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*ASPERGILLUS NIGER***

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**Katarína Peťková, Lubomír Jurkovič, Alexandra Šimonovičová, Marianna Molnárová,
Zuzana Slobodníková**

*Comenius University in Bratislava, Faculty of Natural Sciences, Mlynská dolina,
842 15 Bratislava, e-mail: katkapetkova@gmail.com, jurkovic@fns.uniba.sk,
asimonovicova@fns.uniba.sk, molnarova@fns.uniba.sk, zuzana.slobodnikova@gmail.com*

Abstract:

This work is focused on the study of leaching of potentially toxic elements by selected species of microscopic filamentous fungus *A. niger*, that was isolated from anthropogenic sediments with high contents of selected elements, especially arsenic. Isolated species was put on the samples from Zemianske Kostol'any. The total contents of elements were: 93 - 634 ppm As, 9 - 16,7 ppm Pb, 16,5 - 38,2 ppm Cu, 45 - 182 ppm Zn. The main objective of the experiment was comparative evaluation of bioleaching of selected elements by different weights of substrate (1 g, 10 g, 100 g). By fungal bioleaching following average concentrations of As were released: 550 $\mu\text{g.l}^{-1}$, 270,18 $\mu\text{g.l}^{-1}$, 90,60 $\mu\text{g.l}^{-1}$ from 1 g, 10 g and 100 g of substrate, respectively. The results showed, that the optimal weight of soil substrates for maximum efficiency leaching of arsenic is 1 g, but maximum efficiency leaching of Pb, Zn and Cu is 10 g. The results indicated that solid weight 1 g and 10 g was found to be best to fungal activity and metal solubilization of the three solid weights tested (1 g, 10 g and 100 g) under the chosen experimental conditions.

Keywords: *Aspergillus niger*, bioleaching, heavy metals, soil contamination