

Original article

DOI 10.24419/LHI.2304-3083.2022.4.10

The Features of Stems Growth of Pine Family Species (Pinaceae Lindl.) under Conditions of Botanical Garden UrFU

Roman V. Mikhailishchev¹

Viktor V. Valdayskikh²

Candidate of Biological Sciences

Rima S. Simonyan³

Abstract. The flora of Middle Urals has a small number species of pine family, so the introduction of new species has research and practical interests. The linear growth of shoots was studied in 2021 under agricultural conditions in botanical garden of Ural Federal University. The higher rate of linear growth and size of annual shoots had the species of genus *Pinus* (*Pinus* and *Trifoliae* sections). The species can be divided by beginning and ending of growth to three groups. The species of *Pinus* included to cluster with early beginning of growth and species of *Larix* and *Pseudotsuga* included to cluster with late beginning of shoots growth. The species of *Abies* and *Picea* had a mean beginning of growth. The most of species from northern part of Pine family geographic range included to clusters with early and mean term ending of growth and species from more southern part of natural habitat had a late term ending of shoots growth. The species were different by duration of shoots growth and length of shoots. The duration of shoots growth has not effect on length of shoots ($F = 1,3409$; $p = 0,281$) and biology specific of species has it ($F = 8,182$; $p = 0,000$). The daily temperature maximums in the beginning of vegetation and amount of effective temperatures during the growth had effect on growth rate of shoots. The growth rate of shoots decreases by lignification in second half of vegetation. The positive correlation exists between ending of growth and beginning of lignification ($r = 0,4983$; $p = 0,018$).

Key words: botanical garden, plant collections, carbon farming, Pinaceae, linear growth of shoots

For citation: Mikhailishchev R., Valdayskikh V., Simonyan R. The Features of Stems Growth of Pine Family Species (Pinaceae Lindl.) under Conditions of Botanical Garden UrFU. – Text : electronic // Forestry information. 2022. № 4. P. 103–113. DOI 10.24419/LHI.2304-3083.2022.4.10

¹ Botanic Garden of the Ural Federal University named after B.N. Yeltsin, Leading Engineer (Yekaterinburg, Russian Federation), rmichaliszczew@gmail.com

² Botanic Garden of the Ural Federal University named after B.N. Yeltsin, Director (Yekaterinburg, Russian Federation), v_vald@mail.ru

³ Botanic Garden of the Ural Federal University named after B.N. Yeltsin, Laboratory Assistant (Yekaterinburg, Russian Federation), rimaserov@yandex.ru