ACCUMULATION OF SOME HEAVY METALS IN CARROT ROOTS SAMPLED FROM HOUSEHOLDS IN COPSA MICA

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Abstract

Heavy metals can affect the vegetables and can accumulate in vegetables and thereby indirectly can affect human health. Due to various factors including the disposal of municipal and industrial wastes, application of fertilizers, atmospheric deposition and discharge of wastewater on land, has resulted in increase in the concentration of heavy metals in the soil. Soil normally contains a low concentration of heavy metals such as copper (Cu) and zinc (Zn), which are the essential micronutrients for the optimum growth of the plants. Heavy metals like cadmium (Cd) and lead (Pb) are usually not found in agricultural soil and are toxic to plants. The paper presents a case study achieved in Copsa Mica. As a result of a historical pollution (over 60 years) and a present pollution, the Copsa Mica area is an affected area by atmospheric pollution, characterized by inadequate ambient air quality, surface water pollution, soil pollution, qualitative degradation of vegetable products and possible risk to the health of animals and people in the area. There were sampled carrots roots from 51 households. Obtained data were used to estimate the bioaccumulation of some heavy metals (Cd, Cu, Pb and Zn) in carrot roots. The highest correlations between soil and plant total metal content were obtained for cadmium and lead. It is noted the increased tendency of accumulation of cadmium (r=0.761) in carrot roots compared to lead (r=0.660). In the case of copper and zinc, the correlation established between the two variables is not very strong, thus for zinc r=0.439, while for copper the value was obtained r=0.151.

Key words: accumulation, heavy metals, carrot roots, Copsa Mica