

**FERMENTASI MINUMAN *WHEY* KEJU DENGAN VARIASI
KONSENTRASI GULA MENGGUNAKAN STARTER LOKAL
Lactiplantibacillus plantarum subsp. *plantarum* Dad-13 dan *Streptococcus
thermophilus* Dad-11**

INTISARI

Oleh:

VIRA CHRISTIE MIRACLE PANGGABEAN

21/480991/TP/13276

Pada penelitian ini dilakukan pengembangan minuman fermentasi sebagai salah satu upaya yang efektif untuk memanfaatkan *whey* dari hasil samping pengolahan keju. Penelitian ini bertujuan untuk mengetahui pengaruh gula terhadap pertumbuhan bakteri asam laktat dan probiotik selama fermentasi serta stabilitas produk minuman fermentasi *whey* selama penyimpanan. Fermentasi *whey* diproduksi dengan variasi kadar gula sebanyak 6%, 7%, dan 8% dengan menggunakan kultur *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 dan *Streptococcus thermophilus* Dad-11. Pada sampel ini dilakukan pengujian meliputi jumlah sel BAL dan probiotik selama fermentasi, pH, total asam tertitiasi, viskositas, dan viabilitas bakteri selama penyimpanan. Hasil penelitian menunjukkan bahwa variasi gula tidak memberikan pengaruh signifikan terhadap jumlah bakteri asam laktat serta probiotik selama fermentasi dan penyimpanan. Setelah 24 jam fermentasi, jumlah BAL mencapai 9 log CFU/mL dan probiotik mencapai 8 log CFU/mL. Hingga akhir penyimpanan 6 minggu, jumlah sel BAL maupun probiotik 7 log CFU/mL hingga 8 log CFU/mL. Nilai pH masih berada dalam rentang 4,3-4,9 dan jumlah asam laktat berada pada rentang 0,90–0,91%. Nilai viskositas berkisar antara 17,26–19,30 cP.

Kata kunci : *Whey keju, minuman fermentasi, probiotik, gula, bakteri asam laktat*

FERMENTATION OF CHEESE *WHEY* DRINK WITH VARIATIONS OF SUGAR CONCENTRATION USING LOCAL STARTER *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 and *Streptococcus thermophilus* Dad-11

ABSTRACT

By:

VIRA CHRISTIE MIRACLE PANGGABEAN

21/480991/TP/13276

In this research, the development of fermented beverages was carried out as an effective effort to utilize *whey* from cheese processing by-products. This research aims to determine the effect of sugar on the growth of lactic acid bacteria and probiotics during fermentation and the stability of *whey* fermented beverage products during storage. *Whey* fermentation was produced with variations in sugar content of 6%, 7%, and 8% using *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 and *Streptococcus thermophilus* Dad-11 cultures starter. In this sample, tests were carried out including the number of BAL cells and probiotics during fermentation, pH, total titrated acid, viscosity, and bacterial viability during storage. The results showed that the presence of sugar variations did not have a significant affect on the number of lactic acid bacteria and probiotics during fermentation and storage. After 24 hours of fermentation, the number of LAB reached 9 log CFU/mL and probiotics reached 8 log CFU/mL. Until the end of 6 weeks of storage, the number of LAB and probiotic cells was 7 log CFU/mL to 8 log CFU/mL. The pH value is still in the range of 4.3-4.9 and the amount of lactic acid is in the range of 0.90–0.91%. The viscosity value ranges from 17.26–19.30 cP.

Keywords: *Cheese whey, fermented beverage, probiotic, sugar, lactic acid bacteria*