

EQUILIBRIUM AND KINETIC STUDIES FOR ADSORPTION OF CADMIUM ION FROM AQUEOUS SOLUTION BY *Bacillus laterosporus*

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Bacillus laterosporus

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Abstract

The heavy metals hazardous to humans and environment are lead, mercury, cadmium, arsenic, copper, zinc, and chromium. Such metals are found naturally in the soil in trace amounts, which pose few problems. For instance, Arsenic and Cadmium can cause cancer. Mercury can cause mutations and genetic damage, while Copper, Lead, and Mercury can cause brain and bone damage.

Biosorption can be an effective technique for the treatment of waste water bearing heavy metals resulting from humans and industrial activities. Several bacteria have the ability to remove the heavy metals and thereby making water contaminant free. It has been reported that dead bacterial biomass have greater biosorption capability than viable cells.

In the present study, biosorption of heavy metal Cd (II) from aqueous solution using the bacteria (gram positive) *Bacillus laterosporus* ; MTCC 1628 and parameters affecting the biosorption of heavy metals; such as contact time, metal ion concentration, adsorbent dosage on adsorption of Cd (II) have been investigated.