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Cadmium removal from aqueous solutions using *Moringa oleifera* seed pod as a biosorbent

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ABSTRACT

Biosorption is an effective, environmental friendly and cheap process for removal of contaminants from aqueous solutions. The aim of this study was to determine the *Moringa oleifera* seed pod (Mosp) efficiency in removal of cadmium from aqueous solutions. After determining optimum pH (pH = 6.8) and activation temperature (500°C) by pretests, the biosorption experiments were performed in batch system at room temperature. The effects of experimental parameters such as biosorbent dose (0.1–10 g/L), contact time (3–120 min) and initial Cd concentration (1–300 mg/L) were studied. The highest removal efficiency was 100% and was reached only after a few minutes contact time in the optimum operation condition. The biosorption was found better fitted to the Freundlich model, which was indicative of multilayer adsorption. It was concluded that the Mosp can be used as a successful and environmental friendly Cd biosorbent from aqueous solution especially industrial effluent containing high level of Cd.

Keywords: Biosorption; Cadmium; Equilibrium capacity; *Moringa oleifera*

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