

**THE IMPACT OF TEMPERATURE FACTOR ON SEASONAL CHANGES IN  
PHOTOSYNTHETIC APPARATUS OF CONIFEROUS TREES (FOR EXAMPLE,  
“STOLBY” NATURE RESERVE)**

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The issue of the climate warming effect on trees has been repeatedly discussed over times and it is increasingly evident that the global warming has impact on trees at mid - high latitudes. Rapid climate changes can greatly influence tree metabolism and development so climate-related traits of tree species such as growing period and reproduction should be consistently studied in this extent. The aim of this research was to determine the contribution of the temperature factor to the seasonal changes regulation in photosynthetic apparatus of conifers growing in "Stolby" nature reserve, to identify interspecies differences in test plants and detect their sensitivity to temperature fluctuations.

The research objects were one-year needles of Siberian fir (*Abies sibirica* Ledeb.), Scots pine (*Pinus sylvestris* L.), Siberian pine (*Pinus sibirica* Du Tour.) and Siberian spruce (*Picea obovata* Ledeb.). Chlorophyll fluorescence parameters were recorded by fluorimeter JUNIOR-PAM.

The research data was obtained in the period from 2014 to 2016. Dependence of fluorescence parameters of coniferous trees on the temperature has been revealed on "Stolby" nature reserve.

We defined minimum sensitivity to temperature fluctuations during the autumn photoperiodic response and dormancy in *Pinus sylvestris*. At the same time, *Picea obovata* and *Pinus sibirica* are slightly more susceptible to temperature fluctuations. *Abies sibirica* is considered to be non-resistant to the influence of temperature changes because the tree species in wintertime are in light dormant state as well as they are getting rapidly out of dormant state in spring.

During the summer, not only high temperatures, but also the lack of rainfall caused the decrease in photosynthetic activity among conifer species.