

GENETICS AND SILVICULTURE OF OAKS

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Special issue of the Glasnik za šumske pokuse (*Annales Experimentis Silvarum Culturae Provehendis*) contains the proceedings from the IUFRO Symposium "Oak 2000 – Improvement of Wood Quality and Genetic Diversity of Oaks" which was the joint meeting of the IUFRO research units 1.06.00 "Improvement and Silviculture of Oaks" and 2.08.05 "Genetics of *Quercus*". The Symposium was held in Zagreb on May 20–25, 2000, and organized jointly by the IUFRO working parties and the Faculty of Forestry of the Zagreb University, Zagreb, Croatia.

This symposium was the third one within the last 10 years and was aimed at the latest advances in the field of genetic and ecological investigations mainly of the oak species. The former two symposia were organized in Bordeaux, France (September 2–6, 1991) and Pennsylvania (October 12–17, 1997), from which two proceedings were published in the past¹.

In the first part of the proceedings 24 papers aimed at ecology and silviculture of oaks are published. More than a half of these papers summarize the ecology of oak stands and the experience of silvicultural treatment of oak stands in Croatia and Slovenia

In the second part of the proceedings 13 papers aimed at genetic aspects of the white oak populations are included. They could be divided into two parts: (1) morphometric studies on leaves and growth of oak populations and (2) molecular genetic studies of oak populations.

I. Yakovlev analyzed leaf morphometry of *Q. robur* populations in the region of the Volga river and differentiated individual populations and compared the results with the diversity and differentiation studies using isozymes.

Leaf samples were also used to differentiate individuals *Q. robur* provenances from the provenance trial "Gajno" in Croatia (J. Franjic *et al.*). Breznikar *et al.* dealt with the morphometry of leaves from the complex *Quercus petraea*, *Q. robur* and *Q. pubescens*. Except the methodological aspect of multivariate morphometric analyses based on different sample sizes (100 leaves per tree vs 5 leaves per tree) they tried to discriminate both species (*Q. petraea* and *Q. robur*) and their hybrid populations. Subsequently they analyzed the sampled populations using the standard cpDNA analyses for large scale inventory of west European populations.

Similar investigation of the cpDNA diversity of Hungarian populations was carried out by S. Bordács and that of the Polish populations by J. Glaz. S. Bordács analyzed in total 53 populations (260 trees) over all country and J. Glaz analyzed 33 populations and (168 trees). These studies were part of the EU project "Synthetic maps of gene diversity and provenance performance for utilisation of oak genetic resources in Europe."

B. Heinze and Ch. Lexter dealt with using the microsatellites as a form characterizing the oak seed lots. They proposed successful application of molecular methods for characterization of provenances and commercial seed lots with practical consequences.

M. Vidaković and coauthors dealt with the progeny testing of pedunculate oak. They established the clonal seed orchard using 40 plus trees and in addition they tested the growth performance of 21 open-pollinated families of plus trees from the Drava river region.

S. Perić *et al.* evaluated the growth performance and flushing of 16 provenances of pedunculate oak aged 12 with regard to flushing. M. Liesebach and R. B. Stephan studied the development of *Q. petraea* and *Q. robur* provenances in juvenile phase (from acorns up to 6 years of age) in relation to species specific traits.

Peculiar hermaphroditic and unseasonal flowering of green oak, a supposed hybrid between *Quercus cerris* and *Q. ilex*, was a subject of the paper presented by Ž. Borzan.

One of the most interesting papers was published by J. Kleinschmit and J. G. R. Kleinschmit and was aimed at the critical review of the species concept of both white oak species *Q. petraea* and *Q. robur*. The authors discuss the results of the differentiation of both species in the light of hypotheses on the evolutionary status.

Apart from the indoor sessions, the symposium also included two excursions – the first one to Gajno (provenance trial) and Jastrebarsko and the second one to the region of the Slavonian oak in Lipovljani.

It was surely the advantage of this symposium that the proceedings were reviewed and printed prior to the symposium. The proceedings can be purchased from the Faculty of Forestry, University of Zagreb, PP 422, HR–10002 Zagreb, Croatia.

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¹⁾ Kremer, A., Savill, P. & Steiner, K. C. (eds.) 1991: Genetics of oaks. *Annales des Sciences Forestieres* 50 (supplementum 1): 1–472.

²⁾ Steiner, K. C. (ed.) 1997: Diversity and Adaptation in Oak Species. Proceedings of the second meeting of Working Party 2.08.05 "Genetics of *Quercus*", October 12–17, 1997. University Park, Pennsylvania, USA., 297 pp.