

Distribution of the heavy metals in the soils from Drahany Upland

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Forty-eight soil samples (DV01-48) were collected from the southeastern part of Drahany Upland representing natural background and potentially contaminated sites. All samples were homogenized and sieved. An X-ray fluorescence spectroscopy and a sequential extraction analyses (SEA) were used to specify amount and form of the heavy metals present. The lead, copper, arsenic and zinc were evaluated.

The Index of Geoaccumulation [1] reported that the study area appears to be uncontaminated or moderately contaminated by heavy metals. The highest concentration was found in the soils from a military area (Pb-455 ppm; Cu-132 ppm; Zn-197 ppm). These elevated values were present in the soils from the firing line and the throw area for hand grenades, whereas the highest values of arsenic have been reported in the soils from natural background (24 ppm).

The SEA results proved that lead and zinc are the most mobile in soils from a natural background, whereas the military area held only a residual fraction.

Lead and zinc was readily mobile under reduction conditions of more than 50% its total content, whereas, in a military area, they appeared to be held as immobile from 80% of its total content.

Copper and arsenic have been held especially in residual fraction from 80% in natural background as well as in military area and they do not represent spreading these metals into the environment neither into the plants.

[1] Turekian & Wedepohl (1965), Distributions of the elements in some major units of the earth's crust. *Geol.Soc. Am.* **175–192**.