DEVELOPMENT OF BISCUIT FROM JACKFRUIT (*Artocarpus heterophyllus*) SEED FLOUR BLENDED WITH MUNG BEAN (*Vigna radiata*) FLOUR

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ABSTRACT

This research aims to make biscuits with jackfruit seed flour and mung bean flour as the principal constituents to offer a gluten-free, nutrient-dense food. The jackfruit seed is rich in protein and fiber. Also, mung beans are rich in essential amino acids, fiber, and other bioactive ingredients. These flours improve the nutritional value of biscuits while minimizing the wastage of food and fostering sustainability in the production of food. This study was conducted to produce five combinations of biscuit samples ($T_1 - T_5$). T_1 was the control sample (100% wheat flour and others) while (T_2, T_3, T_4, and T_5) were developed using JSF and MBF 90:10, 80:20, 70:30, and 60:40 formulations, combined with sugar (30g), margarine (40g), baking powder (2.5g), milk powder (10g), egg (50g), vanilla powder (2g), and a pinch of salt. The developed biscuits were evaluated for their sensory attributes by using a 7-point hedonic scale, and after that, their physical (diameter, thickness, spread ratio, and hardness of biscuits) and chemical (moisture, ash, fat, protein, fiber, and carbohydrate) attributes. The findings showed that the biscuits with the optimum blend of JSF and MBF (60:40) had good sensory qualities while greatly improving their nutrition. Further, to ensure the safety and shelf life of the developed biscuits, microbial testing was also carried out, which verified the stability of the biscuits under normal storage temperatures. Also, the physical properties of biscuits varied across treatments. Diameter ranged from 3.96±0.10 (T_1) to 4.07±0.03 (T_5), thickness from 0.40±0.03 (T_1) to 0.37±0.02 (T_5), volume range from 4.95±0.69 (T_1) to 4.82±0.23 (T_5), density range from 1.04±0.13 (T_1) to 1.16±0.10 (T_5) and hardness from 21.03±0.56 (T_1) to 35.76±0.31 (T_5). The spread ratio decreased from 9.94±0.65 (T_1) to 11.04±0.64 (T_5). Chemically, moisture was 3.17±0.03 (T_1) to 3.42±0.20 (T_5), protein increased from 8.56±0.02 (T_1) to 12.26±0.01 (T_5), and fat ranged from 11.33±0.65 (T_1) to 7.73±0.30 (T_5). Fiber and ash content improved from 0.33±0.11 (T_1) and 1.33±0.11 (T_5) to 0.65±0.13 and 2.96±0.01 (T_5), respectively. Carbohydrates decreased from 75.94±0.70 (T_1) to 72.48±0.22 (T_5). T_5 showed enhanced protein and fiber content but a lower carbohydrate content than T_1.

Keywords: Jackfruit seed flour, Mung bean flour, Gluten-free, Sustainability, Health-conscious, Replace

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