



BIOMONITORING OF ATMOSPHERIC POLLUTION OF Fe AND Zn USING NATIVE EPIGEIC MOSSES

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Abstract

Some atmospheric depositions of zinc and iron in mining areas of Dorna Basin were investigated by passive monitoring with six species of bryophytes (*Plagiomnium undulatum*, *Plagiomnium cuspidatum*, *Rhizomnium punctatum*, *Polytrichum strictum*, *Thamnobryum alopecurum* and *Polytrichum commune*) in two periods: April - September 2005 and October 2005 - March 2006. These determinations were achieved in twelve locations. In the same time, it was determined the concentration of these elements in soil. It was noticed a decrease of zinc and iron concentrations in the second period comparing to the first period (zinc maximum concentration in bryophytes for the dry plants in the first period is 172.53 µg/g, in the second period is 78.98 µg/g. In the case of iron samples, the concentration in bryophytes for dry plants in the first period is 6019.8 µg/g and 2640.18 µg/g in the second period. In dry soil, the concentration in the first period is 1661.48 µg/g and 806.48 µg/g in the second period). The concentration factor (CF) values for Zn samples (CF_{Zn}) has a maximum value of 7.5013 in the first period and 6.0434 in the second period. For Fe samples, CF_{Fe} has a maximum value of 8.9182 in the first period and 0.9484 in the second period. This variation shows a maximum accumulation in the selected epigeic bryophytes. High capacity retention of the same bryophytes species is due to both environmental factors and high content of the complex compounds in their composition.

Key words: atmospheric pollution, biomonitoring, FAAS, heavy metals, mining areas

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