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Chemical composition, fatty acid and sterol contents of nuts grown in Portugal

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Nuts are relevant components of the Mediterranean diet, which is thought to be a healthy one and has been considered as one of the best on coronary heart disease prevention¹. Although total fat intake is certainly related to health risks, there is now general agreement that the more important issue, where health is concerned, is the type of fat or fatty acids that are consumed. Nuts are also rich in phytosterols, which have been associated with health benefits². Additionally the assessment of identity and quality of vegetable oils obtained from different sources generally involves many tests, including analysis of fatty acids and sterols, once these are probably the most important major and minor components, respectively³.

In order to obtain data on composition and nutritional quality of different nuts cultivated in Portugal, different cultivars of hazelnuts (*Corylus avellana* L.) and walnuts (*Juglans regia* L.) were analysed. Chemical composition concerning moisture, total oil content, crude protein, ash and carbohydrates was evaluated. The chemical study also included the determination of sterol and fatty acid compositions. These were determined by gas-liquid chromatography coupled to a flame ionisation detector. Polyunsaturated fatty acids were predominant in walnut samples while monounsaturated were the predominant fatty acids in hazelnuts. β -sitosterol, Δ^5 -avenasterol and campesterol were the major phytosterols in both cases.

References:

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Synthesis and characterization of copper(II) complexes with 3-hydroxy-4-pyridinones

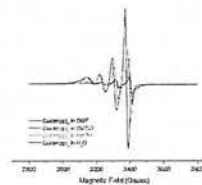
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Pyridinone ligands are particularly attractive for pharmaceutical purposes because their structure allows tailoring of the hydrophilic/lipophilic balance (HLB), making them enough water soluble for oral administration and enough lipophilic to cross membranes, without significantly changing its chelating properties as is known for M(III) ions.^{1,2}

In this work we report the synthetic procedure and characterization of copper(II) complexes with 3-hydroxy-4-pyridinones. The complexes were characterized by EA, MS, FTIR and EPR in water and organic solvents. Stability constants have been determined and speciation diagrams as a function of pH and metal:ligand ratio have been established in water by potentiometric methods.



References:

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