

Optimization of Culture Conditions for Efficient Decolourization of Crystal Violet Dye by *Aspergillus flavus* NCIM 650

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Abstract—Synthetic dyes are extensively used in different industries and are toxic, mutagenic and carcinogenic in nature. Textile industries utilize large volumes of water in its processing operations and generate substantial quantities of wastewater. Dye wastes are usually discarded into water with/without processing. Aesthetic merit, gas solubility, water transparencies are affected by the presence of dyes even in small amounts. Among many classes of synthetic dyes used in the textile industries, Triphenyl-methane group of dyes such as crystal violet has been extensively used as a textile dye and is a potent carcinogen. Color of crystal violet is easily retained in water bodies and usually contributes a major fraction of BOD. It also prevents sunlight to penetrate through water affecting the marine life. Being recalcitrant, if not treated, will remain in nature for extended period of time. Wide range of known methods for dye removal is categorized - physical, chemical, biological. Large number of microorganisms, mostly fungus because of their large mycelial surface area has been explored to decolorize and degrade dyes. Biological method was emphasized because it is cost effective and eco-friendly. Fungi have the ability to degrade a diverse range of pollutants and are attracting wide-spread use in bioremediation. This work is aimed to optimize the physical parameters for efficient decolourization of crystal violet dye by *Aspergillus flavus* NCIM 650. Dye decolourization was monitored using a scanning UV/visible spectrophotometer. *Aspergillus flavus* NCIM 650 decolorized 82.4% of 50 mg/l dye within 48h of incubation in a mineral salt medium at 37°C pH 7 and 150 rpm.

Keywords: Decolorization, Crystal Violet, *Aspergillus flavus*.