International Plant Genetic Resources Institute

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newsletter for Europe

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About this Newsletter

The International Plant Genetic Resources Institute (IPGRI) is one of the 16 Centres of the Consultative Group on International Agricultural Research (CGIAR). IPGRI's goals are to further the study, collection, preservation, documentation, evaluation and utilization of the genetic diversity of useful plants for the benefit of people throughout the world. From its Headquarters in Rome, Italy and its Regional Offices in Benin, China, Colombia, India, Kenya, Malaysia and Syria, IPGRI promotes and coordinates the action needed for the conservation of genetic resources of these plants. IPGRI publishes five Regional Newsletters covering the different regions of the world. They are intended to serve as an informal forum for the exchange of news and views, and to create closer ties between national programme scientists, researchers and other genetic resources workers.

We invite you to send your ideas and contributions for this newsletter to IPGRI's Regional Office for Europe. Please send all contributions for Issue 19 by 30 September 2000.

Will there be a follow-up to EC Regulation 1467/94?

An enlarged meeting of the Committee on Council Regulation 1467/94 on conservation, characterization, collection and utilization of genetic resources in agriculture, was convened on 26 June 2000 in Brussels, Belgium, by the Directorate General for Agriculture of the European Commission (EC). A recent external evaluation report on the implementation of the Regulation was used as the basis for discussion.

The group of experts recommended that a second five-year programme be launched, with permanent Commission staff. It was also recommended that more emphasis be given to *in situ* conservation of both plant and animal genetic resources, that coordinated rationalization efforts be encouraged within *ex situ* collections, that future projects have an ecoregional emphasis coverage and that activities on PGR inventories be discontinued.

Other recommendations called for further involvement of the Commission in the execution of accompanying measures, in the handling of legal needs related to the Convention on Biological Diversity and in the coordination of networks and of national genetic resources programmes, thus underpinning the EU dimension. The importance of involving NGOs was also highlighted.

Delegations of member states and other participants (representatives of genebanks, EU funded projects, NGOs and breeders), were given the opportunity to table their comments. The need to coordinate future activities with the existing European networks was often mentioned and IPGRI renewed the invitation to the EC to become full member of the Steering Committees of ECP/GR and EUFORGEN.

The Commission clearly acknowledged the specificities of forest and animal genetic resources, as well as of *in situ* and on-farm approaches for conservation. They made it clear that decentralization of the responsibilities to member countries will be the condition for the sustainable operation of any future action. The financial involvement of non-EU countries in the future programme was confirmed in principle.

The new work programme should be defined in the next six months. The delegation of France (holding the EU Presidency until December 2000) will be called to play an essential role in this process. For more information, please contact Mr Christian Anz, Rue de la Loi 200, office L1306/166, 1049 Brussels. Tel. (32) 2 2956763, Fax (32) 2 2966255, e-mail: christian.anz@cec.eu.

In memoriam - Dr Abdou Salam Ouédraogo

It was with deep sorrow and sadness that the plant genetic resources community worldwide learned about the tragic death of Dr Abdou Salam Ouédraogo, IPGRI's Regional Director for Sub-Saharan Africa based in Nairobi. He died in the Kenya Airways Airbus crash on 30 January 2000 while on duty travel to west Africa. Dr Ouédraogo, a citizen of Burkina Faso, was well known throughout Africa and the scientific world as a distinguished scientist and leader in his field. In 1995 he obtained his Ph.D. in conservation biology from Wageningen University in the Netherlands and, before joining IPGRI, was the founding director of the Forest Tree Seed Centre in Ouagadougou and coordinator of the FAO/CILSS regional forest genetic resources programme. Abdou had taken up his position in Nairobi only last October, following his move from Rome IPGRI headquarters where he had very ably and successfully led IPGRI's programme on forest genetic resources since 1993. During that period Abdou had also been very closely associated with the development of the European Forest Genetic Resources Programme.

Dr Ouédraogo represented Africa in the FAO Panel of Experts on Forest Gene Resources, served on ICRAF and CIRAD-Forêt programme committees and played leadership roles in IUFRO Research Group on Biodiversity (for Africa) and the IUCN/SSC African Tree Specialist Group. Abdou was a unique person; his warm, infectious personality touched all who knew him. He will be remembered for his vitality and positive attitude towards life. His life was a continuous endeavour to make the world a better place.

IPGRI has launched an appeal for funds in honour of the late Dr Abdou Salam Ouédraogo to be used to provide a travel study award to young African scientists working in the area of forest genetic resources. The award will be offered in association with the Sub-Saharan Africa Forest Genetic Resources Network (SAFORGEN). The exact nature of the award, which IPGRI hopes to be able to make periodically, will depend on the amount received. IPGRI will match the contributions received up to a maximum of US$25,000. IPGRI welcomes all contributions. For further details, please contact Ms. Sheilah Ebel (s.ebel@cgiar.org) or Ms. Josephine Luzon (j.luzon@cgiar.org) at IPGRI Headquarters, Via delle Sette Chiese 142, 00145 Rome, Italy Tel. (39) 0651892202, Fax (39) 065750309.

Third Social Broadleaves Network Meeting

Social Broadleaves (European white oaks and beech) represent the major part of European broadleaved forest resources. These species have high economic and ecological importance for many countries, but are currently under threat by factors such as drought, air pollution, diseases and unsuitable management practices. The conservation and sustainable use of their genetic resources is an important priority. To address these and other issues, representatives from 24 countries attended the third EUFORGEN Social Broadleaves Network meeting which was held in Borovets, Bulgaria, 22-24 June, 2000.

The first part of the meeting was devoted to a joint session with the project on Genetic Resources of Social Broadleaves in Southeastern Europe in which scientists from Bulgaria, Moldova Romania and Luxembourg work jointly since 1997 (see NL issue 16). Results of both the field and the laboratory work were presented and opportunities for collaboration with the Network on assessment of genetic diversity were discussed.

Moving to issues of more general concern, an overview of legislation related to genetic resources of Social Broadleaves in 26 European countries was presented. It is hoped that this information will provide a basis for policy related actions on issues of common interest.

