

PENGARUH SUHU PEMANASAN SUSU TERHADAP KARAKTERISTIK KIMIA DAN KUALITAS MIKROBIOLOGIS KEJU *CHEDDAR* PROBIOTIK

ABSTRAK

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Penelitian ini bertujuan untuk mengevaluasi dampak pemanasan susu pada suhu 32°C selama 15 detik dan pada suhu 65°C selama 15 detik terhadap beberapa parameter, termasuk *yield*, produk samping whey, pH, kadar air, serta tingkat cemaran mikrobiologis. Dalam pembuatan keju *Cheddar*, digunakan kultur lokal *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 sebagai probiotik dan *Streptococcus thermophilus* Dad-11. Dilakukan pengukuran *yield*, total whey, pH, dan kadar air, serta dilakukan pengujian terhadap cemaran mikrobiologis *Enterobacteriaceae* dan *Yeast/Mold* selama proses pengolahan dan setelah 2 bulan pemeraman. Hasil penelitian menunjukkan bahwa pemanasan susu pada suhu 65°C selama 15 detik menghasilkan persentase *yield* yang lebih tinggi (9,37) dibandingkan dengan suhu 32°C selama 15 detik (8,34), tetapi waktu koagulasi lebih lama. Pemanasan susu hingga suhu 65°C selama 15 detik juga menghasilkan jumlah whey yang lebih sedikit dan kadar air yang lebih tinggi. Pemanasan susu 65°C selama 15 detik menghasilkan keju dengan pH $5,22 \pm 0,00$, sedangkan pemanasan suhu 32°C selama 15 detik menghasilkan keju dengan pH $5,24 \pm 0,01$. Selain itu, pemanasan susu pada suhu 65°C selama 15 detik menunjukkan kemampuan untuk mengurangi jumlah cemaran mikrobiologis *Enterobacteriaceae* dan *Yeast/Mold* setelah pemeraman selama 2 bulan, dibandingkan dengan pemanasan pada suhu 32°C selama 15 detik.

Kata kunci : keju *Cheddar*, probiotik, pemanasan susu, cemaran mikrobiologis

THE EFFECT OF MILK HEATING TEMPERATURE ON THE CHEMICAL CHARACTERISTICS AND MICROBIOLOGICAL QUALITY OF PROBIOTIC CHEDDAR CHEESE

ABSTRACT

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This research aims to evaluate the effect of heating milk at 32°C for 15 seconds and at 65°C for 15 seconds on several parameters, including yield, whey by-product, pH, moisture content, and microbiological contamination levels. In the production of Cheddar cheese, a local starter culture comprising *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 as a probiotic and *Streptococcus thermophilus* Dad-11 was used. Measurements were taken for yield, total whey, pH, and moisture content, and microbiological tests for *Enterobacteriaceae* and Yeast/Mold were conducted during processing and after 2 months of ripening. The research findings show that heating milk at a temperature of 65°C for 15 seconds produces a higher yield percentage (9.37) compared to 32°C for 15 seconds (8.34), though with a longer coagulation time. Heating milk to 65°C for 15 seconds also produced less whey and higher moisture content. Heating the milk at 65°C for 15 seconds produces cheese with a pH of 5.22 ± 0.00 , while heating it at 32°C for 15 seconds produces cheese with a pH of 5.24 ± 0.01 . Furthermore, heating milk at 65°C for 15 seconds demonstrated the ability to reduce the levels of microbiological contamination *Enterobacteriaceae* and Yeast/Mold, after 2 months of ripening compared to heating at 32°C for 15 seconds.

Keywords: Cheddar cheese, probiotics, milk heating, microbiological contamination