

OPTIMAZATION OF ETHANOL PRODUCTION BY *SACCHAROMYCES CEREVISIAE* AS FUNCTION OF pH AND TEMPERATURE: BATCH FERMENTATION

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ABSTRACT

In the present study, the effect of pH and temperature on ethanol production using *Saccharomyces cerevisiae* was investigated. Glucose concentration in batch fermentation was 30g/l. Experiments for pH in the range of 4.2 to 5.8 with an increment of 0.4 and in the range of temperature of 20°C to 40°C with an increment of 5°C were performed. Design-Expert software was applied for the optimization of ethanol production incorporating the cell optical density and determination of cell dry weight. Finally, cell dry weight as objective function was determined as function of pH and temperature. The desired conditions for ethanol production were found at pH value of 5.13 and the suitable temperature was 31.8°C.

Keywords: Optimization; Design-Expert; Ethanol production; *Saccharomyces cerevisiae*; pH; Temperature