

OPTIMALISASI KONSENTRASI PEPTON IKAN DALAM MEDIA PERTUMBUHAN UNTUK PRODUKSI BUBUK PROBIOTIK

***Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13**

INTISARI

Oleh:

MARELLA VIRAJAYO

20/460665/TP/12875

Dalam industri, termasuk industri probiotik, diperlukan optimalisasi penggunaan bahan baku agar proses produksi dapat berjalan dengan efisien. Salah satu bahan yang digunakan dalam produksi bubuk probiotik adalah sumber nitrogen dalam media pertumbuhan sel. Penelitian ini dilakukan untuk mengetahui konsentrasi pepton ikan dalam media pertumbuhan yang efisien untuk produksi sel probiotik *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13. Pada penelitian ini, kultur ditumbuhkan dalam media dengan berbagai variasi konsentrasi pepton ikan pada suhu 30°C selama 20 jam dan pertumbuhan sel diukur sebagai CFU/mL. Penelitian dilanjutkan dengan proses produksi sel bubuk untuk mengetahui efisiensi proses. Berdasarkan hasil penelitian, konsentrasi pepton ikan 6,25 g/L dalam media pertumbuhan paling efisien untuk produksi sel probiotik *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 dengan jumlah sel pada akhir proses fermentasi sebanyak $1,02 \times 10^9$ CFU/mL.

Kata kunci: *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13, nitrogen, pepton ikan, media pertumbuhan, pertumbuhan sel, bubuk probiotik

**OPTIMALIZATION OF FISH PEPTONE CONCENTRATION ON
GROWTH MEDIUM FOR *Lactiplantibacillus plantarum* subsp. *plantarum*
Dad-13 PROBIOTIC POWDER PRODUCTION**

ABSTRACT

By:

MARELLA VIRAJAYO

20/460665/TP/12875

In industry, including probiotic industry, optimization of raw materials utilization is required to ensure that production process is efficient. In probiotic industry, nitrogen source is one of the raw materials that used in the growth medium. This study was conducted to determine the efficient concentration of fish peptone on growth medium for *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 probiotic cells production. In this study, the cultures were grown in growth medium with various concentration of fish peptone at 30°C for 20 hours and cell growth was measured as CFU/mL. Thereafter, cells powder production was carried out to know the process efficiency. The results show that growth medium containing 6,25 g/L of fish peptone was the most efficient for *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 probiotic cells production with cells number at the end of fermentation process were $1,02 \times 10^9$ CFU/mL.

Keywords: *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13, nitrogen, fish peptone, growth medium, cell growth, probiotic powder