

ENVIRONMENTAL APPLICATIONS OF MICROALGAE: A REVIEW

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Abstract

Microalgae are significant biological sources that have extensive range of biotechnological applications. In points of environmental biotechnology, microalgae are beneficial for bioremediation of industrial and municipal wastewater, and as a biological organ for monitoring and assessment of environmental toxicants such as pesticides, heavy metals and pharmaceutical compounds. In addition, microalgae are effective types in removing phosphorus, nitrogen and biosorption of toxic heavy metals from wastewater. As a consequence, microalgae are key factors during the final stage of wastewater treatment when organic pollution like nitrogen, phosphorous and chemical oxygen demand (COD) have to be decreased to minimum level demanded by Environmental Protection Agency (EPA). In addition to wastewater pollutions, increasing levels of CO₂ in atmosphere which is caused by the continuous rise of worldwide population and industrialization is become a global concern; that is a major issue facing the world today. This universal problem can be easily solved by use of microorganism such as algae. Microalgae culture has a great potential for CO₂ fixation by their photosynthetic ability. Nowadays, microalgae due to their capability to produce valuable bio-product in the course of culture growth and fixation attracted attention. In this review, microalgae aptitude and applications in environmental processes are discussed.

Keywords

Microalgae, Wastewater treatment, Heavy metal biosorption, CO₂ fixation