Carbonized Pineapple Peel (CPP) Waste as Low Cost Adsorbent for Acid and Reactive Dyes Removal

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There is a considerable need for the dyes removal from textile waste water. Discharge of this waste water into receiving stream cause damage not only to aquatic life but also to human beings. Most of the dyes are not easily biodegradable and thus colour may still remain in the effluent. In this work, the potential feasibility of carbonized pineapple peel (CPP) for removal of acid yellow 14 (AY14) and remazol brilliant blue R (RBBR) from aqueous solution was investigated. Batch experiments were carried out to study the adsorption isotherm with the initial dye concentration of 10-200 mg/L. Equilibrium data were fitted to Langmuir and Freundlich isotherm models. The equilibrium data for AY14 dye and RBBR were best represented by the Langmuir and Freundlich isotherm models, respectively. The maximum monolayer adsorption capacity for AY14 and RBBR dyes were of 156.25 mg/g and 256.41 mg/g, respectively. The maximum percentage removal of AY14 and RBBR dyes were attained at 87.34% and 83.56%, respectively. The results indicated that CPP was an attractive adsorbent for removing AY14 and RBBR dyes from aqueous solutions. Keywords: Pineapple peel; Carbonization; Acid yellow 14; Remazol brilliant blue R; Adsorption.

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