

Genetic Variability in Populations of Scots Pine from Romania and Sweden

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SUMMARY

Pinus sylvestris (Scots pine) is one of the most widespread conifer in the world occupying 37% of forest area and has relict populations from the Pleistocene in the Mediterranean region and central Europe. Variation in mitochondrial DNA (maternally inherited in pines) has indicated that the three major mitotypes are present in Europe, as well as microsatellite markers have revealed the expected heterozygosities to be between 0.50-0.80 (Keys *et al.*, 2000). In central and eastern Europe the gene pools of Scots pine were formed in postglacial times during the migration of the species from the glacial refugia and intensive gene exchange between populations and more recently by human activities. Some studies on macro and mega fossil data (Willis & van Andel, 2004) suggest that Scots pine survived in central Europe more than 30.000 years ago. Two mitochondrial markers *nad1* intronB/C, *nad7* intron1 and 9 SSR nuclear markers were used to determine the genetic variability and post-glacial colonization routes in six populations from Romania and 43 from Sweden. Half of the analyzed individuals in Romania populations had the haplotype-BA frequently found in NorthEast Europe, the other half had a haplotype-AA mostly found in West Europe (Naydenov, 2007; Pyhäjärvi, 2008). The haplotype found in Sweden populations was AA accordingly to the geographical range of this country. The glacial refugia for the haplotype-AA was proved to be South of Spain, Iberian Peninsula (Soranzo *et al.*, 2000), but for the haplotype-BA it was not found yet. To give a conclusion that the haplotype-BA survived in Hungary as well, and if this is the colonization source for Scots pine in Romania, the studies should continue with the analyses on at least two populations in this region. The current project is developed in SLU/UPSC Umea Sweden, under the coordination of Professor Rosario Garcia-Gil.

Keywords: *Pinus sylvestris*, mitochondrial markers, microsatellite markers

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