

Color Removal/Dye Degradation of Industrial Effluent to Curb Water Pollution †

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Abstract: In the recent industrialization world, synthase dyes are widely used in several industries and domestic purposes. In the industries related to textile, paper, printing, cosmetics, pharmaceuticals, color photography, paint, and petroleum products, a large number of dyes are classified based on their structure as acidic, basic, disperse, azo, diazo, anthraquinone0-, and a metal complex. Developing eco-friendly and cost-effective dye degradation technologies is needed, as biological processes do not produce large quantities of byproducts. Among many micro-organisms, white-rot fungi (WRF) are the most intensively studied dye decolorizing microbes. Because this WRF is potential micro-organisms having the capability to degrade a range of complex dyes and dyes of low solubility. The dye ACID ORANGE II was collected from the dye industry. The treatment of the prepared dye solution was carried out using the white-rot fungus *Ganoderma Lucidum*. The dye solution of different concentrations was taken to determine the decolorization of the dye solution keeping other parameters the same. From the results, the optimized conditions were used to achieve the maximum decolorization using *Ganoderma Lucidum* fungi in anaerobic conditions. The data of concentration of decolorized dye was obtained by UV-photo spectroscopy at a particular wavelength. The decolorization achieved after 13 days was 76-85%, and it slightly varies from different concentrations.

Keywords: *Ganoderma Lucidum*; biodegradation process; industrial dye effluent; anaerobic condition.

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Conflicts of Interest

The authors declare no conflict of interest.