

INTISARI

APLIKASI FORMULA INOKULUM BAKTERI ASAM LAKTAT UNTUK PEMBUATAN YOGHURT BERBAHAN SUSU SAPI SEGAR

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Pembuatan yoghurt berbahan susu sapi segar dipengaruhi oleh inokulum bakteri asam laktat (BAL), seperti *Lactobacillus sp.* dan *Streptococcus thermophilus*. Penelitian ini menggunakan tiga inokulum yaitu *Lactobacillus acidophilus*, *Lactobacillus casei*, dan *Lactobacillus plantarum* yang diformulasikan dalam tepung beras. Formulasi ketiga inokulum dalam tepung beras telah dilaporkan memiliki viabilitas BAL tertinggi, namun kemampuan formulasi tersebut dalam pembuatan yogurt belum pernah dilakukan. Sebanyak 3% (b/v) inokulum BAL ($\pm 9 \text{ Log sel/mL}$) ditambahkan ke 100 mL susu sapi segar yang telah dipanaskan pada suhu 80°C selama 30 menit, dan diinkubasi pada 37°C derajat selama 18 jam hingga pH 4.65 ± 0.5 . Parameter analisis yoghurt antara lain nilai pH, total padatan, dan jumlah koloni BAL terbentuk. Yoghurt yang dibuat dengan inokulum BAL yang diformulasikan dalam tepung beras memiliki pH yang signifikan ($p < 0.05$) lebih rendah, dengan total padatan dan jumlah koloni BAL terbentuk yang signifikan ($p < 0.05$) lebih tinggi dibanding yoghurt yang dibuat dengan inokulum BAL yang tidak diformulasikan dalam tepung beras. Perbedaan jenis BAL secara tunggal dan campuran tidak memberikan perbedaan yang signifikan ($p > 0.05$) terhadap pH, total padatan, dan jumlah koloni BAL yoghurt. Inokulum *Lactobacillus acidophilus*, *Lactobacillus casei*, dan *Lactobacillus plantarum* yang diformulasikan dalam tepung beras dapat digunakan sebagai alternatif formula dalam pembuatan yoghurt berbahan susu sapi segar.

Kata kunci: yoghurt, formula inokulum, *Lactobacillus acidophilus*, *Lactobacillus casei*, *Lactobacillus plantarum*

ABSTRACT

APPLICATION OF LACTIC ACID BACTERIA INOCULUM FORMULA FOR THE PRODUCTION OF YOGHURT FROM FRESH COW'S MILK

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The production of yogurt from fresh cow's milk is influenced by the inoculation of lactic acid bacteria (LAB), including *Lactobacillus sp.* and *Streptococcus thermophilus*. This study used three inoculums, namely *Lactobacillus acidophilus*, *Lactobacillus casei*, and *Lactobacillus plantarum*, which were formulated in rice flour. The third formulation of inoculum in rice flour was reported to have the highest LAB viability, but its ability in yogurt production has not yet been tested. 3% (w/v) of BAL inoculum ($\pm 9 \text{ Log cells/mL}$) was added to 100 mL of fresh cow's milk that had been heated to 80°C for 30 minutes, and incubated at 37°C for 18 hours until pH 4.65 ± 0.5 . Yogurt analysis parameters include pH value, total solids, and the number of formed BAL colonies. Yogurt made with BAL inoculum formulated in rice flour has a significantly lower pH value ($p < 0.05$), with significantly higher total solids and the number of formed BAL colonies ($p < 0.05$) compared to yogurt made with BAL inoculum that was not formulated in rice flour. The difference between single and mixed LAB inoculum did not give a significant difference ($p > 0.05$) in pH, total solids, and the number of BAL colonies in yogurt. *Lactobacillus acidophilus*, *Lactobacillus casei*, and *Lactobacillus plantarum* inoculum formulated in rice flour can be used as an alternative formula in producing yogurt from fresh cow's milk.

Keywords: yoghurt, formula, inoculum, *Lactobacillus acidophilus*, *Lactobacillus casei*, *Lactobacillus plantarum*