

## ABSTRACT

In the work to be presented, studies were carried out on the recycling of yeast (*S. cerevisiae*) in ethanol fermentation under anaerobic fermentation conditions. Cane molasses in different concentrations was used as sugar source for the maximum conversion of reducing sugars to ethanol. The substrate was optimized after maintaining different levels of sugar concentrations (10-20%), medium pH(4.0-5.0), incubation temperatures (30-40°C), inoculum sizes(0.5-1.5%) and recycling was done by fresh inoculum and immobilized yeast cells. Results obtained indicated that 1.5 % vegetative cells of yeast on utilizing molasses at 15% sugar level with 5.0 medium pH at 30°C gave maximum ethanol production. The results showed that in ethanol fermentation yeast gave maximum ethanol yield in recycling phase at cycle-1 as compared to control (fresh inoculum). The yeast (*S. cerevisiae*) gave better ethanol production in non immobilized phase as compared to immobilized yeast cells.