

ANALYSIS OF SOIL PROFILE AND PHYSICO-CHEMICAL PARAMETERS NEAR THE INDUSTRIAL AREA OF DRENAS

Shkëlzim Ukaj¹, Fatbardh Sallaku², Albona Shala³, Hyzer Rizani^{1*}

¹Faculty Food Science and Biotechnology, University for Business and Technology, Kalabria nn, 10000 Pristina, Kosovo

²Faculty Agriculture and Environment, University Agriculture of Tirana, Kodër Kamëz nn, 1001 Tirana, Albania

³Faculty of Management, Tourism, Hotels and Environment, University "Haxhi Zeka", UCK nn, 30000 Peja, Kosovo

*e-mail: hyzer.rizani@ubt-uni.net

Abstract

Environmental problems are a concern for the world and Kosovo it is a part. We humans have the earth as our only abode. Environmental protection is today a necessity of the time, so the only option is to call to mind each of us to save the planet. Through this paper we present the interconnection of physical-chemical parameters of environmental pollution indicators. Drenas area is known for minerals containing Ni, Fe, Zn, Pb etc., and the processing factory "Feronikeli" although it is known that has had an impact in reducing unemployment and economic development, also had an impact left on the environment pollution. The aim of this research was to show the interconnection of physical-chemical parameters of environmental pollution indicators.

Soil samples in the arable layer were collected at compliance with the case method (BBodSchV 1999, 2006 Manual). During 2012, there were collected 24 in-depth soil samples (0 - 30 cm) around the "Feronickel Factory" and 3 soil profile (0 - 100 cm in 5 parts) (3 x 5 = 15 soil samples). We determined the: soil pH, organic matter, soil texture, and analysis of the content of heavy metals. Soil pH was measured in soil suspension and H₂O 0.01M KCl in a ratio of 1: 2.5 (DIN ISO 10.390 2005). The total amount of organic matter (OM) is determined by the incineration method. Texture with hydrometer ASTM D 422. All soil samples for determination of heavy metals in aqua region (ISO 1146641995), are measured by inductively coupled plasma (ICP) in the Laboratory Agrovet in Fushë, Kosovo.

The pH value in water varies from 5.6 to 8.0. Calcium Carbonate expressed in% ranges from 3.11 to 13.24%. Organic matter in the soil has its origins from members of plants and livestock not well decomposed. After analyzing the soil and plant samples of this study, the content of heavy metals such as: Fe, Ni, Cr exceeds several times the allowed values.

Profile soil analyses showed that the heavy metal presence in the soil has are consequence of antropogenically factor contributing directly to depositions of heavy metal particles during the rainfalls.

Key words: Soil profile, pH, ICP, Drenas, Aqua region.