

Biodegradation Potential of Selected Micromycetes Against Dyeing Unit Effluents of Sapphire Industry, Raiwind Road Lahore

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Abstract : Mycoremediation is emerging as a potential approach for eco-friendly and cost-effective remediation of polluted effluents collected from the dyeing unit of the textile industry was examined. This work dealt with the analyses of the bio remedial capability of some potential indigenous six fungal isolates viz., *Aspergillus alliaceus*, *Aspergillus flavus*, *Aspergillus fumigatus*, *Aspergillus niger*, *Penicillium* sp. and *Rhizopus oryzae* were identified and selected for studies. All fungal species were known to bring bioremediation, which had been confirmed by measuring the percentage reduction potential in different parameters, i.e., pH, Electrical Conductivity (EC), Total Suspended Solids (TSS), Total Dissolved Solids (TDS), Biological Oxygen Demand (BOD) and Chemical Oxygen Demand (COD). *Rhizopus oryzae* showed the highest reduction in pH, EC, and BOD, while *Aspergillus fumigatus* showed the highest reduction in TDS and TSS, and COD under the optimal conditions of this study. The biodegradation potential of these fungal species was confirmed, evidenced by excellent evaluation of experimental data to propose *Rhizopus oryzae* and *Aspergillus fumigatus* as a cost-effective solution to treat the effluents from the dyeing unit of the textile industry.

Keywords : biological reduction, fungal isolates, micromycetes, mycoremediation

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