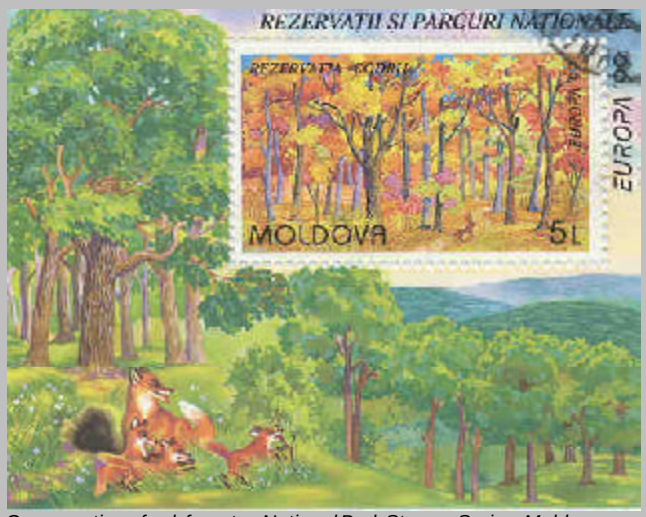
The questionnaire on the current status of Social Broadleaves that was circulated after the last meeting has now been finalized and the following results were obtained. While natural regeneration is of no major concern for beech, its absence is a major constraint for *in situ* conservation of oaks (*Quercus petraea* and *Q. robur*) throughout Europe. *In situ* conservation measures are implemented in most countries for both beech and oaks while *ex situ* measures, namely conservation stands, seed orchards and clonal archives are only found in some countries.

From the data it is apparent that no additional measures are necessary for beech. On the other hand, additional measures were deemed necessary by a large number of countries for *Q. robur* and *Q. petraea*. Discussion then focussed on the technical guidelines for the conservation of genetic resources of European white oaks. These are addressed to forest managers, forest owners and decision makers. The style of the final product will be very practical, but all recommendations will be accompanied by relevant scientific references. In order to make sure that they are used, they should also be made available in the different national languages. The final version in English will be produced before the next Network meeting, in 2001.

Some new results of research on the processes modifying genetic diversity in oak and beech forests such as hybridization, intraspecific geneflow and selection were presented.

The conclusions of a study on mating systems in a mixed oak stand in France were used to illustrate the influence of population size. Effective pollen and seed flow were monitored with microsatellites and inferences were drawn on population size. It was determined that the neighbourhood size varies between 12 and 19 ha and, therefore, if the population is kept to this size there is no risk of genetic drift.

Oaks are predominantly outcrossing species with unidirectional hybridization from *Q. petraea* to *Q. robur*, which tends to increase the diversity of the former species. The case studies also clearly indicated the occurrence of long distance pollen flow and the asymmetry between pollen and seed flow. These important results will be summarized and included in the technical guidelines in a section on biology and genetics of the species.



Conservation of oak forests - National Park Stamps Series, Moldova

A new brochure on Conservation of Genetic Resources of Social Broadleaves in Europe was distributed to participants and will be used to raise public awareness. It was also decided that a poster on Oaks and Beech will be produced in the near future.

The meeting was followed by a visit to experimental sites in the Rila Mountains. The workplan for the Network and other information on Social Broadleaves are available on the EUFORGEN Web Page.

The Conifers Network meets for the first time

European Conifers on the IUCN World List of Threatened Trees (1998)

Abies cephalonica

Abies nebrodensis

Abies nordmanniana subsp. *equi-trojani*

Abies pinsapo var. *pinsapo*

Cupressus sempervirens

Juniperus brevifolia (Azores)

Juniperus cedrus (Madeira, Canaries)

Larix decidua var. *polonica*

Picea omorika

Pinus brutia var. *eldarica*

Pinus nigra subsp. *Dalmatica*

Pinus peuce

Tetraclinis articulata

Following the recommendations of the EUFORGEN Steering Committee (1998), the *Picea abies* Network has now been expanded to include all European Conifers. The first meeting of the EUFORGEN Conifers Network was held in Brdo/Kranj, Slovenia, 5-7 March, 2000 and was attended by Network Members from 25 countries.

The main objective of the meeting was to discuss priorities and future activities of the newly established Network. A questionnaire on current status, threats and priorities for genetic resources of conifers was distributed before the meeting and the outcomes were presented and discussed.

Four main areas for action were identified: information management, technical guidelines, legal and policy issues, and public awareness.

It was agreed that the Network would gradually expand the existing *P. abies* bibliography to include other coniferous species. It was also suggested to create a common information platform on forest genetic resources in Europe. The objective would be to make available a summary profile on each national programme and to provide links to the further information existing at country level. Each country was encouraged to develop its own web page on forest genetic resources, which would be linked to the common information platform to be hosted by IPGRI.

Another important priority identified is to provide a common set of recommendations for genetically sustainable management of conifers, which can then be adopted and adapted in each country.

The need for inventory and analysis of policy/ legal issues affecting the conservation and use of conifers genetic resources was also recognized. This should be carried out at the national level and for the European Union. Results of the analysis, including different options of policy/ legal systems applied in different countries should be provided to National Coordinators.

The new poster on the importance of Norway Spruce in Europe was presented and other public awareness initiatives such as the creation of an image collection and the production of brochures were discussed.

The technical discussion was followed by a seminar on genetic resources in mountain forest and presentations were made by the Network members from Armenia, Slovenia and Switzerland.

The participants also visited some Norway spruce stands on the high plane of Pokljuka in the Triglav National Park in the Julian Alps and some of the research projects of Slovenian Forestry Institute.

The outcomes of the meeting are available on the EUFORGEN web page and the full report of the meeting will be printed during the year 2000.

Sixth *Populus nigra* Network Meeting

The sixth meeting of the EUFORGEN *Populus nigra* Network was held in Isle sur la Sorgue, France on 6-8 February 2000, and was attended by Network members from 16 countries. Malta and Switzerland attended for the first time. The preparation of a technical bulletin on *in situ* conservation strategies of black poplar in riparian ecosystem, including information on distribution and ecology, was discussed and approved.

Young poplars on the Loire. Photo EUFORGEN P. nigra *Network*

Information management and sharing was one of the main focuses of the meeting. The new EUFORGEN Web Page was presented. It now includes the database of *P. nigra* clones for which 29 countries have provided data. There are currently 2789 accessions with a 30% increase in the last three years. The bibliography on *P.nigra* prepared for previous meeting was consolidated and is now also available on line. Finally, an updated version of the descriptors for inventories of black poplar stands was agreed upon. The current state of the core collection of clones which is being maintained at the Istituto Sperimentale di Pioppicoltura (ISP) in Casale Monferrato (see article on p. 4) was presented. Current problems include the need for more countries to join the core collection (Greece, Moldova, Portugal, Russian Federation and Switzerland), obtaining cuttings from all clones and completing passport data. Individual countries were encouraged to apply for cuttings and use them as appropriate. France, for example, plans to establish a stand from the core collection clones on a location where trees can grow old. The core collection was also used by the EUROPOP project (see issue 15) for standardizing techniques.

