



635/E2/Poster

High nutrient biscuit from Avocado (*Persea americana*) seed flour and Finger millet (*Eleusine coracana*) flour

Meththa G. Ranasinghe,^{1,2} Jagath M. A. Wansapala,¹ and Chandani S. Udawatte²

¹Department of Food Science and Technology, Faculty of Applied Sciences, University of Sri Jayawardenepura, Gangodawila, Nugegoda.

²College of Chemical Sciences, Institute of Chemistry Ceylon, Rajagiriya.

The objective of this research was to formulate a nutritious biscuit from Avocado seeds. Avocado seeds are thrown away as waste although rich in nutrients. It cannot be consumed alone and has to be incorporated with other foods after reducing bitterness through techniques like washing under water. A composite flour was developed by combining avocado seed flour, finger millet flour, wheat flour and corn flour in different percentages. Since finger millet has a low GI, these foods can help prevent Diabetes mellitus. Three biscuit formulations were prepared using different amounts of sugar, and without sugar. The best sample was selected by sensory evaluation using 30 untrained panelists. Proximate analysis was conducted to determine the nutritional composition of the final product. The mineral composition was evaluated by Atomic Absorption Spectroscopy. Microbiological assessment was carried out to determine shelf life. Antioxidant activity was determined using DPPH radical scavenging assay with BHT as standard. All tests were carried out in triplicates. The proximate composition of final product was 6.97 ± 0.08 % moisture, 15.8 ± 0.26 % protein, 2.0 ± 0.1 % crude fibre, 1.4 ± 0.1 % ash, 60.1 ± 1.5 % carbohydrate and 12.7 ± 0.1 % total fat. The total energy of the biscuit was 417.9 kcal/100 g. Based on the fat profile of 100 g of sample, the saturated fatty acid level was 9.15 g, mono-unsaturated fatty acid level was 1.50 g, polyunsaturated fatty acid level was <0.01 g and trans fatty acid level was <0.01 g. Minerals detected were Na (55.4 ± 4.7 ppm), Ca (8180 ± 605 ppm), Zn (26.5 ± 3.2 ppm), Fe (42.2 ± 4.0 ppm), Cu (2.0 ± 0.1 ppm), Mg (725 ± 28 ppm) and K (3720 ± 250 ppm). Mn was not detected. Free radical scavenging activity increased with increase in concentrations of product. For some concentrations, it exhibited a greater ability to scavenge DPPH free radicals than the standard, BHT. When analyzing the microbial assessment within three months, the number of CFU counts was negligible. It was stable against yeast, mould and coliform up to three months, and had zero peroxide value. This biscuit can be developed as a commercial product. It is economical, rich in nutrients, has high amounts of minerals and fatty acids, and shows a high level of antioxidant activity.

Key words: High nutrient biscuit, composite flour, Avocado seed flour, finger millet seed flour, free radical scavenging activity

E-mail: meththaranasinghe@yahoo.com