

PROJECT REPORT
ON
“COMPARATIVE STUDY ON DECOLORISATION OF MOLASSES
WASTE WATER BY BACTERIA AND FUNGI.”
(PROJECT APPROVED BY KARNATAKA STATE COUNCIL OF
SCIENCE AND TECHNOLOGY)

Submitted in partial fulfillment of the requirements for the award of degree of
BACHELOR OF ENGINEERING IN
BIOTECHNOLOGY



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ABSTRACT

Effluents released from sugar distilleries leads to environmental pollution due to its large volume and presence of dark brown colored compounds, known as melanoidins. The characteristics of molasses wastewater were studied : the various parameters include pH, TDS, TSS , COD . The strains employed which were obtained from NCIM , Pune were : *Lactobacillus plantarum* , *Acetobacter acetii* , *Aspergillus oryzae* and *Coriolus versicolor*. Ideal conditions such as pH of 6 , constant agitation speed of 150 rpm , and a temperature of 30⁰C were maintained.. Three trials, with different percentage concentrations of inoculum i.e 5%, 10%and 15% were used to determine that percentage concentration which resulted in highest decolourisation extent. TWO LEVEL FACTORIAL METHOD (carbon source , nitrogen source and two salts) was used for media optimization .These optimized conditions were further used in order to carry out decolourisation studies for mixed cultures .Among the four strains ,*A. acetii* showed highest decolourisation of 79.7%. For maximum decolourisation by mixed cultures of bacteria , (15% of *A. acetii* , 5% *L. plantarum* , 0.5g of dextrose and 0.5g of yeast extract) was found to be best .For maximum decolourisation by mixed cultures of fungi ,was best (15% *C. versicolor* and 5 % of *A. oryzae* , 1.0g dextrose , 0.5g yeast extract , 0.1g KH₂PO₄).