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On the performance of *Ballota undulata* biomass for the removal of cadmium(II) ions from water

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ABSTRACT

In this study, cadmium ions, Cd(II), were removed from aqueous solutions using *Ballota undulata*. Experimental data were exploited for kinetic and thermodynamic assessments related to adsorption processes. The different variables affecting the adsorption capacity such as pH, contact time, temperature, adsorbent particle size and mass of adsorbent have been studied. Adsorption isotherms were correlated well with the Langmuir isotherm model. The maximum monolayer adsorption capacity was 121.1 mg/g, which is higher than other adsorbents reported. The kinetic data were best described by pseudo-second-order model. The adsorption process was exothermic-spontaneous to indicate its feasibility.

Keywords: Biosorption; *Ballota undulata*; Kinetic models; Isotherms

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