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## **TRUE COLOR REMOVAL FROM REAL TEXTILE WASTEWATER USING WASTE TEA LEAF POWDER**

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### **Abstract**

This study investigated the use of tea waste to decolorize refractory dyestuff from textile wastewater. The influence of the solution pH and the contacting time were examined for various adsorbents, namely green tea-leaf powder (GTP), black tea-leaf powder (BTP), and powdered activated carbon (PAC). Results from batch experiments revealed that the reduction in true color (ADMI) increases with decreasing pH. The ADMI reduced from 1106 to 150 with 0.8 g/L of GTP at pH 2. The results also showed following ADMI removal efficiency order: GTP > PAC >> BTP. The active functional groups of the tea wastes involved in the adsorptive decoloration of tea waste were the hydroxyl, amine, carboxyl stretching, and C–O groups. The work carried out has revealed that green tea waste has a high potential to be used as an economically viable adsorbent to remove true color from textile effluents.

*Key words:* adsorption, decoloration, tea waste, textile wastewater, true color

*Received:* April, 2012; *Revised final:* September, 2012; *Accepted:* October, 2012

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