

## Abstract

The present study concerned with the saccharification of algal biomass by whole cell technique. Different algal species were collected and were identified microscopically. Chemical composition of all the identified algal samples (*Spirogyra*, *Chlorella*, *Pithophora*, *Anabaena*, *Oedogonium*) was determined. The cellulose content of *Spirogyra*, was found to be highest i.e. 50% and was selected for further studies. Lipid, carbohydrate and cellulose contents of *Spirogyra* were estimated to be 12%, 60% and 50% respectively. *Spirogyra* was pretreated with liquid hot water and 0.1% lime. *Spirogyra* pretreated with lime showed better result. Saccharification of lime pretreated *Spirogyra* was done by consortia of rumen bacteria under semi-anaerobic conditions and the effect of temperature, pH, incubation period and agitation rate was also examined. Maximum saccharification (7.1% (w/w)  $\pm$  0.083) was obtained from *Spirogyra* at 45°C, pH 7.5 and agitation rate of 200 rpm after 24 hours of incubation.