KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

STUDENTS PROJECT PROGRAMME

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A PROJECT REPORT ON

"MUNICIPAL WASTEWATER TREATMENT USING ALGAE"

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Abstract

Nutrient pollution of wastewaters in India and its treatment is currently one of the biggest challenges being faced in waste management. As nutrient pollution leads to eutrophication and algal bloom, the present research aims to reduce the nutrient load in wastewater using microalgae, before its release in water bodies. Microalgae was successfully isolated from municipal wastewater fed urban lake in Bengaluru and inoculated in domestic wastewater to carry out the treatment. Growth curve analysis and biomass studies were carried out on the microalgae isolated from lakes. The dry algal biomass was found to be 1.078gm/L and biomass productivity was 24.5mg/L/d. The nutrient removal efficiencies were found to be 33.33%, 66.66%, 80%, 88.88% and 88.235% in Chemical Oxygen Demand (COD), Biological Oxygen Demand (BOD,) Total Suspended Solids (TSS), nitrate nitrogen and Total phosphates respectively. Crude lipid extracted was 22.54% of the weight of dry algae.

Keywords: Nutrient pollution, microalgae, wastewater treatment, biomass productivity, lipid extraction