ABSTRAK

UJI FENOLIK, KENAMPAKAN FISIK, DAN MUTU HEDONIK TEMPE KECAMBAH KORO PEDANG PUTIH PADA LAMA FERMENTASI DAN JENIS KEMASAN BERBEDA YANG BERPOTENSI SEBAGAI ANTIDIABETIK

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Latar Belakang: Tempe kecambah koro pedang putih dapat menjadi alternatif pengelolaan DM, karena mengandung fenolik yang berpotensi sebagai antidiabetik. Penelitian ini bertujuan untuk mengetahui pengaruh interaksi lama fermentasi dan jenis kemasan berbeda untuk menghasilkan tempe kecambah koro pedang putih terbaik berdasarkan kandungan fenolik, kenampakan fisik, dan mutu hedonik.

Metode: Eksperimental faktorial 3x3 dengan Rancangan Acak Kelompok (RAK). Faktor perlakuan terdiri dari lama fermentasi (48, 60, dan 72 jam) dan jenis kemasan (plastik, daun pisang, dan daun jati). Jumlah perlakuan yaitu 9 dengan 3 kali ulangan. Analisis statistik kandungan fenolik menggunakan ANOVA, sedangkan mutu hedonik menggunakan uji *Friedman*. Apabila terdapat pengaruh nyata ($p<0,05$), maka dilanjutkan dengan DMRT. Perlakuan terbaik dianalisis menggunakan uji indeks efektivitas De Garmo.

Hasil: Tempe kecambah koro pedang putih pada lama fermentasi dan jenis kemasan berbeda berpengaruh nyata terhadap kandungan fenolik ($p=0,075$), kenampakan fisik, mutu warna ($p=0,000$), aroma ($p=0,004$), dan penampilan ($p=0,000$), namun tidak berpengaruh nyata terhadap mutu rasa ($p=0,100$). Tempe kecambah koro pedang putih terbaik yaitu tempe pada lama fermentasi 60 jam dan menggunakan kemasan plastik.

Kesimpulan: Tempe terbaik mengandung fenolik 0,97 mg GAE/g (rendah), nilai aktivitas antioksidan IC_{50} 6.951,38 ppm (lemah), miselium tebal dan kompak, serta skor mutu rasa 3,50 (khas tempe); aroma 3,20 (tidak langu); warna 3,90 (putih); dan penampilan 3,20 (kompak). Berdasarkan kandungan fenolik dan aktivitas antioksidannya, L2J1 belum cukup kuat untuk menghambat stres oksidatif.

Kata kunci: Tempe Kecambah Koro Pedang Putih, Lama Fermentasi, Jenis Kemasan, Fenolik, Mutu Hedonik

ABSTRACT

PHENOLIC TEST, PHYSICAL APPEARANCE, AND HEDONIC QUALITY OF GERMINATED JACK BEAN TEMPEH IN DIFFERENT FERMENTATION DURATIONS AND PACKAGING TYPES THAT HAVE THE POTENTIAL AS ANTIDIABETIC

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Background: Germinated jack bean tempeh has the potential to be an alternative for diabetes mellitus management due to its phenolic content, which exhibits antidiabetic potential. This study evaluated the effects of interaction in different fermentation durations and packaging types on producing the best-germinated jack bean tempeh based on phenolic, physical appearance, and hedonic quality.

Method: Experimental factorial 3x3 with a randomized group design. The factors included fermentation durations (48, 60, and 72 hours) and packaging types (plastic, banana leaves, and teak leaves). There were 9 treatments with 3 replications each. Phenolic was analyzed using ANOVA, while hedonic quality was analyzed using the Friedman test. If significant effects were detected ($p<0,05$), analysis was continued with DMRT. The best treatment was determined using De Garmo's effectiveness index test.

Result: The interaction between fermentation duration and packaging type significantly affected phenolic content ($p=0,075$), physical appearance, color ($p=0,000$), smell ($p=0,004$), and appearance ($p=0,000$), but had no significant effect on taste ($p=0,100$). The best treatment was tempeh, which had a fermentation duration of 60 hours and used plastic packaging.

Conclusion: The best tempeh contained 0,97 mg GAE/g of phenolic (low) and had an antioxidant activity IC50 value of 6.951,38 ppm (weak). It exhibited thick and compact mycelium in physical appearance, with hedonic quality scores of 3,50 for taste (characteristic of tempeh), 3,20 for smell (not musty), 3,90 for color (white), and 3,20 for appearance (compact). Based on its phenolic content and antioxidant activity, the tempeh is not sufficiently strong to inhibit oxidative stress.

Keyword: Germinated Jack Bean Tempeh, Fermentation Duration, Packaging Type, Phenolic. Hedonic Quality