

Comparison of the Functional Properties and Bioactive Components of Yellow Pumpkin (*Cucurbita moschata*) Flour with and without Fermentation Prior to Drying

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ABSTRACT

The processing of yellow pumpkin into flour aims to provide added value in the form of an extended shelf life and expanding its market reach, given its high versatility in various food applications. Fermentation as a pretreatment before drying can enhance the activity of bioactive compounds in food products. This study employed a descriptive comparative design with two processing methods, processing without fermentation (T1) and processing with lactic acid bacteria fermentation (Bimo-CF) prior to drying (T2). The objective of this study was to describe the functional properties and bioactive components of yellow pumpkin flour produced via these two drying methods. This study was a laboratory experiment, and the characteristics analyzed included bioactive components and the functional properties of the flour. The results showed that the water holding capacity of T1 was 781,74%, higher than that of T2 at 663,24%. The oil holding capacity of treatment T1 was 139,26%, higher than that of T2 at 92,95%. The swelling power of T1 was 874,15%, higher than that of T2 at 245,72%. Meanwhile, the antioxidant activity of T2 was 69,70%, higher than that of T1 at 64,63%. Furthermore, the β -carotene content of T2 was 31232,00 $\mu\text{g}/100\text{ g}$, higher than that of T1 at 2242,67 $\mu\text{g}/100\text{ g}$. Yellow pumpkin flour treated with fermentation and without fermentation prior to drying exhibited differences in functional properties and bioactive components.

Keywords: *Yellow Pumpkin Flour, Functional Properties, Bioactive Components, Fermentation, Lactic Acid Bacteria, Bimo-CF*