It was agreed that a core collection of *Populus alba* will be established. Hungary offered to host and maintain the collection.

Casale Monferrato, the Italian hometown of poplars

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Research units and subjects
Genetics: breeding, clonal selection, conservation of germplasm, biotechnologies.
Protection: pathology, entomology, weed control.
Technologies: cultivation techniques (nursery and stand), short rotation forestry, wood quality, wood technology.
Economics and statistics: monitoring, remote-sensing, economics of poplar production and utilization.

Casale Monferrato is a small town in northwestern Italy whose name is permanently associated with poplars for all those who work with these trees all around the world. This is where, more than 70 years ago, the Burgo family, owners of paper mills, established the *Istituto di Sperimentazione per la Pioppicoltura* (Poplar Research Institute). After World War II, the Institute passed to the National Agency for Pulp and Paper (ENCC) and, in 1979, to a controlled company of the ENCC, *SAF – Società Agricola e Forestale*. With the decision to close the ENCC in 1995, difficult times started for the Institute; the future now rests on a decision of the Government to include it in a general reorganization of the research units of the Ministry of Agricultural and Forest Policies.

The Institute, despite several reorganizations, still maintains its original structure, with research sections working on only one tree genus but from every point of view: genetics and breeding, pathology, entomology, silviculture, nursery practices, wood quality, economics. Such a vertical integration is rarely seen in these days and was a key factor of success, especially in the past.

Clonal bank of P. nigra *in Casale Monferrato. Photo ISP*

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Most of the international reputation of the Institute is due to its breeding work and to its past policy of unrestricted distribution of selected cultivars throughout the world. Such cultivars as *Populus canadensis* Mönch 'I-214', 'I-154' or *P. deltoides* Marsh. 'Lux' are cultivated in Asia, the Americas, Oceania, Africa, as well as in many European countries. 'I-214' is probably the cultivar with the single highest biomass production in the world. If such a wide distribution of a few genotypes is rightly regarded as risky and undesirable from the point of view of the maintenance of genetic diversity, it cannot be denied that Italian cultivars contributed to the economic growth of many rural areas in developing countries.

However, the need for a broad genetic base of parent species as a prerequisite for sustained improvement was perceived very soon. The actions taken in this regard were:

a) the development of a long-term breeding strategy based on large breeding populations of *P. deltoides* and *P. nigra* L. (hundreds of individuals), whose hybrids represent the backbone of poplar cultivation in Italy. The selection of clonal cultivars for commercial use is a separate process and does not interfere with the main "population breeding" programme;

b) the exploration, collecting and maintenance of germplasm. Paradoxically, the Institute was rich of *P. deltoides* (obtained from collections coordinated by the Poplar Council of the USA in the 1960's) and had limited resources of native *P. nigra*.

A detailed survey of Italian *P. nigra* resources was carried out by the Institute in cooperation with the *Centro di Sperimentazione Agricola e Forestale* of Rome in the early 1980's. Although the situation of *P. nigra* was not as dramatic as in some countries of Central Europe, the species was not in good shape. Very few natural populations remained as most of the original distribution range was eroded by agriculture, by human settlements and particularly by the hydraulic works (channels, dykes) that prevent the natural processes of erosion and deposition so fundamental in poplar ecology.

Small groups or even scattered individuals were located and described. Material for sexual reproduction and for vegetative propagation was collected and large collections were established in Casale Monferrato.

The collection now serves different purposes. Besides the obvious ones of *ex situ* conservation of an endangered species and of reservoir of genetic variability for breeding work, it is becoming more and more important as a source of material for restoration projects in riparian areas.

Active participation of the Institute in the EUFORGEN *Populus nigra* Network was a natural consequence of the interest in this species.

Within the *P. nigra* Network, the Institute is in charge of the maintenance of the database of *ex situ* genetic resources maintained by the participating countries. The database is accessible on the Web site of EUFORGEN and has been already used by scientists even from outside Europe to obtain specific clones for their breeding programmes (USA, China).

Another contribution of the Institute to the Network is hosting and regenerating the EUFORGEN *P. nigra* "core collection", which includes two clones from each of the participating countries. Despite some difficulties with specific genotypes, the material is being multiplied and in the near future it could be put at the disposal of any interested party as a sort of "common standard" or "control" in research programmes on *P. nigra*.

EUROGARD 2000 in Gran Canaria, Spain

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The Second European Botanic Gardens Congress (EUROGARD) took place in Las Palmas de Gran Canaria, Spain, on 10-15 April, 2000. The congress, organized jointly by the Jardin Botanico Canario "Viera Y Clavijo", Cabildo de Gran Canaria and Botanic Gardens Conservation International (BGCI) under the auspices of the BGCI/IABG (International Association of Botanic Gardens) European Botanic Gardens Consortium, was attended by over 120 participants from botanic gardens throughout Europe.

The main event of the congress was the launch of the Action Plan for Botanic Gardens in the European Union, which represents a major milestone in conservation of plant diversity (see Box 1).

Several sessions and workshops were of particular relevance to plant genetic resources. Many of the gene banks in European botanic gardens conserve a wide range of wild species and local crop varieties. In fact, seed banks are the most frequent technique, but the maintenance of field collections and *in vitro* samples are also important.

Therefore, it was recommended that botanic gardens strengthen the links with other organizations holding genebanks in Europe, where botanic gardens can provide complementary technical assistance, particularly in plant taxonomy.

Botanic gardens should also implement up-to-date conservation and management methods for genebanks. It was recognized that botanic gardens play an essential role in breeding and introducing new plant cultivars and recommended that they should:

· act as centres of scientific horticulture and provide the public with relevant and necessary information on conservation and use of plant genetic resources;

· create collections of economically important varieties, ideally in cooperation with local horticultural societies and genetic resources institutions;

· record and protect the existing biodiversity of useful plants, not limiting themselves only to wild plant protection but increasingly being involved in conservation and use of economic plants.

