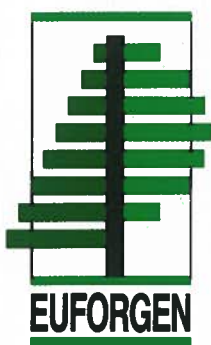




Second EUFORGEN Meeting on Social Broadleaves

3-6 June 1999 - Birmensdorf, Switzerland

**J. Turok, A. Kremer, L. Paule, P. Bonfils and E. Lipman,
*compilers***



European Forest Genetic Resources Programme (EUFORGEN)



IPGRI is an institute
of the Consultative
Group on International
Agricultural Research
(CGIAR)

The International Plant Genetic Resources Institute (IPGRI) is an autonomous international scientific organization, supported by the Consultative Group on International Agricultural Research (CGIAR). IPGRI's mandate is to advance the conservation and use of genetic diversity for the well-being of present and future generations. IPGRI's headquarters is based in Rome, Italy, with offices in another 15 countries worldwide. It operates through three programmes: (1) the Plant Genetic Resources Programme, (2) the CGIAR Genetic Resources Support Programme, and (3) the International Network for the Improvement of Banana and Plantain (INIBAP).

The international status of IPGRI is conferred under an Establishment Agreement which, by January 2000, had been signed and ratified by the Governments of Algeria, Australia, Belgium, Benin, Bolivia, Brazil, Burkina Faso, Cameroon, Chile, China, Congo, Costa Rica, Côte d'Ivoire, Cyprus, Czech Republic, Denmark, Ecuador, Egypt, Greece, Guinea, Hungary, India, Indonesia, Iran, Israel, Italy, Jordan, Kenya, Malaysia, Mauritania, Morocco, Norway, Pakistan, Panama, Peru, Poland, Portugal, Romania, Russia, Senegal, Slovakia, Sudan, Switzerland, Syria, Tunisia, Turkey, Uganda and Ukraine.

Financial support for the Research Agenda of IPGRI is provided by the Governments of Australia, Austria, Belgium, Brazil, Bulgaria, Canada, China, Croatia, Cyprus, Czech Republic, Denmark, Estonia, F.R. Yugoslavia (Serbia and Montenegro), Finland, France, Germany, Greece, Hungary, Iceland, India, Ireland, Israel, Italy, Japan, Republic of Korea, Latvia, Lithuania, Luxembourg, Macedonia (F.Y.R.), Malta, Mexico, the Netherlands, Norway, Peru, the Philippines, Poland, Portugal, Romania, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Turkey, the UK, the USA and by the Asian Development Bank, Common Fund for Commodities, Technical Centre for Agricultural and Rural Cooperation (CTA), European Environment Agency (EEA), European Union, Food and Agriculture Organization of the United Nations (FAO), International Development Research Centre (IDRC), International Fund for Agricultural Development (IFAD), Interamerican Development Bank, Natural Resources Institute (NRI), Centre de coopération internationale en recherche agronomique pour le développement (CIRAD), Nordic Genebank, Rockefeller Foundation, United Nations Development Programme (UNDP), United Nations Environment Programme (UNEP), Taiwan Banana Research Institute (TBRI) and the World Bank.

The European Forest Genetic Resources Programme (EUFORGEN) is a collaborative programme among European countries aimed at ensuring the effective conservation and the sustainable utilization of forest genetic resources in Europe. It was established to implement Resolution 2 of the Strasbourg Ministerial Conference on the Protection of Forests in Europe. EUFORGEN is financed by participating countries and is coordinated by IPGRI, in collaboration with the Forestry Department of FAO. It facilitates the dissemination of information and various collaborative initiatives. The Programme operates through networks in which forest geneticists and other forestry specialists work together to analyze needs, exchange experiences and develop conservation objectives and methods for selected species. The networks also contribute to the development of appropriate conservation strategies for the ecosystems to which these species belong. Network members and other scientists and forest managers from participating countries carry out an agreed workplan with their own resources as inputs in kind to the Programme. EUFORGEN is overseen by a Steering Committee composed of National Coordinators nominated by the participating countries.

The geographical designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of IPGRI or the CGIAR concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries. Similarly, the views expressed are those of the authors and do not necessarily reflect the views of these participating organizations.

Citation:

Turok, J., A. Kremer, L. Paule, P. Bonfils and E. Lipman, compilers. 2000. Second EUFORGEN Meeting on Social Broadleaves. International Plant Genetic Resources Institute, Rome, Italy.

