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The Influence of Biotic and Nonbiotic Transformation of Heavy Metals Species on their Mobility in Soils

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Environmental pollution is one of the most hazardous phenomena in the modern society.

The state of soils provides the ecotoxicological situation. The influence of soils on the neighboring media is realized throw the soil chemical elements species. The firmly tied with soil components species of heavy metals govern the metals fixation in soils. The available species are for the metals migration. They have the most ecological significance.

The mobile species are presented by two groups of chemicals: actually and potentially mobile. Both were received as the extracts from some background and polluted non-calcareous soils with the help of some special salt solutions. The content of Zn, Cu, Ni in the extracts were determined by AAS method.

Experimental data has shown that organic matter plays the most active participation in the transformation of heavy metals species in soils. Just the organic matter fixes metals because of the process of metals precipitation with the organic anions and ion exchange. They also are active in the chelating of metals. Their products dominate in the liquid phases of non-carbonate soils. They are also take part in the formation of potentially mobile species of heavy metals. But at the same time all organic – metals substances in soils are undergone with the influence of microbial activity. The biotic and non-biotic destruction of organic –metals substances of soil solid phases takes place and their products replenish the supply of microelements in other groups of microelements compounds. The last are presented with their species in the soil solution and in the species, firmly tided with non-organic substances. The rates of the conjugated processes of the formation- destruction of organic-metals substances in

soils provide the metals mobility in soils and the influence of the polluted soils on the environment.