

SKRIPSI

**PENGARUH GERMINASI TERHADAP KANDUNGAN
NUTRISI, SIFAT KEASAMAN, DAN AKTIVITAS
ANTIOKSIDAN PADA TEMPE KECAMBAH KACANG KORO
PEDANG (*Canavalia ensiformis*)**

*diajukan untuk memenuhi sebagai syarat
untuk memperoleh gelar Sarjana Sains Program Studi Kimia*



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PENGARUH GERMINASI TERHADAP KANDUNGAN NUTRISI, SIFAT KEASAMAN, DAN AKTIVITAS ANTIOKSIDAN PADA TEMPE KECAMBAH KACANG KORO PEDANG (*Canavalia ensiformis*)

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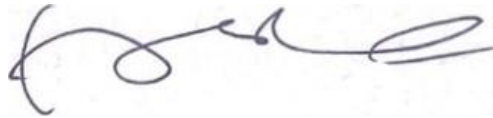
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PERNYATAAN

Dengan ini saya menyatakan bahwa skripsi dengan judul “**Pengaruh Germinasi terhadap Kandungan Nutrisi, Sifat Keasaman, dan Aktivitas Antioksidan Tempe Kecambah Kacang Koro Pedang (*Canavalia ensiformis*)**” beserta seluruh isinya adalah benar-benar karya sendiri. Saya tidak melakukan pengutipan atau penjiplakan dengan cara-cara yang tidak sesuai dengan etika keilmuan yang berlaku dalam masyarakat keilmuan. Atas pernyataan ini, saya siap menerima risiko atau sanksi apabila kemudian hari ditemukan adanya pelanggaran etika keilmuan atau ada klaim dari pihak lain terhadap keaslian karya saya

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ABSTRAK

Pangan fungsional seperti tempe merupakan sumber protein nabati yang harganya terjangkau. Namun, pembuatan tempe masih bergantung pada pemanfaatan kacang kedelai yang sebagian besar merupakan produk impor. Pembuatan tempe dari kacang lokal seperti koro pedang dapat digunakan sebagai alternatif pengganti kacang kedelai. Penelitian sebelumnya menunjukkan bahwa perlakuan pengecambahan (germinasi) sebelum proses fermentasi pada pembuatan tempe kacang kedelai dapat meningkatkan nutrisi. Penelitian ini bertujuan untuk mengevaluasi kandungan nutrisi, sifat keasaman dan aktivitas antioksidan tempe kecambah kacang koro pedang. Kacang koro pedang digerminasi selama 24 dan 48 jam sebelum kemudian difermentasi dengan menggunakan ragi tempe selama 48 jam. Kandungan nutrisi pada tempe kacang dan kecambah koro pedang dilakukan dengan analisa proksimat yang meliputi kadar karbohidrat, protein, mineral, abu, dan air. Pengujian sifat keasaman pada tempe dilakukan dengan metode pengukuran pH dan titrasi asam basa, sedangkan pengujian aktivitas antioksidan menggunakan metode DPPH (2,2-difenil-1-pikrilhidrazil). Hasil penelitian menunjukkan bahwa proses germinasi terhadap kacang koro pedang sebelum difermentasi dapat meningkatkan kadar air dan lemak pada tempe, dan menurunkan kadar karbohidrat dan kadar abu, sedangkan kandungan protein pada tempe tidak berbeda signifikan. Hasil penelitian juga menunjukkan bahwa proses germinasi dapat meningkatkan pH dan total keasaman (*titratable acidity*) tempe koro pedang. Selain itu, tidak perbedaan signifikan pada aktivitas antioksidan dari tempe yang berasal dari kacang yang digerminasi maupun tidak digerminasi.

Kata kunci: Kacang koro pedang (*Canavalia ensiformis*), Germinasi, Fermentasi, Proksimat, pH, Total keasaman, Aktivitas antioksidan.

ABSTRACT

Functional foods such as tempeh are an affordable source of plant-based protein. However, tempeh production still relies on the use of soya beans, which are mostly imported. Making tempeh from local beans such as jack beans can be used as an alternative to soya beans. Previous studies have shown that germination treatment before the fermentation process in soya bean tempeh can improve nutrition. This study aims to evaluate the nutritional content, acidity and antioxidant activity of soya bean tempeh. Jack beans were germinated for 24 and 48 hours before being fermented using tempeh yeast for 48 hours. The nutritional content of tempeh and koro pedang bean sprouts were analysed by proximate analysis, which included carbohydrate, protein, mineral, ash, and water content. Testing the acidity of tempeh was done by pH measurement and acid-base titration, while testing the antioxidant activity using DPPH (2,2-diphenyl-1-picrylhydrazyl) method. The results showed that the germination process of jack beans before fermentation could increase the water and fat content of tempeh, and decrease the carbohydrate and ash content, while the protein content of tempeh was not significantly different. The results also showed that the germination process could increase the pH and titratable acidity of jack bean's tempeh. In addition, there was no significant difference in the antioxidant activity of tempeh derived from germinated and non-germinated beans.

Keywords: Jack bean (*Canavalia ensiformis*), Germination, Fermentation, Proximate, pH, Titratable acidity, Antioxidant activity.

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