

ABSTRAK

POTENSI BAKTERI PROBIOTIK LOKAL SEBAGAI STARTER SUSU FERMENTASI

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Pada penelitian ini dipelajari potensi bakteri probiotik lokal yang ditambahkan dengan *Streptococcus thermophilus* Dad-11 sebagai *starter* susu fermentasi. Tiga strain bakteri probiotik *Lactobacillus plantarum* dan *S. thermophilus* Dad-11 masing masing diinokulasikan ke dalam susu pasteurisasi yang ditambah 2 % susu skim dan 8 % sukrosa, lalu diinkubasi pada suhu 37°C selama 24 jam. Selanjutnya, kultur campuran yang terdiri dari masing-masing strain *L. plantarum* dan *S. thermophilus* Dad-11 digunakan sebagai *starter* pada fermentasi susu. Pengamatan yang dilakukan meliputi jumlah sel, pH, keasaman serta karakteristik fisik. Produk susu fermentasi yang dihasilkan disimpan pada suhu 4°C, diamati karakteristik fisik, kimia dan sensoris, serta stabilitasnya selama penyimpanan. Hasil penelitian menunjukkan bahwa keempat bakteri bakteri asam laktat tersebut tumbuh baik selama fermentasi susu. Pola produksi asam ketiga bakteri probiotik tersebut relatif sama, sedangkan *S. thermophilus* Dad-11 menunjukkan laju produksi asam yang lebih tinggi. Pola penurunan pH masing-masing isolat relatif sama sampai dengan 9 jam fermentasi. Penurunan pH masih berlangsung pada susu yang difermentasi menggunakan *S. thermophilus* Dad-11 mencapai sekitar pH 3,92, namun susu yang difermentasi menggunakan bakteri probiotik hanya mencapai pH 4,89-4,92. Kombinasi bakteri probiotik dengan *S. thermophilus* Dad-11 menghasilkan produk susu fermentasi dengan kadar asam tertitrasi 1,23-1,31% dan pH 4,30-4,42 dengan jumlah sel bakteri asam laktat $8,27 \times 10^8$ - $1,51 \times 10^9$ CFU/mL dan relatif stabil selama penyimpanan pada suhu 4°C. Produk susu fermentasi probiotik ini mengandung cukup bakteri probiotik, yaitu pada kisaran $6,5 \times 10^7$ – $8,5 \times 10^7$ CFU/mL dengan hasil uji sensoris yang cukup disukai oleh panelis, tetapi perlu diteliti lebih lanjut untuk mendapatkan karakteristik fisik seperti yogurt.

Kata kunci : bakteri probiotik lokal, susu fermentasi, kultur *starter*

ABSTRACT

POTENTIAL OF LOCAL PROBIOTIC BACTERIA AS STARTER OF FERMENTED MILK

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This research studied the potential of local probiotic bacteria added with *Streptococcus thermophilus* Dad-11 as a *starter* for fermented milk. Three strains of probiotic bacteria *Lactobacillus plantarum* and *S. thermophilus* Dad-11 each were inoculated into pasteurized milk added with 2% skim milk and 8% sucrose incubated at 37°C for 24 hours. Mixed culture consisting of each strain of *L. plantarum* and *S. thermophilus* Dad-11 was used as a *starter* in milk fermentation. The observations made included the number of cells, pH, acidity and physical characteristics. Fermented milk products were stored at 4°C, physical chemical and sensory characteristics were observed, as well as their stability during storage. The results showed four lactic acid bacteria isolates grew well during milk fermentation. Acid production of three probiotic bacteria were almost the same, *S. thermophilus* Dad-11 showed a higher rate of acid production. The pH reduction of each isolate was relatively the same up to 9 hours of fermentation. The decrease in pH was still ongoing in milk fermented using *S. thermophilus* Dad-11 until it reached around pH 3.92. However, milk fermented using probiotic bacteria only reached pH 4.89-4.92. The combination of probiotic bacteria with *S. thermophilus* Dad-11 produces fermented milk products with titrated acid levels of 1.23-1.31% and pH 4.30-4.42 with the number of lactic acid bacteria cells 8.27×10^8 - 1.51×10^9 CFU/mL and relatively stable during storage at 4°C. This probiotic fermented milk product contains sufficient probiotic bacteria, the range of 6.5×10^7 - 8.5×10^7 CFU/mL and based on the results of sensory tests, it is liked by panelists but needs to be investigated further to get physical characteristics such as yogurt.

Kata kunci : local probiotic bacteria, fermented milk, *starter* cultures