



Air Pollution Survey of Tirana, Durres and Lezhe Regions in Albania, Using the Moss Biomonitoring Technique

I. Gjikaj^{1,*}, M. Vasjari²

¹*Chemistry Department, Faculty of Mathematical Engineering and Physical Engineering, Polytechnic University of Tirana, Albania;* ²*Chemistry Department, Faculty of Natural Sciences, University of Tirana, Albania*

Received June 12, 2013; Accepted July 24, 2013

Abstract: The aim of this survey is the monitoring of air pollution of Albania by means of mosses. For the first time the moss biomonitoring technique was applied to air pollution studies in our country. Based on the fact that mosses obtain most of their nutrients directly from rain water and from the deposition of air-borne particulate material, the concentration of heavy metals in them directly reflects the air quality. Samples of *Hypnum cupressiforme* mosses were collected during September-October 2010 at 13 localities in Tirana, Durres and Lezhe regions. Their location were determined by GPS and shown on the map. A total of 19 elements (Al, As, Ba, Ca, Cd, Cr, Cu, Fe, K, Li, Mg, Mn, Na, Ni, P, Pb, Sr, V, Zn) were determined by ICP-AES technique. Cluster Analysis and Factor Analysis were performed by using MINITAB 15 program, in order to identify and characterize different pollution sources.

Keywords: *air pollution, moss, biomonitor, heavy metals, Cluster Analysis, Factor Analysis.*

* Corresponding: E-Mail: ilva_gjika@yahoo.com; Tel: +355682191101;