In a keynote address, Jan Engels of the International Plant Genetic Resources Institute (IPGRI) considered the possible contributions of botanic gardens to the conservation of plant genetic resources for food and agriculture (PGRFA). The factors that, directly or indirectly, threaten these resources necessitate a concerted effort with long-lasting and broadly supported solutions for their sustainable use.

Comparison of the past and potential holdings and management of agricultural genebanks and botanic gardens revealed numerous ways in which botanic gardens could contribute to PGRFA conservation particularly in terms of collecting, characterization and evaluation, documentation and management. At the congress, a Memorandum of Understanding between IPGRI and BGCI was signed by Jan Engels for IPGRI and Peter Wyse Jackson for BGCI – another sign of welcome collaboration (see Box 2). Conclusions and recommendations for action were reported at the end of the congress. The proceedings will be posted on the congress web site, which can be accessed through the BGCI web address at: http://www.bgci.org.uk.

Box 1. Together for a better conservation of plant diversity.

During the meeting in Gran Canaria in April, BGCI launched the *Action Plan for Botanic Gardens in the European Union*. The plan proposes more than 30 specific objectives and ways of achieving them on science and horticulture; heritage and culture; conservation of biodiversity; education, training and awareness; networking and cooperation; capacity building; and funding to implement the Action Plan. The goal of the Action Plan is to:

· provide an EU-wide framework and shared rationales and priorities for botanic gardens' action for plants and the environment;
· strengthen the capacity of botanic gardens in EU countries;
· help gardens to develop programmes to educate the public about the importance of plants for the planet;
· provide guidance for individual botanic gardens in the formulation and implementation of programmes and to suggest priority actions for such gardens for the study of plants, for conservation and to promote the sustainable use of plant diversity and;
· foster development of the EU botanic garden network, to promote even closer regional collaboration and raise greater resources for their individual and joint priority actions.

The publication also includes several case studies on current activities and innovative programmes in botanic gardens in Europe. For further information, please contact BGCI (e-mail: bgci@rbgkew.org.uk) or see their web site at: www.bgci.org.uk.

Box 2. MOU signed between IPGRI and BGCI

A memorandum of understanding was signed on 15 April 2000, in Las Palmas de Gran Canaria by Jan Engels for IPGRI and Peter Wyse Jackson for BGCI, with the purpose of promoting cooperation between the two organizations to advance the conservation and sustainable use of biodiversity.

Botanic gardens can contribute to conservation of PGRFA in many ways and particularly through their activities of collecting, characterization and evaluation, documentation and management policy. Increased cooperation between botanic gardens and agricultural research institutes will allow for a better coverage of threatened genetic resources and improve the integration of conservation efforts at national and international levels and particularly through:

· exchange of information and involvement in the development of policies related to the implementation of the CBD and the FAO Global Plan of Action;
· development of scientific and methodological framework for effective plant genetic conservation and use;
· production of joint strategic publications;
· promoting and undertaking joint activities particularly on the conservation and use of:
  - neglected and underutilized species
  - medicinal plants
  - wild crop relatives
  - other plants of importance for food and agriculture, including wild species
  - forest species
· capacity building and training
· biodiversity conservation education
· public awareness

A step forward on *in situ* and on-farm conservation of PGRFA in Europe

The goal of the ECP/GR *Insitu* and On-Farm Conservation Network is to contribute to the implementation of the Global Plan of Action (GPA) in Europe in the area of *in situ* conservation of wild relatives and on-farm management.

In this framework, task forces for "wild species conservation in genetic reserves" and for "on-farm management and conservation" were recently established in consultation with the ECP/GR National Coordinators. The two task forces, involving 30 participants from 17 countries, met for the first time at Isola Polvese, Italy, from 18-20 May, 2000. The main objectives of the task forces are to bring together and enhance collaboration between the different European partners involved; identify priorities; and enhance joint fund raising efforts for *in situ* and on-farm conservation in Europe.

Following the recommendations of the European Symposium on the implementation of the GPA in Europe (Braunschweig, Germany, 1998) task force members already initiated a number of activities in their respective countries. During the meeting, both task forces have agreed on workplans to help coordinate these efforts.

A preliminary inventory of existing examples of *insitu* conservation of wild species in Europe and neighbouring regions was presented and the task force agreed to finalize a more comprehensive list. A consolidated list of guidelines and methodologies for the practical implementation of *insitu* conservation of wild relatives will also be completed and published.

Bibliographies of research papers related to the conservation of wild plant genetic resources for food and agriculture (PGRFA) species in gene reserves and to mathematical models for predicting changes as a result of management interventions will be compiled. All of these information products will be made available through the ECP/GR web site.

A proposal for a project to locate, catalogue and assist in the genetic reserve conservation of PGRFA species of Europe, was agreed upon by the task force members and additional project proposals for genetic reserve conservation of wild cereals and wild brassicas will be developed in the near future. Interested European partners are invited to contact the project coordinators: Dr N. Maxted for the PGRFA species in Europe, Prof Y. Anikster for the cereals project and Prof M. Gustafsson for the brassicas project (for contact details see the ECP/GR web site).

Moving to on-farm management and conservation, it was agreed that an inventory of experiences in Europe will be completed. Different strategies to promote and value landraces and local varieties will be identified and studied through the survey. A restricted group will investigate possible solutions to improve legislation on free exchange and use of non-registered seeds in relation to the adoption of Directive 98/95/EC from the European Union. Another subgroup will analyze the documentation needs and develop appropriate descriptors for the inclusion of data derived from farmers' knowledge and on-farm management into crop databases. Several possible mechanisms for improving relations between institutions from the formal and informal sectors have been identified, including greater representation and participation of NGOs in ECP/GR. Finally, a proposal was made for a pilot study on the genetic diversity of landraces conserved in the Carpathian mountain areas of Romania, including socio-economic aspects.

Orchard near Grabova, Poland. Photo M. Machnikowski

The proceedings of the meeting will be published at the end of 2000 and will be made available on the ECP/GR web site. The list and contact details of task force members can be found at: http://www.cgiar.org/ecpgr.

Potato Genetic Resources in Europe

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The final meeting of the EU "Genetic Resources of Potato" project was held in conjunction with the first meeting of the ECP/GR Working Group on Potato (23-25 March, 2000, Wageningen, The Netherlands). The meeting was attended by 25 participants from 18 countries and the EU project partners were joined by other ECP/GR Working Group members from Belgium, Czech Republic, Denmark, Estonia, Hungary, Italy, Poland, Slovakia and Spain and by observers from the Ukraine, Russia and the International plant breeders associations (ASSINSEL).

