

**PENGARUH SUHU DAN LAMA PENYIMPANAN PRODUK SUSU
FERMENTASI DENGAN *Lactobacillus casei* STRAIN AP
TERHADAP KUALITAS FISIKO-KIMIA DAN
MIKROBIOLOGIS**

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh penyimpanan susu fermentasi dengan starter *Lactobacillus casei* strain AP terhadap kualitas fisiko-kimia dan mikrobiologis. Produk susu fermentasi dibuat dari susu sapi yang ditambahkan susu skim 2% (w/v) steril kemudian diinokulasi dengan *L. casei* strain AP 3% (v/v) dan diinkubasi pada suhu 37°C selama 8 jam. Perlakuan penyimpanan dibedakan berdasarkan suhu yaitu suhu refrigerator (4°C) dan suhu ruang (28,25±1,66°C) selama 22 hari. Pengujian kualitas produk susu fermentasi meliputi uji kadar protein, lemak, laktosa, *total solid*, total BAL, dan total bakteri setiap 7 hari, kemudian uji pH, keasaman, dan sineresis dilakukan setiap 2 hari. Analisis data menggunakan analisis variansi pola faktorial dan analisis variansi pola searah. Hasil yang signifikan dilanjutkan uji *Duncan Multiple Range Test*. Hasil analisis menunjukkan bahwa perbedaan suhu penyimpanan berpengaruh ($P < 0,05$) terhadap nilai pH, keasaman, dan sineresis yaitu menaikkan kadar keasaman dan sineresis serta menurunkan nilai pH, sedangkan pada kualitas protein, lemak, laktosa, *total solid*, total BAL, dan total bakteri berbeda tidak nyata ($P > 0,05$) selama penyimpanan. Lama dan penyimpanan suhu ruang mempengaruhi pertumbuhan *Lactobacillus casei* strain AP yang berdampak pada kandungan nutrisi dan karakteristik dari produk susu fermentasi yang dihasilkan. Penelitian ini dapat disimpulkan bahwa produk susu fermentasi lebih baik disimpan pada suhu refrigerator (4°C) dibandingkan pada suhu ruang (28,25±1,66°C) karena nutrisi dalam produk susu fermentasi lebih terjaga kualitasnya pada suhu refrigerator (4°C).

Kata kunci : Susu fermentasi, *Lactobacillus casei* strain AP, Suhu penyimpanan, Lama penyimpanan, Kualitas susu fermentasi.

**THE EFFECT OF TEMPERATURE AND DURATION OF STORAGE ON
THE PHYSICOCHEMICAL AND MICROBIOLOGICAL QUALITY OF
FERMENTED MILK PRODUCED USING
Lactobacillus casei AP**

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ABSTRACT

The purpose of this study was to evaluate physicochemical and microbiological quality of milk fermented with *Lactobacillus casei* strain AP. Fermented milk products were made by mixing of cow's milk 2% (w/v) pasteurized skimmed milk and then inoculated with *L. casei* strain AP 3% (v/v). After that it was incubated at 37°C for 8 hours. Treatments were keeping the products at refrigerator temperature (4°C) and room temperature (28.25±1.66°C) for 22 days. The quality parameters of this fermented milk products were protein, fat, lactose, total solid, total of Lactic Acid Bacteria (LAB), and total of bacteria observed every 7 days, meanwhile the pH, acidity, and syneresis were observed every 2 days. The data obtained were analyzed with analysis of variance using two ways ANOVA and one way ANOVA, and followed by Duncan Multiple Range Test. The result showed that differences in storage temperature significantly affected ($P < 0.05$) on pH, acidity, and syneresis values; which increased acidity and syneresis levels and decreased pH values, while on the quality of protein, fat, lactose, total solid, total Lactic Acid Bacteria, and total bacteria had no significant different ($P > 0.05$) during storage. Both the duration and temperature of the storage affected *Lactobacillus casei* strain AP's growth and characteristics of the fermented milk products that were produced. It can be concluded that fermented milk products are stored at refrigerator temperatures (4°C) better than at room temperature (28,25±1,66°C) because fermented milk nutrients at refrigerator temperatures (4°C) are better maintained.

Keywords : Fermented milk, *Lactobacillus casei* strain AP, storage's temperature, storage's duration, quality.