

**Optimalisasi Suhu Fermentasi Pada Produksi Sel Probiotik  
*Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 untuk Pembuatan  
Suplemen Kesehatan**

**INTISARI**

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Penelitian bertujuan untuk mengetahui pengaruh perbedaan suhu fermentasi (30°C, 35°C, dan 37°C) terhadap jumlah sel *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 pada suplemen kesehatan berbasis probiotik. Kultur probiotik yang digunakan yaitu *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 yang diperoleh dari Pusat Studi Pangan dan Gizi, UGM. Perhitungan sel dilakukan pada awal fermentasi dan akhir fermentasi selama 20 jam.

Hasil penelitian menunjukkan bahwa jumlah sel *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 mengalami kenaikan jumlah sel setelah dilakukan fermentasi selama 20 jam. Jumlah sel *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 pada setiap perlakuan suhu fermentasi (30°C, 35°C, dan 37°C) dihasilkan jumlah sel akhir hampir sama yaitu berkisar pada rentang 10<sup>9</sup> CFU/mL..

Kata kunci: *Lactiplantibacillus plantarum* subsp *plantarum* Dad-13, suhu fermentasi, jumlah sel hidup, probiotik

## Optimization of Fermentation Temperature in the Production of Probiotic Cells *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 for Health Supplement Manufacture

### ABSTRACT

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The research aims to determine the effect of fermentation temperature differences (30°C, 35°C, and 37°C) on the number of *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 cells in probiotic-based health supplements. The probiotic culture used is *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 obtained from the Center for Food and Nutrition Studies, UGM. Cell counting was conducted at the beginning and end of fermentation for 20 hours.

The research results indicate that the number of *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 cells increased after fermentation for 20 hours. The number of *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 cells in each fermentation temperature treatment (30°C, 35°C, and 37°C) resulted in almost the same final cell count, ranging around  $10^9$  CFU/mL.

Keywords: *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13, fermentation temperature, live cell count, probiotic