The meeting, organised by the Centre for Genetic Resources (CGN) in collaboration with IPGRI, illustrated the results of the four-year EU project on "Conservation, characterisation and utilisation of secondary potato varieties for ecological production systems in Europe". Active cooperation between the traditional institutions (genebanks), breeders and NGOs engaged in organic farming was one of the key elements of the success of the project. The main activities focused on documentation, rejuvenation, cryopreservation, virus cleaning and evaluation activities for disease resistance and quality traits (see also Issue 15).

Clones with interesting traits, such as resistance to diseases, in particular late blight, and to pests like cyst-nematodes, were identified. This could help solve some of the major problems encountered in the production of organic potatoes.

A database on clonal potato stocks holding over 14,000 records and covering about 4,200 cultivars and breeding lines was developed by the Scottish Agricultural Science Agency. At the same time, a database of wild and primitive potato species, containing over 11,600 records of accessions maintained in the Czech Republic, Germany, Hungary, the Netherlands, Russia and the UK was established at CGN. The databases will soon be made accessible through the respective web sites: *www.plant.wageningen-ur.nl/cgn/eupotato/* and *www.sasa.gov.uk* .

The third day of the meeting was dedicated to the first meeting of the ECP/GR Working Group on Potato. Reports on the status of national collections were given.

Considering the essential role of the central databases in determining future activities, the Group gave highest priority to updating the databases and including data from the expanded range of countries represented in the Working Group.

The workplan will also include activities on characterization and evaluation, virus cleaning of clonal stocks and regeneration of related species. In order to facilitate the rationalisation of collections and to organize safety duplication (e.g. through cryopreservation), it will be essential to clearly determine maintenance responsibilities.

R. Hoekstra and M. Veteläinen were elected as Chair and Vice chair of the Group, respectively. It was proposed that the ECP/GR Working Group on Potato should meet again in connection with the 15th triennial European Association for Potato Research (EAPR) meeting in Hamburg 2002. A report of the Working Group meeting will be published by IPGRI and will be available from the Regional Office for Europe.

Participants to the Potato meeting. Photo CGN

Vegetables Network Coordinating Group meeting

At its recent meeting in Vila Real, Portugal (26-27 May 2000), the Vegetables ECP/GR Network Coordinating Group (NCG) proposed the inclusion of *Solanaceae* (tomato, pepper and eggplant), cucurbits (melon, watermelon and other *Cucumis* and *Cucurbita* species) and leafy vegetables (lettuce, chicory, spinach and asparagus) among the range of crops to be included in the activities of the Vegetables Network.

The group, that includes Chairs, Vice-Chairs and database managers of the Working Groups on *Allium*, *Brassica* and Umbellifer Crops convened to review progress of the Working Groups and to plan a coordinated strategy for future activities within the Vegetables Network. Focal persons on *Solanaceae*, cucurbits and leafy vegetables were invited to present the results of preliminary surveys on the status of the respective crop genetic resources in Europe. They also agreed to identify priorities to be proposed for collaborative action in Europe, such as establishment of crop databases, definition of regeneration guidelines, identification of gaps in the collections, etc. A focal person on Minor Vegetables also attended the meeting thus ensuring the link between the Vegetables and the Minor Crops Network.

The NCG suggested that, as no Working Group meetings are planned during Phase VI of ECP/GR, in 2001 small ECP/GR meetings could be organized in conjunction with the *Brassica*, carrot, eggplant and melon project meetings funded by the European Commission GENRES Programme, Regulation 1467/94. A small *ad hoc* meeting on leafy vegetables and a technical meeting to discuss the management and safety of the European vegetatively propagated *Allium* collections were also proposed.

Although the Working Groups (WG) will continue to develop their respective workplans under the guidance of the WG Chairs, issues of common interest, such as the implementation of a system for safety duplication, documentation issues, etc., will be raised at the NCG level and discussed horizontally within the Network.

In order to give itself an operational structure, the NCG selected Dr G. Thomas (INRA, Rennes, France) as the Network facilitator. Special attention was given to the integration in Network activities of experts from European countries intensely involved in vegetable production and in the conservation of their genetic resources.

The linkage between the NCG and non ECP/GR countries will be facilitated by Dr T. Kotlinska (Research Institute of Vegetables Crops, Skierniewice, Poland). All the proposals of the Vegetables NCG will have to be evaluated by the ECP/GR Steering Committe before they can become operational.

Contact details for all the members of the Vegetables Network (Working Groups and Network Coordinating Group) are available from the ECP/GR web site: http://www.cgiar.org/ecpgr.

Focus on the Caucasus

Wild melon (*Cucumis melo*) genetic resources in Armenia

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Yerevan
Armenia

Armenia is one of the northernmost countries where melons originated and, since ancient times, it has been considered as a special zone for the cultivation of *Cucurbitaceae*. In fact, wild species of this family are still found there today. For example, wild species of *Cucumis melo*, namely *C. melo* var. *agrestis* Naud (Pang) and *C. melo* var. *microcarpus* Alex can be found in the South, near the Arax river, and in the Southeast (Megry). However, as a result of intensive land cultivation and of the use of modern hybrids, wild species are now on the verge of extinction. Wild varieties of melons in Armenia (C. *melo* var. *agrestis* – sect. *Bubalion*) can be divided into two groups: the Asia Minor group (C. *melo* var. *gracilior*) and the Persian-Turkmenistan group (C. *melo* var. *rigidus*). These wild melons vary greatly in appearance, size and texture of fruit flesh. A wide range of fruit patterns typical of cultivated melons is found. The fruit placenta is dense, fruit-flesh is thin (1 to 1.5 cm), fragile, with white or green-white and sometimes even pink coloring, with a bittersweet flavor. They become more fragrant with ripening. The seeds are small, oval and of white-straw color.

One of the most interesting characteristics of the wild melons is their high fertility: each plant produces between 60 and 120 fruits. They are also resistant to melon fly, which makes them particularly important for breeding purposes.

