

Study of Physical, Chemical, Functional Characteristics and Glycemic Index of Composite and Hybrid Corn Flour

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ABSTRACT

Corn is one of Indonesia's local food commodities with great potential as an alternative raw material for food diversification. Genetic differences between hybrid and composite corn are expected to influence the characteristics of the flour produced. This study aimed to identify the physical, chemical, functional characteristics, and glycemic index of hybrid and composite corn flour. A descriptive quantitative method was employed. Samples consisted of hybrid and composite corn flour, which were analyzed for physical characteristics (syneresis, swelling power, yield, and bulk density), chemical characteristics (moisture, carbohydrate, amylose, amylopectin, dietary fiber, crude fiber, fat, protein, and ash content), functional properties (Water Holding Capacity (WHC) and Oil Holding Capacity (OHC)), and glycemic index. Data were analyzed descriptively using mean values. The results showed that hybrid corn flour had lower syneresis and higher swelling power, bulk density, WHC, and OHC than composite corn flour, whereas composite corn flour produced a higher yield. In terms of chemical composition, composite corn flour contained higher protein, dietary fiber, crude fiber, and ash, while hybrid corn flour contained higher carbohydrate, fat, and amylose. The glycemic index values were 49.06 for hybrid corn flour and 50.90 for composite corn flour. Both flours were classified as low glycemic index foods (<55). In conclusion, both hybrid and composite corn flour demonstrated favorable characteristics as alternative food ingredients. Hybrid corn flour is more suitable for products requiring high water and oil retention, whereas composite corn flour has greater potential as a higher-fiber food ingredient. Both flours can be further developed as functional food ingredients to support local food diversification.

Keywords: *corn flour, hybrid corn, composite corn, physical characteristics, functional properties, glycemic index*