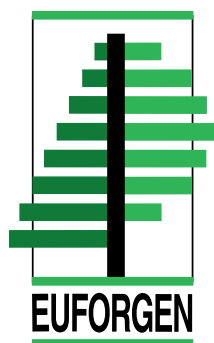




***Populus nigra* Network**

Summary of the fifth meeting

Kyiv, Ukraine, 5-8 May 1999



European Forest Genetic Resources Programme (EUFORGEN)

Summary of the meeting¹

Introduction

The meeting was attended by 16 participants (see List of participants at the end of this volume). R. Volosyanchuk welcomed the participants and wished them a successful and pleasant meeting. The agenda was introduced by F. Lefèvre, Chair of the Network. J. Turok welcomed the participants on behalf of IPGRI and presented the main outcomes of the second EUFORGEN Steering Committee meeting (held in Vienna, Austria, in November 1998) and other international developments relevant to the Network.

Reports on the progress of activities in countries

Introductory country reports from Portugal and Slovenia were presented. All other countries briefly reported on the progress made in the conservation of *Populus nigra* at the national level during the past 1.5 years. The reports also covered *P. alba*, where relevant.

During this period significant progress has been made in field inventories and collecting of material for *ex situ* conservation. Intensive research was carried out in a number of countries, particularly those involved in EUROPOP. Various meetings, presentations, leaflets and articles in journals contributed to raising public awareness in at least seven countries.

Synthesis of in situ conservation measures and activities

The overview table compiled in October 1997 was presented, with additional information received from Ukraine and Yugoslavia. It was agreed that the overview should be revised and/or completed by the participating countries, preferably during the meeting. Substantial progress had been achieved in countries regarding *in situ* conservation activities during the period since the last two meetings.

In situ conservation strategies

Three presentations were made:

1. Effects of ecosystem management on dynamic processes in *P. nigra* populations (I. Popivshchy and S. de Vries).
2. Restoration of riparian ecosystem (B. Heinze).
3. Indicators for monitoring the evolution of diversity in riparian ecosystem (F. Lefèvre and D. Kajba).

These three elements of an *in situ* conservation strategy of the Network were discussed and three overview tables produced during the meeting.

List of descriptors for inventories of stands

F. Lefèvre reported on the results of an inventory of *P. nigra* resources in existing nature reserves in France. This was the first inventory which used the list of stand descriptors previously proposed by the Network. Although the study revealed that *P. nigra* was only represented in a small number of reserves, the list was found useful for field surveys by reserve managers not specialized in forestry. However, multiple response should be allowed for several items, and quantification of the item describing regeneration should be introduced in the future.

Several modifications in the list of descriptors were agreed upon and supplementary information on climate types was presented. In particular, I. Popivshchy and

¹ This summary was adopted and distributed at the meeting.

R. Volosyanchuk provided additional feedback on the climatic classification used in their countries.

Joint research and research needs

During the last meeting it was agreed that progress made by the EUROPOP project be briefly reported at each Network meeting. An introduction to EUROPOP is given in the report of the fourth Network meeting. S. de Vries presented a summary of the progress made in EUROPOP. During the second meeting (held in Wageningen in January 1999), it was concluded that the project was on schedule:

- Results of the isoenzyme analysis of the EUFORGEN reference collection were discussed and the results achieved by the participating labs were very similar. AnFLP analysis could not be standardized. For this reason each participating laboratory will analyze one primer set for all samples.
- Cuttings from the selected trees in populations, genebanks and the reference collection were collected during the winter of 1998/99. These cuttings were multiplied during 1999 and the field trial was established with these cuttings in the spring of 2000. The trial contains 2×60 clones from populations, 100 clones from the genebank and 15 clones from the EUFORGEN reference collection (in total 235 clones).

CpDNA polymorphism in the EUFORGEN core collection was analyzed. It turned out that polymorphism in *P. nigra* is low. One of the universal primers has been adapted to detect more polymorphism. Six primer sets/restriction enzyme combinations were selected. The protocol available for oak has been adapted for black poplar.

Microsatellite-containing fragments were isolated and approximately 20 different fragments are available for sequencing. Four primers were selected from the homepage of Poplar Molecular Genetics Cooperative and these primers described for hybrid poplars were tested for *P. nigra*. As the results were satisfying, these primers will be used to start standardization for microsatellites.

All partners selected two populations which meet the selection criteria. Trees were selected and mapped. All partners took cuttings and samples from their respective genebanks.

An update of the EUROPOP homepage has been loaded at <http://www.ibn.dlo.nl/europop>; and a discussion site on the Internet has been opened at <http://www.ibnresearch.nl/europop>.

It was agreed that after publication the characterization data of the core collection will be distributed to all those who contributed to the collection.

A proposal for a black poplar conservation project along the River Danube was introduced. It could be submitted to the Fifth Framework Programme involving central and east European countries.

While a number of urgent research topics which were identified previously by the Network (see Report of the Second Meeting) are currently covered within the framework of EUROPOP, the needs for further research were discussed and listed as follows:

- Study of local adaptation in *P. nigra* through a provenance experiment as opposed to the traditional research at the individual (clonal) level. This may be achieved through a set of common controls, i.e. the reference clones or the core collection.
- Recurrent selection programmes. Long-term breeding programmes should benefit from the genetic material collected and characterized.