Initially, hybridization of local cultivars (C. *melo* var. *dutmas*) with wild melons (C. *melo* var. *agrestis*) resulted in bitter-tasting fruits. But valuable, early-ripening varieties, resistant to melon fly and with tasty and sweet flesh were obtained by crossing F1 progenies. Of all the natural hybrids found in Armenia, *C. melo* var. *agrestis* shows a noticeable advantage in the areas where melon is cultivated and some varieties have up to 6-7% sugar content. However, they have the disadvantage of small fruit size. Therefore, the selection of wild melons is of primary importance. Other small-sized melons (*C. melo* var. *microcarpus* Alex -sect. *Eumelon*), known as "*shamam*", are only used for decorative purposes. They have a sharp and fragrant smell, the fruits are small, the size of an orange, and mostly round. The fruit surface is flat and white, yellow or red-orange, without patterns or with various kinds of stripes. The fruit flesh is stringy, dense and tasteless. The flowers are small and the female ones have normally developed stamens.

Melons ripening in a field. Photo IPGRI

Moving to cultivated melons, the local varieties belong to the Eumelon types: *Melo ameri, M. zard* and *M. adana*. The *M. ameri* group includes Armenian "sneyvazes" and "jarjars". The "sneyvazes" are medium-ripening, the yield per hectare is 18-20 metric tons and they store and transport easily. They are resistant to diseases and melon fly. The "Jarjars" are a well-known group of late melons with average ground cover, a long stem (2.5 m) and medium-size 5 angled leaves. The fruits are oval or long, elliptic, with an average weight of 2.5-3.5 kg. They are very sweet (14% sugar content). The yield is 20-30 metric tons per hectare, and they also are stored and transported easily, and are resistant to melon fly. The *M. zard* group includes all local "dutma" varieties cultivated in Armenia such as "Hamkyar" and "Miaband". The fruits of this late-ripening variety are big (3.5-5 kg). The full ripening and sweetening takes place only 2-4 weeks after the harvest. They are easy to store. The yield is high, 28-37 metric tons per hectare.

M. adana "shalakhs" type have yellow and green rind and are very early local melons. The fruits are big (3.5-8 kg) and are highly productive (30-35 metric tons per hectare). They are very fragrant but have poor taste (3.6-4.8% sugar content). They are resistant to melon fly, but have a poor potential for storage and transportation. Wild and traditionally cultivated melon genetic resources play an important role in Armenian horticulture and it is crucial that this genetic material is preserved and remains available for future needs. Currently, there are more than 45 varieties of melons cultivated in Armenia (both traditional and modern). Hybridization is frequent and recently some of the best types (9) were selected on the basis of their high productivity (23-32 metric tons per hectare) and good taste qualities (8-9% sugar content) and are now being tested in the field.

National Workshop on Forest Genetic Resources in Armenia

The difficult social and economic situation in the former Soviet Union republics of the Trans-Caucasus (Armenia, Georgia and Azerbaijan) has created a great demand for energy alternatives for heating. Large peri-urban areas have been denuded of forest trees and it has been estimated that in each of the last 5-6 years at least 50 million m^3 of wood has been illegally cut. Lack of funding, inadequate forest management practices, lack of legislation or its ineffective implementation contribute to the general decline of the forests in the Trans-Caucasus, thus threatening their unique genetic diversity.

The current political, economic and social environment in the region requires urgent re-examination of all aspects of forestry policy, including forest genetic resources (FGR) conservation and use. A background study on various aspects of FGR management in the Trans-Caucasus has been recently conducted by the Forest Research and Experimental Centre in Yerevan, Armenia. The study, which includes an overview of the status and conservation of FGR, list of tree and shrub species, policy and legislation and major donors' policies will be published in English and Russian later this year.

A national workshop to discuss FGR related issues among interested stakeholders in the context of the new market economy, organized under the auspices of Armenia's Ministry of Agriculture and Natural Resources Use, was held on 10-11 May 2000 at the Academy of Sciences in Yerevan. It was attended by representatives of the forest service, research centres, universities, non-governmental organizations and professional societies. The discussion was based on the background study and focused on how to help define a long-term programme for FGR development in Armenia. Opportunities for an information-base on FGR, *in situ* and *exsitu* conservation, use and management, legal and institutional aspects as well as public and private sector participation were discussed during the workshop.

The genetic diversity of rare and valuable forest tree species is particularly threatened, not only by continued illegal cutting but also by pests and diseases, said Mr. Robert Petrossyan of *Hayantar*, the State Forest Service of Armenia. He added that regeneration is almost non-existent in wild walnut stands.

The critical issue of natural ecosystem degradation, exacerbated by poverty, and the role and experience of NGOs in development projects were mentioned by Mr. Hakob Sanasaryan, Chair of the Green's Union. Ms. Karine Danielyan from the Society for Sustainable Human Development stressed that social and economic development is a key issue and presented the national report recently submitted to the Earth Summit, which refers to the importance of sustainable forest management.

More than 30 participants of the workshop took a field trip on the second day. The itinerary spanned from 900 m to 2,100 m above sea level. It was noted that the arid open woodlands have highest diversity and intra-species richness, and need to be regarded as a priority for any gene conservation efforts.

The participants of the workshop adopted a joint resolution. They recommended that human resources development in the field of FGR be given highest priority, along with strengthening the public participation and awareness. Consultative meetings, workshops and conferences, study and training courses both at the national and sub-regional level were considered necessary for the formulation, broad discussion and adoption of a national programme in this area. The programme should focus its attention on genetic resources of walnut (*Juglans*), pear (*Pyrus*), apple (*Malus*), Juniper (*Juniperus*) and *Yew* (*Taxus*). Field surveys and inventories should be conducted in order to identify and designate the forest ecosystems with most valuable genetic potential and highest diversity. National legislation to ensure their sustainable conservation and use, taking into consideration relevant international conventions and commitments, should be adopted. The country's social and economic conditions and needs, the specifics of mountain forestry, and particularly the necessity of the rural development make action particularly urgent and it was felt that these recommendations could only be carried out successfully through close partnership among all stakeholders.

Wild fruit trees and woodlands in Dilijan Reserve. Photo J. Turok

Plant Genetic Resources in Albania

Prof Lufter Xhuveli
National Coordinator for Plant Genetic Resources
& Dr Pellumb Abeshi
Director of National Seed Institute
Tirana
Albania

Plant Genetic Resources are a very important component of Albanian life, both for their economical and ethno-cultural value. The high variability of climate and landscape has made of a small country like Albania, with a surface of only 28 000 square kilometers, a very rich source of plant biodiversity. About 3 200 plant species are listed in the Albanian flora, and 150 of them are classified as endemic and semi-endemic. Approximately 420 species are cultivated, while a great number of crop relatives grow in the wild.

