OPTIMALISASI KONSENTRASI EKSTRAK KHAMIR DALAM MEDIA PERTUMBUHAN SEL *Lactiplantibacillus plantarum* subsp. *plantarum* FNCC-0250 PADA PROSES PRODUKSI BUBUK PROBIOTIK

INTISARI

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Dalam pembuatan media pertumbuhan, diperlukan ekstrak *yeast* sebagai sumber nutrisi dalam pertumbuhan sel. Namun, ekstrak *yeast* memiliki harga yang tinggi dan berkontribusi besar terhadap biaya produksi media pertumbuhan. Tujuan dari penelitian ini adalah untuk mengetahui efisiensi konsentrasi ekstrak *yeast* dalam media pertumbuhan *Lactiplantibacillus plantarum* subsp. *plantarum* FNCC-0250. Pada penelitian ini, kultur ditumbuhkan dalam media dengan berbagai variasi konsentrasi ekstrak *yeast* pada suhu 30°C selama 20 jam proses fermentasi dan diukur pertumbuhan jumlah sel, pH dan absorbansinya. Penelitian dilanjutkan dengan produksi sel bubuk probiotik untuk mengetahui efisiensi proses selama produksi bubuk probiotik. Berdasarkan hasil penelitian, didapatkan kesimpulan bahwa formula A efisien untuk menghasilkan jumlah sel *Lactiplantibacillus plantarum* subsp. *plantarum* FNCC-0250 dengan jumlah sel akhir proses fermentasi sebesar 1,52 x 10^9 CFU/mL.

Kata kunci: media pertumbuhan, *Lactiplantibacillus plantarum* subsp. *plantarum* FNCC-0250, ekstrak *yeast*, pertumbuhan sel, bubuk probiotik

OPTIMIZATION OF YEAST EXTRACT CONCENTRATION IN CELL GROWTH MEDIA OF *Lactiplantibacillus plantarum* subsp. *plantarum* FNCC-0250 IN THE PRODUCTION PROCESS OF PROBIOTIC POWDER

ABSTRACT

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In making growth media, yeast extract is needed as a source of nutrition for cell growth. However, yeast extract has a high price and contributes greatly to the production costs of growth media. This study aim to determine the efficiency of yeast extract concentration in the growth medium of *Lactiplantibacillus plantarum* subsp. *plantarum* FNCC-0250. In this study, cultures were grown in media with various concentrations of yeast extract at a temperature of 30°C during the 20 hour fermentation process and the growth of cell, pH and absorbance were measured. The research continued with the production of probiotic powder cells to determine the efficiency of the process during probiotic powder production. The results showed, that the using it can be summarized that formula A is efficient in producing of *Lactiplantibacillus plantarum* subsp. *plantarum* FNCC-0250 with cells amount at the end of the fermentation process was around 1,52 x 10^9 CFU/mL.

Key words: growth medium, *Lactiplantibacillus plantarum* subsp. *plantarum* FNCC-0250, yeast extract, cell growth, probiotic powder