

ASSESSING GROWTH PERFORMANCE OF *Saccharomyces cerevisiae* IN STILLAGE FROM ETHANOL FERMENTATION

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ABSTRACT

A study was conducted to evaluate the biomass production of baker yeast, *Saccharomyces cerevisiae* in batch culture. Aerobic fermentation was carried out in clear shake-flasks using stillage as the sole culture medium for 48 hours. Removal of ethanol from stillage was carried out by boiling the broth for 2 hours until ethanol concentration was nearly 1-5 gL⁻¹. Biomass production was optimized by varying glucose concentration as nutrient amendment. So, the growth of *S.cerevisiae* was higher (7 gL⁻¹) in highest level of glucose concentration (150 gL⁻¹). Effect of yeast growth and different glucose concentration on evolution of organic matter (measured as chemical oxygen demand, COD) was analyzed. The maximum reduction of COD was achieved practically after 48 hours from 92 gL⁻¹ to 30.5 gL⁻¹. COD removal was not affected by different glucose concentration as the reduction level was almost similar in all replicates. Aerobic biological degradation by baker's yeast reduces the COD and overall reductions in the range of 60 to 70% were obtained.

Keywords: *Saccharomyces cerevisiae*, stillage, biomass, single cell protein, COD