Biosorption chrome (Cr) and dyes using biosorbent in the modified tea bag

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Abstract	Biosorption has been known as a potential method in reducing heavy metals and dyes in wastewater, including chrome (Cr) and dyes contents of the wastewater from the batik industry. Straw and spent mushroom compost (SMC) are potential biosorbents due to cheap, abundant, and easily obtained. However, the effectivity of the biosorbents is not only depended upon the type of material but also their surface area. In this study, a modified tea bag was used to increase the surface area of the straw and spent mushroom compost to absorb Cr and dyes from the batik industry wastewater. The optimum of biosorbent ratio and pH in Cr absorption and dyes decolorization was measured. This experiment was conducted using Spilt Plot Design. The results showed that the highest Cr absorption was found at 0,0050 mg/g, and the percentage of decolorization was 68,92% in the biosorbent ratio of 3:1 and pH 5. Biosorbent packed in the tea bags modification was effective removes Cr and dyes in the batik industry wastewater.
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