

Phytoremediation potential of Indian mustard (*Brassica juncea* L.) in lead-contaminated soils

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ABSTRACT: A pot experiment was conducted in order to find out the natural potential of Indian mustard (*Brassica juncea* L.) for cleanup of lead (Pb) contaminated soil. At the rate of 50 mg/kg of applied Pb, there was maximum reduction in the root dry biomass (46.94%) and shoot dry biomass (46.25%) of *Brassica juncea* L., but 10 mg/kg applied Pb promoted the dry biomass root and shoot to some extent. The concentration of Pb in the tissues followed the order: root > shoot. Indian mustard recorded the maximum concentration of Pb in root and shoot (75.58 mg/kg and 36.25 mg/kg, respectively) in the combinatorial treatment (T₁₆) comprising of 50 mg/kg of applied Pb along with 1 g/kg elemental sulphur (S) and 8 g/kg vermicompost (VC). Therefore, it is suggested to apply recommended dosage of elemental S (30 kg/ha) and vermicompost (20 t/ha) in Pb-contaminated soils. It was concluded that Indian mustard could be safely grown in the low level of Pb-contaminated soils and it is useful for lead phytoremediation.

Key Words: Phytoremediation, lead, *Brassica juncea* L, concentration, vermicompost, elemental sulphur