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## **EFFECTS OF NATURAL AND MODIFIED MONTMORILLONITE ON PLANT AVAILABILITY OF Cd(II) AND Pb(II) IN POLLUTED SOILS**

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### **Abstract**

Simultaneous uptake of Cd(II) and Pb(II) by corn in two artificially contaminated soils (sandy and sandy loam) amended with two doses of natural (NM) and modified (MM) montmorillonite were investigated in a pot experiment under greenhouse conditions. Results showed that the addition of NM and MM to sandy loam soils didn't have significant effect on the uptake of Cd(II) by roots, then is translocated to the aerial tissues. On the contrary, uptake of Cd(II) by shoots was increased in pots containing 10% MM in the sandy soils compared to those in the un-amended soils. In the case of Pb(II), metal uptake by corn roots and shoots was not affected by the both NM and MM in the sandy loam soils as compared to those in the un-amended soils. While in the sandy soils, Pb(II) contents of roots were decreased by the both NM and MM at level of 10%. Also, Pb(II) contents of corn shoots significantly were decreased by NM, while MM had not significant effect on uptake of Pb(II) by shoots. The transfer factor (TF) values of Pb(II) were much less than those of Cd(II) in the same treatments. The results suggest that the effects of soil texture on efficiency of the amendments for immobilization of Cd(II) and Pb(II) in polluted soils should be considered.

*Key words:* Cd(II), immobilization, montmorillonite, Pb(II), plant-availability

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