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Environmental Stress Control to enhance lipid content in Oleaginous Microalgae for Biodiesel production

Nirmala.N, Dawn S S

Centre for Waste Management, Sathyabama University, India

Abstract: The aim of the present study is to evaluate the effect of nitrogen and phosphorus concentration in BG-11 medium to accumulate the higher amount of lipid content in the cells of oleaginous microalgae, which is a raw material for biodiesel production. The ability of *Chlorella vulgaris* growth was tested in the medium containing the presence of nitrogen and phosphorus (N+P+), medium with nitrate deficiency (N-P+), medium with phosphorous deficiency (N+P-) The achievement of high biomass concentration and abundant lipid accumulation are determined by performing dry weight determination and lipid accumulation experiments in the cells. The optimization of nitrogen and phosphorous was also achieved by performing the experiment for 12 days at different varying concentration of Sodium nitrate from 0g/L to 3.0g/L and Di- Potassium hydrogen phosphate from 0g/L to 0.5g/L in the presence of constant temperature 24± 2 ° C under 1500 µmol-^{1}m^{2}s^{-1} intensity with 10:14 hour's photoperiod.

Keywords: Biomass Concentration, Environmental stress, High Lipid content, oleaginous microalgae.

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