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## LIGNINOLYTIC ENZYME SYSTEM OF WHITE-ROT FUNGI: A NATURAL APPROACH TO BIOREMEDIATION AND DETOXIFICATION OF AZO DYES IN TEXTILE WASTEWATER

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### Abstract

In the wake of advance industrialization, the intensive growth of modern textile production and inappropriate wastewater treatment strategies have led to the release of noxious and carcinogenic contaminants like azo dyes directly or indirectly into the environment. Therefore, to ensure the protection of the humankind and natural bionetwork, cost-effective and efficiently regulated control measures are necessary. On this account, recent developments in biotechnology and microbiology have driven bioremediation of azo dyes using white rot fungi (WRF), which is a prospective option compared to conventional methods. These specially adopted microbes reductively cleave the azo group. This review has been carried out to address the bio remedial capabilities of WRF in textile wastewater treatment by evaluating their typical attributes and performance. Furthermore, it emphasizes on the recent obstacles and future outlook for the abatement of azo dyes via advanced strains of WRF.

*Keywords:* azo dyes, bioremediation, detoxification, ligninolytic enzymes, textile effluent, white rot fungi

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