46 | 333 | 13.8 | Broomcorn millet (30.9%) | Naked wheat (6.3%), Foxtail millet (5.1%), Spelt (1.2%) | |
| Castelo Pequeno de Santigoso | CPS | 42° 0'15.44"N 7° 0'41.16"W | Iron Age | 2,555 | 513 | 3,068 | 5,591 | 54.9 | Rye (54.9%) | Emmer/Spelt (12%), Spelt (5.7%), Emmer (5.2%), Naked wheat (1.2%) | Unpublished |
| Crastoeiro | CRT | 41°24'52.75"N 7°55'46.55"W | Iron Age/Early Roman | 624 | 7 | 631 | 91,812 | 0.7 | Spelt (55.1%) | Broomcorn millet (5%), Hulled barley (1.8%), Foxtail millet, Naked wheat, and Oat (<1%) | Seabra et al., 2018 |
| Cruito | CRUI | 41° 8'9.04"N 8° 2'12.93"W | Late Iron Age/Early Roman | 13 | 0 | 13 | ≈170 | ≈7.6 | Hulled and naked wheats (≈80%) | Oat (<1%) | Pinto da Silva, 1990 |
| Freixo/Tongobriga | TONG | 41° 9'54.78"N 8° 8'51.09"W | Iron Age/Early Roman | 4 | 0 | 4 | 1,860 | 0.2 | Broomcorn millet (21.9%) | Spelt (14.9%), Foxtail millet (9.5%), Naked wheat, Hulled barley, and Oat (<1%) | López-Dóriga, 2020, Unpublished |
| | | | Late Antiquity (Late Roman) | 1 | 0 | 1 | 25 | 4 | Foxtail millet (56%) | Not applicable | López-Dóriga, 2020 |
| | | | Late Antiquity | 10 | 0 | 10 | 220 | 4.5 | Foxtail millet (47.3%) | Hulled barley (2.7%), Oat (<1%) | |
| Castro de Guifões | GUIF | 41°11'59.75"N 8°40'44.55"W | Late Antiquity | 28 | 14 | 42 | 285 | 14.7 | Broomcorn millet (30.2%) | Naked wheat (4.9%), Foxtail millet (2.8%), Hulled Barley (1.4%), Oat (1.1%) | Seabra et al., 2020 |
| Cabeço da Grincha | CDG | 41°24'7.59"N 6°48'6.20"W | Roman Period | 1 | 0 | 1 | 1 | 100 | Not applicable | Not applicable | Tereso et al., 2020 |
| Castro de Astariz | AST | 42°19'4.21"N 8° 2'12.87"W | Late Antiquity (Late Roman) | 1 | 0 | 1 | 36 | 2.8 | Wheat (27.8%) | Broomcorn millet (8.3%), Foxtail millet (5.6%), Oat (2.8%) | Unpublished |
| Monte Mozinho | MOZ | 41°8'46.86"N 8°18'40.28"W | Late Antiquity (Late Roman) | 47 | 0 | 47 | 920 | 5.1 | Broomcorn millet (24.7%) | Foxtail millet (19%) | Tereso et al., 2013 |
| | | | Late Antiquity | 505 | 1,171 | 1,676 | 16,387 | 10.2 | Rye (10.2%), and Broomcorn millet (9.7%) | Foxtail millet (5.6%), Naked wheat (4.6%), Oat (1%), Hulled Barley, and Emmer/Spelt (<1%) | Tereso et al., 2013; Vaz et al., 2017a |
| Crestuma | CRES | 41° 4'6.84"N 8°30'14.53"W | Late Antiquity | 11 | 0 | 11 | 35 | 31.4 | Rye (31.4%) | Naked wheat (8.6%), Broomcorn millet (5.7%), Oat (5.7%) | Unpublished |
| Castro S. João das Arribas | CSJAMD | 41°32'24.20"N 6°13'22.27"W | Late Antiquity | 49,186 | 0 | 49,186 | 145,072 | 33.9 | Rye (33.9%) | Naked wheat, Hulled Barley, Broomcorn millet, and Foxtail millet (all <1%) | Seabra et al., 2022a |
| Quinta de Crestelos | QCREST | 41°15'7.37"N 6°54'24.14"W | Late Antiquity | 6 | 0 | 6 | 52 | 11.5 | Broomcorn millet (26.9%) | Hulled Barley (3.9%) | Tereso et al., 2018 |
| | | | Middle Ages | 1 | 0 | 1 | 40 | 2.5 | Naked wheat (17.5%) | Broomcorn millet (5%), Hulled barley (2.5%) | |
| Senhora do Barrocal | SB | 40°44'17.80"N 7°38'32.64"W | Middle Ages | 48,237 | 1,712 | 49,949 | 154,846 | 32.3 | Oat (33.7%), and Rye (32.3%) | Broomcorn millet (7.9%), Hulled barley (6.9%), Naked wheat (1.3%), Foxtail millet (<1%) | Seabra et al., 2022b |
| Ponte do Burgo | PDB | 42°26'5.45"N 8°38'41.67"W | Middle Ages | 0 | 4 | 4 | 1,014 | 0.4 | Broomcorn millet (77%) | Oat (<1%) | Teira-Brión et al., 2023 |
| A Rocha Forte | ARF | 42°51'39.32"N 8°34'23.20"W | Middle Ages | 5 | 0 | 0 | 269 | 1.9 | Oat (6.7%) | Broomcorn millet (<1%) | Teira-Brión, 2013; López-Costas and Teira-Brión, 2014 |

