

newsletter

for Europe

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EU research programme and PGR

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 goal is to advance the conservation and use of genetic diversity for the well-being of present and future generations. From its headquarters in Rome and its regional offices, IPGRI promotes and coordinates the action needed for the conservation of these genetic resources.

IPGRI's Regional Office for Europe provides the Coordination Secretariats for the European Cooperative Programme for Crop Genetic Resources Networks (ECP/GR) and for the European Forest Genetic Resources Programme (EUFORGEN).

IPGRI publishes three issues of the Regional Newsletter for Europe a year. This Newsletter is intended to serve as an informal forum for the exchange of news and views, and to create closer ties within the genetic resources community in Europe. Previous issues are available from the IPGRI website.

A Russian version of this Newsletter is being produced and disseminated in collaboration with the N.I. Vavilov Research Institute of Plant Industry (VIR) in St. Petersburg.

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 24 by **15 June 2002**.

Multi-year programmes on research and technology are provided for in the Establishment Treaty of the European Community and the next programme will span the period 2002-2006, replacing the current, fifth Framework Programme (FP).

The sixth FP will be an important tool in implementing the "European Research Area". This is a vision of the European Union's (EU) overall, integrated research effort, aimed at increasing Europe's competitiveness; encouraging investment in research and innovation; and promoting mobility of human resources in research.

Compared to previous FP's, it is substantially different with regard to scope and instruments used in its implementation.

The first proposal for the sixth FP was adopted by the European Commission (EC) in February 2001, and adoption by the European Parliament and the Council is anticipated by the end of June 2002.

The sixth FP is divided into two main specific programmes, namely "Integrating and strengthening research" and "Structuring the European research area". The first is based on seven key actions, focusing available funding on emerging technologies and research priorities where "European added value" can be obtained by an EU level action. The key actions are:

- Genomics and biotechnology for health;
- Information society technologies;
- Nanotechnologies, intelligent materials, new production methods;
- Aeronautics and space;
- Food safety and health risks;
- Sustainable development and global change;
- Citizens and governance in European society.

In the current proposal, the priority thematic area "Global change and ecosystems" includes, *inter alia*, the research objective to preserve ecosystems and protect biodiversity, which would also contribute to the sustainable use of land and marine resources.

A major conference to launch the sixth FP will be held by the EC 11-13 November 2002. This is essentially a forum where the objectives and priorities of the FP are presented and the rules of participation explained, and provides opportunities for scientific debate and exchange of best practice.

Under the focused actions in priority research areas, emphasis will be on larger, multi-disciplinary projects of longer duration, requiring more decentralized management procedures. Two main instruments, "networks of excellence" and "integrated projects", will be financed and established following the public calls for proposals, ensuring a measure of managerial autonomy for the consortia that implement them.

The previous FP covered research, technological development and demonstration activities, with a multi-theme structure, consisting of seven specific programmes including four thematic and three horizontal programmes. The horizontal programmes underpinned and met the common needs of the thematic programmes on: Quality of life and management of living resources; User-friendly information society; Competitive and sustainable growth, and Energy, environment and sustainable development. A number of projects funded within the fifth FP conducted research with direct or indirect relevance for improving the conservation and increasing the sustainable use of PGR in Europe. Updates on four recently approved PGR related projects are given on pages 8-9.



The EC contribution will be part of a financing plan, which may involve recourse to other financing schemes. It may amount to up to 50% of the total project budget, broken down into budgets per activity and paid annually. The sixth FP will be open to the participation of the Central and East European Candidate countries (CEEC), Cyprus, Malta and Turkey, and with further countries on the basis of bilateral agreements.

The EC will be responsible for the implementation of the FP and submit regular progress reports during 2002-2006. Prior to a further FP proposal, an independent assessment will evaluate the implementation of the activities undertaken, ensuring full accountability and transparency.

Comprehensive details concerning the future FP are available at www.cordis.lu/rtd2002/.

NEW EU FUNDED RESEARCH INITIATIVES IN THIS ISSUE:

PGR FORUM:

European Crop Wild Relative Diversity Assessment & Conservation Forum

EUROCAT:

European Catalogue of Life

ENBI:

European Network for Biodiversity Information

DYGEN:

Dynamics and conservation of genetic diversity in forest ecosystems

ECP/GR Vegetables Network: Extraordinary meeting on *Brassica*

The status of the European *Brassica* Database (Bras-EDB), issues of safety duplication and regeneration standards, and opportunities for *in situ* conservation of *Brassica* wild relatives were the main highlights of an extraordinary meeting of the ECP/GR Working Group on *Brassica*. Held jointly with the Third Coordination meeting of the EU Project Gen Res 109-112 in Vila Real, Portugal 8-9 February 2002, the meeting was attended by 24 participants from 16 countries.

A new version of the Bras-EDB, established in 1993 and recently updated with funding from the EU *Brassica* project, currently includes data sets from 32 different institutions of 22 mainly European countries. With a total of 19 113 accessions, this also includes data from countries previously not represented, such as Austria, Romania, Slovakia, Ukraine and F.R. Yugoslavia. Germany holds the largest number of accessions (4212), followed by the UK (3108), Spain (1917), the Netherlands (1377), Czech Republic (1211) and the Russian Federation (1040). *B. oleracea*, a species with several economically important types, is the largest species with over 10 000 accessions. Other sizable species include *B. napus* (rapeseed) and *B. rapa* (turnip and turnip rapeseed) with 3787 and 3022 accessions

respectively. A number of wild *Brassica* species are represented in the Bras-EDB by only a few accessions. The new version of Bras-EDB is available on the homepage of the Centre for Genetic Resources, the Netherlands

(CGN): www.plant.wageningen-ur.nl/cgn or www.genebank.nl. Sets of characterization data will be added to Bras-EDB in the near future.

During a demonstration of the Geographic Information System (GIS) DIVA software (see page 10), data downloaded from the Bras-EDB were plotted on a map using latitude and longitude references, which is available for 12% of the accessions. Verification of the accuracy of this data for each accession was also demonstrated. This analysis of landrace data identified a hotspot rich in *Brassica* species in western Ukraine and other significant areas of *Brassica oleracea* subspecies in eastern Hungary and in northern Portugal.

The need to systematically safety duplicate the collections was reiterated and the Group recommended that bilateral arrangements be made to maximize the level of safety duplication. Specific measures include a "black box" sample (minimum of 300 seeds) being sent to a different genebank, possibly in a different country during the regeneration of every accession.

