

PRODUCTION AND NUTRITIONAL DETERMINATION OF PROTEIN ENRICHED COOKIES MADE WITH WINGED BEANS (*Psophocarpus tetragonolobus*)

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ABSTRACT

Despite the fact that winged bean has a lot of potential as a functional ingredient, its use in food products is still limited. Composite flour mixture-based cookies preparation was carried out by mixing various percentages of winged bean seed and tuber flour, wheat flour, and corn flour. The method involved four-component mixture design that was generated using wheat flour, winged bean seed flour, winged bean tuber flour and corn flour respectively as T₁(20%, 40%, 40%, 20%), T₂(40%, 30%, 10%, 20%), T₃(25%, 25%, 25%, 25%), T₄(10 %, 30 %, 20%, 40%) along with 100% wheat flour as control. Further, it was evaluated for physical parameters, proximate analysis, and energy value. The sensory evaluation for different treatments was carried out using 9-point hedonic scale testing for taste, texture, color, aroma, appearance, and overall acceptability. The results showed that there were significant differences (p<0.05) observed between different formulations for moisture, fiber, ash, protein-energy value, and sensory attributes. The physical parameters like thickness, volume, and density showed significant differences (p<0.05) among the treatments. The moisture content of cookies varies between 0.8 to 2.052%, while fiber content ranged from 5.883 to 29.113%. The protein content of composite cookies ranged between 10.482 to 23.355% and mineral content varied between 4.185% to 6.17%. The energy value of the treatment cookies was around 585.40 to 602.472 kcal/100g which is comparably higher than control (510.22 kcal/100g). The physio chemical and sensory analysis showed that composite cookies were preferred over traditional cookies and T₂ secured higher nutritional values compared to other treatments. Therefore, this study efficiently combined local raw materials such as winged bean to develop cookies which constitute a fine and delicate commercial potential baked food.

Keywords – Winged Bean, Composite Cookies, Protein-Enriched Cookies, Proximate Analysis, Sensory Evaluation