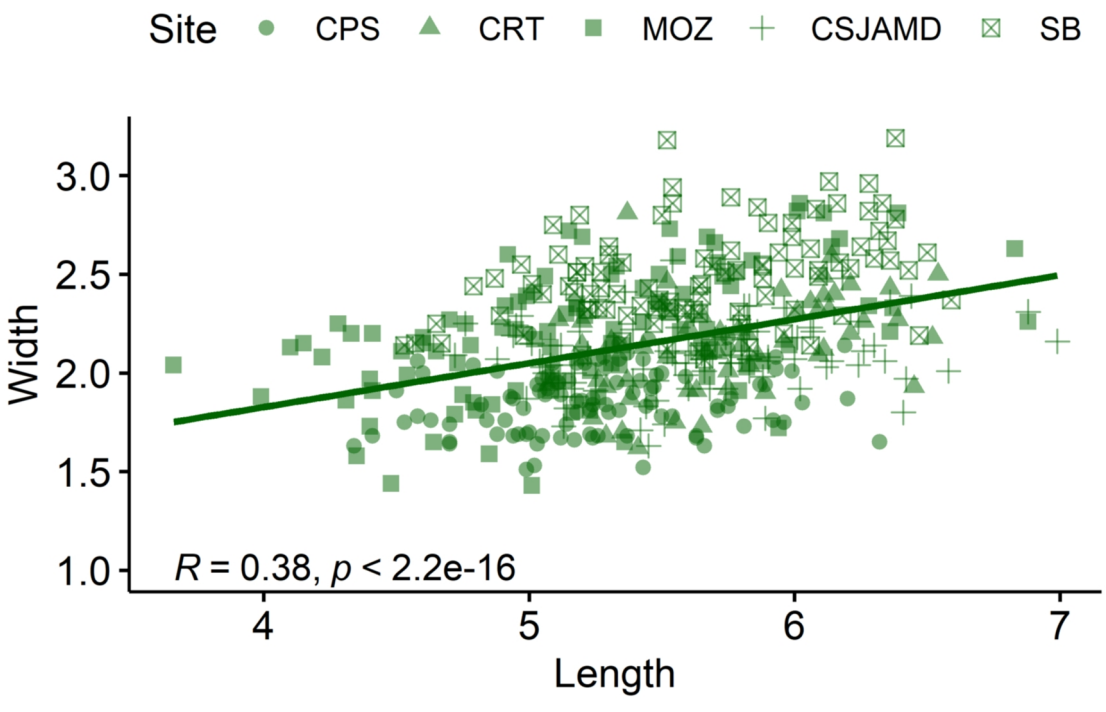
Table A7.2 - Representativeness of rye in the archaeobotanical record of the 15 sites addressed in this approach. Analysis per period, including the identification of the predominant cereal and other cereals as well.

