

Study of seasonal impact on accumulation of chemical elements in epiphyte mosses

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Nowadays, studies of developing active biomonitoring methods for soil moss species are carried out abroad. In this method moss samples are collected from ecological pure sites and then transplanted into urban territories on special devices. During realization of active biomonitoring issues emerge, connected with the fact that the correct assessment of pollution is possible only if transplanted moss saved its vital functions [1].

In this paper, transplantation method of moss *pylasia polyantha*, which inhabits tree bark, was examined. Samples were placed at two sites and were left on trees during summer and winter period. Nearly all samples in a quantity of 45 pieces for summer and winter periods (except for 4 samples) saved their initial color, that may be indicative of saving vital functions. Content of chemical elements was determine with neutron activation analysis on research reactor in TPU.

Content of the half of chemical elements increased in 2-3 times in winter period comparing to those in summer period on two investigated site, what could be explained by increased in 1.5 times exposition period and increased impact of the fuel/energy complex in winter period due to heating season. Comparison of chemical elements concentrations (which exceed background) for each exposition site was carried out with non-parametric Mann – Whitney test. As result, there is a significant distinction during the season for U, Th, Yb, Co for one site and Th, Sr, As, Rb, Co for another site.

References

1. Ares A. et al. // Moss bag biomonitoring: a methodological review // Science of the Total Environment. 2012. vol. 432. p. 143-158.