



“Gheorghe Asachi” Technical University of Iasi, Romania



MONITORING OF SEVERAL RADIOISOTOPES IN SOILS AND PLANTS FROM URANIUM MINING AREAS

Dan T. Costin, Catalin C. Nica, Danut G. Cozma, Alexandru Cecal, Karin Popa*

“A.I. Cuza” University, Department of Chemistry, 11 Carol I Blvd., 700506 - Iasi, Romania

Abstract

A five-year survey of gross $\alpha+\beta$, ^{226}Ra , and ^{137}Cs in soils and selected spontaneous plants (*Hypnum cupressiforme*, *Urtica dioica*, *Dryopteris filix-mas*, and *Cirsium arvense*) in the Crucea and Lesu Ursului mining areas is presented. The maximum activities in soils were found to not exceed 0.257 Bq/g for gross $\alpha+\beta$, 0.35 Bq/g ^{226}Ra , and 0.05 Bq/g ^{137}Cs . All plant species shown similar capabilities for gross $\alpha+\beta$ and ^{226}Ra assimilation. The soil-to-plant transfer coefficients are of about 1÷2, in line with values already reported and lower than ones found for other much effective species as *Mentha piperita*, *Fragaria vesca*, or *Abies alba*.

Key words: Gross $\alpha+\beta$, ^{226}Ra , ^{137}Cs , radioactive monitoring, spontaneous vegetation

* Author to whom all correspondence should be addressed: e-mail: kpopa@uaic.ro, phone: +40-232-201316, fax: +40-232-201313