

Desodermus sp.: A Potential Micro Alga to Treat the Textile Wastewater

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Abstract : Textile industry is the one of the most important industrial sector in India. It accounts for 5% of total Gross Domestic Product (GDP) in the country. A Textile industry consumes large quantities of water (~250 m³/ton of product) and they generate almost ~90% of wastewater from its consumption. The problem is alarming and requires proper treatment process to acquire dual benefit of Zero Liquid Discharge and no contamination to the environment. Here we describe the process by which the textile wastewater can be reused. We have collected the textile wastewater in and around Ayyampettai area of Tamilnadu, India. Among different microalgal strains used, Desodermus sp. collected at Manali, Chennai, Tamilnadu, India was able to lessen the colour of the waste water in 12-15 hrs of its growth, COD around 81.7%, Dissolved solid reduction was 28 ± 0.5 %, Suspended solid was reduced to 40.5 ± 0.3 %, Dye degradation was 50-78%. Further, Desodermus sp. able to achieve the biomass of 0.9 ± 0.2 g/L (dry weight) in two weeks' time, the Chl a content was 11 mg/L. It infers that this algal strain able to utilize the textile wastewater as source for growth and algal biomass production.

Keywords : Desodermus sp., microalgae, textile, treatment, wastewater

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