

**PENGARUH KONSENTRASI EKSTRAK YEAST TERHADAP  
PERTUMBUHAN DAN PRODUKSI METABOLIT PADA MEDIA  
BERBASIS PEPTON DAGING OLEH *Lactiplantibacillus Plantarum* subsp.  
*plantarum* FNCC0250**

**ABSTRAK**

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Probiotik sebagai agen kesehatan sekaligus mikroorganisme membutuhkan lingkungan tumbuh yang sesuai untuk dapat memaksimalkan potensi yang dimiliki. Dalam penelitian ini, *Lactiplantibacillus plantarum* subsp. *plantarum* FNCC0250 sebagai salah satu strain probiotik lokal Indonesia diuji dalam media pertumbuhan berbasis peptone daging dengan variasi konsentrasi ekstrak yeast. Penelitian ini mempelajari pengaruh media 1% pepton saja dan ditambah variasi konsentrasi ekstrak yeast 0,01%; 0,5%; dan 1% terhadap pertumbuhan sel dan produksi GABA. Sebagai kontrol digunakan media *deMan Rogosa Sharpe* (MRS). Kultur *Lactiplantibacillus plantarum* subsp. *plantarum* FNCC0250 ditumbuhkan pada setiap variasi komposisi media dan diinkubasi selama 24 jam pada 30°C. Pertumbuhan sel dan penurunan pH diukur pada awal dan akhir proses fermentasi (jam ke-0 dan jam ke-24). Selanjutnya dilakukan sentrifugasi pada akhir fermentasi untuk mendapatkan supernatan dan dilakukan analisis kadar GABA dan asam folat pada media fermentasi. Berdasarkan hasil fermentasi, peningkatan konsentrasi ekstrak yeast berbanding lurus dengan penurunan pH, jumlah sel, dan kadar GABA. Hasil terbaik didapatkan pada konsentrasi pepton 1% dan konsentrasi ekstrak yeast 1% menghasilkan jumlah sel pada akhir fermentasi sebanyak  $9,63 \pm 0,09$  Log CFU/mL dengan pH  $3,82 \pm 0,01$ . Didapatkan GABA tertinggi pada  $12,47 \pm 0,39$  mg/L sedangkan tidak ada asam folat yang dapat terdeteksi pada kontrol dan seluruh variasi media pertumbuhan.

Kata kunci : probiotik, media halal, pertumbuhan sel, pH, *Gamma Amino Butyric Acid* (GABA)

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**EFFECT OF YEAST EXTRACT CONCENTRATION ON GROWTH AND METABOLITES PRODUCTION ON PEPTON-BASED MEDIA BY *Lactiplantibacillus Plantarum* subsp. *plantarum* FNCC0250**

**ABSTRACT**

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Probiotics, as health-promoting agents and microorganisms, require a suitable growth environment to maximize their potential. In this study, *Lactiplantibacillus plantarum* subsp. *plantarum* FNCC0250, a local Indonesian probiotic strain, was tested in a meat peptone-based growth medium with varying concentrations of yeast extract. This research investigated the effects of a 1% peptone medium alone and in combination with yeast extract concentrations of 0.01%, 0.5%, and 1% on cell growth and *gamma-amino butyric acid* (GABA) production. *De Man Rogosa Sharpe* (MRS) medium was used as the control. *Lactiplantibacillus plantarum* subsp. *plantarum* FNCC0250 was cultured in each variation of the medium composition and incubated for 24 hours at 30°C. Cell growth and pH reduction were measured at the beginning and end of the fermentation process (0 hours and 24 hours). Subsequently, centrifugation was performed at the end of the fermentation to obtain the supernatant, and the levels of GABA and folic acid in the fermentation medium were analyzed. Based on the fermentation results, increasing yeast extract concentration was directly proportional to the decrease in pH, cell count, and GABA levels. The best results were obtained with a 1% peptone and 1% yeast extract concentration, yielding a final cell count of  $9.63 \pm 0.09$  Log CFU/mL and a pH of  $3.82 \pm 0.01$ . The highest GABA concentration was  $12.47 \pm 0.39$  mg/L, while no folic acid was detected in the control or any of the growth medium variations.

Keywords : probiotic, halal media, cell growth, pH, *Gamma Amino Butyric Acid* (GABA)

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