

## THE STUDY OF HEAVY METAL FROM ENVIRONMENTAL SAMPLES BY ATOMIC TECHNIQUES

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**Rezumat.** Prin tehnicile Spectrometriei de Absorbție Atomică (AAS) și Spectrometriei Razelor X de Fluorescență cu Dispersie în Energie (EDXRF) am analizat conținutul de metale grele (Cd, Cr, Ni, Pb, Ti, Sr, Co, Bi) din opt specii de ciuperci sălbatice (*Amanita vaginata*, *Amanita rubescens*, *Amanita phalloides*, *Armillariella mellea*, *Armillariella tabescens*, *Agaricus campestris*, *Hypholoma fasciculare*, *Hypholoma pudorinus*) și probe de sol substrat, colectate din zece site-uri forestiere ale județului Dâmbovița, România. S-a determinat că elementele, în special metalele grele în sol erau caracteristice solurilor acide din terenurile forestiere românești care sunt influențate de poluarea industrială. S-a studiat transferul metalelor grele de la substraturi la ciuperci și s-a calculat coeficientul de acumulare al metalelor grele analizate prin tehnicile AAS și EDXRF. Valorile concentrațiilor metalelor grele din probele de ciuperci analizate sunt ușor crescute față de cele raportate în literatură.

**Abstract.** Using the Atomic Absorption Spectrometry (AAS) and Energy Dispersive X-ray spectrometry (EDXRF) techniques we analyzed the contents of heavy metals (Cd, Cr, Ni, Pb, Ti, Sr, Co, Bi) from eight wild mushrooms and soil substrate samples (48 samples of eight fungal species and 32 underlying soil samples), collected from ten forest sites of Dambovița County Romania. It was determined that the elements, especially heavy metals, in soil were characteristic of the acidic soils of the Romanian forest lands and are influenced by industrial pollution. Analytical possibilities of AAS and EDXRF analytical techniques have been compared and the heavy metal transfer from substrate to mushrooms has been studied. The coefficient of accumulation of essential and heavy metals has been calculated as well. Heavy metal contents of all analyzed mushrooms were generally higher than previously reported in literature.

**Keywords:** EDXRF, FAAS, essential element, heavy metal, wild mushroom, soil pollution

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