- Forest ecology of riparian ecosystem and the impact of management practices on *P. nigra* genetic resources. It was decided to contact several specialists in this field. J. Turok will contact several persons as indicated by Network members and will inquire about their interest in presenting the ecology aspects to the Network at its next meeting.
- Factors influencing amount and risk of introgression and its impact.
- Minimum viable population size.

The last two items are directly related to forest practices and restoration of the riparian ecosystem.

Coordinating activities on *Populus alba* genetic resources in Europe

In view of the increasing involvement of the Network in the area of *in situ* conservation in the riparian ecosystems, participants of the previous meeting agreed to broaden the scope of the Network to include *P. alba*. This was endorsed by the Steering Committee Meeting in Vienna in November 1998. The main arguments for including *P. alba* into the Network are:

- ecology of the riparian ecosystem – *P. nigra* and *P. alba* represent different stages in the development of this ecosystem;
- similar biological features of both species including interspecific hybridization.

While *P. nigra* remains the main priority species for the Network in the future, it was agreed that the Network will directly address the questions of *in situ* and *ex situ* conservation of *P. alba* and will only indirectly consider *P. × canescens* within the agenda for *in situ* management of the riparian ecosystems which include *P. nigra* and *P. alba*.

Every country briefly described the situation of *P. alba* genetic resources and expressed its needs for coordinated action at the level of the Network. The importance of *P. alba* varies significantly among European countries. While Belgium and The Netherlands are not concerned with the genetic resources of the species, *P. alba* is important for forestry practice in countries along the Danube (Austria, Hungary, Slovakia) and in Spain. The genetic resources of *P. alba* are not threatened but its use in breeding programmes and for reforestation require the attention of the Network. It was agreed that the following steps be taken before the next Network meeting:

1. A database of *P. alba* clones will be compiled following the same structure as that for *P. nigra*. Countries with existing collections will provide data to N. Alba, who offered to take responsibility for establishing and maintaining this database. The structure of the database with first data included will be reviewed at the next Network meeting and will then be uploaded on the Internet, along with the *P. nigra* database (see below).
2. Technical recommendations for the propagation and conservation of *P. alba* will be developed on the basis of a literature survey of the techniques used. Morphological descriptors for nursery evaluation and taxonomic characterization will be developed, aiming at the discrimination of *P. alba* subspecies as well as *P. × canescens* hybrids. R. Schulzke offered to develop both draft documents. They will be circulated to all Network members one month before the next meeting.

Following the adoption of these two outputs by the Network, exchange of material and establishment of a core collection will be discussed at the next meeting. E. Gabnai and L. Varga will prepare guidelines for safe movement of material to be discussed at the next Network meeting (to be circulated one month before the next meeting).

Presentation of Ukraine's national programme on forest genetic resources

R. Volosyanchuk presented the national programme on forest genetic resources which has been implemented since the 1960s. It consists of four main elements: gene reserves, *ex situ* conservation measures, tree breeding, and introduction of new species and provenances. A number of constraints are being faced in the present socioeconomic situation. The main opportunities for collaboration with partners in Europe include: further exchange of information, databases, common conservation strategies, and transfer of modern molecular genetic technologies.

A short field trip was organized to natural riparian black poplar stands on the River Dnipro. The central botanical gardens in Kyiv were also visited which host a collection of specimens from the family Salicaceae.

EUFORGEN core collection

J. Turok on behalf of S. Bisoffi presented an update on the core collection including a list of clones sent from Casale Monferrato to The Netherlands, Belgium and France during the past 1.5 years. It was agreed that the most relevant information was related to the institutions to which requests for material need to be sent.

A total of 17 countries have so far each sent two clones to the collection. One country sent only a single clone. It was requested that all Network members either send their two clones or complete their number to two. J. Turok will invite persons in countries not participating in the Network to join the core collection. Passport data according to the Network's list must accompany all clones.

It was furthermore agreed that all Network members hosting the core collection or part of it send their updated information to S. Bisoffi. This information will be published in the Report of the meeting. F. Lefèvre proposed Network members who take part in the EUROPOP project to plant cuttings of the core collection together with the cuttings they need to plant in relation to Task 1 of EUROPOP, in order to be able to compare morphological and phenological characters of all clones. It was also suggested to Network members that they plant some cuttings of the core collection on a location where the trees can grow old (e.g. arboreta, botanical gardens, forestry school yards), in order to have mature trees from a large portion of the distribution range.

European database of clones

J. Turok presented the European database of clones which was updated and sent by S. Bisoffi. The database contained 2257 entries as of May 1999. Passport data for the clones in the core collection have been included, but some relevant information is still missing for individual clones. The database has been available on the Internet since 1997 as a downloadable Excel file. J. Turok offered the possibility to change this into a searchable Access database to be accessible from the Internet before 31 May 1999.

