

PHYSICO-CHEMICAL PROPERTIES, FATTY ACID AND MINERAL CONTENT OF SOME WALNUT CULTIVARS (*JUGLANS REGIA L.*) IN IRAN

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INTRODUCTION:The objective of this research was to investigate the varietal effect on chemical composition, mineral content, energy value, and fatty acid profile of kernel and oils of some walnut cultivars ('Damavand', Z53, and 'Z67') that were collected during the 2013 harvest season in Hamedan, west of Iran.

Result and discussion:The analysis of chemical composition revealed that protein and dietary fiber was highest in Z53, 'Damavand' cultivar. The total oil content ranged from (55.2 to 71.7%) while crude energy ranged from 659 to 738.6 Cal. The moisture was found to range from 1.7% to 2.6% and variations in peroxide value and acid value were between (0.90 to 0.98 meq O₂/kg oil) and (0.06 to 0.08% oleic acid) respectively. The main fatty acids identified by gas chromatography were stearic (3.1-3.6%), palmitic (6.3-6.9%), oleic (23.8-29.9%), linoleic (51.7-53.1%) and linolenic (8.9-13.5%) acids. Also, the results demonstrated that mineral contents including K, Mg, Fe and Na had significantly varied between all cultivars. The work attempts to contribute to knowledge of the chemical and nutritional properties of walnut kernels. The fruits were found to be rich in protein and unsaturated fatty acids. These results may be useful not only for pharmaceutical and food industries, but also for nutrition counseling.



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