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Removal of Disperse Red 1 from an aqueous solution by fungus *Aspergillus niger*

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ABSTRACT

In this study, removal of Disperse Red 1 from an aqueous solution by biosorption on dead fungus, *Aspergillus niger* was investigated. Effective pretreatment for increasing the biosorption capacity was studied by using different pretreatment methods. Among them, NaOH pretreatment was the most effective. The effective initial pH for the maximum dye adsorption by fungal biomass was 4.0. Kinetic studies showed that the biosorption of Disperse Red 1 on fungal biomass was a slow process and the binding between fungal biomass and the molecules of Disperse Red 1 was weak in the initial period. Equilibrium was reached in 48 h. Isotherm studies showed that the Redlich–Peterson isotherm model could describe the experimental data with a low correlation coefficient. This study demonstrated that dead fungal biomass of *A. niger* was only moderately effective in removing Disperse Red 1 from an aqueous solution.

Keywords: Biosorption; *Aspergillus niger*; Disperse Red 1

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