Biosorption of Reactive Blue 49 Dye under Continuous Mode Using A Macro-Fungus Agaricus bisporus Immobilized on a Natural Support

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Synthetic dyes from the effluents of textile industry are known to be a major source of environmental pollution when considered both volumes discharged and effluent composition [1]. Approximately one million kilograms per year of dye is discharged in effluents from textile industry [2].

Biosorption technology that utilizes different kind of biomasses has attained a great importance from an environmental point of view as they can be used to remove toxic compounds from contaminated effluents [3].

The macro fungus Agaricus bisporus was immobilized onto cone biomatrix of Thuja orientalis. Biosorbent system in continuous biosorption process was evaluated for the potential to remove Reactive Blue 49 (RB49) textile dye from aqueous solutions. Dynamic flow biosorption potential of biomass system was investigated as a function of flow rate, column size and inlet solute concentration. FTIR and SEM analysis were used to identify the biosorbent characterization and biosorption mechanism. On the whole, our results suggest that the proposed environmentally friendly and low cost biomass system can be useful for the removal of reactive dye contamination.

References