**ABSTRACT :**

**The present study aims to evaluate the background levels of some heavy metals (Cd, Co, Ni, Pb and Cr) in sub-groups of Sohag agricultural soils. Seventy three samples were collected from 20 soil profiles representing 20 locations and were analyzed for Cd, Co, Ni, Pb and Cr. The obtained results showed that the amounts of the total metals are generally low in the Typic Torriorthents sub-group whereas the Typic Torrifluvents have the highest content of the studied metals. Higher values of Pb were generally concentrated in the soils of Dar El Salam. Maximum Cd levels were found in soils of profile no.14 from Gerga. Cobalt, Cr and Ni concentrations were high in Dar El Salam and Gerga. Within soil profiles, Cd, and Pb tend to be present at higher concentrations in the surface layers which partly reflect the inputs from atmospheric deposition, fertilizers and cycling through plants.**

**The total heavy metal contents of Cd and Cr had Relative Topsoil Enhancement (RTE) values less than 2 for all studied sub groups (Torripsamments, Torrifluvents, Torriorthents, Haplocalcids and Vertric Torrifluvents), indicating no anthropogenic accumulation of Cd and Cr in the soils under study. On the other hand a high value of RTE (more than 2) for Pb was recorded only in Haplocalcids and Vertric Torrifluvents that revealed a significant accumulation of the anthropogenically–derived metals in these soils, whereas the other sub groups not affected by the anthropogenic activities. The total content of Ni and Co displayed RTE values that were less than 2 at all studied subgroups except Torriorthents, indicates no additional built up of these metals in the studied soils, while there is an occasional accumulation in the Torriorthents.**

**Lead shows the highest bioavailable content among the estimated heavy metals. The DTPA-wxtractable Pb is generally low in the Typic Torriorthents, where the level (> 1 ppm) and extremely higher in Vetric Torrifluvents (1.3 to 9.3 mg kg-1).Elevated concentrations were recorded in the surface layers compared with subsurface one. The Typic Haplocalcids display a very low content of the bioavailable Ni (0.4 mg kg-1) and slightly higher in the in Typic Torrifluvents (average = 0.73 mg kg-1). The DTPA-extractable Co and Cd and Cr is generally low in the different soils of the five sub-groups. The highest average levels of DTPA-extractable Co is recorded in the Typic Torrifluvents soils (0.24 ± 0.04).The uncultivated sandy soils were, therefor, poor in DTPA-extractable heavy metals. On an average, the clay cultivated soils contain two to three times greater available-heavy metals than sandy ones.**

**The results emphasize that the total and DTPA-extractable Cd, Co, Ni, Pb and Cr in Sohag soils don’t distinctly differ from the uncontaminated soils in various countries of the word (USA, England, Wales and Scottish). The data obtained in the present survey advance our knowledge about distribution of heavy metals in Sohag soils.**