

THE STATE OF *LARIX SIBIRICA* (PINACEAE) PLANTATIONS IN THE MARI EL REPUBLIC

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SUMMARY

Based on the material of the field studies and the data from electronic databases on forest resources (more than 415 000 allotments with the total area of 1 207 670 ha) the paper showed that Siberian larch (*Larix sibirica* Ledeb.) is not naturally found in the Mari El Republic, however, there are many cultural forms of Siberian larch which have complex compositions. One of the main companions of larch is Scots pine, the proportion of which in stands is 21.6 % on an average. The mix of Norway spruce and silver birch are quite frequent (19.6 and 19.9 % respectively). The part of lime is 4.5 %, of aspen – 4.1 %, and other tree species – 0.8 %. The proportion of larch varies is 29.5 % (from 1 to 10 individuals). The greatest presence of larch is registered in cultures, established in humid pine forests and moderately wet oak forests. The highest part of pine in plantations is in the moderately wet pine forests, of spruce – in humid subor forests, and deciduous tree species – in humid suramen forests. The proportion of deciduous tree species tends to decrease in all types of forests, the latter can be explained by both natural and economic reasons.

The best conditions for larch growth are proved to be in moderately wet oak forests of Cis-Volga region of the Mari republic. In moderately wet suramen and oak forests the larch species at the age of 40–60 years. The height of both Siberian larch and Scots pine is nearly the same at any age, but Norway spruce and English oak are much shorter. In moderately wet subor forests the culmination of the trunk timber stock, which is 343 m³/ha, is registered at the age of 75, and then as a result of Norway spruce and other deciduous species mortality it gradually decreases. In moderately wet suramen and oak forests the maximum of trunk timber stock, which is 308 and 443 m³/ha respectively, is registered at the age of 85. In forests of all types, the maximum productive capacity is typical of Siberian larch with admixture of Scots pine. The increase in proportion of deciduous tree species can influence the decrease in timber stock, as well as the decrease in average height and tree diameter. Excessive density, which should not exceed 1 000 trees/ha at age 20, could also be considered a negative effect on the growth of trees and formation of sustainable and highly capable larch stands. It is concluded, that establishing larch in the Mari El republic is advisable, though further attention should be given to the technologies of planting and caring for the said tree species.

Key words: *Larix sibirica*, forest cultures, structure, growth, production capacity, forest sites, the Mari El Republic.