Basic guidelines for the regeneration of *Brassica* accessions were agreed upon. These include the use of at least 50-60 plants per accession; controlled pollination using isolation cages/tunnels (insect pollination), or to allow outdoor open pollination with a minimum geographical distance; and to give priority to the regeneration of



Wild Brassica sp. in Ponza, Italy (Photo: L. Maggioni)

unique, indigenous accessions.

Regarding the *in situ* conservation of wild relatives of *Brassica*, the Working Group noted that a few local projects are underway in Sicily and in Northern Spain. It was felt that the local authorities (state, regional, national etc.) should drive such initiatives involving genetic reserves, and the role of the Group should be to highlight the usefulness of the wild germplasm for breeding purposes. Further funding will be sought in collaboration with breeders to evaluate traits of major interest from the whole set of wild *Brassica* accessions contained in the European collections.

A report of the meeting is under preparation by the ECP/GR Secretariat and will include a global overview of the state of regeneration of the collections in Europe.



DIVA map showing collecting sites of different *Brassica* landraces in Portugal and Spain.

ECP/GR Vegetables Network: *Ad hoc* meeting on Umbellifer crops

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Capitalizing on the expertise present at the annual meeting of the Gen Res Carrot project, an *ad hoc* meeting of the ECP/GR Working Group on Umbellifer Crops was held simultaneously on 23 November 2001. Hosted by the Scottish Agricultural Science Agency (SASA) in Edinburgh, Scotland, members of the ECP/GR Umbellifer Crops Group from the Czech Republic and Poland joined the six partners of the Gen Res Carrot project.

The Umbellifer Working Group deals with nine genera including *Anethum* (dill), *Apium* (celery), *Carum* (caraway), *Chaerophyllum* (chervil), *Coriandrum* (coriander), *Daucus* (carrot), *Foeniculum* (fennel), *Pastinaca* (parsnip) and *Petroselinum* (parsley).

The ambitious agenda involved a review of the status of knowledge for all nine genera. Work on carrot has benefited significantly from the inputs of the Gen Res Carrot project and other national programme activities. The availability of a carrot field trial at SASA made it possible to review the "agreed" minimum characterization descriptors in the field, and to clarify a number of characters problematic in scoring. The field trip also enabled an assessment of variation within and between populations of landraces. The Group benefited from sharing experiences and the indepth knowledge of individual partners relating to scoring variety trials, and the characterization of variable landrace material collected on expeditions.

Conclusions for the other eight genera were summed up in the statement, "*we still do not know enough about the genetic resources of these crops*". In preparation for the ECP/GR Vegetables Network meeting held in 1999, a questionnaire was distributed to all known curators of umbellifer crops. Although the results provided an overview of the resources in Europe, it was decided that more information is needed to direct the work programme efficiently. A further questionnaire with crop specific questions will be distributed to fill

gaps in knowledge and to enable the Working Group to develop programmes for the individual crops/genera.

The Edinburgh venue provided the additional benefit of a meeting with M. Watson at the Royal Botanic Gardens Edinburgh. Focusing on the taxonomy of umbellifers, particularly in Asia, one aspect of his work involves making taxonomic information available to a much wider audience, resulting in the development of the on-line Umbellifer Resource Centre (www.rbge.org.uk/data/URC/urc.htm). This site contains valuable information for the specialist and general public



Participants of the umbellifer meeting

on umbellifer taxonomy, molecular research, floras and revisions, genetic resources and wide ranging publications and news and views, alongside links to research centres and individuals.

The meeting also coincided with the New Zealand All Blacks playing Scotland for a Rugby Union match, which made for a very colourful and interesting visit.

ECP/GR Vegetables Network: *Ad hoc* meeting on Cucurbitaceae

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Partners of a new collaboration on Cucurbitaceae genetic resources came together for the first time in Adana, Turkey, for an *ad hoc* meeting organized within the framework of the ECP/GR Vegetables Network. The meeting involved four partners of the EU-funded *Cucumis melo* project (Gen Res CT99 108) from Portugal, Spain and Turkey, together with representatives from Spain, the Netherlands and Turkey not involved in the project. An additional four experts from Bulgaria, Czech Republic, Hungary, and the Russian Federation also participated. This informal meeting was held directly following the second annual *Cucumis melo* project meeting 17-19 January 2002. Most of the institutions holding the largest Cucurbitaceae collections in Europe were represented at the meeting, enabling interaction of the project partners with the additional representatives. The purpose of this interaction was to initiate the organization of Cucurbit genetic resources in Europe. Focus areas identified include muskmelon, cucumber, watermelon, squash and pumpkin, as well as other minor cucurbits such as *Lagenaria*,

Benincasa, *Momordica*, etc. The importance of pursuing a number of collaborative objectives was also agreed upon, such as the establishment of a European Central Cucurbits database (ECCUDB), which is currently under construction at the Polytechnic University of Valencia, Spain. The ECP/GR Cucurbits focal person, F. Nuez, volunteered to receive and compile passport, characterization and evaluation data on the genetic resources held in the region. The current level of safety duplication and long-term storage facilities for these resources was revised, and a plan of action was established to improve the level of safety storage for Cucurbits. An additional task for the Group is to improve and harmonize the seed regeneration and characterization protocols for Cucurbits in Europe. As a first step, current information on protocols used in the different genebanks will be shared, and common regeneration standards and a minimum descriptor list for each crop will be elaborated and agreed by all participants. To formalize this networking initiative and to ensure more stable financial support, the Group will submit a request for the establishment of a Working Group on Cucurbitaceae to the next meeting of the Steering Committee of ECP/GR in 2003. A full report of the meeting will be available later in the year from the ECP/GR Secretariat.

Final meeting of Gen Res project on grapevine genetic resources

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The EU project Gen Res CT96 81 on grapevine genetic resources, initiated in March 1997, drew to a close in February 2002. The final project meeting, held 12-13 September 2001 in Susegana, Italy, highlighted the tremendous progress made on *Vitis* genetic resources in Europe. Participants included 12 representatives from EU partner countries (Austria, France, Germany, Greece, Italy, Portugal and Spain) and seven from non-EU countries (Bulgaria, Croatia, Czech Republic, Hungary, Moldova, Slovenia and Switzerland).

