

Comparison of fungal and enzymatic decolorization of dye wastewater

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Dye wastewater from textile and dyestuff industries is one of difficult treats, because dyes generally bear complex aromatic compound that is very stable and hard to be degraded. Furthermore this wastewater is highly colored. Therefore, the traditional physicochemical and biological treatment techniques are not efficient in the treatment of dye wastewater, and there is an urgent need for a more cost-effective process free of secondary pollution. Various fungal strains are known to degrade a wide variety of recalcitrant compounds by their extracellular ligninolytic enzymes system. Among the ligninolytic enzymes, laccase was used for degrade of nonphenolic and phenolic compounds, bioremediation of organic pollutants and decolorization of dye wastewater. In this study, we compared a various methods using *Funalia trogii* and their enzymes for the decolorization of dye wastewater. The greater part of dye was decolored by *F. trogii*. Also, addition of CuSO_4 enhanced the decolorization ability of *F. trogii*. But disperse dyes and reactive black 8 were not decolored by their enzymes solution and immobilized enzymes.