

Effect of pH, temperature and salinity on growth and biochemical parameters of *Spirogyra* sp.

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ABSTRACT : Microalgae are considered as the most promising renewable feedstock for bio-fuel production and bio-refineries, due to their advantages of fast growth, efficient carbon dioxide fixation, not competing for arable lands and potable water. *Spirogyra* sp. shows potential for the successful bio-fuel production. In the present study, effect of pH, temperature and salinity on growth and biochemical traits like biomass, lipid, carbohydrate, chlorophyll and protein content of *Spirogyra* sp. were assessed. Most of the traits were found higher in control condition. When *Spirogyra* sp. is grown at pH 7 higher yield of biomass, lipid, chlorophyll, carbohydrate and protein were seen. When isolated *Spirogyra* sp. is grown at 25°C, the higher yields of lipid and chlorophyll content were observed and there is decrease in carbohydrate and protein content. The effect of various concentrations of NaCl on the isolated algal species of *Spirogyra* sp. has showed increased biomass yield at 0.1mM NaCl concentration as compared to control. Initial increase of NaCl concentration from 0.0-0.2 mM decreased the lipid content. The present study signifies that the growth of microalgae not only depends on the temperature, light and nutrient availability, but is also highly affected by the salinity.

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