

Original article

DOI 10.24419/LHI.2304-3083.2023.2.11

## Biometric Indicators of Seedlings of Coniferous Species with an Open and Closed Root System

**Raisa A. Tret'yakova**<sup>1</sup>

**Oksana V. Parkina**<sup>2</sup>

*Candidate of Agricultural Sciences*

**Olga E. Yakubenko**<sup>3</sup>

**Alexey A. Yakubenko**<sup>4</sup>

**Abstract.** *The biological features of Siberian spruce and Siberian stone pine determine the possibility of their effective use in the conditions of Western Siberia. The vertical-fractional structure of the phytomass of the planting material of these species and the development of an open and closed root system were studied on the territory of the UPH "Garden Michurintsev" of Novosibirsk. The biometric indicators of seedlings with open and closed root systems were analyzed. It has been established that the cultivation method has an impact on the formation of the underground and above-ground parts of the planting material. Thus, in seedlings of the studied species with an open root system, higher rates of growth in height are observed than in seedlings with a closed root system. It was concluded that the type of root system makes the greatest contribution to the growth of the axial shoot in the planting material of coniferous species – 64%.*

**Key words:** *phytomass, Siberian pine (Pinus sibirica), Siberian spruce (Picea obovata), open-type root system, closed-type root system.*

**For citation:** *Tret'yakova R., Parkina O., Yakubenko O., Yakubenko A. Biometric Indicators of Seedlings of Coniferous Species with an Open and Closed Root System. – Text: electronic // Forestry information. 2023. № 2. P. 136–145. DOI 10.24419/LHI.2304-3083.2023.2.11.*

<sup>1</sup> Federal State Budgetary Educational Institution of Higher Education «Novosibirsk State Agrarian University», Postgraduate student of the Department of Forestry (Novosibirsk, Russian Federation), rtret'yakova@yandex.ru

<sup>2</sup> Federal State Budgetary Educational Institution of Higher Education «Novosibirsk State Agrarian University», Head of Forestry Department (Novosibirsk, Russian Federation), Parkinaoksana@yandex.ru

<sup>3</sup> Federal State Budgetary Educational Institution of Higher Education «Novosibirsk State Agrarian University», Senior Lecturer of the Department of Forestry (Novosibirsk, Russian Federation), o.e.yakubenko@yandex.ru

<sup>4</sup> Federal State Budgetary Educational Institution of Higher Education «Novosibirsk State Agrarian University», Graduate of the Department of Forestry (Novosibirsk, Russian Federation), yakubenkoalex@yandex.ru