A long period of traditional cultivation resulted in a considerable number of autochthonous landraces of wheat, maize, vegetables, grapes, fruit trees, olives, etc. Unfortunately, as in other countries, these genetic resources are currently under threat. Estimates of genetic erosion for the period 1943-1993 are around 50-70% for certain crops, therefore collecting, conservation and of the remaining Albanian autochthonous material are very urgent.

The first collecting expedition in Albania was carried out in 1941 by the German scientist Hans Stubbe. A collection of 290 accessions is still conserved in the Genebank of Gatersleben, Germany. Collecting activities focusing on wheat, maize, white bean, vegetables, alfalfa, grapes, olives, and fruit trees were continued by the Albania's scientific institutes from 1955 to 1990. However, the published information and the documentation related to these expeditions is very limited, and most of the collections were damaged due to lack of proper conservation conditions.

The most active period of collecting in Albania was 1993-1996. In this period, five international collecting missions were organized under the auspices of the National Coordinator for PGR. Four of them were financed by IPGRI (1993-1995), in cooperation with the Germplasm Institute of Bari, Italy and the Genebank of Gatersleben, Germany while the one in 1996 was supported by ARS-USDA and carried out in cooperation with American scientists. Over 800 accessions of local cultivated material and wild crop relatives were collected and were shared between the participating institutions for conservation and multiplication.

Unfortunately, the seed conserved in Albania was damaged during the turmoil of 1997, while the related documentation is still available.

The germplasm currently conserved in Albania is mainly introduced from other countries and only a small fraction is autochthonous.

Ex situ collections maintained by the different scientific institutes include about 8 100 seed accessions of wheat, maize, white bean, etc. About 160 accessions of olives and fruit trees are conserved in field collections.

The Albanian Genebank with a capacity of 20 000 accessions was established in 1998 and is currently being completed and consolidated. A National Committee for Plant Genetic Resources was also recently established.

In order to consolidate the national programme on PGR it is essential to secure financial support for collection, conservation and study of the germplasm, to o rganize new collecting missions, to repatriate Albanian germplasm from foreign genebanks and to i ncrease cooperation with other countries and international institutions.

Vineyards near Tirana, Albania. Photo L. Maggioni

EU approves the EPGRIS Project

The European Commission (Directorate General for Research, Fifth Framework Programme) recently approved a project to establish a European Plant Genetic Resources (PGR) Information Infra-Structure (EPGRIS). This three-year concerted action, coordinated by the Center for Genetic Resources (CGN), The Netherlands, has the following objectives:

1. To support the creation and provide technical support to National PGR Inventories.
2. To create a European Search Catalogue (EURISCO) with passport data of Plant Genetic Resources maintained *ex situ* in Europe. The catalogue will be frequently and automatically updated from the National PGR inventories, and will be easily accessible via the Internet.

The project will focus its action on the EU and associated states, but other European countries will be invited to join the initiative (on a self-funding basis).

National PGR inventories are to be implemented and maintained by the individual countries, with their own resources, as part of the Clearing House Mechanism (CHM) of the Convention on Biological Diversity (CBD) as well as part of the implementation of the Global Plan of Action.

Initially, the project will facilitate the designation of focal persons for National PGR inventory in each EU member or associated state, in consultation with the respective ECP/GR National Coordinators. Then, sub-regional meetings will be organized to support and coordinate the creation of National PGR inventories. All details concerning data exchange, the exact format of the data sets, and ways to publish them on public FTP servers will be discussed in these meetings.

The staff involved in the preparation of National PGR Inventories will visit selected Documentation Support Centres (CGN, NGB and ZADI) for an exchange of experiences and training. A pan-European meeting of all focal persons and project participants will be organised at the end of the project.

At the same time, the European Search Catalogue (EURISCO) will be created at IPGRI and provided with technical facilities to automatically receive data from the nodes and to upload them on the central catalogue on Internet. Data will be uploaded from the accessible National PGR Inventories, as well as from the European Central Crop Databases after clearance from the focal persons. It is expected that at the end of the project EURISCO will include about 70% of all passport data on *ex situ* PGR collections in Europe.

The project is expected to start at the end of summer 2000. Further information can be obtained from Dr Theo van Hintum, e-mail: Th.J.L.vanHintum@plant.wag-ur.nl

NGB Third Technical Training Course

The third technical training course (TTC3) for genebank information technicians was held by the Nordic Gene Bank (NGB) in Alnarp, Sweden, from 21 February to 11 March , 2000. Participants (instructors and students) from genebanks in Estonia, Latvia, Lithuania, Poland and Russia were sponsored by the Nordic-Baltic and the VIR co-operation projects.

The objectives of these technical training courses are to provide genebanks with affordable server-client based hardware and software solutions, to train personnel on configuration and maintenance of server machines and related software, and to enhance technical cooperation among genebanks and other institutes with special interest in PGR database systems.

All applications used were based on the GNU/Linux operating system and other open source software, with standard PCs as hardware platform. In fact, in the Linux environment, hard disks holding applications can be moved between machines with small changes to the configuration files, thus allowing participants to continue their work at home.

Further information on the training courses can be obtained from Morten Hulden, Nordic Gene Bank, Alnarp, Sweden, e-mail: morten@ngb.se

Publications of interest

Action Plan for Botanic Gardens in the European Union. 2000. (Judith Cheney, Joaquin Navarrete Navarro and Peter Wyse Jackson eds.) for the BGCI/ABG European Botanic Gardens Consortium, Volume 19, National Botanic Garden of Belgium, Universa, Wetteren. 68 pages.

Agricultural Technology and the Poor. 1999. Proceedings of an International Conference on Biotechnology in Washington D.C., 21-22 October 1999, G.J. Persley and M.M. Lantin, Editors, 235 pages.

Central and Eastern European agriculture in an expanding European Union. 2000. S. Tangermann and M. Banse, Institute of Agricultural Economics, University of Göttingen, Germany. 216 pages.

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Commercial Uses of Biodiversity: access to genetic resources and benefit-sharing. 1999. K. ten Kate and S. Laird, Earthscan, London. 398 pages.

Evaluation of the Impact of Forest Management practices on Biological Diversity in Central Europe - a case study on Polish Forest Act and other regulations, K. Rykowski, G. Matuszewski. 1999. E. Lenart (editors), Forest Research Institute, Warsaw, Poland. 372 pages.