Grapes are one of the most important fruit crops in Europe. In 2000 the area planted with grapevine in Europe (5 million ha) represented 63% of the world's wine growing area. The European production of wine in the same year was 274.9 million hl, accounting for 73% of world production, and 33.1 million tons of table grapes, representing 53% of the global market.

Within the first four years of the project, the European *Vitis* Database (www.dainet.de/eccdb/vitis/) was established and now comprises passport data of approximately 27 000 accessions, from the project partners collections, with primary description data for 600, and secondary description data for nearly 300 accessions. Description focuses mainly on old neglected autochthonous varieties. Variety identification was aided by the addition of more than 1000 photographs of different anatomical parts of 250 vine accessions. The project also became the platform for standardizing molecular tools such as Sequence Tagged Microsatellite Analysis (STMS) and the development of descriptors for the assessment of molecular diversity.

The Database has proved to be a major source of interest, as demonstrated by the frequent access on-line, with up to 200 hits per month. This will continue to serve as a precious source of information on existing genetic variability of *Vitis* and as a tool to promote rational conservation of

grapevine genetic resources in Europe.

Efforts on conserving, describing, identifying and evaluating old endangered cultivars have been intensified in all participating countries through this Gen Res project. However, owing to the large number of homonymous and synonymous designations and the occurrence of 5-10% misnamed varieties in grapevine collections, the identification of unique and duplicate varieties is an ongoing problem. This continuing activity now involves more partners from East European countries such as Albania, Armenia, Cyprus, Georgia, Macedonia (FYR),

Romania, Slovakia and F.R. Yugoslavia, where numerous varieties of local origin are maintained. Continued collaboration is also required to further develop the Database and harmonize descriptors.

In order to ensure continuing network activity on grapevine genetic resources in Europe, the Group submitted a request to the ECP/GR Steering Committee to establish a formal Working Group on *Vitis*. The application was successful and the new Working Group (see issue 22 page 2) will be organizing a meeting sponsored by ECP/GR in the near future.

Managing Biodiversity in Agricultural Ecosystems

The International Symposium on Managing Biodiversity in Agricultural Ecosystems convened 8-10 November 2001 in Montreal, Canada. The Symposium was co-organized by the United Nations University (UNU), the Secretariat of the Convention on Biological Diversity (CBD) and IPGRI. The Symposium brought together 140 participants from the academic, government, research and non-profit sectors to share experiences, case studies, initiatives and ideas on the management of agricultural biodiversity in agro-ecosystems. Agricultural biodiversity includes all components of biological diversity with relevance to food and agriculture, including crop and livestock resources.

Each of the three days was devoted to a different theme, specifically: crop and livestock genetic resources; associated biodiversity and agro-ecosystem services; and landscape, scale and change. Presentations were given on specific aspects of each theme and poster displays provided visual expansion of each area. The objectives of the Symposium were to: advance understanding of the complex process and mechanisms for on-

farm management of biodiversity and their relation with farmers' livelihoods; compare and exchange experiences in encouraging profitable management practices and systems of biodiversity on farm; identify lessons learned for policy and capacity building; and contribute to the implementation of the CBD programme of work on agricultural biodiversity. The Symposium was held immediately prior to the seventh meeting of the CBD's Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), which discussed and assessed the overall progress made in the programme of work (www.biodiv.org).

During the final session participants agreed that the success stories discussed during the Symposium depended on a rigorous interdisciplinary approach and recognized the importance of the understanding of the socioeconomic aspects, in addition to the genetic knowledge.

For further information contact D. Jarvis, Senior Scientist, *In Situ* Conservation, at IPGRI (d.jarvis@cgiar.org). Full proceedings from the Symposium, including abstracts, will be published later in the year.

Analysis of duplicates and most original samples in collections

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An internship funded by the Government of Québec, Canada, was undertaken by Marie-Hélène Lamarre, June - December 2001 at the IPGRI Regional Office for Europe, in collaboration with the N.I. Vavilov Research Institute of Plant Industry (VIR) and a number of other European genebanks. The main objective was to obtain an overview of the genetic material held in collections to enable rationalization in conserving and managing PGR.

Results from previous analyses of germplasm data undertaken mainly by van Hintum *et al.* in the early 1990s, indicate that it is not possible to identify duplicate (genetically identical) accessions in *ex situ* germplasm collections by matching passport data only, due to the low quality of the database information. The information is highly unreliable due to the lack of a standard data management system in all genebanks, and due to human error, since accession names may be interpreted differently or

incorrectly. It is possible to identify database matches as "putative duplicates" that are indicative of, but not necessarily, genetic duplicates. The identification of duplicate accessions would therefore require molecular analysis for confirmation.

The limitation of the database information available was also a major challenge faced by the internship project. The use of a variety of software packages to detect the duplicate data identified 30-60% of duplicates, depending on the *ex situ* collection evaluated. However, despite a recent improvement in software tools available, this result is still not accurate enough to enable strategic management choices of genetic material.

The study also focused on the problem of low quality wheat passport data available for analysis methodologies, involving VIR, the German Center for Documentation and Information in Agriculture (ZADI) and the ECP/GR Wheat Working Group.

Current computer assisted evaluation was demonstrated to be insufficient due to the poor information available, and it is therefore necessary for database managers and curators to screen accessions manually to enable the identification of data matches or duplicates. Application of their expertise should also enable the identification of the original samples of a collection. Their involvement is vital at the start of the evaluation process to ensure accurate results and to implement rational germplasm management.

To rationalize collections on the basis of genetic identity or similarity, analysis of passport data should be followed by molecular analysis on a reduced number of accessions. The preliminary outcomes of this work show the need for active collaboration between all the partners involved. It is hoped that continued efforts in the analysis of germplasm collections will lead to sustainable cooperation and rationalization of collections in Europe.

ECP/GR meeting on Flax genetic resources in Europe

The need to strengthen European cooperation on flax genetic resources became recently evident with a significant decrease in flax acreage in Europe during the last ten years. Simultaneous to this loss of resources, it is also not known which European countries maintain flax collections or how large these holdings are. To address this situation, an *ad hoc* meeting on flax genetic resources in Europe was organized within the framework of the ECP/GR Industrial Crops and Potato Network in collaboration with Working Group 1 of the FAO – ESCORENA Flax and other Bast plants Network. The meeting, attended by 12 participants from nine countries, was held at the Research Institute for Crop Production Prague-Ruzyne (RICP), Czech Republic, 7-8 December 2001. The local organizer, M. Pavelek of Agritec Sumperk, Chair of the ESCORENA Working Group 1 and manager of the International Flax Database (IFDB), was selected as Chair of the flax *ad hoc* Group, in collaboration with L. van Soest, Centre for Genetic Resources, the Netherlands.

