

BIODIESEL PRODUCTION FROM OLEAGINOUS MICROALGAL STRAIN ISOLATED FROM AGRO-INDUSTRIAL WASTEWATER

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Abstract

From the agro-industrial waste water fifteen colonies of microalgae were isolated and screened for their high lipid content using Nile red staining method. Based on the results, three high lipid content containing green microalgal species were identified as *Chlorococcum sphacosum*, *Chlorella vulgaris* and *Volvox carteri* used for further studies. The selected three green microalgal strains were cultured in two different cultivation methods (Mixotrophic and Heterotrophic) to enhance the biomass and lipid production. In mixotrophic cultivation method, *Chlorococcum sphacosum* showed significant increase in the total lipid content (81%) and biomass concentration (810 mg L⁻¹) were grown in 10g L⁻¹ of sugar molasses than in heterotrophic condition. *Chlorococcum sphacosum* was cultured in modified BBM media, high biomass and lipid content were achieved and compared with BBM media. Among the three microalgal species, the lipid content was high in *Chlorococcum sphacosum* (81.6%) and further used for the production of biodiesel. *Chlorococcum sphacosum* was cultured in both sewage water (SW) and treated effluent water from septic tank (TEW). The physiochemical parameters of SW and TEW were quantified before and after culturing of *Chlorococcum sphacosum*. It was found that all the physiochemical parameters were found to be reduced after culturing the microalgae which indicates that *Chlorococcum sphacosum* can be used for the treatment of wastewaters.c

Biography:

Dr.Ranjitha Jambulingam is one of the best faculty in Organic Chemistry. She has successfully completed 25 years of teaching experience in Vellore Institute of Technology in Vellore. She has a PhD in Organic Chemistry. She also has some latest Article published in one of the best Indexed Journals.

Publications:

1. Phytoremediation of metal-contaminated soils by the hyperaccumulator canola (*Brassica napus* L.) and the use of its biomass for ethanol production.
2. Qualities of commercially and experimentally sun dried fin fish, *Scomberoides tol*
3. Pharmacological profile of *Cassia occidentalis* L-A review.

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