

TREATMENT OF CR (VI) CONTAMINATED WASTEWATER USING BIOSORBENT, HYDRILLA VERTICILLATA

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Abstract

The present paper deals with the adsorption of Cr (VI) using a waste weed, *Hydrilla verticillata*. The uptake capacity of the present adsorbent was studied as a function of contact time, pH, adsorbate concentration and adsorbent dose. From the time variation experiments, the equilibrium contact time was found to be 6hr. Cr (VI) uptake capacity of the adsorbent increased with decrease in pH. The maximum uptake capacity of the adsorbent was observed at pH 1.8. The adsorption capacity of the adsorbent was found and to be increased with increase in adsorbate concentration, whereas it decreased with increased in adsorbent dose. The experimental data followed Langmuir adsorption isotherm. The Cr (VI) adsorption process followed pseudo 2nd order kinetics. Ligand exchange mechanism was found to be responsible for the high Cr (VI) adsorption capacity of the adsorbent.

Keywords: Adsorption, Cr (VI), Isotherm, Kinetics, Wastewater treatment