One objective of the meeting was to further facilitate the development of the IFDB. Managed and coordinated by Agritec since 1994, it includes data for 1416 accessions, stored in 13 contributing genebanks from 11 countries. The current content is estimated as being only 5% of the total number of accessions (potentially 25 000) conserved in Europe. During the meeting, participants from Bulgaria, the Netherlands, Poland, and the Russian Federation provided their passport data, and the Group agreed to prioritize the development of the IFDB. Requests for passport data will also be sent to the UK, the Nordic Gene Bank and the Baltic States, as well as Canada and the United States. The addition of characterization and evaluation data will also be recommended in a subsequent phase. The Group was informed that a project entitled "Utilization of European Flax Germplasm Biodiversity for Improving and Increasing sustainable Flax production in Europe" (EuroBioFlax), had been submitted for funding to the

European Commission within the 5th Framework Programme. The objectives are to complete the inventory of European flax germplasm collections; to standardize the evaluation, description and characterization methodologies; to identify duplicate accessions maintained under synonymous names in the collections using molecular methods, and to develop a European flax core collection. Unfortunately, the funding application was not successful. However, limited funding will be made available by ECP/GR for non-EU countries to undertake characterization work and to further promote the development of the IFDB. A request will be submitted to the Steering Committee of ECP/GR to formalize the establishment of a Working Group on Flax, to guarantee the possibility of future meetings, with a second potential meeting in 2004. A report of the meeting, including information on the status of flax genetic resources in European collections, is under preparation by the ECP/GR Secretariat.

Forest genebank in Kostrzyca, Poland



The dynamic conservation of populations is the principal way of conserving genetic resources of forest trees species, owing to their long life cycles, mating systems and very low degree of domestication. The conservation of seeds and other genetic material in genebanks is, therefore, considered as a "back-up" measure, complementing other *in situ* and *ex situ* efforts. In contrast to cultivated plant species, genebanks represent only a small proportion of efforts to conserve the genetic resources of forest trees.

The main objective of the *ex situ* conservation in forest tree genebanks is to ensure the availability of genetic material at different locations and periods of time for tree improvement, evaluation, research or afforestation purposes. Forest tree genebanks are also an essential source of genetic material for the restoration of threatened species and their populations.

The Forest Gene Bank in Kostrzyca, Poland is one of the recent, state-of-the-art facilities of this type in Europe. Built in the shadow of the Karkonosze Mountains on the Polish-Czech border, the Gene Bank is located in one of the most damaged areas of Polish forest, caused by industrial air pollution.

The idea to establish the Gene Bank in this location originated in the 1980s from a group of local foresters and scientists, and became a reality after the programme's aims were elaborated by Prof B. Suszka in 1992. Construction was financed by the State Forestry Commission; the Global Environment Facility (GEF); the National Environmental Protection and Water Resources Fund; Eco-Fund; the Regional Environmental Protection; the Water Resources Fund in Jelenia Gora, and the Forest Research Institute. The PHARE programme of the European Union also joined the project in 1996, providing additional resources for a hotel and recreation facilities for visitors to the Forest Gene Bank. Building began in March 1994 and

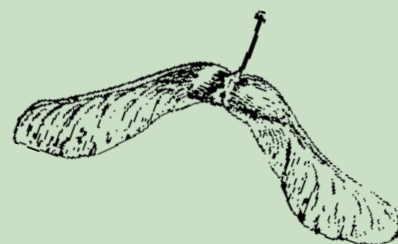
the Gene Bank was opened in December 1995. Designed by the Miastoprojekt designers in Wroclaw and constructed by the Wroclaw Industrial Building Company, the building incorporates traditional local design elements. It is of such a high standard, that both the designers and constructors were awarded the national prize of "Construction Project" in 1995.

The laboratories of the Gene Bank are fitted with equipment from suppliers around Europe for the entire seed preparation process and long-term storage. The Gene Bank is authorized to issue seed quality certificates, according to both national and international standards. Facilities include a nursery for the production of containerized plants and nursery stock, plus an arboretum of 4.32 ha. New laboratories are planned for molecular research, including isozyme and DNA analyses.

The Gene Bank plays a significant role in capacity building and in the six years since opening, it has hosted a number of local and international conferences and symposia. Since 1997, in collaboration with the Krakow Agricultural University, it has also hosted annual post-graduate courses on forest genetics and tree breeding. The most recent course in 2001 included the training of 30 specialists from various areas of forestry practice in Poland.

The Gene Bank operates under the scientific supervision of the Forest Research Institute, the Institute of Dendrology of the Polish Academy of Sciences and other forest academic centers.

The hosting of the third EUFORGEN Conifers Network meeting at the Gene Bank in Kostrzyca, in September 2002, will provide an excellent opportunity for discussing the collaborative work on conifers in Europe, including the particular aspects of genetic conservation in forest tree genebanks. More information on the Gene Bank is available at www.lbg.jgora.pl/ or contact: lbg@lbg.jgora.pl.



EUFORGEN Mid-term steering committee meeting planned

National Coordinators from 33 countries and focal persons from ten additional European countries are expected to participate in the EUFORGEN Steering Committee meeting, 30 June - 1 July, in Jönköping, Sweden. Jönköping, a town amid large Nordic conifer forests, is the location of the National Board of Forestry, the implementing agency of EUFORGEN in Sweden.

The main objective of the meeting will be to evaluate progress made in the first half of the current, five-year Phase II (2000-2004). Evaluation will focus on activities and achievements of the five operating Networks, namely: Conifers; Mediterranean Oaks; *Populus nigra* (black poplar and *P. alba*, white poplar); Noble Hardwoods and Social Broadleaves. As agreed at the previous Steering Committee meeting in November 1998, the emphasis of Phase II is on the development of gene conservation strategies and technical guidelines, as well as the continued exchange and standardization of information among countries.

A further request at the previous meeting was that closer links be facilitated between the Networks, to harmonize action and to address themes of common interest, e.g. global climate change and conservation of ecosystems. A small group composed of chairpersons was established to facilitate this network synergy. One successful example of the increased joint action is the development, and wide use, of the on-line bibliographic database on Forest Genetic Resources (FGR).

