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Chromium removal by non- living biomass of *Cabomba* sp. - A kinetic and equilibrium study

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Chromium is found in effluents from electroplating, leather tanning and textile industries, chiefly as Cr(VI), which is toxic and mutagenic for most organisms. Consequently, removal of Cr(VI) from industrial wastewater is of great importance.

Several chemical procedures based on reduction and precipitation and ion exchange processes are known, though with limitations due to handling of large volumes of aqueous solutions of colloidal chromium hydroxide and high cost. Removal of Cr(VI) from water using adsorption by activated carbons, prepared from different sources, is considered cheap.

Previously, we reported the study of use of non- living biomass of *Cabomba* sp. to remove chromium from aqueous solution. We present here, the kinetic and equilibrium studies on biosorption of Cr(VI) by non- living biomass of *Cabomba* sp.

Kinetic studies were carried out to determine the time required for Cr(VI) binding process to reach equilibrium. The dry mass was exposed, in triplicate, to varying Cr(VI) solution. Upon equilibration, solutions were filtered and the filtrate was analyzed for chromium by Atomic Absorption Spectrometer.

This work shows that biosorption is a complex process involving first and second order kinetics. Results from adsorption studies indicated that uptake of Cr increased with increasing concentration of test solution. The system obeys chemisorption and Freundlich isotherm relationship for Cr adsorption by *Cabomba* sp.

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