

ABSTRACT

The accumulation of heavy metals in soil is a drastic environmental risk. Metals are present in soil in different chemical forms, which influence their reactivity and hence their mobility and bioavailability. A study, to determine the effect of Cow Manure on Lead availability and their redistribution among soil fractions, pot experiments were conducted. Chemical properties such as pH, EC, CEC and Lime of concerned soils are also analyzed. Cow Manure (0, 1, 5%) was added to soil contaminated with different concentrations of Pb (0, 100, 200mg kg⁻¹ soil, added as pb(NO₃)₂) at 60% field moisture. The amount of Pb was determined from the soil after 4 months of incubation time using sequential extraction procedure. Tessier method was exerted to decompose the metal content into exchangeable, acid extractable, reducible, oxidizable fractions and Residual fraction was determined in aqua regia digest. Fractionation studies on soils amended by different amounts (1, 5%) of Cow Manure with single metal nitrate, showed that, after four months, Pb were bound mostly to the acid-extractable, reducible and oxidisable fractions in amended soil (p<0.05). Also the application of Cow Manure (CM) levels significantly decline the exchangeable and residual fractions (p<0.05). Whereas in control soil, pb was mainly occurred in the acid-extractable and residual fractions.

Keywords: Fractionation, Metal Bioavailability, Pollution, Organic Amendment, Sequential Extraction.



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**The effect of cow manure application
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fractionation in contaminated**

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