

KARAKTERISTIK KEJU FETA KAMBING MULTIPROBIOTIK RENDAH LEMAK DENGAN PENAMBAHAN PATI GARUT (*Maranta arundinaceae L.*) SELAMA 60 HARI PENYIMPANAN DINGIN

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INTISARI

Penelitian ini bertujuan untuk mengetahui karakteristik (kekerasan, keasaman, pH, kadar air, kadar protein, kadar asam-asam organik, jumlah bakteri dan sensori) pada keju feta kambing rendah lemak dengan penambahan multiprobiotik (*Lactobacillus acidophilus*, *Bifidobacterium longum* dan *Lactobacillus casei*) dan penambahan *Maranta arundinaceae L.* sebagai prebiotik. Hasil pengujian bahan baku, rendemen, kadar air, dan protein kasar dari keju dianalisis secara deskriptif, sedangkan pengujian kekerasan, keasaman, pH, asam-asam organik dan kadar protein dengan metode Lowry menggunakan analisis Rancangan Acak Lengkap Pola Searah (ANOVA). Hasil pengujian sensori dianalisis menggunakan analisis nonparametrik Kruskal-Wallis H. Penelitian ini menggunakan keju feta yang dibuat dari susu kambing rendah lemak selama penyimpanan 60 hari dalam refrigerator suhu 4°C. Hasil penelitian menunjukkan bahwa kadar lemak pada bahan baku susu kambing segar sebesar 0,07%. Hasil rendemen pada keju feta dengan penambahan *Maranta arundinaceae L.* sebesar 16,42%. Perubahan secara signifikan ($P < 0,05$) terjadi pada nilai kekerasan, pH, keasaman dan kadar protein dengan metode Lowry selama penyimpanan 60 hari pada refrigerator. Kadar protein dengan metode Lowry pada keju mengalami peningkatan yaitu dari $2,88 \pm 0,50\%$ menjadi $5,85 \pm 0,41\%$ ($p < 0,05$). Kadar protein kasar dan kadar air pada keju yang disimpan 60 hari sebesar $41,21 \pm 1,21\%$ dan $48,67 \pm 1,19\%$. Peningkatan kadar asam laktat dan asam asetat terjadi selama penyimpanan dan asam piruvat mengalami penurunan dan tidak terdeteksi pada penyimpanan 60 hari. Daya terima keju oleh panelis mengalami penurunan seiring dengan peningkatan sensori pada keju meliputi rasa asam, pahit, asin dan tekstur pada keju feta. Pengukuran jumlah bakteri pada keju menunjukkan adanya penurunan jumlah bakteri selama penyimpanan. Kesimpulan dari penelitian ini adalah terjadi perubahan karakteristik pada keju feta kambing rendah lemak dengan penambahan bakteri multiprobiotik dan *Maranta arundinaceae L.* sebagai prebiotik, meliputi fisik, kimia, mikrobiologi dan sensori selama penyimpanan 60 hari. Keju feta kambing rendah lemak lebih baik dikonsumsi secara segar tanpa penyimpanan.

Kata kunci: Keju Kambing Sinbiotik, Multiprobiotik, Pati Garut, Fisiko-kimia, Sensori

CHARACTERISTICS OF MULTIPROBIOTIC LOW FAT GOAT FETA CHEESE WITH THE ADDITION OF GARUT (*Maranta arundinaceae L.*) FOR 60 DAYS OF COLD STORAGE

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ABSTRACT

This study aims to determine the characteristics (hardness, acidity, pH, moisture content, protein content, level of organic acids, the number of bacteria and sensory) of low-fat goat feta cheese with the addition of probiotic cultures, namely *Lactobacillus acidophilus*, *Bifidobacterium longum* and *Lactobacillus casei* and addition of *Maranta arundinaceae L.* as a prebiotic. The test results of raw materials, yield, moisture content, and crude protein of cheese were analyzed descriptively, while the hardness, acidity, pH, organic acids and protein content of the Lowry method on cheese used Completely Randomized Designs One-Way (ANOVA) analysis. The sensory test analyzed by Kruskal-Wallis H. This study used feta cheese made from low-fat goat's milk and replicated into 3 with duplicate testing at storage during 60 days in the refrigerator at 4°C. The results showed that fat content in the raw material for fresh goat milk has 0.07%. The yield of feta cheese with the addition of *Maranta arundinaceae L.* was 16.42%. Significant changes ($P < 0.05$) occurred in the values of hardness, pH, acidity and protein content of the Lowry method during 60 days of storage in the refrigerator. The protein content using the Lowry method decreased from $2.88 \pm 0.50\%$ to $5.85 \pm 0.41\%$ ($P < 0.05$). The crude protein content and moisture content in cheese stored for 60 days were $41.21 \pm 1.21\%$ and $48.67 \pm 1.19\%$. The levels of lactic and acetic acid were increased during storage and the levels of pyruvic acid decreased and was not detected at 60 days of storage. The acceptance of cheese by the panelists decreased along with the sensory increase in cheese including sour, bitter, salty and texture of feta cheese. The number of bacteria in cheese decreased during 60 days of storage. The conclusion of this study is that there is a change in the characteristics of feta cheese from low-fat goat's milk and used probiotic bacteria and *Maranta arundinaceae L.* as a prebiotic including physical, chemical, microbiological, and sensory during 60 days of storage. The low fat goat's milk feta cheese is better consumed fresh without storage.

Kata kunci: Goat Synbiotic Cheese, Multiprobiotic, Arrowroot Starch, Physic-chemistry, Sensory