

The variability of some features among European larch populations growing in Poland is still unknown. The sensitivity of larch to individual climate elements is one of the interesting and unexamined features. Provenance studies based on provenance experiments in Sękocin, Rogów, Siemianice, Bliżyn and Krynica, which are located in the different part of Poland, help to expand this knowledge.

The aim of the study is to characterize of the variability of short-term (annual) radial increment responses of European larch (*Larix decidua* Mill.) of 20 Polish provenances growing in the experiments in Sękocin, Siemianice, Bliżyn and in the larch mother stands, and also identify the climate elements determining these responses. We do not know, how the larches of the different provenances response to lowlands and uplands climate conditions. The measurement of the trees' sensitivity to climate conditions is the size of tree-rings.

From each provenance and mother stand will be taken using increment borer 2 cores per tree from 20 trees at 1.3 m above ground level. The cores will be scanned using an optical scanner. Tree-ring widths will be measured on images of the cores using the CooRecorder and CDendro program. Cross-dating of the tree-ring widths will be verified using the COFECHA program. We will carry out statistical analyses of climate-radial increment relationships. The analyses will consider such the most important climate parameters for plants as air temperatures and precipitations.

This study expands knowledge of ecology of European larch, particularly his sensitivity to climate conditions.