

KUALITAS SUSU FERMENTASI MENGGUNAKAN STARTER PROBIOTIK *Lactobacillus casei* STRAIN AP DAN AG SERTA *Pediococcus acidilactici* STRAIN BE

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh starter probiotik, strain asal sistem pencernaan manusia terhadap kualitas fisiko-kimia dan mikrobiologis susu fermentasi. Susu fermentasi dibuat dengan susu segar dengan penambahan susu skim hingga padatan total 18% kemudian diinokulasi *Lactobacillus casei* strain AP, *Lactobacillus casei* strain AG dan *Pediococcus acidilactici* strain BE, masing-masing sebanyak 10%. Inkubasi dilakukan pada suhu 37°C sampai mencapai pH 4,5 selama 8 jam. Parameter yang diuji yaitu viskositas, nilai pH, kadar air, keasaman, kadar laktosa, kadar protein, kadar lemak, kadar *free fatty acid*, dan total bakteri asam laktat. Data dianalisis dengan analisis variansi pola faktorial untuk data uji pH, dan mikrobiologi, serta analisis variansi pola searah untuk data keasaman, viskositas, kadar air, kadar laktosa, kadar lemak, kadar protein dan *free fatty acid*. Hasil penelitian menunjukkan bahwa perbedaan strain berpengaruh tidak nyata pada kadar air, keasaman, laktosa, lemak dan *free fatty acid*. Penelitian ini menunjukkan perbedaan yang nyata ($P < 0,05$) pada viskositas dan kadar protein. Waktu fermentasi juga berpengaruh nyata terhadap nilai pH. Rerata pH awal ($5,78 \pm 0,19$), turun pada akhir fermentasi ($4,32 \pm 0,12$) ($P < 0,05$). Total bakteri asam laktat awal fermentasi ($6,98 \pm 1,00$ log cfu/ml), akhir fermentasi ($8,15 \pm 0,61$ log cfu/ml) ($P < 0,05$). Dari penelitian ini, dapat disimpulkan bahwa ketiga starter probiotik, strain asal sistem pencernaan manusia memenuhi syarat sebagai starter yang mampu memfermentasi susu. Susu fermentasi dengan starter *Lactobacillus casei* strain AP menghasilkan kualitas paling baik.

Kata kunci: Susu fermentasi, Starter probiotik, Kualitas susu fermentasi

QUALITY OF FERMENTED MILK WITH *Lactobacillus casei* STRAIN AP AND AG AND *Pediococcus acidilactici* STRAIN BE A STARTER PROBIOTIC

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Abstract

This research was done to determine the effect of probiotic starter, original strain human digestive system, toward quality of physico-chemical and microbiologic of fermented milk. Fermented milk made of fresh milk added up to 18% of total solids, and then inoculated with *Lactobacillus casei* strain AP, *Lactobacillus casei* strain AG, *Pediococcus acidilactici* strain BE as much as 10%. Incubation was carried out at temperature of 37°C to achieve a pH of 4.5. The examined parameters were viscosity, pH value, water content, acidity, lactose content, protein content, fat content, content of free fatty acids, and total of lactic acid bacteria. Data were analyzed by variance analysis for factorial pattern to data of pH, and microbiology test and also one way analysis for data of acidity, viscosity, water content lactose content, protein content, fat content, content of free fatty acids, and total lactic acid bacteria test. The result showed that difference strain was not significant in water content, acidity, lactose content, fat content and content of free fatty acid. This research showed significant difference ($P < 0,05$) in viscosity and protein levels. Time of fermentation was also significantly affect the pH value. The mean of initial pH ($5,78 \pm 0,19$), decrease at the final fermentation ($4,32 \pm 0,12$) ($P < 0,05$). This study also showed that there was a noticeable increase in total of lactic acid bacteria which were ($6,98 \pm 1,00$ log cfu/ml) at the beginning became ($8,15 \pm 0,61$ log cfu/ml) at the end of fermentation ($P < 0,05$). This research concluded that the three of starter probiotic, original starter probiotic of human digestive system were qualified as a starter which were able to ferment milk. Fermented milk with *Lactobacillus casei* strain AP starter produced highest quality of the three fermented milk.

Keywords: Fermented milk, Probiotic starter, Quality of fermented milk.