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REMOVAL OF DUNKEL BLAU DYE FROM AQUEOUS SOLUTIONS BY FUNGAL AND PEAT BIOMASS IN BATCH MODE

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Abstract

Wastewaters of textile and leather dyeing industries contain significant quantities of water-soluble dyes. Moreover the temperature and pH of these wastewaters may be controlling variables affecting the biosorption performance. In this study the sorption of dark blue dye by *Aspergillus* biomass and peat was studied as a function of temperature, initial dye concentration, and initial pH values. In addition, the effects of sorbent dosage on the sorption processes were systematically studied in batch shaking sorption experiment. The results revealed that the high biosorption performance has been achieved for *Aspergillus* biomass for the conditions of T=35°C and pH 5-6. The best efficiency of peat for dye sorption occurred at T=45°C and pH 4-5. Maximum removal efficiency of 69 % was reached for *Aspergillus* biosorbent at 35°C, while for peat sorbent a maximum removal efficiency of 73% at 45°C was obtained. Experimental data were modeled by Sips equilibrium equation. A goodness-of-fit between experimental and predicted data was observed.

Key words: biosorbent, dye, peat, sorption

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