

D-32:STUDY OF THE FEASIBILITY OF RECYCLING YEASTS AND ITS EFFECT ON FERMENTATION EFFICIENCY

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A study on yeast recycling was conducted in the laboratory for molasses fermentation. Local selection of *Saccharomyces cerevisiae* yeast culture SL-SRI-C-102 was used as the test organism. After each round of fermentation the fermented wash was decanted and the sludge containing yeast cells was acid treated and aerated and 4 levels of Nitrogen and Phosphorus were added. Then recycling experiments were conducted until the fermentation efficiencies record uneconomical levels. Cell concentrations, residual sugars, fermentation efficiencies and alcohol yields in each cycle were recorded.

It was found that the fermentation efficiencies were always higher when the molasses medium supplemented with 0.3% urea and 0.15% Potassium hydrogenphosphate and the values were 94.2%, 94.1%, 88.2%, 80% in the 1st, 2nd, 3rd and the 4th cycle respectively. The lowest value (57.6%) was recorded in the 4th cycle of the experiment which used unsupplemented molasses. Adding, only phosphate in to the medium did not show any significant difference in the fermentation efficiency. Although the urea treated (0.3%) molasses showed the highest efficiency (84.5%) in its 2nd cycle and it had significantly different efficiency value than the fermentations with molasses supplemented with Nitrogen and Phosphorus.