

FUNGAL DECOLORIZATION OF SYNTHETIC DYE

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ABSTRACT

Synthetic dyes are widely used in various industries such as the food, pharmaceutical, cosmetic, printing, textile and leather industries. As a result of this highly colored effluents discharge into the environment and becoming as one of the serious water and soil pollutants released into the environment. Due to their toxic nature and persistence in the environment, they affect the aquatic and soil flora and fauna. So, there is need to develop a suitable technology for decolorization of dye effluents. Conventional color removal techniques comprising activated charcoal, membrane technology, ozone treatment and coagulation/flocculation are effective but have high operating costs and limited applicability. These techniques possess significant differences in color removal results, volume capability, operating speeds and capital costs. Recently, a number of biological approaches have been suggested as of potential interest towards combating this pollution source in an eco-efficient manner. Biological decolorization is an environmentally friendly and cost-competitive alternative to chemical decolorization. Therefore, it has been considered as effective, specific, less energy intensive and environmentally benign. One key to efficient dye decolorization is to use broad-spectrum and highly efficient dye-decolorizing microorganisms. Several microorganisms, such as bacteria, yeast and fungi have been investigated for their ability to decolorize synthetic dyes. Fungi in general have proved to be suitable organisms for the treatment of textile effluent and dye removal. Here we report, forty five (45) fungal isolates retrieved from different contaminated sources by enrichment technique from contaminated soil, effluent and soil enriched with effluent in the laboratory. These isolates further screened and evaluated for decolorization of Crystal violet. Out of 45 fungal isolates twelve isolates were having the potential to decolorize Crystal violet dye in the range of 60.82-98.96%.

Key Words: *Crystal Violet, Decolorization, Effluent, Fungi and Synthetic Dyes.*