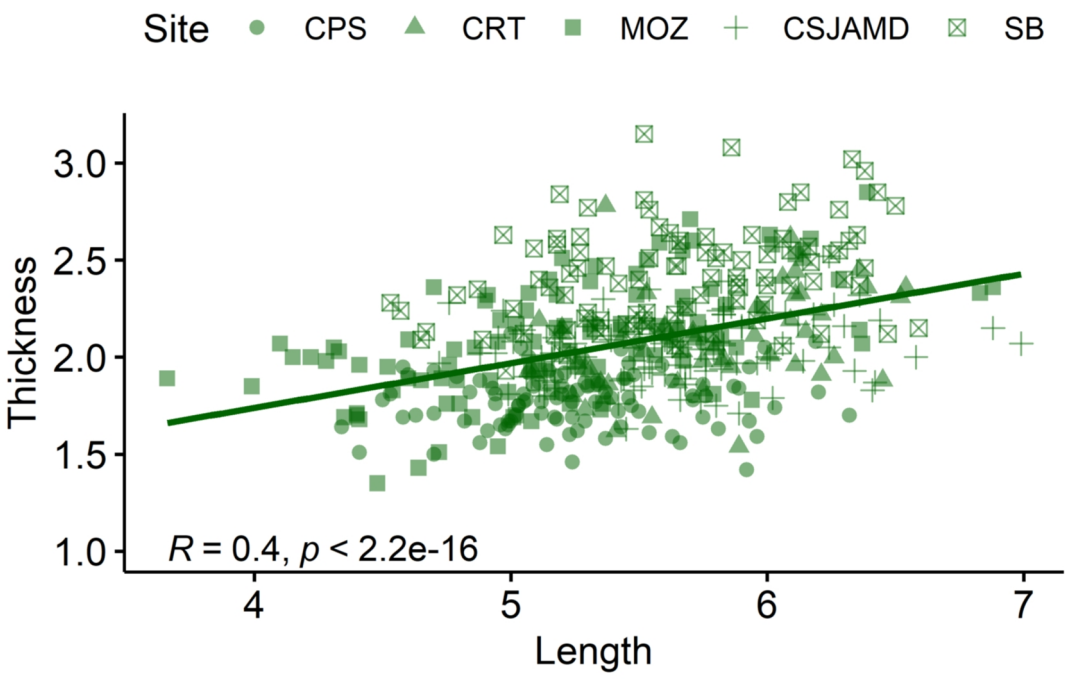
| Rye Chronology | | Modelled date BCE/CE | | | | Indices | |
|---|---|---|---|---|---|---|---|
| | | | | | | Amodell=86.7 | |
| | | | | | | Aoverall=82.2 | |
| | | 68.3% | | 95.4% | | A | C |
| Iron Age/Early Roman | Boundary (Iron Age/Early Roman start) | -225 | -130 | -290 | -60 | | 96 |
| | Iron Age-Early Roman KDE_Plot | | | | | | 99.7 |
| | Iron Age/Early Roman_Kernel N(0,1) | -0.99 | 1.03 | -2 | 2.02 | 99.8 | 99.2 |
| | Iron Age/Early Roman_Scale U(0,1) | 0.634 | 1 | 0.353 | 1 | 100 | 99 |
| | R_Date ("TONG-Round hut", 2158, 21) | -200 | -105 | -210 | -55 | 67.7 | 98.7 |
| | R_Date ("CDCR-Pit 51", 2139, 20) | -180 | -100 | -200 | -55 | 91.5 | 99.3 |
| | R_Date ("CRT-Pit 18.1", 2132, 31) | -175 | -55 | -195 | -50 | 104.2 | 99.3 |
| | R_Date ("CPS-Utilization layer", 2120, 30) | -160 | -55 | -190 | -45 | 107.2 | 99.6 |
| | R_Date ("TONG-Wall", 2062, 22) | -110 | -40 | -160 | 5 | 99.5 | 99.7 |
| | R_Date ("CRUI-Floor", 2050, 30) | -115 | -1 | -155 | 10 | 95.2 | 99.6 |
| | R_Date("CRT-Pit 18.2", 2027, 25) | -100 | -5 | -155 | 25 | 78.7 | 99.6 |
| | Boundary (Iron Age/Early Roman end) | -70 | 35 | -120 | 110 | | 98.9 |