ISBN 92-9043-439-2

IPGRI
Via delle Sette Chiese, 142
00145 Rome
Italy

© International Plant Genetic Resources Institute, 2000

Contents

Summary of the meeting	1
Introduction	1
Workplan update	2
Research needs and coordination of research priorities	3
Progress Reports	
Moldova – <i>In situ</i> conservation of pedunculate oak (<i>Quercus rubur</i>) genetic resources <i>Gh. Postolache</i>	7
Ukraine Igor M. Patlaj, Svitlana A. Los, Roman M. Jatsyk, Olga I. Sverdlova, Nina O. Voloshynova, Jury I. Gajda, Eugeny I. Savitch, Zoya M. Voronina, A.F. Olkhovsky and Konstantin P. Badalov	13
Hungary Sándor Bordács	16
Czech Republic Vladimír Hynek	18
Austria Thomas Geburek	19
Switzerland Patrick Bonfils	21
Italy Paolo Menozzi	22
Slovenia Hojka Kraigher	24
France Antoine Kremer, Alexis Ducousso and Eric Teissier Du Cros	28
Luxembourg Frank Wolter	30
Belgium Dominique Jacques and Bart De Cuyper	31
The Netherlands Sven M.G. de Vries	32
Germany B. Richard Stephan	33
Lithuania Virgilijus Baliuckas	37
Finland Pekka Vakkari	38
Sweden Lennart Ackzell	39
Introductory Country Reports	
Social Broadleaves genetic resources in Bulgaria Alexander H. Alexandrov, Emil Popov, Konstantin Genov and Ghyorghi Hinkov	41

Beech and oak genetic resources in Croatia <i>Joso Gračan</i>	53
Oak and beech genetic resources in Ireland <i>John Fennessy</i>	62
Conservation and state of genetic resources of oaks and beech in Norway <i>Tor Myking and Tore Skrøppa</i>	69
Present situation of deciduous oaks in Portugal <i>Maria Regina Chambel, H. Sousa and M.H. Almeida</i>	72
Genetic resources of beech (<i>Fagus sylvatica</i>) and oaks (<i>Quercus robur</i> , <i>Q. petraea</i> and <i>Q. pubescens</i>) in Spain <i>Dolores Agúndez</i>	74
Management and conservation of oak (<i>Quercus petraea</i> , <i>Quercus robur</i>) and beech (<i>Fagus sylvatica</i>) genetic resources in the United Kingdom <i>Ned Cundall</i>	82
Programme	88
List of Participants	90

Ukraine

Igor M. Patlaj¹, Svitlana A. Los¹, Roman M. Jatsyk², Olga I. Sverdlova¹, Nina O. Voloshynova¹, Jury I. Gajda¹, Eugeny I. Savitch¹, Zoya M. Voronina¹, A.F. Olkhovsky¹ and Konstantin P. Badalov¹

¹ Ukrainian Research Institute of Forestry and Forest Melioration, Kharkiv, Ukraine

² Ukrainian Research Institute of Mountain Forestry, Ivano-Frankivsk, Ukraine

Practical conservation activities

Thirteen *Quercus robur* plus trees and seven *Fagus sylvatica* plus trees were selected in the Chernivtsy and Ivano-Frankivsk regions.

Two progeny tests and two seed orchards of *Q. robur* were established in Kharkiv and Rivne regions (Tables 1 and 2). All plots were established by planting 2-year-old seedlings. The seedlings were grown from acorns harvested in 1996.

Inventories

The inventory of gene resource units was carried out in the Lviv, Ivano-Frankivsk, Chernivtsy, Transcarpathian, Rivne and Ternopil regions. Table 3 gives data on the area of gene resource units including the results of the inventories, selection and establishment of new units.

Legislation

The "Main statute for conservation of genetic resources of the Carpathian region" was elaborated by the Ukrainian Research Institute of Mountain Forestry.

Research

The inventories of gene resource units included the study of diversity of oak and beech natural populations. In Rivne region two gene reserves of *Q. robur* were surveyed. The phenological types, types of bark and selection categories were determined besides the diameter and height of trees. In the Ternopil region two *F. sylvatica* and one *Q. robur* gene reserves were surveyed (Table 4.). In Crimea the studies of biodiversity of the natural population of *Q. pubescens* were continued. The morphology of leaves and acorns of 60 tree clusters was studied. Yearly observations of the flowering and fruit-bearing intensity of *Q. robur* clones have been continued at clonal seed orchards and clonal archives in Vinnitsa, Kharkiv, Kirovohrad and Rivne regions. Cytological studies of *Q. robur* clones were carried out to elucidate the causes of low fruit-bearing intensity of some clones. The buds of 18 clones with different fruit-bearing intensity were studied. The presence of unreduced pollen was found in nine clones. Three of them had polyploid pollen. The creation of the database on Social Broadleaves genetic resources has started.

