ANALELE ŞTIINŢIFICE ALE UNIVERSITĂŢII „AL. I. CUZA" IAŞI
Geologie. Tomul LIII, 2007

INFLUENCE OF MICROORGANISMS COMMUNITY STRUCTURE ON THE RATE OF METALS PERCOLATION IN SOIL

LIVIA VIŞAN[1], ROXANA SANDU[1], VIRGIL IORDACHE[2], AURORA NEAGOE[1]

[1] Research Center for Ecological Services (CESEC), University of Bucharest, Faculty of Biology, Panduri Street, 90-92, 76235, Bucharest, Romania
[2] Department of Systems Ecology, University of Bucharest, Spl. Independenţei, 92-94, 76235, Bucharest, Romania

Abstract

A multidisciplinary international research was developed and field operation team was assembled to find opportunities to exploit bioremediation technologies for remediation of contaminated soil and ground water. In addition to standard chemical and hydrogeochemical analyses and laboratory based microbiological evaluations, potential toxicity constrains to bioremediation were assessed through the use of lab-pots (with low costs and controlled conditions) as well as ex-situ lysimeters experiments. They present an intermediate solution between laboratory and field test.

The aim of this research was to reproduce the circumstances where contaminants in the upper part of the soil are transported by rainfall and added to the pollutant in the deeper part. The soil was completely characterized from the physical and chemical point of view. Lab-pots experiments and a series of 35 small-lysimeters were performed using soil from three different heavy metal polluted areas, in order to assess the effect of mycorrhization and green fertilizer application on plants stressed by metals and quantity and quality of leachate.

Keywords: Bioremediation, Heavy metals; Lysimeters, VAM

[1] velenalivia@yahoo.com