| | Interval (Iron Age/Early Roman-Roman/Late Antiquity) | 160 | 320 | 55 | 380 | | 98.7 |
| Roman/Late Antiquity | Boundary (Roman/Late Antiquity start) | 180 | 300 | 90 | 320 | | 98.8 |
| | Roman/Late Antiquity KDE_Plot | | | | | | 100 |
| | Roman/Late Antiquity_Kernel N(0,1) | -1 | 1 | -2.01 | 1.99 | 100.3 | 99.3 |
| | Roman/Late Antiquity_Scale N(0,1) | 0.604 | 1 | 0.34 | 1 | 100 | 99.2 |
| | R_Date("CDG-Oven", 1819, 23) | 220 | 320 | 205 | 330 | 83 | 98.7 |
| | R_Date("MOZ-Quad. structure", 1770, 30) | 245 | 340 | 230 | 375 | 100.9 | 99.7 |
| | R_Date("TONG-Impluvium house", 1692, 27) | 345 | 410 | 255 | 420 | 100.6 | 99.6 |
| | R_Date("MOZ-Oven", 1640, 30) | 400 | 535 | 360 | 540 | 99.4 | 99.6 |
| | R_Date("CRES-A1_1003", 1607, 26) | 420 | 535 | 415 | 540 | 99.4 | 99.5 |
| | R_Date("CRES-A1_469", 1557, 24) | 435 | 565 | 430 | 575 | 98.8 | 99.8 |
| | R_Date("CRES-A1_1010", 1538, 24) | 440 | 585 | 435 | 600 | 99.5 | 99.4 |
| | R_Date("CRES-E_728", 1501, 24) | 560 | 600 | 540 | 640 | 101.4 | 99.7 |
| | R_Date("CRES-E_734", 1471, 28) | 570 | 635 | 555 | 645 | 100.2 | 99.6 |
| | R_Date("CSJAMD-Vessel", 1435, 24) | 595 | 635 | 580 | 650 | 94.6 | 99.6 |
| | Boundary (Roman-Late Antiquity end) | 605 | 675 | 590 | 755 | | 98.2 |

