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## Effect on physicochemical, antioxidant and sensory properties of bread substituted with different levels of mangosteen (*Garcinia mangostana*) pericarp powder

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**Statement of the Problem**: Mangosteen (*Garcinia mangostana*) pericarp is considered as an agricultural waste and it is not fully utilized in food products. In some Asia countries, mangosteen pericarp is being used as one of the ethnomedicine in the treatment of human diseases by the locals. Although mangosteen pericarp has been widely reported to contain an appreciable amount of antioxidants and dietary fibers, but the inclusion of mangosteen pericarp in the food products is still limited as it alter the taste, color and texture of the products. The purpose of this study is to develop novel bread substituted with different levels of mangosteen pericarp powder (MPP).

**Methodology & Theoretical Orientation**: Some nutritional and antioxidant properties were analyzed for bread samples substituted at 0%, 5%, 10% and 15% of MPP. A 9-point hedonic scale of sensory evaluation and physical properties, i.e. texture profile analysis and color analysis of bread samples were evaluated to correlate the overall acceptability among panelists.

**Findings**: Higher substitution level of MPP resulted in significant (p<0.05) increase of moisture, ash, crude fat and dietary fiber of the bread. The amount of potassium and antioxidant properties (total phenolic, total flavonoid, and DPPH) significantly (p<0.05) increased at higher substitution level of MPP. However, with higher substitution level of MPP significantly (p<0.05) produced darker colour of bread and reduced the acceptability of panelists than control sample.

**Conclusion & Significance**: Higher substitution of MPP significantly increased the nutritional value of the bread. However, the physical properties of bread at higher MPP substitution level impaired its textural and sensorial properties. Bread with 5% substitution level of MPP received a comparable and good overall acceptability with control.

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