

## NETWORK

### 3.6. Vegetables Network

**Working Groups:** *Allium*, *Brassica*, Cucurbits, Leafy Vegetables, Solanaceae and Umbellifer Crops.

The **Vegetables Network Coordinating Group** consisted of 11 members: Marie-Christine Daunay, France (Network Coordinator), Willem van Dooijeweert, The Netherlands (Vice-Coordinator); Dave Astley (retiring at the end of 2011), United Kingdom; Noortje Bas, The Netherlands; Ferdinando Branca, Italy; Maria José Díez, Spain; Emmanuel Geoffriau, France; Joachim Keller, Germany; Charlotte Allender, United Kingdom and Rob van Treuren, The Netherlands.

The **Seventh Meeting of the *Allium* WG** was held 6-8 September 2011 in Perea near Thessaloniki, Greece, involving 14 WG member and 7 observers. J. Keller, coordinator of the European GENRES Project EURALLIVEG (European *Allium*, vegetatively propagated – Web site <http://euralliveg.ipk-gatersleben.de>), reported on the conclusion of this project in March 2011: 202 well-characterized garlic accessions are now stored and safety-duplicated in cryopreservation in CRI, Czech Republic, IPK, Germany and RIVC, Poland. A list of 202 candidate European garlic accessions were then sent to the National Coordinators for flagging them as European Accessions in EURISCO and the first European Collection accessions were thus flagged by Germany in December 2011.

J. Keller also reported the results of the AEGIS-funded project on cryopreservation of young inflorescence bases of garlic [Bioversity Newsletter for Europe 43:9 (2011)]. It has been recommended to use the studied method for cryopreserving bolting garlic in European collections. It has the advantage that the material is much cleaner than that from bulbs dug out of the soil, there is direct access to the material without long pre-culture (unlike the case of *in vitro* donor plantlets), and the regenerating explants usually produce many shoots due to the presence of several meristems in the cryopreserved pieces of tissue. The hosting and management of the European *Allium* Database will be transferred from the University of Warwick to IPK Gatersleben in January 2012.

The Group agreed on a workplan to establish European Accessions for seed-propagated landraces and wild taxa, as well as cultivars, starting with *A. ampeloprasum* and then extending the list to other priority groups of seed-propagated species. Black box safety storage of seeds was offered by four institutions. The need to establish a new project on garlic characterization by molecular markers was underlined. A letter will be sent to the European crop genebanks, asking for their interest in collaboration. The meeting was concluded with the resignation of Dave Astley from his position as the Chairman of the Working Group, owing to his retirement. The Group representatives expressed their heartfelt thanks to Dave for his preparatory input to establish the *Allium* Working Group and for his continuing leadership for 29 years altogether. J. Keller (Germany) and T. Kotlińska (Poland) were elected as new Chair and Vice-Chair, respectively.

A Task Force of the ***Brassica* Working Group** has investigated the status of the collections of wild brassicas and their availability and has verified that samples are available from the University of Tohoku, Sendai, Japan. No replies were received from most of the other sources in Europe, which indicates the need for a more reliable system for germplasm exchange.

The N.I. Vavilov Research Institute of Plant Industry (VIR), Russian Federation, started an ECPGR-funded activity for the identification and morphological, biochemical and molecular description of 58 unknown *Brassica rapa* accessions provided by European genebanks.

The Department of Agriculture and Food Science (DISPA) of the Catania University, Italy, started an ECPGR-funded activity for morphological and molecular (SSR) characterization of 26 accessions of wild *Brassica* species collected from different European genebanks.

**The Working Group on Cucurbits** completed in April 2011 a document on “General guidelines for regeneration, processing and storage of cucurbit species”.

A poster on the activities of the WG was presented at the EUCARPIA Genetic Resources Congress held in Wageningen, The Netherlands, in April 2011.

A table on the current level of safety-duplication of Cucurbit collections in Europe was updated and made available online. It shows that there is a wide variability across genebanks and that safety-duplication is still far from being complete.

**The Second meeting of the ECPGR Leafy Vegetables Working Group**, planned for November 2011 in Slovenia, has been cancelled, owing to the low number of countries that were using their country quota and to insufficient inputs of the Working Group members to the agreed workplan. The opportunity to organize a Leafy Vegetables WG meeting as an “ad hoc” meeting was brought to the attention of the Executive Committee, who decided to discuss this option at the next Steering Committee meeting in November 2012, when the budgetary situation of ECPGR Phase VIII will be clearer.

The Minor Leafy Vegetables Database, managed by IPK, Germany, was improved at the end of 2011. Apart from updating the existing data of rhubarb, asparagus, lamb’s lettuce, artichoke and rocket salad, data were also added of the genera *Atriplex*, *Chenopodium*, *Chrysanthemum*, *Lepidium*, *Portulaca*, *Rumex*, *Taraxacum* and *Tetragonia*.

The First official meeting of the **Solanaceae Working Group**, originally planned for 2011 has been postponed to February 2012 in Menemen, Turkey. The Group needed more time to improve the passport data before being able to select Most Appropriate Accessions in order to allow the identification of the European Accessions.

