



INFLUENCE OF THERMAL PROCESSING ON THE NUTRITIONAL COMPOSITION, AMINO ACID PROFILE AND SENSORIAL CHARACTERISTICS OF BISCUITS PRODUCED FROM WHEAT-DEFATTED MELON SEED FLOUR BLENDS

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<https://doi.org/10.34302/crpfst/2024.16.2.15>

Article history:

Received: August 12th, 2023

Accepted: April 12th, 2024

Keywords:

Egusi seed;

Defatting;

Amino acid;

Thermal processing;

Biscuits;

Nutritional properties.

ABSTRACT

The study was conducted to investigate the influence of thermal processing on the nutritional composition, amino acid profile and sensorial characteristic of biscuits produced from wheat flour-defatted melon flour blends from toasted and raw melon seeds. The melon seeds was toasted at 160⁰ C for 20mins and the other portion left untreated. The treated and untreated melon seed was defatted using n-Hexane and grinded into flour. The flour from the defatted roasted and raw melon seed flour was incorporated with wheat flour at 4 percentage ratio (100:0, 95:5, 90:10, 80:20, 70:30) respectively. Nine (9) samples of biscuit was formulated with other ingredients to produce biscuits according to the standard method and subjected to statistical evaluation in complete randomized design using statistical Product for Social Services version 21. The means were separated using Duncan Multiple test range at (p<0.05). The inclusion of the defatted melon flour from the untreated (raw) and toasted melon significantly increased (p<0.05) the moisture (1.78-3.87 %), protein (13.47 to 21.05 %), ash (2.04 to 2.72 %), fat (9.34-12.73%) and reduced (74.92-56.86 %) carbohydrate content of the biscuits. The amino acid profile of the biscuits showed significant (p<0.05) difference. The amino acid values varied significantly (p<0.05) and showed increase with increase in the substitution of the defatted melon flour. The amino acid ranged from leucine (7.48 to 9.18 g/100 g), lysine (4.78-9.18 g/100g), Histidine (1.89-2.38 g/100g), Arginine (3.12-5.02 g/100g) and 10.48-12.80 g/100g in glutamic acid respectively. The physical analysis showed significant (p < 0.05) difference among the biscuit samples. The study showed that substitution of wheat flour with defatted raw and toasted defatted melon flour at a ratio of 95:5 and 90:10 yielded the most acceptable biscuits in all the sensory attributes assessed. This implies that biscuits produced from this composite blend contain sufficient amounts of protein, fat, fiber and carbohydrate. Hence, they can serve as relief for malnutrition.