

ESTIMATION OF GENETIC SIMILARITY PINUS CEMBRA POPULATIONS FROM THE TATRA MOUNTAINS AND SYBERIA ON THE BASE ON NEEDLES MORPHOLOGY AND DNA MARKERS

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On the turn of the 19 century, the Polish Tatra Mountains Society carried out the uncontrolled introduction of stone pine, unknown origin, probable Siberian or Alpine. Koscieliska Valley in Tatra National Park is one of the more important place where *P.cembra* was planted. The aim of this study was to broaden the data on genetic similarity among native and introduced stone *P.pumila* was taken as a control.

Seven *P.cembra* population and one of *P.pumila* were used in the present studies. Material was collected from Polish and Slovakia parts of the Tatra Mts. And from Syberia, near Bajkal Lake. Biometrical analysis was carried out on needles of two-years-old short stams under 8 morphological characters. In this study the following four categories of DNA markers, i.e. RAPD, ISJ and two bacterial sequences, *katG* and IS6110 were analysed.

Morphology and molecular research confirm high genetic similarity between introduced native stone pine in Tatra Mts. Stone pine population from the Tatra Mts. And Syberia are very similar in morphological characters of needles. The populations are very similar on molecular level because they do not have specific DNA markers and the genetic similarity index is equal to $I=0,97$. This results can indicate the same origin of *P.cembra* population, which constitute a single biological species.

P.pumila is probable mutant of *P.cembra*, because this species doesn't have differences in DNA markers, and the genetic similarity between them is very high, $I=0,97$.