OPTIMIZATION OF FERMENTATION CONDITIONS PRODUCTION OF SOPHOROLIPID BY RESPONSE SURFACE METHODOLOGY

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Summary

In this research, Response Surface Methodology is used to optimize the fermentation conditions of sophorolipid (SL) production. To select the elements: molasses content, soybean oil content, pH, temperature, fermentation time is based on the design of Plackett-Burman. Survey 3 factors: molasses content, soybean oil content, the temperature most affected ($p < 0.05$) to the fermentation. To determine the optimal value of the 3 main factors affecting fermentation, Box-Behnken design, it is the appropriate choice. The result was 134.27 g/l molasses, 4.35% soybean oil, 28.38^0C will content of SL collected is 50.87 g/l, in which lactone SL is 80%. Conducting fermentation bulk 100 liters 500 liter bioreactor environment SL content is 52.15 ± 0.55 g/l Similarly, when fermented in 250 ml erlen, Productivity and production rate of the fermentation were 0.0074 g SL/g biomass/h and 0.3104 g SL/ l/ h respectively.

Keywords: *Box-Behnken, Cadida bombicola, Surface Response Method, Plackett-Burman, sophorolipid.*