

ANALISIS TOTAL BAKTERI ASAM LAKTAT DAN DAYA CERNA PROTEIN *CREAM CHEESE* ANALOG BERBASIS KACANG KEDELAI (*Glycine max*) DENGAN SUBSTITUSI KACANG TUNGGAK (*Vigna unguiculata* L.)

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ABSTRAK

Latar belakang: Kacang kedelai memiliki zat anti gizi yang mampu menghambat penyerapan protein. Produk fermentasi bakteri asam laktat (BAL), seperti *cream cheese*, merupakan salah satu penanganan terkait kondisi tersebut. Dalam proses fermentasi, total BAL dan daya cerna protein akan dipengaruhi oleh zat gizi yang tersedia. Kacang tunggak memiliki kandungan protein dan karbohidrat yang berpotensi mampu meningkatkan total BAL dan daya cerna protein produk.

Tujuan: Membandingkan total BAL dan daya cerna protein *cream cheese* analog dalam formula yang berbeda.

Metode: Studi eksperimental dengan rancangan acak lengkap (RAL) yang terdiri atas empat formula *cream cheese* analog: F0(-) (100:0), F1 (70:30), F2 (60:40), F3 (50:50). *Cream cheese* difermentasi dengan *L. acidophilus*, *S. thermophilus*, *B. lactis*. Total BAL akan diuji menggunakan *total plate count* dan daya cerna protein diuji secara *in vitro* menggunakan enzim pepsin. Data dianalisis menggunakan One-Way ANOVA dan Kruskal-Wallis.

Hasil: Substitusi kacang tunggak mampu memberikan perbedaan signifikan pada total BAL dan daya cerna protein antar formula *cream cheese* ($p < 0,05$). Hal ini dipengaruhi oleh zat gizi dan zat anti gizi yang terkandung dalam kacang tunggak.

Simpulan: Penambahan kacang tunggak pada *cream cheese* memberikan pengaruh pada total BAL dan daya cerna protein produk.

Kata kunci: *cream cheese*, kacang kedelai, kacang tunggak, total bakteri asam laktat, daya cerna protein

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TOTAL LACTIC ACID BACTERIA AND PROTEIN DIGESTIBILITY OF ANALOGUE SOY CREAM CHEESE (*Glycine max*) SUBSTITUTES MADE WITH COWPEAS (*Vigna unguiculata* L.)

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ABSTRACT

Background: Soybeans contain anti-nutritional factors that can inhibit protein digestibility. This condition can be addressed through fermentation using lactic acid bacteria (LAB), such as cream cheese. During fermentation, the total LAB count and protein digestibility are affected by the amount of nutrients available. There is evidence that cowpeas have a high content of protein and carbohydrate, which improves the number of LABs and the digestibility of protein in the product.

Objective: To compare the total LAB count and the protein digestibility of analogue cream cheese of each formula.

Methods: This study employed a completely randomized design with four formulations of analogue cream cheese: F0(-) (100:0), F1 (70:30), F2 (60:40), and F3 (50:50). The cream cheese was fermented with *L. acidophilus*, *S. thermophilus*, and *B. lactis*. The LAB were quantified using the total plate count, and in vitro protein digestibility was assessed using pepsin enzyme. Analysis of the data was conducted using a One-Way ANOVA and a Kruskal Wallis test.

Results: There was a significant difference was observed in the LAB count and protein digestibility of both analogue and commercial cream cheese products ($p < 0.05$). This is influenced by the nutrients and anti-nutrients present in cowpeas.

Conclusion: The addition of cowpeas exerts an impact on both the total lactic acid bacteria count and protein digestibility.

Keywords: Cream cheese, soybean, cowpea, lactic acid bacteria count, in vitro protein digestibility

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