

## ABSTRAK

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### **APLIKASI *HEAT MOISTURE TREATMENT* (HMT) PADA TEPUNG SUKUN (*Artocarpus altilis* F.) DALAM FORMULASI KUE CUBIT DENGAN PENAMBAHAN GULA RENDAH KALORI**

Skripsi, Fakultas Sains dan Teknologi (2025)

(xvii + 102 halaman, 13 gambar, 17 tabel, 20 lampiran)

Kue cubit terbuat dari tepung terigu yang diimpor, namun dapat disubstitusi dengan tepung sukun yang merupakan bahan lokal dan memiliki nilai fungsional yang lebih baik dibandingkan tepung terigu. Modifikasi *heat moisture treatment* (HMT) pada tepung sukun dapat dilakukan untuk meningkatkan daya kembang. Tujuan penelitian adalah untuk menentukan pengaruh waktu HMT terhadap karakteristik fisikokimia tepung sukun, kemudian memilih perlakuan waktu HMT yang menghasilkan tepung sukun termodifikasi dengan karakteristik terbaik, menentukan pengaruh rasio tepung terigu:tepung sukun dan jenis gula rendah kalori terhadap karakteristik fisikokimia kue cubit, kemudian memilih perlakuan yang menghasilkan kue cubit dengan karakteristik terbaik dan membandingkan antara kue cubit terpilih berdasarkan nilai fungsional dan penilaian organoleptik. Metode HMT dilakukan selama 3, 5 dan 7 jam. Tahap pendahuluan berupa pembuatan tepung sukun, penelitian utama tahap I berupa modifikasi tepung sukun HMT, dan penelitian utama tahap II berupa pembuatan kue cubit dengan rasio tepung terigu:tepung sukun dan jenis gula rendah kalori. Hasil penelitian menunjukkan bahwa HMT dapat meningkatkan daya kembang, kadar serat pangan, kadar pati resisten, kadar karbohidrat total dan kadar air, tetapi menurunkan kelarutan dan *glycemic carbohydrate*. Tepung sukun HMT terpilih adalah perlakuan waktu 5 jam dengan daya kembang ( $10,71 \pm 0,73$  g/g), kelarutan ( $16,47 \pm 0,49\%$ ), kadar serat pangan ( $12,95 \pm 0,04\%$ ), kadar pati resisten ( $11,01 \pm 0,24\%$ ) dan *glycemic carbohydrate* ( $49,44 \pm 7,61\%$ ). Kue cubit terpilih adalah 100:0 xylitol dengan daya kembang ( $118,01 \pm 9,15\%$ ), kadar air ( $35,44 \pm 0,56\%$ ) dan kadar karbohidrat total ( $26,92 \pm 0,92\%$ ) dan 50:50 xylitol dengan daya kembang ( $151,09 \pm 18,38\%$ ), kadar air ( $36,31 \pm 0,91\%$ ) dan kadar karbohidrat total ( $30,50 \pm 0,26\%$ ). Kue cubit terpilih adalah 50:50 xylitol dengan kadar serat pangan ( $5,15 \pm 0,00\%$ ), kadar pati resisten ( $4,48 \pm 0,06\%$ ) dan *glycemic carbohydrate* ( $14,26 \pm 0,48\%$ ), dan 100:0 xylitol dengan kadar serat pangan ( $4,59 \pm 0,03\%$ ), kadar pati resisten ( $3,9 \pm 0,1\%$ ) dan *glycemic carbohydrate* ( $12,78 \pm 0,70\%$ ). Penilaian organoleptik menunjukkan nilai kue cubit 50:50 xylitol dan 100:0 xylitol menyerupai kue cubit kontrol berdasarkan parameter tekstur, aroma sukun, rasa manis dan penerimaan keseluruhan.

Kata kunci : daya kembang, *heat moisture treatment*, kue cubit, tepung sukun

Referensi : 82 (2005-2024)

## ABSTRACT

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### **UTILIZATION OF HEAT MOISTURE TREATMENT (HMT) ON BREADFRUIT FLOUR (*Artocarpus altilis* F.) IN THE FORMULATION OF *KUE CUBIT* WITH ADDITION OF LOW-CALORIE SUGAR**

Thesis, Faculty of Science dan Technology (2025)

(xvii + 102 pages, 13 figures, 17 tables, 20 appendices)

*Kue cubit* is made up of wheat flour that is imported, but it can be substituted by breadfruit flour, which is a local ingredient that has better functional value than wheat flour. Applying heat moisture treatment (HMT) to breadfruit flour can be done to enhance its swelling power. The research aims to determine the effect of HMT time on the physicochemical characteristics of breadfruit flour, then select the HMT treatment time that results in modified breadfruit flour with the best characteristics, determine the effect of the ratio of wheat flour:breadfruit flour and the type of low-calorie sugar on the physicochemical characteristics of *kue cubit*, then select the treatment that produces *kue cubit* with the best characteristics and compare the selected *kue cubit* based on the functional values and organoleptic test. The HMT method was conducted for 3, 5 and 7 hours. The preliminary stage involves the production of breadfruit flour, the primary research phase I involves the modification of breadfruit flour using HMT, and the primary research phase II involves the making of *kue cubit* with various ratios of wheat flour:breadfruit flour and types of low-calorie sugar. The results showed that HMT improve the swelling power, dietary fiber content, resistant starch content, total carbohydrate content, and moisture content, but reduce solubility and glycemic carbohydrate. The selected HMT breadfruit flour was the 5-hour treatment, which has swelling power ( $10.71 \pm 0.73$  g/g), solubility ( $16.47 \pm 0.49\%$ ), dietary fiber ( $12.95 \pm 0.04\%$ ), resistant starch ( $11.01 \pm 0.24\%$ ), and glycemic carbohydrates ( $49.44 \pm 7.61\%$ ). The selected *kue cubit* was the 100:0 xylitol ratio, which had a swelling power of ( $118.01 \pm 9.15\%$ ), moisture content ( $35.44 \pm 0.56\%$ ), and total carbohydrate ( $26.92 \pm 0.92\%$ ), and the 50:50 xylitol ratio with swelling power ( $151.09 \pm 18.38\%$ ), moisture content ( $36.31 \pm 0.91\%$ ), and total carbohydrate ( $30.50 \pm 0.26\%$ ). The selected *kue cubit* was the 50:50 xylitol ratio with dietary fiber ( $5.15 \pm 0.00\%$ ), resistant starch ( $4.48 \pm 0.06\%$ ), and glycemic carbohydrates ( $14.26 \pm 0.48\%$ ), and the 100:0 xylitol ratio with dietary fiber ( $4.59 \pm 0.03\%$ ), resistant starch ( $3.9 \pm 0.1\%$ ), and glycemic carbohydrates ( $12.78 \pm 0.70\%$ ). The organoleptic evaluation indicated that the 50:50 xylitol and 100:0 xylitol *kue cubit* were similar to the control *kue cubit* in terms of texture, breadfruit aroma, sweetness, and overall acceptance.

Keywords : breadfruit flour, heat moisture treatment, *kue cubit*, swelling power

Reference : 82 (2005-2024)