KUALITAS FERMENTASI *Lactococcus lactis* subsp. *lactis* NBRC 1700 MENGGUNAKAN CAMPURAN SUSU UHT DAN SARI KACANG MERAH

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INTISARI

Raffinose termasuk dalam kelompok oligosakarida terkandung dalam kacang merah. Komponen ini harus diuraikan agar dapat mudah diserap oleh saluran cerna manusia. Salah satu BAL yang dapat menguraikan adalah *Lactococcus lactis* subsp. *lactis* termasuk dalam kelompok bakteri asam laktat. Bakteri Asam Laktat mampu menghasilkan enzim α-β galaktosidase sehingga mampu memecah raffinose menjadi sukrosa dan glukosa. Penguraian oligosakarida dengan bantuan Bakteri Asam Laktat dapat dilakukan dalam proses fermentasi. Penelitian ini bertujuan untuk mengetahui kualitas dan pengaruh terhadap total protein, total BAL, total asam dan pH pada produk fermentasi substrat sari kacang merah Starter *Lactococcus lactis* subsp. *lactis* NBRC 12007 ditambahkan 3% kedalam substrat sari kacang merah dan susu sapi UHT. Fermentasi dilakukan selaam 24 jam dengan suhu 37^{o}C. Hasil akhir menunjukkan bahwa nilai total sel sebsar 2,99 x 10^{8} CFU/ml, total asam sebesar 1,75%, total protein sebesar 17,57, pH sebesar 3,79, antibakteri sebesar 22,5 ±1,00mm, total padatan sebesar 15,34% dan kadar air sebesar 84,6%. Produk fermentasi dengan substrat sari kacang merah lebih baik daripada substrat susu UHT dari segi kuantitas. Segi kualitas, fermentasi dengan substrat susu UHT lebih banyak diminati dibandingkan dengan substrat sari kacang merah.

Kata kunci : Kacang merah, Fermentasi, *Lactococcus lactis* subsp. *Lactis*, Asam Laktat

FERMENTATION QUALITY OF *Lactococcus lactis* subsp. *lactis* NBRC 1700 USING THE COMBINATION UHT MILK AND RED BEAN MILK

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ABSTRACT

Raffinose belongs to the oligosaccharide group which is a carbohydrate content in red beans. This component of food must be broken down so that it can be easily absorbed by the human digestive tract. One of the microorganisms that can decompose is Lactococcus lactis subsp. lactis belongs to the Lactic Acid Bacteria group. Lactic Acid Bacteria can produce the enzyme α-β galactosidase so that it can break down raffinose into sucrose and glucose. The decomposition of oligosaccharides with the help of Lactic Acid Bacteria can be done in the fermentation process. This study aims to determine the quality and effect of total protein, total LAB, total acid and pH on the fermented red bean extract substrate product of Lactococcus lactis subsp. lactis NBRC 12007 was added 3% to the substrate of red bean extract and UHT cow's milk. Fermentation is carried out for 24 hours at 37oC. The final results showed that the total value of cells was 2.99 x 108 CFU / ml, total acid was 1.75%, total protein was 17.57, pH was 3.79, antibacterial was 22.5 ± 1.00mm, total solids 15.34% and water content 84.6%. Fermented products with red bean extract substrate are better than UHT milk substrate in terms of quantity. In terms of quality, fermentation with UHT milk substrate is more desirable compared to the red bean extract substrate.

Key word: Fermentation , Red bean, *Lactococcus lactis* subsp. *Lactis* , lactic acid