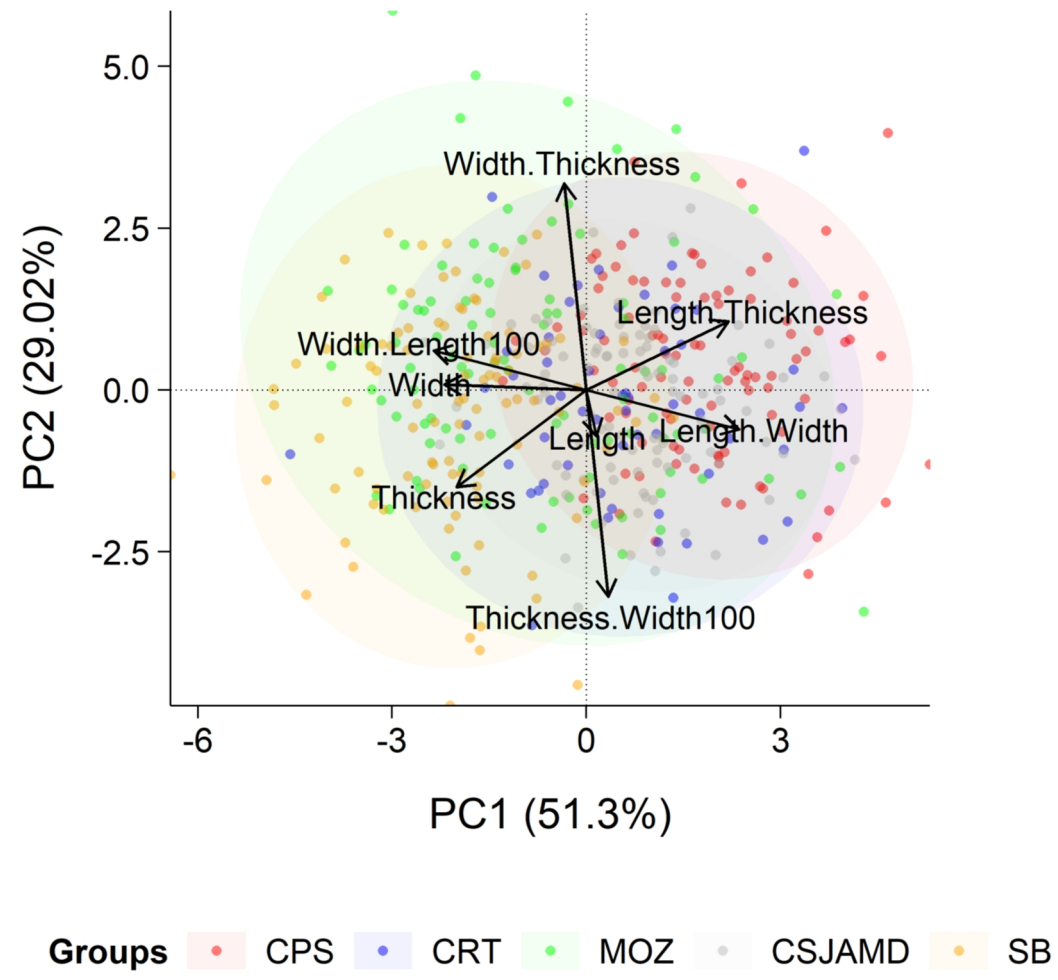
Table A7.3 - Table with the results of the KDE and Bayesian analysis, including only modelled data (adapted from the OxCal software (version 4.4.4.) (Bronk Ramsey, 2001) and applying IntCal20 calibration curve (Reimer et al., 2020). The Medieval 14C date from SB was not included. All modelled ages were rounded to the nearest five years, following Bayliss and Marshall (Bayliss and Marshall, 2022).




