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BIODEGRADATION OF BASIC FUCHSIN AND METHYL RED BY THE BLUE GREEN ALGAE *Hydrocoleum oligotrichum* AND *Oscillatoria limnetica*

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Abstract

In this work biodegradation of basic fuchsin and methyl red by the blue green algae *Hydrocoleum oligotrichum* and *Oscillatoria limnetica* was investigated. The degradation of basic fuchsin after 7 days by *H. oligotrichum* and *O. limnetica* was 92.44% and 90.23%, respectively. On the other hand, the degradation of methyl red by *H. oligotrichum* and *O. limnetica* after 7 days was 53.23% and 50.18%, respectively. The degradation of these dyes by algae seems to be related to the molecular structures of the compound and physiological metabolism of algae. Infra red (IR) spectra represented a new peak at 3200 cm⁻¹ and a reduction in the azo band at 1570 – 1630 cm⁻¹. Visible spectroscopy and Thin layer chromatography (TLC) confirmed that color removal was due to degradation of the dye. The original dyes and the degraded dye products were evaluated by High Performance Liquid Chromatography (HPLC) and mass spectra (MS) before and after treatment by algae to examine the ability of the algae to degrade dyes.

Key words: biodegradation, cyanobacteria, dyes, wastewater

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