

DECOLOURIZATION OF TEXTILE DYES, DISPERSE BLUE 56 AND CIBACRON DEEP RED DYES BY FUNGAL ISOLATES

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ABSTRACT

The presence of a very small amount of dyes in water (less than 1 ppm for some dyes) is highly visible and affect the aesthetic merit, water transparency and gas solubility in lakes, rivers and other water bodies and as a result of this, the removal of the colour and the chemicals present in water is necessary. This research work is therefore aimed at the decolourization and degradation of dyes by fungi isolated from industrial effluents. Nine fungi out of twenty isolates that were isolated from the effluent and soil samples collected from the premises of textile manufacturing and dyeing industries were used for the biodecolourization experiments. These fungi includes *Aspergillus terreus*, *Fusarium flocciferum*, *Neurospora sitophila*, *Candida valida*, *Candida valida*, *Aspergillus melleus*, *Saccharomyces uvarum*, *Penicillium expansum* and *Penicillium atrovnetum*. The decolourization and degradation studies were carried out using UV visible spectrophotometer. The results obtained showed that all the isolates used had potential of being used for decolourisation experiment. Six out of the nine isolates used can decolourise disperse blue 56 to about 60% and eight out of nine can decolourise cibacron deep red to about 60% and above within four and six days respectively while other demonstrated less than 60% decolourization for both dyes within four and six days. The highest decolourization of 72.02% was recorded for *Aspergillus melleus* on day six for Disperse blue 56, while *Neurospora sitophila* had the highest biodecolourization of 83.6% on day 2 for Cibacron deep red dye. Thus, the potentials of these isolates can be employed industrially for the treatment of dye effluent.

KEYWORDS: Biodecolourization, Cibacron, Disperse Blue, Fungal Isolates, Textile Effluent