The First Meeting of the **ECPGR Working Group (WG) on Umbellifer Crops** took place on 29 March–1 April 2011 at the Julius Kuehn-Institute (JKI) in Quedlinburg, Germany, jointly organized and held with the second and final workshop of the AEGIS-funded project “Assessment of unique material in the European collections of umbellifer crops”. A tentative selection of 1415 carrot cultivar accessions was made for AEGIS. Minimum descriptors for characterization of carrot, celeriac, celery, dill and parsley were selected and agreed. Proposed minimum standards for conservation and regeneration were drafted. As part of an ECPGR-funded project, partners from Belgium, Czech Republic, France, Germany, Poland, Sweden and UK agreed to carry out characterization of a number of umbellifer wild relative accessions. Evaluation for resistance to *Alternaria* and *Botrytis* and presence of volatile compounds will be done in Germany. Taxonomic identification will be carried out in France and Germany. The Genetic Resource Unit of the Warwick University offered to continue the maintenance of the Umbellifer Crops Database, providing an updated new structure, including characterization descriptors. An update of ongoing national activities related to PGR was also presented by several members. Emmanuel Geoffriau (France) and Charlotte Allender (UK) were re-elected as Chair and Vice-Chair respectively.

A research task using carrot as a model has been included in the **project proposal “Plant Gene Access”**, submitted for funding under the FP7 of the EU (see below, Section 4). The task intends to facilitate access to genebank collections of variable, outcrossing crops. An optimal marker system will be selected to assay genetic diversity in carrot accessions and a core collection of carrot will be defined.

A **proposal on brassica was accepted for funding under the second call of the AEGIS Grant Scheme**. The proposal “*Brassica* selection criteria for the identification of the MAAs related to the *Brassica oleracea* of the Iberian collection” was submitted by Banco Português de Germoplasma Vegetal, INRB, I.P., Portugal. This project, involving partners from The Netherlands, Portugal, Spain and United Kingdom, will receive a grant of € 12 450.

## Summary of AEGIS development status

### **Allium WG**

- European Collection: As an outcome of the GENRES EURALLIVEG project, a list of 202 candidate European garlic accessions were sent to the National Coordinators for flagging them as European Accessions in EURISCO: a first batch of 61 accessions were thus flagged by Germany in December 2011. An updated and enlarged list of candidate garlic accessions will require molecular screening of the European garlic collection, which has not been successfully completed so far. The Group has established a workplan to select seed-propagated wild accessions, landraces as well as cultivars. They will start with a focus on *A. ampeloprasum*.
- AQUAS: The Group has agreed on recommendations for field maintenance of garlic and shallot accessions and on protocols for *in vitro* medium-term storage and for cryopreservation of garlic. Two levels of phytosanitary standards were adopted, with or without virus elimination.

### **Brassica WG**

- European Collection: A test was made for selecting Most Appropriate Accessions of *B. rapa*. It was concluded that insufficient data were available for many accessions of *B. rapa*, meaning that the selection criteria could not be applied in an objective, unequivocal manner.  
The methodology to define MAAs among groups of duplicates is being tested on Iberian *B. oleracea* landraces, as part of a project funded by the AEGIS Grant Scheme.
- AQUAS: A summary of present practices and the draft minimum standards have been completed.

### **Cucurbits WG**

- European Collection: Following an update of the Cucurbits Database, expected for January 2012, volunteers from the WG have planned to screen the Database to identify Most Appropriate Accessions for the European Collection. Bulgaria has offered to designate for AEGIS the 1064 accessions that were safety-duplicated in 2010.
- AQUAS: General guidelines for regeneration, processing and storage of cucurbit species were agreed.

### **Leafy Vegetables WG**

- European Collection: The WG agreed to start focusing on lettuce and spinach and to develop a shortlist of potential AEGIS accessions that should be discussed at the next meeting of the WG. Information on potential AEGIS accessions has been collected for both lettuce and spinach from five collection holders. Once the exercise is completed with lettuce and spinach, the Group will move on to chicory and minor leafy vegetables.
- AQUAS: Developing a list of suggested minimum standards for leafy vegetables is part of the Group's workplan. Information on genebank procedures has been collected for both lettuce and spinach from four collection holders.

### **Solanaceae WG**

- European Collection: The Group initially aimed at improving the passport data of the Solanaceae collections as a first step, in particular the geographical origin of the accessions. However, given the difficulties encountered, the selection of the European Accessions will be discussed at the next meeting with the Database Managers, on the basis of the existing passport data.
- AQUAS: The Group agreed in 2004 on a "Standardized minimum protocol for seed regeneration and seed storage of Solanaceae". The protocol includes disinfection of seeds, identification, number of plants regenerated, transplanting seedlings, isolation, harvest, seed cleaning, desiccation and storage. The safety-duplication of all collections is a priority for the future.

### **Umbellifer Crops WG**

- European Collection: The Group agreed on a methodology for selecting accessions for AEGIS. In total, 45% of the original 2498 cultivar accessions were identified as potential European Accessions. The list needs to be cross-checked, confirmed with complementary information and extended to landraces and wild relatives. A workplan was decided, to extend the analysis to other Apiaceae.

- AQUAS: A proposal for minimum standards for regeneration and long-term conservation conditions was made. The standards still need to be formally agreed by the Group.

**Outlook for 2012**

The First Solanaceae WG Meeting is planned for February 2012 in Turkey, including one day dedicated to a Database Managers meeting.

Activities funded by the Vegetables Network will be carried out by the *Brassica* WG for the morphological, biochemical and molecular characterization of unknown *B. rapa*, *B. oleracea* landraces and wild *Brassica* accessions.