

Sifat Fisik, Kimia, dan Fungsional Tepung Jagung yang Diproses Melalui Fermentasi

Title	Sifat Fisik, Kimia, dan Fungsional Tepung Jagung yang Diproses Melalui Fermentasi
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Abstract	<p>Corn flour has some limitations to be developed as food products. To expand the use of corn flour for food production, some modifications on its characteristic were needed. The production of corn flour by fermentation may change its characteristics; therefore could expand the application of corn flour to develop food products. The aim of this study was to determine the effect of fermentation media and fermentation time on physical, chemical and functional characteristics of corn flour. This research was performed using factorial randomized block design. The studied factors were: fermentation medium (water, lactic acid bacteria, <i>Lactobacillus casei</i>, and ragi tape™) and fermentation time (20, 40, 60, and 80 h). The results of this research showed that corn flour produced by fermentation using <i>Lactobacillus casei</i> for 60 h has the best functional properties (based on gelatinization properties). The gelatinization properties of this corn flour were: the initial gelatinization temperature of 72 °C, maximum viscosity of 1646 BU, gelatinization peak temperature of 74 °C, breakdown viscosity of 402 BU and setback viscosity 1575 BU. The corn flour has a moisture content of 7.68%, ash content of 0.27%, soluble protein content of 2.48%, total protein of 8.27%, amylose content of 33.10%, water absorption capacity of 117.80%, oil absorption capacity of 149.50% and swelling power of 13.80%.</p> <p>ABSTRAK Tepung jagung memiliki beberapa keterbatasan untuk dikembangkan menjadi produk pangan. Untuk memperluas penggunaannya dalam bidang pangan, tepung jagung perlu dimodifikasi. Pembuatan tepung jagung menggunakan proses fermentasi diharapkan mampu mengubah karakteristiknya sehingga memperluas aplikasi tepung ini sebagai produk pangan. Penelitian ini bertujuan untuk mengetahui pengaruh media fermentasi dan lama fermentasi terhadap karakteristik fisik, kimia dan fungsional tepung jagung. Penelitian ini menggunakan Rancangan Acak Kelompok (RAK) faktorial. Faktor yang dicoba yaitu media fermentasi (air, bakteri asam laktat, <i>Lactobacillus casei</i>, dan ragi tape) dan waktu fermentasi (20, 40, 60, dan 80 jam). Hasil penelitian menunjukkan bahwa tepung jagung yang memiliki sifat fungsional terbaik (dilihat dari sifat gelatinisasinya) adalah tepung jagung yang dihasilkan dengan metode fermentasi menggunakan <i>Lactobacillus casei</i> selama 60 jam. Sifat gelatinisasi tepung jagung tersebut adalah: suhu awal gelatinisasi 72 °C, viskositas maksimum 1646 BU, suhu puncak gelatinisasi 74 °C, breakdown viscosity 402 BU dan setback viscosity 1575 BU. Tepung jagung memiliki kadar air 7,68%, kadar abu 0,27%, kadar protein terlarut 2,48%, protein total 8,27%, kadar amilosa 33,10%, kapasitas penyerapan air 117,80%, kapasitas penyerapan minyak 149,50%, dan swelling power 13,80%.</p>
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