It was agreed that the information be regularly updated. Latest updates were requested to be sent to S. Bisoffi by 15 May 1999 (as Excel files according to the previous instructions). From then on, all updates will be sent annually to S. Bisoffi by 15 June. Further instructions on how to send the updates will be provided by S. Bisoffi and J. Turok. It was decided that a complete version of the respective national database be sent every time an update is given (instead of sending individual changes).

Public awareness

Several countries sent slides for the collection, among which 134 were chosen to best represent the items identified previously and the countries that contributed. This set of slides was scanned and electronically stored on a Photo-CD which was briefly demonstrated during the session. Missing items will be treated in the same way. These are the following:

- use of young shoots for animal fodder;
- pollen;
- vines growing on the support of poplars;
- species-mixed riparian ecosystems and forest associations (particularly in dry Mediterranean oak forests);
- biodiversity in black poplar stands (e.g. butterflies that only feed on *P. nigra*);
- particular landscapes (e.g. North Africa);
- drawings from the Identification Sheet;
- restoration planting techniques; and
- poplars in the art.

Individual participants offered to supply slides on these items. New slides from Croatia and Hungary and photographs from Slovakia were shown.

The whole 'basic' set of slides on CD will be sent to all Network members by S. de Vries for use in public awareness activities. There is no copyright on the set of slides; the EUFORGEN *Populus nigra* Network should be cited as source. J. Turok will undertake a conversion of pictures and text into an interactive CD-ROM format with public awareness professionals. A draft proposal will be presented at the next Network meeting.

The WWF Danube-Carpathian Programme has addressed the Network with an outline for a European Freshwater Public Awareness Campaign (see Appendix I). Black poplar was identified as a 'flagship' in the campaign for freshwater habitats, but the conservation of the species itself should also be promoted. B. Heinze, F. Lefèvre, S. de Vries and J. Turok will keep up this contact and will investigate the possibilities for collaboration.

Bibliography

A preliminary addendum to the list of references already published in previous reports was distributed by F. Lefèvre. Other references were provided by R. Schulzke, B. Heinze, G. Božič and other participants.

The whole list of references will be compiled into a single file and provided to J. Turok for inclusion on the EUFORGEN Web site.

The list of references will be progressively turned into a searchable database, following the structure established for the Norway Spruce Bibliography, and made available on the Internet.

Overview of a study on leaf morphology

D. Kajba presented an overview on leaf morphology in *P. nigra*.

Conclusions

Election of Chair and Vice-Chair: F. Lefèvre who acted as Chair of the Network since its establishment in October 1994 was thanked by Network members for his leadership in the development of the Network. A number of practical outputs were provided and considerable impact achieved in countries by the *Populus nigra* Network during this period.

The participants elected S. de Vries as Chair and D. Kajba as Vice-Chair of the Network for the period until the Seventh Network meeting.

Next Network meeting: it was proposed that the next meeting be held in Avignon, France, in conjunction with the planned EUROPOP project meeting. The Sixth Network meeting will be held from 3 to 6 February 2000. The last day of the meeting (6 February) will consist of a joint session with the EUROPOP participants and a field trip.

The report of the meeting was adopted.

Programme

6 May

1. Opening of the meeting
 - 1.1 Welcome (Host country and Chair of the Network)
 - 1.2 Introduction (EUFORGEN Coordinator)
 - 1.3 Adoption of the agenda and nomination of rapporteurs
2. Joint research
 - 2.1 Update on the progress made in EUROPOP (S. de Vries)
 - 2.2 Discussion
3. Country updates on the progress made (Austria, Belgium, Croatia, France, Germany, Hungary, Italy, The Netherlands, Poland, Russian Federation, Slovakia, Spain and Ukraine)
 - 3.1 Introductory reports from newly attending countries: Portugal and Slovenia
4. Synthesis of *in situ* conservation measures and activities (S. de Vries)
5. List of descriptors for inventories of stands – review (N. Alba)
6. Network discussion: Coordinating action on *Populus alba* genetic resources in Europe
7. *In situ* conservation strategies
 - 7.1 Effects of ecosystem management on dynamic processes in *P. nigra* populations (S. de Vries and I. Popivshchy)
 - 7.2 Restoration of riparian ecosystem (B. Heinze)
 - 7.3 Indicators for monitoring the evolution of diversity in riparian ecosystem (F. Lefèvre and D. Kajba)
 - 7.4 Discussion

7 May

7. *In situ* conservation strategies (Discussion continued and recommendations)
8. Presentation of Ukraine's national programme on forest genetic resources (R. Volosyanchuk)
9. Field trip to *P. nigra* stands on the river Dnipro

8 May

10. Core collection of clones – update
11. European Database – update
12. Public awareness activities of the Network (S. de Vries/J. Turok)
 - 12.1 Review of the slide collection
 - 12.2 Production of the CD-ROM version
 - 12.3 Other public awareness initiatives
13. Bibliography update (F. Lefèvre)
14. Overview of a study on leaf morphology (D. Kajba)
15. Miscellaneous
 - 15.1 Election of Chair and Vice-Chair
 - 15.2 Date and place of next meeting
16. Conclusions

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