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Physiology and Genetics of Tree-Phytophage Interactions. 1999. F. Lieutier, W.J. Mattson and M.R. Wagner (ed.), INRA Editions, France. 376 pages.

IPGRI Publications

ECP/GR, Report of a Working Group on Beta. First Meeting – 9-10 September 1999 – Broom's Barn, Higham, Bury St., Edmunds, United Kingdom. 2000 L. Maggioni, L. Frese, C. Germeier and E. Lipman, compilers. 102 pages.

Second EUFORGEN Meeting on Social Broadleaves. 3-6 June 1999 – Birmensdorf, Switzerland. 2000. J. Turok, A. Kremer, L. Paule, P. Bonfils and E. Lipman, compilers. 92 pages.

Issues in Genetic Resources No. 9. Moving forward with the International Undertaking legal mechanisms to alleviate mistrust. 2000. S. H. Bragdon. 11 pages.

Genes in the Field, On-Farm Conservation of Crop Diversity. Edited by Stephen B. Brush. 2000. 287 pages.

Descriptors for Citrus. 1999. 66 pages.

*Descriptors for Hawthorn (*Crataegus *spp.).* 1999. 33 pages.

Descriptors for Lathyrus *spp*. 2000. 60 pages.

*Descriptors for Rocket (*Eruca *spp.)* 1999. 56 pages.

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Forthcoming Meetings

21-26 August 2000
Biodiversity and Dynamics of Ecosystems in North Eurasia
Novosibirsk,
Akademgorodok, Russia
Fax: (7) 3832 331278
Email: kol@bionet.snc.ru

24-26 August 2000
Natura Megalopolis-"Nature in cities" under the aegis of the Council of Europe & IUCN's European Programme
Prague, Czech Republic
e-mail:
praga2000@imip.mepnet.cz
http://www.praha-mesto.cz/praga2000

30 August -1 September 2000
Quantitative Genetics and Breeding Methods: the way ahead
EUCARPIA Congress
Paris, France
e-mail: gallais@moulon.inra.fr

4-10 September 2000
8th International Symposium on Pear. International Society for Horticultural Science
Ferrara, Italy
Fax: (39) 0512091500
e-mail:
musacchi@agrsci.unibo.it
http://www.agrsci.unibo.it/pear/

20-24 September 2000
EUROSILVA 2000, Workshop on Development and ageing in forest trees
Florence, Italy
Fax: (39) 055486604
http://eagle.bio.unipr.it/~sisef/eurosilva/eurosilva2000.html

1-3 October 2000
2nd Symposium of the Pan-European Ecological Network: "The Partnership of local authority in the conservation of biological and landscape diversity"
Rochefort, Belgium
Fax: (33) 3 88412235
e-mail: tarcisio.bassi@coe.int

8-14 October 2000
International Symposium: Scientific Basis for Participatory Improvement and Conservation of Crop Genetic Resources
Oaxtepec, Mexico
Fax: (1) 530 754 8505
e-mail:
abdamania@ucdavis.edu
http://www.grcp/ucdavis.edu/projects/indexe.htm

9-11 October 2000
3rd National Conference, Ressources Génétiques: Connaissances et Gestion
Bureau des Ressources Génétiques (BRG)
Toulouse, France
Fax: (33) 1 44 087263
e-mail: brg@inapg.inra.fr
http://www.brg.prd.fr

10-12 December 2000
2nd General Consultation of the FAO European Cooperative Research Network on Flax and others bast plants, "Bast Plants in the new Millenium", in conjunction with the International Flax Symposium (12-14, 2000)
Kortrijk, Belgium
Fax: (48) 618417830
e-mail:
netflax@iwn.inf.poznan.pl

9-13 April 2001
11th EUCARPIA Meeting on Capsicum and Eggplant
Genetics and Breeding
Antalya, Turkey
e-mail:
eucarpia@mail.cu.edu.tr
http://www.cu.edu.tr/eucarpia
Fax: (90) 322 3386388

20-24 May 2001
III International Symposium on Pistachios and Almonds
Zaragoza, Spain
e-mail: rsc@mizar.csic.es
http://www.iamz.ciheam.org/almond-pistachio-Zaragoza2001.htm

4-7 July 2001
EUCARPIA Rye Meeting
Co-organized by Ihar-Danko-EUCARPIA
Radzików, Poland
Fax: (48) 22 7254714
e-mail: s.gielo@ihar.edu.pl or j.jagodzinski@ihar.edu.pl

8-12 July 2001
4th European Conference on Grain Legumes, Towards the sustainable production of healthy food, feed and novel products
Kraków, Poland
Fax: (33) 147235872
e-mail:
c.boutin-aep@prolea.tm.fr
http://www.rol.ar.krakow.pl/kongr/kongres.htm

Vavilov-Frankel Fellowships 2001

IPGRI has established the Vavilov-Frankel Fellowship Fund to commemorate the unique contributions to plant science by Academician Nikolai Ivanovich Vavilov and Sir Otto Frankel.
The Fund aims to encourage the conservation and use of plant genetic resources in developing countries through awarding Fellowships to outstanding young researchers.
The Fellowships will enable the applicants to carry out relevant, innovative research outside their own country for a period of between three months to one year. The research should have a clear benefit to the home country, preferably in areas of the applicant's future research. Awards can be held concurrently with other sources of support.
In 2001, a total of US$50,000 will be made available for awards. The maximum award per Fellow will be US$25,000 which is intended to cover travel, stipend, bench fees, equipment, conference participation or any other appropriate use. Fellows are encouraged to present the results of their research at an international conference. This can take place within one year of termination of the Fellowship.
Applications for the year 2001 are invited from developing-country nationals, aged 35 or under, holding a masters degree (or equivalent) and/or doctorate in a relevant subject area.
Application forms in English, French and Spanish may be obtained from: Vavilov-Frankel Fellowships, IPGRI, Via delle Sette Chiese 142, 00145 Rome, Italy [Fax: (39)065750309 e-mail: e.clancy@cgiar.org or http://www.ipgri.cgiar.org/training/vavilov.htm] and should be returned to IPGRI, Rome.
Applications must be received at IPGRI by 15 November 2000.
Applications must be in English, French or Spanish and should include a covering letter, completed application form, full curriculum vitae, research proposal (maximum 1000 words which should include a clear statement of objectives, methodology, materials and justification) and letter of acceptance from the proposed host institute. The successful applicants will be informed by 31 March 2001 and are required to take up their Fellowships before 31 December 2001.

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