International Journal of Applied
and Natural Sciences (IJANS)
ISSN(P): 2319-4014; ISSN(E): 2319-4022
Vol. 8, Issue 4, Jun - Jul 2019; 33-46
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International Academy of Science,
Engineering and Technology
Connecting Researchers; Nurturing Innovations

AZO DYES DECOLORIZATION USING WHITE ROT FUNGI

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ABSTRACT

Wastewater from different industries is one of the major environmental concerns in the present scenario. The textile industry uses many kinds of synthetic dyes as azo, anthraquinone, polycyclic compounds and triphenylmethane and among them azo dyes are most commonly preferable. Azo dyes cause a serious environmental issue because these dyes are obstinate to biodegradation. Textile industries discharge large amounts of dyes about 10-200 mg/L and 10 -20% of the dye along with organic and inorganic accessory chemicals because the uptake of these dyes by fabrics is very poor. Industrial effluents containing about 5-10% of dyestuffs, which is usually discharged into water bodies. This highly colored textile wastewater severely affects photosynthesis in the plant. It also has an impact on aquatic life due to low light penetration and oxygen consumption. So, this textile wastewater must be treated before their discharge. Physical or chemical methods are costly, energy consuming, low efficient to the environment and generate secondary sludge. Thus biological degradation most preferable for textile dyes degradation will be eco-friendly, do not generate secondary sludge and cost-effective method. Fungi especially white rot fungi (WRF), produces Peroxidases (Lignin peroxidase, LiP, and Manganese peroxidase, MnP) and Phenol oxidase (Laccase) can be used for bioremediation of Azo dyes. In this article, decolorization and biodegradation of Azo dyes, abilities of WRF are reviewed.

KEYWORDS: *Azo, Anthraquinone, Biodegradation, Lignin Peroxidise, Manganese Peroxidase*

Article History

Received: *08 May 2019* **|** ***Revised:*** *21 May 2019* **|** ***Accepted:*** *27 May 2019*