Figures A7.1 - Figures obtained through the statistical analyses carried out in R (biometric approach).




Figures A7.1 - (continued).

# Text A7.1 - Description of the 10 archaeological sites with radiocarbon dates over grains of rye

**1 -** "Casa Romana" (Roman house) of the Castro de São Domingos (CDCR): located in the lower slopes of an Iron Age hillfort, at around 314 m a.s.l., CDCR integrates remains of several occupations covering a long period of time from, at least, the Iron Age to the Late Antiquity (Mendes-Pinto, 2008; Nunes et al., 2018; Lemos, 2020; Lemos et al., 2021). The site is rather disturbed, but several structures have been identified, such as habitational areas, graves, postholes, and pits. Fruits/seeds analyses showed an assemblage dominated by broomcorn millet (*Panicum miliaceum*), a few grains and chaff of rye were recovered, so far, inside Iron Age negative structures and Late Antique graves (Seabra et al., 2023). One grain from Pit 51 was dated, revealing an Iron Age chronology. The grains collected were not enough for the biometric analysis.

**2 -** Crastoeiro (CRT): placed on the slope of Monte Farinha, at 453 m a.s.l., CRT was an Iron Age hillfort with a subsequent but short Roman occupation (Dinis, 2001; Dinis and Bettencourt, 2009). In a central area, a large archaeobotanical assemblage was found in several storage pits. 624 grains of rye were found inside storage pits, most of them in Pit 18.2 (Seabra et al., 2018). However, spelt (*Triticum spelta*) was predominant (55.1%), and rye represented just 1% of the fruits/seeds assemblage. Other cereals, namely broomcorn millet and hulled barley (*Hordeum vulgare*) were also more abundant than rye. Foxtail millet (*Setaria italica*) and naked wheat (*Triticum aestivum/durum*) were identified in smaller amounts. Two $^{14}C$ dates obtained over grains of rye point to a period between the Iron Age and the Early Roman period. Due to preservation issues, only 57 grains were measured.

**3 -** Castelo Pequeno de Santigoso (CPS): surrounded by several small streams and rivers, CPS was a large hillfort, implanted at 1,254 m a.s.l., with three enclosed areas defined by granitic walls. Excavations in 2019 have demonstrated occupations from the Iron Age and the Roman period (Platas, 2019). A very localized concentration of fruits/seeds was found in a utilization layer (s.u. 204), next to a delimitation wall, and a few metres below the hilltop. Rye is the predominant taxon as its chaff (n=513) and grains (n=2,555) comprise 54.9% of the assemblage. It is followed at a distance by emmer (*Triticum dicoccum*) and spelt, while naked wheat is rare. One grain of rye was dated, revealing an Iron chronology. 100 grains were measured.

**4 -** Cruito (CRUI): hillfort occupied between the 4$^{th}$ century BCE and the 1$^{st}$ century CE (Pereira, 1988), located in the top of an elevation, at 516 m a.s.l., c. 4 km from the Douro

river. Excavations carried out from 1984 to 1988, revealed several circular and rectangular houses, surrounded by two walls. In 1987, five samples were recovered and later studied by A.R. Pinto da Silva (Pinto da Silva, 1990). A small number of rye grains was collected in an assemblage dominated by hulled and naked wheat. One grain was dated to the Late Iron Age/Early Roman period. The number of grains found did not reach the minimum number defined for the biometric study.

**5 -** Freixo/Tongobriga (TONG): located at approximately 300 m a.s.l., close to the Tâmega river, TONG was an important Roman city in northwest Iberia, most likely a civitas under the administration of *Bracara Augusta* (Dias, 1997). Recent archaeological interventions have confirmed that TONG was inhabited since the Bronze Age and until the Middle Ages (e.g. Lima, 2017; Lima et al., 2020; López-Dóriga, 2020). A large number of $^{14}C$ dates was obtained, several of them over rye grains. One of these was associated with a house occupied during Roman and Late Antique times, where foxtail millet was predominant. Other two were related to an Iron Age wall and a Round hut that revealed archaeological evidence from the Iron Age and Late Roman times. In both contexts broomcorn millet was the main crop, and hulled wheats were found in significant amounts. A small number of grains was collected, insufficient for biometric analysis.

**6 -** Cabeço da Grincha (CDG): small Roman farm, implanted at around 245 m a.s.l., a few metres from the Sabor river. The archaeological data suggest a short occupation, spanning from the second half of the 1$^{st}$ century CE to the early 2$^{nd}$ century CE (Pereira et al., 2014). A single grain of rye, recovered in a destruction layer of an oven, was the only crop found in the site (Tereso et al., 2020). The $^{14}C$ date obtained revealed a long interval from the 2$^{nd}$ century CE to the 4$^{th}$ century CE.

**7 -** Monte Mozinho (MOZ): a large hillfort built during Roman times (Soeiro, 1984). Grains of rye came from a functional area at roughly 383 m a.s.l., dating to the Late Antiquity, displaying three compartments with storage structures, hearths, and a large oven (Tereso et al., 2013; Vaz et al., 2017a, 2017b). The archaeobotanical study revealed a considerable set of fruits/seeds, with a large amount of grains and chaff of rye. Broomcorn millet and rye are predominant. Rye grains from a storage facility in Compartment 1, and an Oven in Compartment 3 were dated, supporting two occupation phases, within Late Antiquity. Among 100 measured grains, 14 came from the storage facility, 59 from Compartment 2, and 27 from the Oven.

