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## STUDY ON REMOVAL OF CADMIUM FROM AQUEOUS SOLUTIONS BY ADSORPTION ON BAELE TREE LEAF POWDER

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### Abstract

The adsorption behavior of bael tree (BT) leaf powder for cadmium ions from aqueous solutions has been investigated as a function of appropriate equilibrium time, adsorbent dose, adsorbate concentrations and pH using a batch system. Studies showed that the pH of aqueous solutions affected cadmium removal as a result of the fact that removal efficiency increased with increasing solution pH. The maximum adsorption was 93.56% at solution pH equal to 6.0, contact time of 30 min and initial concentration of 10 mg/L. The equilibrium data are well described by Langmuir and Freundlich isotherms. The maximum adsorption capacity determined from the Langmuir isotherm was 1.890 mg/g at 30°C. The BT leaf powder investigated in this study showed the good application potential for the removal of cadmium from aqueous solutions. The goal for this work is to develop inexpensive, highly available, effective metal ion adsorbents from natural waste as alternative to existing commercial adsorbents.

*Key words:* adsorption isotherms, adsorbent, batch adsorption, cadmium, removal

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