ABSTRAK

PROTEIN TERLARUT, SERAT KASAR, DAN SENSORI HEDONIK TEMPE KECAMBAH KORO PEDANG PUTIH DENGAN LAMA FERMENTASI DAN JENIS KEMASAN BERBEDA SEBAGAI ALTERNATIF PANGAN FUNGSIONAL

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Latar Belakang: Penggunaan kecambah koro pedang putih sebagai bahan baku pembuatan tempe dapat menjadikan tempe sebagai alternatif produk pangan fungsional. Penelitian ini bertujuan untuk mengetahui pengaruh interaksi lama fermentasi dan jenis kemasan berbeda terhadap kadar protein terlarut, serat kasar, dan sensori hedonik tempe kecambah koro pedang putih.

Metode: Penelitian eksperimental ini menggunakan rancangan acak kelomok dengan 2 faktor, yaitu lama fermentasi (36, 48, 60, dan 72 jam) dan jenis kemasan (plastik, daun pisang, dan daun jati). Analisis statistik kadar protein terlarut dan serat kasar menggunakan *one-way* ANOVA, sedangkan sensori hedonik menggunakan uji Friedman. *Duncan's multiple range test* (DMRT) dilakukan bila terdapat pengaruh nyata ($p<0,05$). Perlakuan terbaik ditentukan dengan uji indeks efektivitas.

Hasil Penelitian: Tempe dengan lama fermentasi dan jenis kemasan berbeda berpengaruh nyata terhadap kadar protein terlarut ($p=0,000$), kadar serat kasar ($p=0,000$), sensori hedonik warna, aroma, penampilan, dan rasa ($p=0,000$). Tempe kecambah koro pedang putih terbaik yaitu lama fermentasi 72 jam dan jenis kemasan daun jati yang memiliki kadar protein terlarut sebesar 3,30%bk, serat kasar sebanyak 21,6%bk, skor sensori hedonik warna 3,08 (cukup suka); aroma 3,36 (cukup suka); penampilan 3,22 (cukup suka); dan rasa 3,34 (cukup suka); serta memiliki kandungan asam amino hidrofobik sebanyak 28,7 g/100g protein bk.

Kesimpulan: Lama fermentasi dan jenis kemasan berbeda meningkatkan kadar protein terlarut, serat kasar, dan sensori hedonik. Lama fermentasi 72 jam dan kemasan daun jati pada tempe kecambah koro pedang putih berpotensi menjadi pangan fungsional yang bermanfaat untuk kesehatan.

Kata kunci: Tempe Kecambah Koro Pedang Putih, Protein Terlarut, Serat Kasar, Pangan Fungsional

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ABSTRACT

SOLUBLE PROTEIN, CRUDE FIBER, AND HEDONIC SENSORY CHARACTERISTICS OF GERMINATED JACK BEAN TEMPEH WITH DIFFERENT FERMENTATION DURATIONS AND PACKAGING TYPES AS AN ALTERNATIVE FUNCTIONAL FOOD

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Background: The use of germinated jack bean as raw material for tempeh production has the potential to develop tempeh as an alternative functional food. This study aimed to determine the interactive effects of fermentation duration and different packaging types on the levels of soluble protein, crude fiber, and hedonic sensory attributes of germinated jack bean tempeh.

Methods: This experimental study employed a randomized group design with two factors, fermentation duration (36, 48, 60, and 72 hours) and packaging type (plastic, banana leaf, and teak leaf). Statistical analysis of soluble protein and crude fiber content was performed using one-way ANOVA, while hedonic sensory evaluation was analyzed using the Friedman test. Duncan's Multiple Range Test (DMRT) was performed for further analysis if significant differences were found ($p<0,05$). The best treatment was determined using an effectiveness index test.

Results: Tempeh with different fermentation durations and packaging types had significant effects on soluble protein content ($p=0,000$), crude fiber content ($p=0,000$), and hedonic sensory attributes including color, aroma, appearance, and taste ($p=0,000$). The best germinated jack bean tempeh was the one fermented for 72 hours and packaged in teak leaves, which contained 3,30% soluble protein (dry weight), 21,6% crude fiber (dry weight), and hedonic sensory scores as follows: color 3,08 (moderately liked), aroma 3,36 (moderately liked), appearance 3,22 (moderately liked), and taste 3,34 (moderately liked); and contained 28,7 g of hydrophobic amino acids per 100 g of dry weight protein.

Conclusion: Different fermentation durations and packaging types increased the levels of soluble protein, crude fiber, and hedonic sensory attributes. A fermentation duration of 72 hours and teak leaf packaging in germinated jack bean tempeh has the potential to become a functional food beneficial for health.

Keywords: Germinated Jack Bean Tempeh, Soluble Protein, Crude Fiber, Functional Food

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