



The soil fungi communities and risk assessment of heavy metal contaminated soils management

Bozena Sosak-Swidarska (1)

(1) University of Cardinal Stefan Wyszyński at Warsaw, Institute of Ecology and Bioethics, Dewajtis Street 5, 01-815 Warsaw, Poland, (2) Medical University of Warsaw, Dept. of Apparatus, Zwirki and Wigury 61, 02-091 Warsaw, Poland

Fungi constitute a high proportion of the microbial biomass in soil. The quantitative-qualitative structures of the fungi communities

were recognised in different mountains soils: Karkonsze and Bieszczady and Silesia Region in Poland.

The main objectives of this presentation were: to investigate the response of soil fungi towards various heavy metal species and to find out the characteristics of heavy metal tolerance in different fungal taxonomic groups, to assess fungal capability to accumulate heavy metals in the biomass, to detect of melanin pigment in fungal cells and to evaluate of risk assessment of heavy metal contaminated soils management.

The 480 isolates were made, which represented by 73 species. The fungi investigated belonged to widespread genera: *Alternaria*, *Aspergillus*, *Cladopsorium*, *Penicillium* and *Trichoderma*. Using electron microscopy and localization of melanin place in fungal cells was studied to determined sensitive and resistant fungal strains.

The evaluation of risk due to contaminated soils by heavy metals includes: identification of sources of treats, determinations of ways and rate of heavy metals dissemination, identification of heavy metals bioaccumulation degree in living organism, scenarios of heavy metals release from contaminated areas. Contaminated soils risk assessment should be understand as objective method of assessment the contaminated soils potential influence of living organism, ecosystems and on environment. The analysis results are used to determination of environmental and ecological consequences of enterprises as reclamation of degraded soils.