Available online at http://geology.uaic.ro/auig/
Analele Stiintifice ale Universitatii "Al. I. Cuza" din Iasi
Seria Geologie 63 (1–2) (2017) 5–23

AUI
GEOLOGIE

The geochemical distribution of the heavy metals in the forestlands of the moor Şaru Dornei

Bogdan Constantin Cazacu[1]

[1] "Alexandru Ioan Cuza" University of Iaşi, Department of Geology, 20A Carol I Blv, 700505 Iaşi, Romania

Abstract

Industrial activities such as burning coal and gasoline are the main factors which contribute to the more increasing emissions of heavy metals in the atmosphere. Once they have reached the atmosphere, these are easily dissolved in the precipitation water and they can be deposited at local, regional and global level, leading to the disturbance of the biogeochemical cycles of the trace elements. A series of heavy metals (Cr, Co, Ni, Cu, Zn, Pb, As and Cd) from the forestlands adjacent to the moorland from Şaru Dornei moor were investigated within this study. The samples were analyzed with an X-ray fluorescent spectrometer with energy dispersion (ED-XRF). Following the analysis, we obtained the following average values (mg/kg): Cr (49.31), Co (5.56), Cu (30.88), Ni (27.69), Zn (48.38), Pb (57.13), As (12.76) and Cd (0.17). The values of their pH varied between 3.5 (very strongly acid) and 4.68 (strongly acid). The results of the study showed that the following elements, Cr, Co, Zn and Cd, had concentrations inferior to the minimum value, while those of Pb and As exceeded the alert threshold (50 mg/kg) and the intervention one (25 mg/kg) respectively, according to the HG 756/1997.

Keywords: trace elements, Şaru Dornei, heavy metals, organic horizon, anthropogenic pollution.

Corresponding author's e-mail: cazacu.bogdan14@yahoo.com