PENGARUH PENAMBAHAN PROBIOTIK *Bifidobacterium longum* DAN LAMA PENYIMPANAN TERHADAP KUALITAS FISIKO-KIMIA DAN ORGANOLEPTIK KEJU FETA SUSU KAMBING *REDUCED FAT*

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan *Bifidobacterium longum* pada keju feta susu kambing *reduced fat* terhadap kualitas fisiko-kimia selama penyimpanan 60 hari. Penelitian ini menggunakan keju feta susu kambing yang dibuat dari susu kambing *reduced fat* yang ditambahkan kultur probiotik sebesar 10% (v/v). Tahapan penelitian dimulai dengan uji kualitas dan analisis komposisi susu segar (uji alkohol, uji berat jenis, uji pH, uji kadar keasaman, uji kadar air, uji kadar abu, uji kadar protein kasar, uji lemak susu *reduced fat*), peremajaan kultur bakteri, pembuatan keju feta susu kambing, analisis komposisi kimia keju feta susu kambing (uji rendemen, uji pH, uji kadar keasaman, uji protein terlarut, uji asam-asam organik metode HPLC, uji kadar air, uji abu, uji protein kasar, uji kadar lemak, uji breed, uji *Total Plate Count*), dan analisis fisik keju feta susu kambing (uji kekerasan dan uji organoleptik). Pembuatan keju feta susu kambing *reduced fat* direplikasi sebanyak 3 kali dan dalam pengujian masing-masing parameter secara duplo pada hari ke-0 dan hari ke-60. Komposisi keju dianalisis secara T-test. Data terkait total bakteri keasaman, kadar air, kadar protein terlarut, pH, asam organik dan kekerasan keju dianalisis *Two Way* ANOVA. Data terkait organoleptik dianalisis menggunakan analisis non-parametrik *Kruskall- Wallis Test*. Hasil penelitian menunjukan bahwa hasil rendemen keju tanpa probiotik sebesar 14,46% sedangkan keju dengan probiotik sebesar 16,63%. *Bifidobacterium longum* dapat berkembang hingga 1,6 X 10^7 selama penyimpanan 60 hari. Penambahan probiotik memiliki efek yang signifikan ($P<0,05$) terhadap kadar air, nilai pH dan protein terlarut, sedangkan kekerasan, keasaman, dan asam organik tidak memberikan efek yang signifikan ($P>0,05$). Selama penyimpanan tidak memberikan efek yang signifikan ($P>0,05$) terhadap rasa asam, rasa asin, kesukaan rasa, kelembutan dan kesukaan tekstur, sedangkan rasa pahit memberikan efek yang signifikan. Hasil penelitian menunjukan bahwa keju feta susu kambing *reduced fat* dengan penambahan probiotik bisa dikategorikan sebagai produk probiotik.

Kata Kunci: Susu kambing, Keju feta *reduced fat*, *Bifidobacterium longum*, Kualitas fisiko-kimia, Sensoris.

EFFECT OF ADDING PROBIOTIC *Bifidobacteria longum* AND STORAGE TIME ON PHYSICO-CHEMICAL AND ORGANOLEPTIC QUALITY OF REDUCED FAT GOAT MILK FETA CHEESE

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ABSTRACT

This study aims to determine the effect of adding Bifidobacterium longum to reduced fat goat's milk feta cheese on the physico-chemical quality during 60 days of storage. This study used goat's milk feta cheese made from reduced fat goat's milk which was added with 10% (v/v) probiotic culture. The research stages began with quality testing and analysis of the composition of fresh milk (alcohol test, specific gravity test, pH test, acidity test, water content test, ash content test, crude protein test, reduced fat milk fat test), bacterial culture rejuvenation, manufacture of goat's milk feta cheese, analysis of the chemical composition of goat's milk feta cheese (yield test, pH test, acidity test, soluble protein test, HPLC method of organic acids test, water content test, ash test, crude protein test, fat content test , breed test, Total Plate Count test), and physical analysis of goat's milk feta cheese (hardness test and organoleptic test). The production of reduced fat goat's milk feta cheese was replicated 3 times and each parameter was tested in duplicate on day 0 and day 60. Cheese composition was analyzed by T-test. Data related to total bacterial acidity, moisture content, dissolved protein content, pH, organic acids and cheese hardness were analyzed by Two Way ANOVA. Organoleptic-related data were analyzed using the non-parametric analysis of the Kruskall-Wallis Test. The results showed that the yield of cheese without probiotics was 14.46% while cheese with probiotics was 16.63%. Bifidobacterium longum can grow up to 1.6 X 10^7 during 60 days of storage. The addition of probiotics had a significant effect ($P<0.05$) on water content, pH value and dissolved protein, while hardness, acidity, and organic acids had no significant effect ($P>0.05$). During storage, it did not have a significant effect ($P>0.05$) on sour taste, salty taste, taste preference, softness and texture preference, while bitter taste had a significant effect. The results showed that reduced fat goat's milk feta cheese with the addition of probiotics could be categorized as a probiotic product.

Keywords: Goat's milk, Reduced fat feta cheese, *Bifidobacterium longum*, Physico-chemical quality, Sensory.