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Vitamin E profile of cooked dishes for patients with Phenylketonuria

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Phenylketonuria (PKU) is a rare inherited metabolic disorder with an autosomal recessive transmission. Early diagnosed patients need a prompt dietary intervention that consists in a semi-synthetic low-phenylalanine (Phe) diet with the inclusion of free Phe aminoacid mixtures, controlled amounts of natural foods low in protein such as fruits and vegetables and also complement with low Phe dietetic products. The dietary treatment of PKU resembles a vegan-like food pattern. As a result from the dietetic restrictions, low intakes of some micronutrients have been observed in some PKU patients, namely of vitamin E [1].

Vitamin E is the common name given to a group of 8 lipophilic compounds, namely α-, β-, γ- and δ- tocopherols and α-, β-, γ- and δ- tocotrienols, that occur naturally in vegetable oils. Its distribution pattern is related to the botanical origin of the oil.

In this work, we studied the Vitamin E profile of 10 low protein recipes [2,3] specifically planned for PKU patients, as well as natural daily basic cooked foods. Lipid fraction of the samples was obtained by Soxhlet extraction with petroleum ether and tocopherols were analyzed by normal-phase HPLC/fluorescence [4].

Total vitamin E contents varied between 0.07 and 10.08 mg/100 g. The prevailing vitamer found in all samples was α-tocopherol. The 8 vitamers were found in 3 meals cooked with vegetal margarine as a common ingredient. This suggests that the margarine used may contain palm oil in its composition.

In conclusion, cooked dishes, using good quality fats in its preparation, can be good sources of vitamin E for these patients and contribute to improve their nutritional status, concerning this particular nutrient.

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