Unfortunately, cuts in financial support caused reduction in research activities in Ukraine. Highly experienced specialists were lost, as well as several Research Stations. Whole regions are not covered by the studies this year. The necessary steps for gene resource conservation have not been taken because of a low level of funding for forest enterprises and they are still declining.

Bibliography

Patlaj, I.M., J.I. Gajda, S. Los, N.O. Voloshynova, K.P. Badalov and R.M. Jatsyk. 1998. Tree breeding and testing of oak in Ukraine. Forest science on confines of XX century. Forest Institute NAS of Belarus. V. 46. Gomel. [in Russian].

Table 1. Establishment of progeny trials of *Quercus robur* in Ukraine in 1999

Region	Forestry regional enterprise	Area (ha)	Origin of trees-donors of seeds	Number of progenies
Kharkiv	Octiabrsky	0.9	Kharkiv, Donetsk and Sumu regions	31
Rivne	Klevanivsky	1.6	Rivne region	40
Total		2.5		

Table 2. Establishment of seedling seed orchards of *Quercus robur* in Ukraine in 1999

Region	Forestry regional enterprise	Area (ha)	Origin of trees-donors of seed	Number of progenies
Kharkiv	Hutiansky	5	Kharkiv, Donetsk and Sumu regions	27
Rivne	Klevanivsky	1	Rivne region	20
Total		6		

Table 3. *Ex situ* and *in situ* conservation of gene resources of Social Broadleaves in Ukraine

	Gene reserve		Plus stand (ha)	No. of plus trees	Clonal archive (ha)	Clonal seed orchard (ha)	Seedling seed orchard (ha)	Progeny trial	
	Area (ha)	No.						Area (ha)	No. of progenies
<i>Fagus sylvatica</i>									
Mixed forest	2	1	0	0	0	0	0	0	0
Forest-steppe	324.7	20	77.6	32	0	2	6	0	0
Carpathians	3855.5	51	10	177	0	0	0	0	0
Crimea	0	0	0	12	0	0	0	0	0
Total	4182.2	72	87.6	221	0	2	6	0	0
<i>Quercus robur</i>									
Mixed forest	2526.3	80	330.3	294	11	76.9	16	2.1	92
Forest-steppe	3295.1	130	1213.3	418	13.2	382	40.2	28	664
Steppe	269	16	30.3	323	5.6	28.6	10	3.5	119
Carpathians	1141.8	26	14.7	184	0	14	0	0	0
Crimea	0	0	0	0	0	0	0	0	0
Total	7232.2	252	1588.6	1219	29.8	501.5	66.2	33.6	875
<i>Quercus petraea</i>									
Mixed forest	52.4	1	27	30	0	0	0	0	0
Forest-steppe	13	1	0	28	0	0	0	0	0
Steppe	128	7	2.6	0	0.6	0	0	0	0
Carpathians	70.2	3	0	63	0	0	0	1	14
Crimea	33.7	0	0	99	0	0	0	5.4	120
Total	297.3	12	29.6	220	0.6	0	0	6.4	134
Total	11711.7	336	1705.8	1660	30.4	503.5	72.2	40	1009
<i>Quercus pubescens</i>									
Crimea	129	11	0	12	0	0	0	0	0

Table 4. Results of observations of the gene reserves in Ternopil region in 1998

Forestry Regional enterprises	Area (ha)	Species composition			Age (years)	Mean height (m)	Mean diam. (cm)	growing stock (m ³ /ha)	Trees with straight trunk (%)
		Layer	Species	%					
Chortkovsky, Kopichinsky	1.0	I	<i>Fagus sylvatica</i>	100	209	41.7	86.9	693	75
Chortkovsky. Skala-Podolsky	3.7	I	<i>Fagus sylvatica</i>	94.0	102	38.2	46.0	650	79
			<i>Fraxinus excelsior</i>	3.0		37.1	54.1	26	
			<i>Acer platanoides</i>	1.7		38.1	44.5	12	
			<i>Acer pseudoplatanus</i>	0.7		26.4	44.4	3	
			<i>Ulmus foliaceae</i>	0.7		35.8	49.1	5	
Berejansky Pidgaetsky	18	I	<i>Quercus robur</i>	83.3	143	29.7	67	149	81
			<i>Acer pseudoplatanus</i>	11.1		27.0	48.2	3	
			<i>Acer platanoides</i>	5.6		27.4	50.2	10	
		II	<i>Carpinus betulus</i>	98.1		22.6	28.9	130	
			<i>Ulmus foliaceae</i>	1.42		20.4	21.6	1	
			<i>Tilia cordata</i>	0.47		19.1	37.6	1	