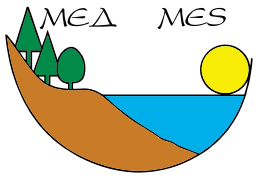

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5th CONGRESS OF ECOLOGISTS OF THE REPUBLIC OF MACEDONIA WITH INTERNATIONAL PARTICIPATION

ABSTRACT BOOK

Ohrid, Macedonia 19th - 22nd October 2016

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localities at three distances (0.5-0.75, 2.5-3.5 and 6-8 km, respectively) from the Thermal Power Plant Oslomej in the period from April 2012 to May 2014. We analyzed the content of seven heavy metals (Ni, Cu, Zn, Fe, Mn, Cd and Pb) by atomic adsorption spectroscopy in the fruiting bodies that were not rinsed before drying.

Significant correlation between the distance and content of certain heavy metals was found in 10 fungi species, especially in the cases of Ni and Cu and less in the cases of Cd, Pb and Fe. Such correlations between heavy metals content in soils (total and extractable) and fruiting bodies were found mostly in the cases of Mn, Zn, Fe, Cd and Cu. Also, the Canonical Discriminant Analysis showed possible impact of Thermal Power Plant Oslomej on heavy metals patterns in *Boletus aestivalis, Russula cyanoxantha, Cantharellus cibarius* and *Hypholoma fasciculare.* It can be concluded that both the pollution from the Thermal Power Plant Oslomej and soil composition determine the heavy metals content in the fruiting bodies of wild fungi in Kičevo valley.

Keywords: Fungi, heavy metals, pollution, Thermal Power Plant, Republic of Macedonia

The content of heavy metals in the soil by the state road Čačak-Kraljevo

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The origin of heavy metals in soil is geochemical. Their concentration caused by anthropogenic influences has increased with the development of industry and agriculture. Soil pollution by heavy metals is a significant environmental problem worldwide. Their toxicity has high negative impact on ecology, nutrition and environment.

Physico-chemical soil analysis is performed in order to determine the presence of contamination caused by agrochemicals from farmland and frequent traffic on the nearby road. Sampling was carried out in April 2016 at three locations (L1, L2 and L3) near state road Čačak – Kraljevo, at the waterfront of tributaries of Zapadna Morava River, at a depth of 30 cm. The analysis of the tested parameters is carried out in accordance with current legislation. Organic matter content, pH and clay content, as well as harmful and hazardous substances (Pb, Cd, Zn, Cu, Ni, Cr, Hg, As) was determined. The contents of Cu, Cr, Ar (L2) and Cr, Hg (L3) were crossing the limits given in the Regulation. The content of Ni (72.1) at the site L1 was higher than the limit value, and L2 (96) and L3 (102) has been over remediation values. Limit and remediation values for L1 was higher (the result of the higher content of clay (14%) and organic matter 6.42%), with respect to L2 (0.31%; 2.78%), and L3 (0.05% and 4%), respectively. Only the content of Ni was higher than limit values of MDK (50 mg kg^{-1}). Based on previous research in this region it can be concluded that the increased content of Ni in the soil of geochemical origin.

Investigated farmland near busy roads is not threatened by Pb. Soil samples did not show acid reaction (obtained value: pH 8.03; 8.52; 8.31), so mobility of heavy metals and the risk of contamination of groundwater not expected.

Keywords: Pollution, hazardous substances, remediation values, MDK, environment