The conservation of FGR can be ensured through carefully designed and implemented networks of gene conservation units for target species within their distribution areas. A "masterplan" for a given species would set priorities for conservation efforts in the different areas of the distribution range. Such agreement would also provide the basis for recommending, coordinating and monitoring the practical measures taken in the forests. The main objectives are to secure the long-term conservation and availability of critical levels of genetic diversity, and to integrate work done at the national level. A system of incentives would be required to support such a "masterplan" and all the conservation measures be embedded into routine forestry activities.



Silver fir (*Abies alba*) seedling
(Photo: M. Bozzano, IPGRI)

These management principles and guidelines are already available to a large extent as the result of EUFORGEN networking efforts in recent years. Modules with technical guidelines are currently being finalized for twelve Noble Hardwoods species or genera, as well as for temperate white oaks (*Quercus* sp.), and will also be developed for five priority Conifer species.

The group of chairpersons, concerned with an effective implementation of FGR conservation in Europe, has recently discussed and formulated a new vision for the future based on these "masterplans" which will be discussed further at the forthcoming meeting.

Additional items on the agenda of the Steering Committee meeting will include communication, the wider influences on research and conservation collaboration, cooperation with other regional programmes, and impact on the progress in FGR conservation at national level.

Since its establishment in 1994, EUFORGEN has received a strong endorsement from participating countries. The contribution of this Programme towards the goals set by the Ministerial Conferences on the Protection of Forests in Europe will also be discussed in light of the forthcoming Fourth Conference in April 2003.

Conserving broadleaved forest genetic resources in the Ukraine

In 2001 the Ukraine joined the second phase of an international project aiming at the conservation of the valuable, and largely threatened, broadleaved forest genetic resources in southeastern Europe (see issue 20 page 3). This collaborative partnership of the Ukraine's institutions has yielded several practical results during the first year of activities.

The main emphasis has been on undertaking field inventories of existing resources. In the other three partner countries of the project (Bulgaria, Moldova and Romania), a large number of stands were identified, selected and described as *in situ* conservation units for 11 species during the first phase of the project (1997-2000). In 2001 the Ukraine undertook a comprehensive inventory of the existing system of genetic reserves for all the broadleaved forest tree species throughout the country, with particular emphasis on rare species. A total of 93 genetic reserves and 11 conservation stands were described during the inventory, requiring 24 field expeditions for data collection.

The results reveal that significant damage has occurred in many stands due to ice breakage in the past two years. Using data from the State Forest Inventory database, an integrated distribution map of beech species (*Fagus* sp.) in southeastern Europe was compiled and produced in the Ukraine on behalf of all partners. Laboratory based research is planned for 2002, involving micropropagation techniques to establish an *in vitro* collection of the most endangered genotypes of oak trees in the Kharkiv region in eastern Ukraine. This will be undertaken by a young Ukrainian researcher who received training in these techniques on *Quercus* sp. at the Centre de Recherche Public Gabriel Lippmann, Luxembourg, one of the partner institutions. In addition to the Ukrainian Research Institute of Forestry and Forest Melioration in Kharkiv, national partners in the project include the Institute for Mountain Forestry in Ivano-Frankivsk and the University in Lviv. Financial support is being provided by the Government of Luxembourg.



Oak (*Quercus polycarpa*) from southeastern Europe (Photo: S. Bordacs, Hungary)

For further information please contact the Ukrainian National Coordinator R. Volosyanchuk (volrom@u-fri.kharkov.com).



EU Research: Dynamics and conservation in forest ecosystems

Dynamics and conservation of genetic diversity in forest ecosystems (DYGEN) is the title of an international conference being held 2-5 December 2002 in Strasbourg, France. With financial support from the EU fifth Framework Programme, the Conference will host scientists, conservation agency end users, forestry organizations and other stakeholders. In addition to sharing and discussing the achievements of relevant EU-funded research projects in this area, the Conference will highlight the applicability of the results in practical conservation. It will focus on filling the gap between basic research in population, evolutionary and ecological genetics and the implementation of their results through conservation actions. The Conference will also identify gaps and future research needs, and will consist of two principal parts: "Processes and mechanisms promoting genetic diversity in forest ecosystems"; and "Implementation of conservation strategies". Research related to the monitoring and understanding of basic mechanisms shaping forest

genetic diversity was supported within the fourth and fifth FPs through 16 different projects involving 157 partners.

With their regular annual meetings and frequent contact among members from different European countries, the closely linked EUFORGEN Networks have played a catalyzing role, providing opportunities for identifying research needs and planning joint project proposals. Many of the Networks also offer a platform for discussing and disseminating the results of ongoing projects.

More information on the Conference organized by INRA Station de Recherches Forestieres, Pierroton-Cestas, France, is available from www.pierroton.inra.fr/genetics/Dygen/



Cork Oak (*Quercus suber*) (Photo: M. Bozzano, IPGRI)



EU Research: European Network for Biodiversity Information - ENBI

The aim of the European Network for Biodiversity Information (ENBI) is to manage an open network of relevant biodiversity information centres in Europe. The Network will include all European national nodes of the Global Biodiversity Information Facility (GBIF) and relevant EU-funded programmes and projects. ENBI will identify priorities requiring a common approach at the European scale. By offering European researchers access to European technical and human resources, including expertise and know-how on biodiversity, the Network will provide views and access to biodiversity data and information at the European biogeographical scale. It will also provide a discussion forum for developing strategies on issues of biodiversity information that require a European approach.

This three-year project is expected to initiate activities in summer 2002. The outcomes will be disseminated through the various networks and working groups of ECP/GR and EUFORGEN. ECP/GR will also provide an effective link with the EURISCO catalogue.

The project coordinator is W. Los, University of Amsterdam, the Netherlands and more information is available at the temporary web site: www.faunaeur.org/enbi/info.html.

