



Phytoremediation of Cadmium, Lead and Nickel contaminated soils

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Regarding the population growth and environment pollution providing a secure, inexpensive and rapid method for without any adverse side effects seems absolutely necessary. Phytoremediation can be a favorite technique to extract heavy metals from contaminated soils. In order to evaluate phytoremediation and to compare plants ability in remediation of polluted soils, a factorial experiment in a completely randomized design was performed in greenhouse condition. Four plant treatments (Broad bean, Barley, Canola, Wild mustard), three kinds of heavy metals (Cadmium, Lead, nickel) in three levels (0, 250, 500), (0, 50, 100) and (0, 500, 1000) respectively with three replications were applied to evaluate plants phytoremediation ability in 108 plots. Transfer coefficient and translocation factor are important index in phytoremediation. The results indicated that in Broad bean, nickel and cadmium have the most and the least translocation respectively. The most transfer coefficient belonged to nickel and cadmium. Cadmium transfer coefficient was the highest value in barley compared to the other elements. Therefore Broad bean and Barley are suitable plants to remediate the soils polluted with cadmium and nickel. In Wild mustard and canola, cadmium and nickel are attributed to the most transfer coefficient and translocation values. The results showed that the most appropriate plants for phytoextraction include canola, Wild mustard, Broad bean and barley, respectively.

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