



Mobility and bio-availability of heavy metals in anthropogenically contaminated alluvial (deluvial) meadow soils (EUTRIC FLUVISOLS)

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The total content of heavy metals is not sufficient to assess the pollution and the risk for environment as it does not provide information for the type and solubility of heavy metals' compounds in soils. The purpose was to study and determine the mobility of heavy metals in anthropogenically contaminated alluvial (deluvial) meadow soils spread around the non-ferrous plant near the town of Asenovgrad in view of risk assessment for environment pollution. Soil samples from monitoring network (1x1 km) was used. The sequential extraction procedure described by Zein and Brummer (1989) was applied. Results showed that the easily mobilizable cadmium compounds predominate in both contaminated and not contaminated soils. The stable form of copper (associated with silicate minerals, carbonates or amorphous and crystalline oxide compounds) predominates only in non polluted soils and reviles the risk of the environment contamination. Lead spreads and accumulates as highly soluble (mobile) compounds and between 72.3 and 99.6 percent of the total lead is bioavailable in soils. The procedure is very suitable for studying the mobility of technogenic lead and copper in alluvial soils with neutral medium reaction and in particular at the high levels of cadmium contamination. In soils with alkaline reaction - polluted and unpolluted the error of analysis increases for all studied elements.