Panel of Experts on Forest Gene Resources

The largely unexplored potential of many forest tree species, including wood products and medicinal uses, is the reason why forest diversity is of such importance. Genetic variation within a species is significant since the survival of the species depends on this variation to grow and resist stresses such as harsh weather and disease. This was the point emphasized by the 12th Session of the Panel of Experts on Forest Gene Resources, held 21-23 November at FAO in Rome. The Panel, established in 1968, meets every two years, reporting on the state of Forest Genetic Resources (FGR), making recommendations for their conservation and use, and on the future focus of FAO's FGR programme. The Panel's 15 members are independent experts in a wide variety of areas and are from an equally wide range of cultural, linguistic and regional backgrounds. The importance of continued

FAO support in elaborating regional and sub-regional FGR action plans, as discussed and agreed upon by countries in a series of regional workshops, was considered of particular importance. The final aim of these efforts is to develop a country-driven, participatory, global action plan for the conservation and sustainable use of FGR. Panel members reviewed the outcomes of some of the workshops organized during recent years in dry-zone Sub-Saharan Africa, the South Pacific and southern and eastern Africa. Additional workshops are planned for 2002 and 2003 in Central Africa and Central America. As part of its regular agenda, the Panel updated the lists of priority tree species requiring attention, by region and by operational activity. These "Panel lists" complement national and local lists of priority species, and priority lists of endangered forest tree species. The Panel recommended that networking

support be provided for a limited number of species of importance (including neem and some mahogany species) to a range of countries. It was emphasized that there is a need to pay special attention to species threatened by genetic impoverishment caused by unmanaged use, and by natural phenomena such as fire and drought.

An update on the activities carried out within EUFORGEN Networks was also given during the meeting, and the priority list of European species established and agreed upon by the Noble Hardwoods and Mediterranean Oaks Networks were also taken into consideration during discussions of species requiring attention.

The Panel's full report will be published later in the year in English, French and Spanish. More information is available from www.fao.org/forestry/FOR/FORM/FOGENRES/homepage/



EU Research: PGR Forum

The project proposal entitled "European Crop Wild Relative Diversity Assessment & Conservation Forum (PGRForum)", submitted in October 2001, has been approved for funding. The proposal was submitted to the Fifth Framework Programme for Energy, Environment and Sustainable Development, Key action 2 'Global change, climate and biodiversity', 2.2.3 'Assessing and conserving biodiversity'. The scientific and technical objectives of the project are: to provide a European forum and network for the assessment of species conservation and genetic diversity of European wild crop relatives, and to develop appropriate conservation methodologies.

A broad expertise of partners from 15 European countries as well as the Nordic Gene Bank, the International Union for the

AIMS OF THE PGRForum :

- To bring together European plant conservationists to debate the assessment and conservation of European wild crop relatives at both the species and population levels;
- To produce an assessment of baseline biodiversity data, threat and conservation status for European wild crop relatives, and to debate and formulate methodologies for their conservation; and
- To communicate these results to relevant conservation stakeholders, policy makers and user groups in a manner that aids efficient and effective European wild crop relative diversity conservation and also facilitates the use of this European resource.

Conservation of Nature (IUCN) and IPGRI, participate in the project. The project proposal was formulated and submitted as an initiative of the ECP/GR *In situ* Conservation Task Force. The Task Force will also provide a link between this new project and the crop-specific Working Groups of

ECP/GR, and will play a major role in the dissemination of results.

The project is coordinated by N. Maxted, University of Birmingham, UK (nigel.maxted@dial.pipex.com), and the first meeting is planned for September 2002 in Greece.



EU Research: Catalogue of Life - EuroCat

The EuroCat Thematic Network aims at bringing together all the taxonomic databases maintained independently around Europe into a comprehensive and a single scientific infrastructure. The existing databases include three major EU-funded taxonomic database projects covering many groups of organisms indigenous to Europe. The Network will initiate a comprehensive catalogue of organisms to underpin activities on biodiversity in the region and worldwide. A "distributed organization" will be developed, to:

- assemble a comprehensive catalogue of organisms (EuroCat - Catalogue of Life)
- establish a sustainable business plan for developing the catalogue as an ongoing information infrastructure.

The EuroCat Gateway will be an electronic gateway using the indexing property of the Catalogue to locate precise technical biodiversity information on species from other data systems in Europe

and worldwide. Examples include germplasm sources, access to museum specimens and to ecological data, as well as illustrations and maps.

The ECP/GR networks will assist the project partners in identifying the needs of users and evaluating the final products.

The EuroCat Network, a

three-year project coordinated by F. Bisby, University of Reading, UK, (f.a.bisby@reading.ac.uk), includes key players and experts in Europe, from the largest taxonomic institutes to individual experts. It is led by a consortium of six principal partners, which will meet for the first time in September 2002.

IPGRI/FAO Multi-crop Passport Descriptors

In collaboration with FAO, a revised version of the 1997 Multi-Crop Passport Descriptors (MCPD) list has recently been developed by IPGRI. This important reference tool has been developed to provide international standards to facilitate germplasm passport information exchange amongst genebanks with different crop collections.

These descriptors aim to be compatible with IPGRI crop descriptor lists and with the descriptors used for the FAO World Information and Early Warning System (WIEWS) on Plant Genetic Resources (PGR). This updated version of the 1997 MCPD List, completed in

December 2001, provides a brief explanation on the content, coding scheme and suggested fieldnames for each descriptor to assist in the computerized exchange of this data. This allows for basic passport data to be exchanged worldwide in a consistent manner. Copies of the MCPD list can be obtained from the IPGRI website at www.ipgri.cgiar.org/publications/pubfile.asp?id_PUB=1241 in PDF format or for printed copies contact ipgri-publications@cgiar.org. For further information on the MCPD list or any IPGRI Descriptors, please contact A. Alercia at a.alercia@cgiar.org.

