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Competitive adsorption of nickel and cadmium on sheep manure wastes: experimental and prediction studies

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Abstract: Sheep manure wastes (SMW) previously have been shown to be very efficient in removing nickel and cadmium from single-component, dilute aqueous solutions. Simultaneous removal of nickel and cadmium ions from aqueous solutions using SMW has been investigated in this study. The experimental results showed that the SMW has a relatively higher affinity for cadmium binding than that for nickel. Different multicomponent isotherm models; extended Langmuir, modified Langmuir, extended Redlich-Peterson, and extended Sips isotherm models, were used to predict the removal of either ions using single metal isotherm data.