

ABSTRACT

THE EFFECT OF CASSAVA AND YELLOW SWEET POTATO PROPORTION ON THE PHYSICOCHEMICAL PROPERTIES OF COMPOSITE MOCAF FLOUR

By

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Composite mocaflour improved the nutritional content and functional properties. One promising approach involved blending it with yellow sweet potato, known for its high beta-carotene content. The purpose of this research was to determine the effect of cassava and yellow sweet potato proportion and the fermentation process on the physicochemical properties of composite mocaflour. The research treatments consisted of seven variations, specifically: P0 (100:0, non-fermentation), P1 (100:0, fermentation) as the control, P2 (40:60, fermentation), P3 (50:50, fermentation), P4 (60:40, fermentation), P5 (0:100, non-fermentation), and P6 (0:100, fermentation). The analyzed parameters included moisture content, water absorption capacity, swelling power, solubility, and color analysis. The results showed that the moisture content decreased as the proportion of cassava increased, with the lowest value in the composite mocaflour being $6.14\% \pm 0.23$. The results also indicated that the water absorption capacity of composite mocaflour increased with a higher proportion of yellow sweet potato, with a value of $1.63 \text{ g/g} \pm 0.09$. The swelling power and solubility values of the composite mocaflour increased at higher heating temperatures (65°C, 70°C, and 75°C). The color analysis showed that higher proportions of yellow sweet potato resulted in a more intense yellow color in the flour; however, the fermentation process caused color fading due to beta-carotene degradation. These results indicated that variations in ingredients and fermentation treatments produced different physicochemical characteristics of composite mocaflour.

Keywords: cassava, fermentation, mocaflour, physicochemical properties, yellow sweet potato.

ABSTRAK

PENGARUH PROPORSI UBI KAYU DAN UBI JALAR KUNING TERHADAP SIFAT FISIKOKIMIA TEPUNG MOCAF KOMPOSIT

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Tepung mocaf komposit dapat meningkatkan kandungan gizi dan sifat fungsional mocaf. Salah satu pilihan yang dapat dipertimbangkan adalah menggunakan ubi jalar kuning yang dikenal memiliki kandungan betakaroten yang lebih tinggi. Penelitian ini bertujuan untuk mengetahui pengaruh proporsi ubi kayu dan ubi jalar kuning serta proses fermentasi terhadap sifat fisikokimia tepung mocaf komposit. Perlakuan penelitian terdiri dari tujuh variasi, yaitu P0 (100:0, non-fermentasi), P1 (100:0, fermentasi/kontrol), P2 (40:60, fermentasi), P3 (50:50, fermentasi), P4 (60:40, fermentasi), P5 (0:100, nonfermentasi), dan P6 (0:100, fermentasi). Parameter yang dianalisis meliputi kadar air, daya serap air, swelling power, kelarutan, dan warna. Hasil menunjukkan bahwa kadar air menurun seiring meningkatnya proporsi ubi kayu, dengan nilai terendah pada tepung mocaf komposit sebesar $6,14\% \pm 0,23$. Daya serap air cenderung meningkat pada campuran dengan proporsi ubi jalar kuning lebih tinggi, mencapai $1,63 \text{ g/g} \pm 0,09$. Nilai swelling power dan kelarutan meningkat pada suhu pemanasan yang lebih tinggi (65°C , 70°C , dan 75°C). Dari segi warna, peningkatan proporsi ubi jalar kuning menghasilkan warna tepung yang lebih kuning, namun proses fermentasi dapat memudahkan warna tersebut akibat degradasi pigmen beta-karoten. Hasil ini menunjukkan bahwa variasi bahan dan perlakuan fermentasi menghasilkan karakteristik fisikokimia tepung mocaf komposit yang berbeda.

Kata Kunci: fermentasi, mocaf, sifat fisikokimia, ubi jalar kuning, ubi kayu.