DIVA-GIS: a new tool to manage PGR



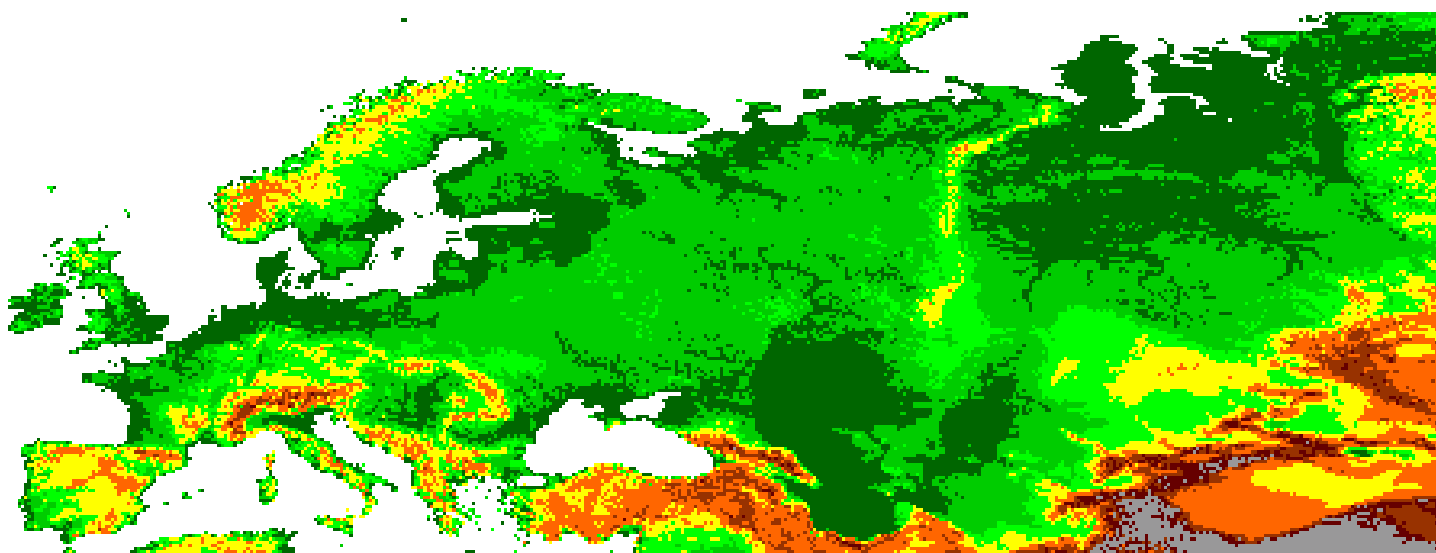
Plant genetic resources management is a complex process that ranges from identifying a gene pool, to conserving and using its genetic resources. Many activities in this process generate and require the analysis of geographic data. This is done most effectively with geographic information system (GIS) software. GIS can be used to analyse genetic diversity data and combine it with information such as population density, climate, topography and soil. These analyses can contribute to activities such as monitoring genetic diversity, selecting potential sites for collecting, designing reserves or developing conservation strategies.

In collaboration with national and international organizations, IPGRI is developing innovative methodologies and tools to support the use of GIS. This initiative includes the design, development, and distribution of low cost and easy to use tools such as DIVA-GIS, a recently released software for spatial analysis of genetic resources data. DIVA-GIS is a tool developed at the International Potato Center (CIP) in collaboration with IPGRI and additional financial support from the System-wide Genetic Resources Program (SGRP) and others.

DIVA-GIS allows users to find and verify the coordinates of an accession or draw associated climate data, identify diversity hotspots or predict where to find accessions with desired characteristics (see article on *Brassica*, page 2). Preliminary versions of DIVA-GIS were used during IPGRI training events in Africa, Asia, Latin America and the Middle East, with support from organizations and IPGRI offices in those regions. Users of the software find it easy to apply and many of their suggestions on possible improvements have been incorporated in the software.

DIVA-GIS is available free of charge from gis.cip.cgiar.org/gis/tools/diva.htm and copies of the user manual and a tutorial can be downloaded from the same site. Geo-referenced data on countries in the region, including climate, land use, population density and administrative boundaries is available from gis.cip.cgiar.org/gis/data/MapServer.htm.

For further information on DIVA-GIS, contact L. Guarino at IPGRI: l.guarino@cgiar.org or R. Hijmans at CIP: r.hijmans@cgiar.org. More information on these GIS activities is also available on-line at www.ipgri.cgiar.org/regions/Americas.



Information on funding opportunities

IPGRI's Regional Office for Europe is collecting information on funding agencies with the goal of increasing accessibility to European based funding opportunities for plant genetic resources conservation activities worldwide.

Disclaimer – IPGRI is not responsible for technical inaccuracies. Please contact the specific centres directly with any queries.

European Forest Institute (EFI)

Mission to promote, conduct and cooperate in research of forests, forestry and forest products at pan-European level, and make research results known, notably in the areas of policy formulation and implementation, in order to promote the conservation and sustainable management of forests in Europe. Finances scholarships and training. Typical level of funding is of less than US\$5000. Research programmes: Forest ecology and management; Forest products markets and socioeconomics; Policy analysis; and Forest resources and information.

Closing Date: 31 June 2002. **Further Information:** www.efi.fi/research/project_proposal_format.html

European Science Foundation - Standing Committee for Life and Environmental Sciences.

Grants available within the framework of several scientific programmes and networks. **Closing Date:** Varies according to activity type & programme. **Further information:** www.esf.org/life/

NATO Science Programme

Environmental and Earth Science and Technology (EST) finances projects, workshops and travel to support collaboration between scientists in Partner countries or Mediterranean Dialogue countries and scientist in NATO countries. **Closing Date:** 1 April & 1 September 2002.

Further information: www.nato.int/science/

Natural Environment Research Council

Supports research projects, training and fellowship awards in a number of fields and in a number of manners, including: Small grants (up to £30K) – Deadlines: 1 June & 1 Oct; New Investigators (up to £50K) – Deadline: 1 Feb; Standard Grants (more than £30k, typically £125k) – Deadlines: 1 July & 1 Dec; Consortium grants (up to £2 million) – Deadlines: 1 July & 1 Dec; Fellowships – Deadline: 30 Sept.

Closing Date: Depends of grant type. **Further information:** www.nerc.ac.uk/funding/

Wain Travel Fellowship

Provides support to researchers for international collaboration in agriculture, including sustainable systems and fundamental research in areas within the remit of BBSRC. Funds not provided for conference attendance. Applicant must be UK based and either approaching the end of PhD studies, or at the start of an academic research career. Approximately six awards are available each year and applications invited annually.

Shortlisted applicants are invited to an interview. **Closing Date:** 30 September (annually). **Further Information:** www.bbsrc.ac.uk/international/bbsrc/wain.html

The Linnean Society –The Percy Sladen Fund

Supports fieldwork in earth and life sciences. No grants available for further study. Grants for maximum of £600.

