

DECOLORIZATION OF TWO DYES USING WHITE ROT FUNGUS *P.OSTREATUS* (BWPH) STRAIN AND EVALUATION OF ZOOTOXICITY OF POST PROCESS SAMPLES

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Abstract

Synthetic dyes are extensively used in various industries like textile and food industry and are responsible for generation of colored and toxic wastewater. The aim of study was to evaluate decolorization efficiency of White Rot Fungi *Postreatus* (strain BWPH) for dyes belonging to different classes: Anthanthrone Red (anthraquinone dye) and Disazo Red (azo dye) having concentration of 0.08g/l. The *Daphnia magna* immobilization test was performed to check zoo toxicity of samples during and after treatment. The result show that maximum decolorization efficiency achieved for Anthanthrone Red and Disazo Red dye after 168h was 94.31% and 73.13% respectively. The zoo toxicity test reflects that the pure dyes were much less toxic to *D.magna* at higher concentration. In contrast, the post process samples were more toxic to organism. It reflected production of toxic metabolites because of enzymatic degradation/biotransformation of dye. For anthraquinone dye, post process sample of 0.25 h was less toxic as compared to 168 h sample. Toxicity Unit was 23.52(class IV), and 2.61(class III) respectively for Anthanthrone Red and Disazo Red post process sample. The conducted research showed high potential of BWPH strain for decolorization dyes belonging to different classes. But the mycelium produces toxic substances during the decolorization process. It may be related to the biodegradation of these substances to toxic metabolites. Further studies have indicated to optimize the process of decolorization.

Keywords: Anthraquinone dye; Azo dye; Decolorization; *Pleurotus ostreatus*; Zoo toxicity.