

Original article

EDN SXRAQR

DOI 10.24419/LHI.2304-3083.2023.3.08

Growing Forest Crops of Pine With a Closed Root System in the Steppe in the South of Western Siberia

Aleksandr A. Malenko¹

Doctor of Agricultural Sciences

Aleksandr S. Chichkarev²

Sergej I. Zavalishin³

Candidate of Agricultural Sciences

Aleksej A. Malinovskih⁴

Candidate of Biological Sciences

Evgeniya S. Kursikova⁵

Annotation. The results of research on the cultivation of forest plantations of pine with a closed root system in the conditions of the Chupinsky pine forest, located in the steppe zone of the Altai Territory, are presented. It has been established that the survival rate of seedlings, the safety and growth of pine crops with a root-balled tree system depend on the forest suitability of the soil. Steppe herbaceous vegetation is a dangerous competitor and has a negative impact on survival and growth of pine. Plantings with wide aisles are overgrown with perennial cereal rhizomatous species, and the closing of tree crowns is delayed by almost 20 years. To reduce competition from herbaceous vegetation, regular agrotechnical maintenance and regulation of planting density should be carried out. The stability of pine crops with root-balled tree system is ensured by the formation of a rod-type root system. On ordinary black soils with deep carbonate occurrence, pine with root-balled tree system forms a taproot, the length of which is limited by the depth of the carbonate horizon. In especially dry years, under these conditions, artificial plantations suffer from drought and are partially upset. When creating forest plantations with bare root tree system and root-balled tree system, it is necessary to take into account the forest suitability of the soil.

Key words: soil cover, pine, root-balled tree system, survival rate of seedlings, safety of crops, forest suitability of soil

For citation: Malenko A., Chichkarev A., Zavalishin S., Malinovskih A., Kursikova E. Growing Forest Crops of Pine with a Closed Rootsystem in the Steppe in the South of Western Siberia. – Text : electronic // Forestry information. 2023. № 3. P. 103–116. DOI 10.24419/LHI.2304-3083.2023.3.08. <https://elibrary.ru/sxraqr>.

¹ Altai State Agricultural University, Head of the Department of Forestry (Barnaul, Altai Territory, Russian Federation), malenko51@mail.ru

² Altai State Agricultural University, Assistant of the Department of Forestry (Barnaul, Altai Territory, Russian Federation), Chichkarev94@mail.ru

³ Altai State Agricultural University, Head of the Department of Soil Science and Agrochemistry (Barnaul, Altai Territory, Russian Federation), serg11zav@mail.ru

⁴ Altai State Agricultural University, Associate Professor of the Department of Forestry (Barnaul, Altai Territory, Russian Federation), almaa1976@yandex.ru

⁵ Altai State Agricultural University, Postgraduate Student of the Department of Forestry (Barnaul, Altai Territory, Russian Federation), sinenko19@mail.ru