Closing date: 30 September 2002. **Further information:** www.linnean.org

Carpathian Foundation

Operating in the bordering areas of Central-Eastern Europe (Hungary, Poland, Romania, Slovakia and Ukraine). Mission to promote "good neighbourliness", social stability, and economic progress in the bordering areas by supporting community development, cross-border and inter-ethnic cooperation. **Further information:** www.carpathianfoundation.org

The Foundation for Russian American Economic Cooperation (FRAEC): US –RFE Partnership Activity

Sponsored by USAID to support existing partnerships and encourage partnerships between groups working together in the Russian Far East (RFE) and the US. Collaboration at various levels focused on: community connections; innovative technology transfer; strengthening NGOs; developing grassroots citizen awareness and participation; provision of particular skills to Russian leaders and professional to bring about sustainable changes; and strengthening networks and capacity building of partner organisations. **Further information:** www.fraec.org

Charity Know How (CKH) Grants Programme 2002

Provides small grants (up to £15 000) for skill-sharing partnerships between NGOs from different countries of Central and Eastern Europe and the NIS. CKH welcome applications on: Cross-border partnerships within the four priority sub-regions (Balkans and Carpathians; Caucasus; Central Asia; Western CIS); and partnerships where skills and 'know-how' are transferred from larger, more experienced NGOs to smaller, grass-roots, community-based organisations. **Closing date:** 27 August 2002. **Further information:** www.allavida.org

TACIS – Institution Building Partnership Programme

Main objectives are to support the development of civil society and local institutions i.e.: a) to support institutions which constitute a counterpart to the central state authority; b) to promote local level initiatives in the regions. Sectors or themes that can be supported: economic development and environmental issues. Grants between Euro symbol100 000 - 200 000. Eligible countries: Belarus, Kazakhstan, Kyrgystan, Mongolia, Moldova, Russia, Ukraine. **Closing date:** 8 April 2002. **Further information:** europa.eu.int/comm/europeaid/

Earthwatch Institute

Promotes sustainable conservation of natural resources and cultural heritage by creating partnerships between scientists, educators and the general public. Priority themes: botany; conservation methods (*ex situ* and *in situ*); forestry; human aspects; nutrition; scientific publications; public awareness; socio-economic and ethnobotany; training; and field-based research.

Further information: www.earthwatch.org/aboutew/cfr.html

The Royal Society

Awards granted for research in natural and agricultural sciences. **Further information:** www.royalsoc.ac.uk/international/index.html

Trust for Mutual Understanding

Promotes communication, cooperation, and greater respect between the people of the US, the Soviet Union, and other countries in Eastern and Central Europe. Areas of priority: biodiversity; environment conservation; international cooperation; public awareness on environmental issues; and capacity building of local and national organisations. **Closing date:** 1 May & 1 October 2002. **Further information:** www.tmuny.org

Institute of International Education, Hubert H. Humphrey Fellowship Program

Priority issues: biodiversity; environment conservation; international cooperation; public awareness on environmental issues; capacity building of local and national organizations; food security; agriculture; socio-economic; and nutrition. **Closing date:** July - December 2002.

Further information: www.iie.org/pgms/hhh/



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Forthcoming Meetings

8-26 April 2002
Sixth Conference of the
Parties to the Convention on
Biological Diversity and
meeting of the Cartagena
Protocol
The Hague, the Netherlands
secretariat@biodiv.org
www.biodiv.org

12-16 May 2002
Seventh International
Workshop on Seeds
Salamanca, Spain
[www.geocities.com/
workshop_on_seeds](http://www.geocities.com/workshop_on_seeds)

21-22 May 2002
120 years of agricultural
sciences in Sadovo
Sadovo, Bulgaria
rada_k@abv.bg or
koeva.ipgr@au-plovdiv.bg

26-30 May 2002
Biotechnology approaches for
exploitation and preservation
of plant resources
Yalta, Crimea, Ukraine
nbs1812@ukr.net
www.nbg.crimea.ua

2-7 June 2002
International Conference on
Legume Genomics and
Genetics: Translation to Crop
Improvement
Saint-Paul, Minnesota, USA
www.agro.agri.umn.edu/iclgg

10-13 June 2002
World Food Summit – five
years later
Rome, Italy
foodsummit@fao.org
www.fao.org/worldfoodsummit

22-27 June 2002
43rd Annual Meeting of the
Society for Economic Botany
Symposium on the Origins,
Evolution, and Conservation of
Crop Plants: a Molecular
Approach
New York, USA
Adlantz@nybg.org
www.econbot.org

8-10 July 2002
International Conference for
Botanic Gardens on Science
for Plant Conservation
Dublin, Ireland
www.rb.g.ca/bcbn/science/

11-14 July 2002
6th International Conference on
Agricultural Biotechnology:
New Avenues for Production,
Consumption and Technology
Transfer, ICABR
Ravello, Italy
icabr@economia.uniroma2.it

[www.economia.uniroma2.it/
conferenze/icabr](http://www.economia.uniroma2.it/conferenze/icabr)

22-26 July 2002
FAO/ITTO/INAB Guatemala
International Conference on
Criteria and indicators for
Sustainable Forest Management
Guatemala City, Guatemala
froylan.castaneda@fao.org or
christel.palmberg@fao.org or
itto@or.jp

11-17 August 2002
Symposium S21 "Plant
Genetic Resources: The
Fabric of Horticulture's
Future", XXVIth International
Horticultural Congress
Toronto, Canada
[www.ihc2002.org/ihc2002/
multi_day-symposia_S21.htm](http://www.ihc2002.org/ihc2002/multi_day-symposia_S21.htm)

21-23 August 2002
Plant Genetic Resources in
Agricultural and Environmental
Sustainability (NIAB)
St John's College
Cambridge, UK
mary.mcphee@niab.com
www.niab.com

25-29 August 2002
IUFRO Symposium on
Population and Evolution
Genetics of Forest trees
Stara Lesna, Slovakia
[www.tuzvo.sk/~paule/
conference](http://www.tuzvo.sk/~paule/conference)

26 August - 4 Sept 2002
World Summit on Sustainable
Development
Johannesburg, South Africa
www.un.org/rio+10

1-6 September 2002
13th Congress of the
Federation of European
Societies of Plant Physiology
Crete, Greece
fespp@biology.uoc.gr
[www.biology.uoc.gr/meetings/
fespp](http://www.biology.uoc.gr/meetings/fespp)

1-7 September 2002
Management of Mountain
Forest Ecosystems under
New Environmental Conditions
Prague, Czech Republic
balcar@vulhmop.cz or
vancura@mze.cz

Publications of Interest

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42 pages.

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V. Ramanatha Rao, A.H.D.
Brown & M.T. Jackson. 2002.
CABI. 487 pages.

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