

ASSESSMENT OF AIR POLLUTION IN ULAANBAATAR USING ACTIVE MOSS BIOMONITORING TECHNIQUE

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Moss biomonitoring technique widely applied in many countries, for the first time, was applied to assess the air quality in Ulaanbaatar. Moss *Sphagnum girgensohnii* Russow was exposed for three different periods: December-February, March-May, and December-May at 13 Government stations for air quality monitoring. The content of Al, Ba, Co, Cd, Cr, Cu, Fe, Mn, P, Pb, Sr, S, V, As and Zn was determined using inductively coupled plasma-optical emission spectrometry, while a direct mercury analyzer was used to determine Hg content in samples. Significant differences in elements accumulation between seasons were noticed, the remarkable fact is that accumulation of Al, Ba, As, Co, Cr, Fe, Pb, V and Zn was higher in the spring, while P and S were more actively accumulated in moss samples exposed during the winter period. Several indices, namely the Relative accumulation factor, Contamination factor, Pollution load index, and Enrichment factor were calculated in order to evaluate the level of air pollution and the possible origin of elements. Substantial contributions to air pollution are making Zn, Fe, As, V, Cr and Al. Factor and correlation analysis were applied to highlight the association of elements and to link them with possible sources of emission. Soil particles, dust originating from combustion burning, transport, and coal burning can be designated as main air pollution sources.

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