KARAKTERISTIK FISIK SELAMA FERMENTASI DAN DAYA CERNA PATI TEMPE KORO PEDANG PUTIH (*Canavalia ensiformis* (L.) DC.) DENGAN BERBAGAI METODE PENGASAMAN

INTISARI

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Tren konsumsi pangan berbasis nabati meningkat, koro pedang putih (*Canavalia ensiformis* (L.) DC.) memiliki potensi sebagai bahan baku tempe karena ketersediannya dibandingkan kedelai yang bergantung pada impor. Pemanfaatan masih terbatas akibat karakteristik struktur pati yang mempengaruhi tingkat kecernaan. Penelitian ini bertujuan untuk mengevaluasi pengaruh metode pengasaman terhadap karakteristik fisik dan daya cerna pati tempe koro pedang putih. Terdapat tiga variasi metode pengasaman, yaitu perendaman konvensional (RCM1), *backslopping* (RCM2), dan *direct acidification* (RCM3), serta kontrol berupa kacang utuh (DC). Parameter yang diamati meliputi karakteristik fisik (kekerasan dan total padatan terlarut), total pati, pati yang tersedia, pati resisten, serta daya cerna pati secara *in vitro* pada fase *gastric* 0 jam, *gastric* 2 jam, dan *intestinal* 2 jam. Hasil penelitian menunjukkan metode pengolahan memberikan pengaruh terhadap karakteristik fisik dan daya cerna pati. Nilai kekerasan mengalami penurunan selama proses pengolahan dan fermentasi, dengan nilai terendah pada metode RCM3 sebesar 35,62 ± 9,5 N dan Nilai total padatan terlarut cenderung meningkat selama fermentasi dengan nilai akhir berkisar pada 3,17 – 3,39°Bx . Pada fase *gastric* 0 jam, terdapat perbedaan signifikan antar perlakuan, dimana RCM3 memiliki nilai daya cerna pati tertinggi namun pada fase akhir *intestinal* 2 jam meski nilai daya cerna pati meningkat namun tidak ada perbedaan antar perlakuan RCM1, RCM2, dan RCM3.

Kata kunci : daya cerna pati, koro pedang putih, metode pengasaman, resistant starch, tempe

PHYSICAL CHARACTERISTICS DURING FERMENTATION AND STARCH DIGESTIBILITY OF JACK BEAN TEMPEH (*Canavalia ensiformis* (L.) DC.) PRODUCED USING DIFFERENT ACIDIFICATION METHODS

ABSTRACT

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The trend of plant-based food consumption is increasing, and jack bean (*Canavalia ensiformis* (L.) DC.) has potential as a raw material for tempeh due to its availability compared to soybean, which is highly dependent on imports. However, its utilization remains limited due to starch structural characteristics that influence digestibility. This study aimed to evaluate the effect of acidification methods on the physical characteristics and starch digestibility of jack bean tempeh. Three acidification methods were applied, namely conventional soaking (RCM1), backslopping (RCM2), and direct acidification (RCM3), with whole beans used as control (DC). The observed parameters included physical characteristics (hardness and total soluble solids), total starch, available starch, resistant starch, and in vitro starch digestibility at gastric phase (0 h and 2 h) and intestinal phase (2 h). The results showed that processing methods significantly affected the physical characteristics and starch digestibility. Hardness decreased during processing and fermentation, with the lowest value observed in the direct acidification method (RCM3) at 35.62 ± 9.5 N. Meanwhile, total soluble solids (TSS) tended to increase during fermentation, with final values ranging from 3.17 to 3.39 °Bx. At the gastric phase (0 h), significant differences were observed among treatments, where RCM3 exhibited the highest starch digestibility. However, at the final intestinal phase (2 h), although starch digestibility increased, no significant differences were observed among RCM1, RCM2, and RCM3.

Keywords: starch digestibility, jack bean, acidification method, resistant starch, tempeh