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Citrus sinensis peel: A potential source for functional food development

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Epidemiological studies strongly suggest that foods rich in antioxidants have protective effects against degenerative diseases. *Citrus sinensis* (orange) which is consumed worldwide is an important source of vitamin C and polyphenol compounds with the peels containing the highest concentration. This study aims at determining the antioxidant properties of biscuit produced from millet-wheat-orange peel flour blends. Fine grinded peel flours of ripe and unripe orange were prepared and the total phenolic and flavonoid contents investigated. The total phenolic compounds in ripe and unripe peels were 9.85 and 5.38 mg GAE/g and the flavonoid contents were 4.20 and 3.30 mg QE/g respectively. Ripe peels were found to contain more antioxidant content and therefore used in the composite formulation. Biscuits were produced using composite blend of wheat-millet-ripe orange peel flours at ratios; 100:0:0; 75:20:5; 60:30:10; 50:35:15; and 40:40:20 respectively. The samples were labeled as samples; WMO, WMOA, WMOB, WMOC, and WMOD. The results of the total phenolic content for the samples ranged from; 5.84-11.87 mg GAE/g while 1.20 - 11.87 mg QE/g was recorded for flavonoid contents. It was observed that phenolic and flavonoid content increased with increase in orange peel flour inclusion this was also evident in the DPPH scavenging activity. These results illustrate that inclusion of orange peel flour in biscuit preparation may serve as a functional food to reduce the risk of degenerative diseases by lowering the effects of oxidative reactions. Further in-vivo studies of the effect of such formulations in the production of biscuits are recommended.

Biography

Faboya Evelyn Taiwo holds MTech and BTech (Hons) in Food Science and Technology from the Federal University of Technology, Akure, Nigeria. She belongs to professional and academic bodies such as: Nigerian Institute of Food Science and Technology (2012) and Women in Technical Education and Employment (WITED) (2013). She was employed into the service of Rufus Giwa Polytechnic as an Assistant Lecturer in the Department of Food Science and Technology. She has two (2) papers published in reputed journals and six (6) abstracts published in professional conferences' and seminars' book of abstracts.

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