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**POLYCYCLIC AROMATIC HYDROCARBONS
IN *BETULA NANA* (BETULACEAE, MAGNOLIÓPSIDA)
UNDER THE IMPACT OF A THERMAL POWER PLANT**

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The content of polycyclic aromatic hydrocarbons (PAH) in *Betula nana* L. and soil organogenic horizons was studied at a control site and sites affected by a thermal power station (TPS) at distances of 0.5, 1.0, and 1.5 km from the source of pollution. The PAH distribution over the vegetative organs of dwarf birch was irregular. The qualitative composition of PAH in different organs of dwarf birch was similar. No significant changes in the PAH content in dwarf birch organs and at the surface of these organs at different distances from the TPS were revealed. The PAH content in the organs of plants affected by the TPS was 2–3 times higher than the background value, and the highest excess was found in leaves. The surface PAH concentration on the cork and roots increased by three times under contamination. No excess was revealed in leaves and branches. The excess over the background value in the soil at contaminated sites was 3–3.5 times with the maximal accumulation at a distance of 1 km. The PAH content in the soil was three times higher than that in the dwarf birch at the control site and 5–6 times at the contaminated sites. A strong correlation between the PAH concentrations in the soil and in *B. nana* was revealed. In the leaves and branches of *B. nana*, a decrease was revealed in the proportion of surface accumulation in the total PAH pool at contaminated sites as compared with the control site. An opposite trend was found for cork and roots. Cluster analysis showed clear separation between the surface and total PAH content in all plant organs under study. Factor analysis of the total PAH content in the organs of dwarf birch allowed us to reveal three main factors affecting the PAH distribution, with light structures, toxic components and the other polyarenes to be discerned. Dwarf birch organs can be used for indication of the contamination level in tundra communities. In order to analyze short-term changes and a long-term impact in the PAH content, we suggest using the PAH content in leaves and cork, respectively.

Key words: *Betula nana*, polycyclic aromatic hydrocarbons, organs, soil, surface accumulation, bioaccumulation, indication.

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