

REDUCTION OF TOTAL DISSOLVED SOLIDS (TDS) IN TEXTILE DYE EFFLUENT BY BIOLOGICAL PROCESS

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Abstract

Combating environmental pollution is a thrust area at this present juncture. In this context, the dye effluent of the Textile industries has been identified as one of the major pollutant of water ways. In Eritrea, Asmara is a major textiles sector contributing to a sizeable chunk to the economy of the country. At the same time the dyeing units in Asmara, outlet their effluents to the nearby waterway causing dangerous level of pollution. Quiet a large amount of research has gone into preventing pollution. While chemical and biological methods have been tried to reduce the pollution level of the dye effluents, the later method using microbial organisms is attractive because of mild operating conditions and the economy of the process. With this view, experiments have been conducted to degrade the dye effluents using *Aspergillus manginii*, *pencillium chrysogenum*, *pencillium expansum* and *debaryomyces hemsanii var.h*, which were identified to be salt tolerant. Laboratory scale experimental results, using each of the above have been obtained. A comparison to chemical treatment has also been made. The experimental investigation reveals the economy of the biological treatment and also points to the fact that water consumption can be reduced considerably leading to the reuse of the treated effluents.

Keywords: Textile dye effluents, *Aspergillus manginii*, *Pencillium chrysogenum*, *Pencillium expansum*, *Debaryomyces hemsanii var.h*.