Ecological and Geographical Variability of Taxation Indicators Of Artificial Stands of Scots Pine in the European North

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Forest plantings growing over vast territories have different taxation indicators, which is caused by geographical differences in their composition, middle age, and productivity. More detailed information can be obtained by comparing certain types of forests by geographical latitude. In addition to the influence of geographic latitude on taxation characteristics of forest phytocenoses, their variability is also manifested in connection with the ecological (forest-growing) growing conditions.

The purpose of the work is to identify the ecological and geographical variability of taxation indicators characterizing the growth and productivity of artificial pine forests in the European North.

The study of production indicators and growth in the geographical context was carried out in the north-taiga forest region (Yemetsky forestry of the Arkhangelsk region) and in the southern taiga forest region (Ustyuzhensky forestry of the Vologda region). The objects of research were 65-year-old birch trees, pure in composition or with a slight admixture, identical in the method of creation (sowing), areas of common pine crops (Pinus sylvestris L.) in the lichen, lingonberry, and bilberry forest types, where forest stands differ significantly in productivity.

Field experimental material was obtained by the method of single measurements on temporary trial plots. For the laying of test plots, plantations of artificial origin were selected that were homogeneous in

horizontal and vertical structure, taxation characteristics, and location conditions.

As a result of studies, it was found that when moving from north to south, the main taxation indicators of the studied artificial pine forests increase. In addition to the influence of geographical location on the productivity of stands, its dependence on the type of growing conditions is clearly manifested. A distinct differentiation of the main taxation parameters of the stands was revealed, variability was revealed, and the reliability of differences in the taxation parameters of the artificial pine stands was established. Thus, for example, differences in the diameter of the pine forest of the bilberry northern taiga forest region with the same pine in the southern taiga forest region reaches 6 cm (29.1 %), in the lingonberry pine forest – 3.5 cm (26.1 %) and in the pine forest lichen – 4.9 cm (44.6 %). On the whole, evaluating the nature of the distribution of the analyzed parameters, it can be noted that the largest amplitude of variability of taxation features is observed in the most productive of the compared types of forest (blueberry pine and lichen pine). In lingonberry pine, they are somewhat smoothed, and the significance of differences in this type of forest is established only in relation to the diameter of the stand.