

## INTISARI

### **POLA PERTUMBUHAN DAN PRODUKSI ASAM BAKTERI ASAM LAKTAT *INDIGENOUS* PADA FERMENTASI SUSU MENGGUNAKAN KULTUR TUNGGAL DAN CAMPURAN**

Bakteri asam laktat *indigenous* memiliki potensi sebagai probiotik dan kultur starter susu fermentasi. Penelitian ini bertujuan mempelajari pola pertumbuhan dan produksi asam bakteri asam laktat *indigenous* pada fermentasi susu menggunakan kultur tunggal dan campuran. Bahan yang digunakan adalah susu UHT, susu skim 3%, kultur starter *Streptococcus thermophilus* Dad 11, *Lactobacillus plantarum* Dad 13 dan *Lactobacillus plantarum* Mut 7. Penelitian dilakukan melalui dua tahap yaitu tahap fermentasi susu menggunakan kultur tunggal dan tahap fermentasi susu menggunakan kultur campuran *S.thermophilus* Dad 11 dan *L. plantarum* Dad 13 serta *S. thermophilus* Dad 11 dan *L. plantarum* Mut 7. Kultur starter sebanyak 1% ditambahkan ke dalam susu UHT dan susu skim 3% kemudian diinkubasi pada suhu 37 dan 42<sup>0</sup>C. Hasil penelitian menunjukkan pola pertumbuhan, produksi asam dan penurunan pH kultur tunggal *S. thermophilus* Dad 11 meningkat lebih cepat daripada *L. plantarum* Dad 13 dan *L. plantarum* Mut 7. Pola pertumbuhan, produksi asam dan penurunan pH kultur campuran meningkat lebih besar daripada kultur tunggal. Yogurt kultur campuran *S.thermophilus* Dad 11 dan *L. plantarum* Dad 13; *S.thermophilus* Dad 11 dan *L. plantarum* Mut 7 mencapai jumlah sel 1,32 – 1,74 x 10<sup>9</sup> CFU/ml, produksi asam 1,08 – 1,37%, dan pH 4,87 – 4,48 selama fermentasi 24 jam dengan tekstur padat, rasa asam dan aroma khas sesuai dengan standar SNI yogurt. Yogurt isolat lokal secara keseluruhan dapat diterima oleh konsumen. Fermentasi yogurt isolat lokal membutuhkan waktu 24 jam.

Kata kunci : Yogurt, *Streptococcus thermophilus* Dad 11, *Lactobacillus plantarum* Dad 13, *Lactobacillus plantarum* Mut 7, kultur tunggal, kultur campuran

## GROWTH PATTERNS AND ACID PRODUCTION FROM INDIGENOUS LACTIC ACID BACTERIA DURING MILK FERMENTATION USING SINGLE AND MIXED CULTURE

### ABSTRACT

Indigenous lactic acid bacteria has potency as probiotics and fermented milk starter cultures. This research aims to study the pattern of growth and acid production of indigenous lactic acid bacteria in fermented milk using a single and mixed culture. It used UHT milk, 3% skim milk, starter cultures *Streptococcus thermophilus* Dad 11, *Lactobacillus plantarum* Dad 13 and *Lactobacillus plantarum* Mut 7. This study conducted in two phases : the fermentation of milk using a single culture and mixed culture of *S.thermophilus* Dad 11 and *L. plantarum* Dad 13; *S.thermophilus* Dad 11 and *L. plantarum* Mut 7. Amount 1% starter culture is added to the milk UHT and 3% skim milk, incubated at 37 and 42<sup>0</sup>C. The results showed a pattern of growth, acid production and pH decreased of single culture *S.thermophilus* Dad 11 more than single culture of *L. plantarum* Dad 13 and *L. plantarum* Mut 7. The pattern of growth, acid production and pH decreased of mixed cultures increased more than the single culture. Yoghurt mixed culture *S.thermophilus* Dad 11 and *L. plantarum* Dad 13; *S.thermophilus* Dad 11 and *L. plantarum* Mut 7 reaches the cell number from 1,32 to 1,74 x 10<sup>9</sup> CFU/ml, acid production from 1,08 to 1,37%, and a pH 4,87 to 4,48 during 24 hours fermentation with dense texture, flavor and aroma typical acid in accordance with yoghurt standards. Overall, local isolated yoghurt is acceptable for consumers. Isolated local yoghurt fermentation take place for 24 hours.

**Keywords** : Yoghurt, *Streptococcus thermophilus* Dad 11, *Lactobacillus plantarum* Dad 13, *Lactobacillus plantarum* Mut 7, single culture, mixed culture