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Features of Scots pine radial growth in conditions of provenance trial.

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Provenance trial of Scots pine in Boguchany forestry of Krasnoyarsk krai is conducted on two different soils – dark-grey loam forest soil and sod-podzol sandy soil. Complex of negative factors for plant growth and development appears in dry conditions of sandy soil. It could results in decrease of resistance to diseases. Sandy soils in different climatic zones have such common traits as low absorbing capacity, poorness of elemental nutrition, low microbiological activity and moisture capacity, very high water permeability. But Scots pine trees growing in such conditions could have certain advantages and perspectives of use. In the scope of climate change (global warming) the study of Scots pine growth on sandy soil become urgent because of more frequent appearance of dry seasons. Purpose of the work is revelation of radial growth features of Scots pine with different origin in dry conditions of sandy soil and assessment of external factors influence.
The main feature of radial growth of majority of studied pine provenances in conditions of sandy soil is presence of significant variation of increment with distinct decline in 25-years old with loss of tree rings in a number of cases. The reason of it is complex of factors: deficit of June precipitation and next following outbreak of fungal disease. Found «frost rings» for all trees of studied clymatypes in 1992 are the consequence of temperature decline from May 21 to June 2 – from 23 down to 2 degree Celsius. Perspective climatypes with biggest radial increments and least sensitivity to fungal disease were revealed.
Eniseysk and Vikhorevka (from Krasnoyarsk krai and Irkutsk oblast)provenances of pine have the biggest radial increments, the least sensitivity to Cenangium dieback and smallest increments decline. These climatypes are in the group of perspective provenances and in present time they are recommended for wide trial in the region for future use in plantation forest growing. Kandalaksha (Murmansk oblast) climatype from northern taiga with good resistance to pathogen have nonsignificant decline in radial increment during epiphytoty in comparison with local and southern climatypes. Southern Chemal provenance (Altai) after influence of Cenangium dieback has more than others losses of tree rings as the result of nonresistance to this fungal disease.