

KUALITAS MIKROBIOLOGIS DAN FISIKOKIMIA KEJU FETA DENGAN STARTER ALTERNATIF KOMBUCHA

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INTISARI

Penelitian ini bertujuan untuk membandingkan kualitas mikrobiologis dan fisikokimia keju feta yang diproduksi menggunakan starter komersial dan starter alternatif. Starter komersial terdiri dari bakteri asam laktat multi-strain sementara starter alternatif kombucha terbuat dari fermentasi simbiotik bakteri asam asetat-yeast (scoby) dengan teh hitam. Populasi bakteri asam laktat ditemukan pada kombucha dan dibuktikan dapat digunakan pada pengolahan susu. Dua sampel keju diproduksi (FD dan KC) diambil untuk pengujian kualitas mikrobiologis: Total Plate Count (TPC), populasi bakteri asam laktat (BAL), bakteri asam asetat (BAA), dan yeast. Pengujian kualitas fisik meliputi rendemen dan analisis kekerasan tekstur. Pengujian kualitas kimia meliputi kadar air, protein, lemak, nilai pH, dan derajat keasaman. Data yang diperoleh dianalisis secara statistik menggunakan metode T-test Independen, dinyatakan signifikan apabila $P < 0,05$. Hasil analisis statistik menunjukkan tidak ada perbedaan signifikan dalam rerata kualitas mikrobiologis dan fisikokimia antara perlakuan starter komersial dan kombucha. Rerata hasil uji TPC sampel FD dan KC berturut-turut antara lain $7,48 \pm 1,71$ dan $7,57 \pm 0,52$; uji BAL $8,25 \pm 1,25$ dan $7,19 \pm 0,74$, BAA 8,08 dan yeast Log 7,71 CFU/ml. Hasil uji nilai pH keju feta berturut untuk FD dan KC menunjukkan nilai $4,77 \pm 0,11$ dan $5,45 \pm 0,43$; keasaman $1,41 \pm 0,17\%$ dan $0,97 \pm 0,33$; kadar air $42,98 \pm 4,76$ dan $46,38 \pm 1,34$; kadar protein $18,50 \pm 1,07$ dan $17,67 \pm 1,48$ serta lemak total $28,19 \pm 4,13$ dan $27,68 \pm 3,89$. Hasil uji rendemen menunjukkan nilai untuk FD dan KC $12,58 \pm 0,80\%$ dan $12,81 \pm 0,79\%$ sedangkan tingkat kekerasan tekstur $17,17 \pm 7,72$ dan $14,21 \pm 2,64$. Berdasarkan uji statistik kualitas mikrobiologi dan fisikokimia dapat disimpulkan bahwa keju feta dapat diproduksi menggunakan starter alternatif kombucha.

(Kata kunci: Keju feta, Starter komersial, Starter kombucha, Kualitas mikrobiologi, Kualitas fisikokimia).

MICROBIOLOGICAL AND PHYSICOCHEMICAL QUALITIES OF FETA CHEESE WITH KOMBUCHA AS ALTERNATIVE STARTER

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ABSTRACT

This study aims to compare the microbiological and physicochemical qualities of feta cheese produced using commercial starter and alternative starter. The commercial starter consists of multi-strain lactic acid bacteria while the alternative starter made of tea fermented with symbiotic fungus of acetic acid bacteria and yeast (scooby). Lactic acid bacteria was found in kombucha which support lactose fermentation process. Two cheese samples (FD and KC) were produced for microbiological quality testing: Total Plate Count (TPC), population of lactic acid bacteria (LAB), acetic acid bacteria (AAB), and yeast. Physical quality testing includes yield and texture hardness analysis. Chemical quality testing includes moisture content, protein, fat, pH value, and acidity degree. The obtained data were statistically analyzed using Independent T-test method, considered significant if $P < 0.05$. Statistical analysis results showed no significant difference in mean microbiological and physicochemical qualities between commercial starter and kombucha treatment. The mean TPC test results for samples FD and KC were 7.48 ± 1.71 and 7.57 ± 0.52 respectively; LAB test 8.25 ± 1.25 and 7.19 ± 0.74 , AAB 8.08, and yeast Log 7.71 CFU/ml. The pH value test results of feta cheese for FD and KC respectively showed values of 4.77 ± 0.11 and 5.45 ± 0.43 ; acidity $1.41 \pm 0.17\%$ and 0.97 ± 0.33 ; moisture content 42.98 ± 4.76 and 46.38 ± 1.34 ; protein content 18.50 ± 1.07 and 17.67 ± 1.48 and total fat 28.19 ± 4.13 and 27.68 ± 3.89 . Yield test results showed values for $12.58 \pm 0.80\%$ and $12.81 \pm 0.79\%$ respectively, while texture hardness level 17.17 ± 7.72 and 14.21 ± 2.64 . Based on microbiological and physicochemical qualities, feta cheese can be produced using alternative starter kombucha.

(Key Words: Feta cheese, Kombucha starter, Commercial starter, Microbiological quality, Physicochemical quality).