ACTIVE MOSS BIOMONITORING STUDY IN DONETSK REGION (UKRAINE)

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The active moss biomonitoring technique was applied to assess the environmental pollution in the Donetsk region and to compare the biomonitoring capacity of acrocarpous *(Ceratodon purpureus)* and pleurocarpous (*Brachythecium campestre)* moss transplants. Moss bags were exposed for six months in the surroundings of two steelworks, a power station, and two parks. The concentrations of 19 elements were determined in the moss transplants by neutron activation analysis and atomic absorption spectrometry. Various environmental indices − relative accumulation factor, contamination factor, pollution load index, enrichment factor, and ecological risk index were used to quantitatively assess the degree of ambient contamination. The RAF values indicate that the most prevalent elements in *Brachythecium campestre* and *Ceratodon purpureus* were Na, Al, Ca, Fe, Ti, V, Cr, Mn, Co, Ni, Zn, Ba, Sr, Pd, and Cd. The results showed a significant difference between metal accumulation by *Ceratodon purpureus* and *Brachythecium campestre* indicating various mechanisms of uptake. All elements were highly correlated in *Ceratodon purpureus*. The main air pollution sources in the region can be considered the Zuivska power station (Zuivska TES), Donetsk Metallurgical Plant, Yenakiieve Iron and Steel Works.

Key words: active moss biomonitoring, *Ceratodon purpureus*, *Brachythecium campestre*, air pollution, urban area, neutron activation analysis, atomic absorption spectrometry, Donetsk region