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# INTRAPOPULATION VARIABILITY OF BIOCHEMICAL CHARACTERISTICS AND DAMAGE OF *PINUS SYLVESTRIS* (PINACEAE) FORMS IN STRESSFUL CONDITIONS OF NORTHERN TAIGA

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SUMMARY

The aim of the study is to obtain information on variability of biochemical characteristics and stability of *Pinus sylvestris* L. forms in stressful conditions. The test plots established by standard methods on boggy soils in the mouth of the Northern Dvina river are affected by atmospheric pollution (distance to Arkhangelsk CHP is 6 km). The degree of needle loss was determined by the standardized methods for Economic Commission for Europe (UNECE), the needles damage – by the scale proposed by Yarmishko (1997), the index of tree damage – according to formula (Tsvetkov, Tsvetkov, 2003). The content of photosynthetic pigments and peroxidase activity were determined by the photometric method and pH – by pH meter. The levels of endogenous and individual variability of chlorophyll and carotenoid, pH, and peroxidase activity were determined for one-year needles. In conditions of excessive moisture and atmospheric pollution harrow-crowned form demonstrated higher adaptive potential. The *P. sylvestris* long-leaf form had a higher content of chlorophyll and three-leaf form – higher pH value. The significant damage was observed in «bog» forms with broad crown and shorter needles. Harrow-crowned long-leaf *P. sylvestris* forms exhibited higher resistance to stress factors.

Key words: *Pinus sylvestris*, form diversity, endogenous and individual variability, photosynthetic pigments, peroxidase activity, pH, excessive moisture, atmospheric pollution.