**8 -** Castelo de Crestuma (CRES): small site in a hill next to the river Douro at 57 m a.s.l., occupied between the Iron Age and the Medieval period (Silva et al., 2017). A small

number of macroremains was found, most in negative structures in the highest areas of the hill. The results remain unpublished. Several rye grains were dated, revealing Late Antique ages. On other hand, the grains recovered were not enough for the biometric approach.

**9 -** Castro S. João das Arribas (CSJAMD): implanted on the edge of a cliff, at 658 m a.s.l., next to the Douro river, was initially considered an Iron Age hillfort (Lemos, 1993) but recent excavations only revealed occupation between the Late Roman times and the Medieval period (Salgado and Pereira, 2018, 2018-19, 2019). In a central area, a large number of rye grains was collected inside two storage facilities and in their surroundings, as well as in pottery vessels (Seabra et al., 2022a). One $^{14}C$ date from a vessel revealed a Late Antique chronology. A total of 100 grains found nearby the storage facilities (s.u. 225) were measured.

**10 -** Senhora do Barrocal (SB): small settlement placed on a granitic tor at 598 m a.s.l, on very rough terrains. The occupation of SB was marked by a fire that destroyed a habitational structure, around the 10$^{th}$-11$^{th}$ centuries CE, being SB reoccupied afterwards, but during a short period of time (Tente, 2019; Seabra et al., 2022b). A massive archaeobotanical assemblage was recovered, containing fruits/seeds, charcoal and food remains. Rye and oat were the main crops. A $^{14}C$ date with a long interval (8$^{th}$ -10$^{th}$ centuries CE) was obtained over a grain of rye collected in a filling of a wall. Biometric data was obtained in 100 grains from a fire level (s.u. 107), corresponding to the house´s destruction (Tente, 2019; Seabra et al., 2022b).

## Text A7.2 - Oxcal code (CQL2) used to create the multiphase model

```
Plot()
 {
  Sequence("Rye chronology")
  {
   Boundary("Iron Age/Early Roman start")
   {
    color="green";
   };
   KDE_Plot ("Iron Age/Early Roman")
   {
    R_Date("TONG-Round hut", 2158, 21);
    R_Date("CDCR-Pit 51", 2139, 20);
    R_Date("CRT-Pit 18.1", 2132, 31);
    R_Date("CPS-Utilization layer", 2120, 30);
    R_Date("TONG-Wall", 2062, 22);
    R_Date("CRUI-Floor", 2050, 30);
    R_Date("CRT-Pit 18.2", 2027, 25);
   color=“blue"
   };
   Boundary("Iron Age/Early Roman end")
   {
    color="red";
   };
   Interval("Iron Age/Early Roman-Roman/Late Antiquity");
```

```
 Boundary("Roman/Late Antiquity start")
 {
  color="green";
 };
 KDE_Plot ("Roman/Late Antiquity ")
 {
  R_Date("CDG-Oven", 1819, 23);
  R_Date("MOZ-Quad. structure", 1770, 30);
  R_Date("TONG-Impluvium house", 1692, 27);
  R_Date("MOZ-Oven", 1640, 30);
  R_Date("CRES-A1_1003", 1607, 26);
  R_Date("CRES-A1_469", 1557, 24);
  R_Date("CRES-A1_1010", 1538, 24);
  R_Date("CRES-E_728", 1501, 24);
  R_Date("CRES-E_734", 1471, 28);
  R_Date("CSJAMD-Vessel", 1435, 24);
 color=“blue"
 };
 Boundary("Roman/Late Antiquity end")
 {
  color="red";
 };
};
};
```

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