

BIOREMEDIATION OF NATIONAL THERMAL POWER CORPORATION (NTPC) INDUSTRIAL WASTE WATER BY USING MICROALGA *SCENEDESMUS DIMORPHUS*

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ABSTRACT

Now a days water pollution is a worldwide threat to public health and new initiatives are to be taken for the restoration of our aquatic environment. The conventional method of chemical treatment of waste water can only reduce the concentration of pollutants to a limited extent. In this context biological treatment is more reliable as it is cost effective and economical than mechanical or chemical treatment processes. Being primary producers, algae are of very important in this aspect. The present investigation focuses on the bioremediation of waste water by using a microalga *Scenedesmus dimorphus*. For the study the industrial waste water samples and algal samples were collected from Kayamkulam Lake at source (NTPC), Alappuzha district, Kerala. Samples were analysed for five Physico- Chemical parameters such as p^H, phosphate, nitrate, BOD, COD using standard methods with an interval of five days till the colour of water sample changes. Algae were analysed quantitatively and qualitatively. Among the algal taxa *S. dimorphus* was found to be the most abundant and pollution tolerant one. *S. dimorphus* was isolated from the waste water and cultured in BBM medium. The percentage reduction of various parameters was recorded from the samples treated with the alga. Maximum percentage reduction attained with *S. dimorphus* were COD (71.23%) BOD (89.72%) Phosphate (86.14%) and Nitrate (77.64%). The results are discussed in the text.

Key words: Bioremediation, Physico- Chemical parameters, *Scenedesmus dimorphus*