



Distributions and variations of the heavy metals with depth and grain size fractions in the cultivated soils, a case study in Middle Nile Delta, Egypt

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Abstract: In this study, distribution of heavy metals with depth and various particle size fractions in Middle Nile Delta cultivated soils were studied. The highest values were found in the clay fraction while the lowest values were found in the sand fraction. The concentration of heavy metals decreased with the depth, so the highest values were found in the surface layer. The concentrations of Fe, Co, Cr, Cu, Ni, Pb, Zn, and Ba in the soil samples of Middle Nile Delta around and near Kafr EL-Zayat and Tanta cities in different depths compared with Canadian soil quality guidelines (CSQG) of Canadian Council of Ministers of the Environment [1] and average shale of [2]. The pollution of heavy metals restricted to the upper layer (surface layer) only, Where, the heavy metals originating from various organic waste sources accumulate in the surface. The organic matter content in the uppermost layer is higher than in the lower layer.

Key words: Middle Nile Delta – Pollution – CSQG – Distribution – size fractions – Depth.

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