



European Cooperative Programme for Plant Genetic Resources (ECPGR)

Phase VIII (2009-2013) 2013 Progress Report

AEGIS section extracted from:

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3. ACTIVITIES CARRIED OUT WITHIN THE NETWORKS

3.1. Cereals Network

Summary of AEGIS development status

Avena WG

The Netherlands included 75 Avena accessions in the European Collection.

Barley WG

The Netherlands included 642 Hordeum accessions in the European Collection.

Wheat WG

Regarding selection of wheat accessions for the European Collection, the WG had decided in its meeting in 2012 that each WG member should propose accessions from a list provided by the Database Manager on the basis of agreed criteria. Unfortunately there was very little follow up by WG members to this initiative. Subsequently, the revised procedure for the selection of AEGIS accessions somehow derailed the efforts of the WG Chair and Database Manager who were trying to promote a guided selection of appropriate accessions. The Database Manager partially analysed an initial offer of accessions made by Germany and by the Netherlands and she noted a generally low quality of the data, which created a number of questions related to the uniqueness and true origin of the accessions. Eventually, only the Netherlands included 646 Triticum accessions in the European Collection (mainly from Pakistan and from the Netherlands).

Other cereals

Rye

The AEGIS-supported project 'Improving the prerequisites for a European rye collection' was concluded and the final report was submitted in July 2013. Based on a survey and a workshop that involved the main rye collection holders in Europe, the project produced a draft of rye germplasm conservation procedures, a draft characterization descriptor list for cultivated rye and a provisional list of Secale candidate European Accessions. The descriptor list was revised and finalized in December 2013.

The final report and its annexes are available online from the ECPGR and AEGIS websites:

http://www.ecpgr.cgiar.org/news_area/european_rye_collection.html

http://aegis.cgiar.org/aegis_grant_scheme/second_call.html

3.2. Forages Network

Summary of AEGIS development status

A second workshop on the Establishment of the European Forages Collection took place at NordGen, Alnarp, Sweden, 9–11 April 2013 as part of the AEGIS Grant Scheme. The attending forage Database Managers checked data, discussed open questions and data errors, and sought confirmations for AEGIS candidates and AEGIS accessions. In all, 8966 accessions were confirmed to fulfil the demand that there are safety duplicates preserved and seed available. In addition, the collection holders approved assuming the responsibility to act as the primary holders of the accessions. Formal approval of the European Accessions was consequently expected to be made by the National Coordinators concerned. An additional 14 051 'AEGIS candidate accessions' were confirmed. These were considered MOS (most original accessions) by the WG and the holding genebanks agreed to act as the primary holders of these accessions. However, until the requirements for safety duplication and seed availability are fulfilled, the accessions remain as AEGIS candidates.

One of the workshop goals was to enhance the inclusion of characterization and evaluation (C&E) data in the Central Forage Databases as a means of providing the data to EURISCO. Both IPK and NordGen Database Managers gave a practical presentation on how C&E data had been included in their information system and acted as references to discuss technical solutions with other Database Managers.

The final report of the workshop is available from the AEGIS website and from the Forages WG webpage.

The Netherlands included the following accessions in the European Collection: *Agrostis* (11), *Dactylis* (25), *Festuca* (67), *Lolium* (290), *Phleum* (90), *Poa* (132) and *Trifolium* (237). Germany included a small number of accessions of minor forage grasses and minor forage legumes.

3.3. Fruit Network

Summary of AEGIS development status

The Czech Republic designated 3 accessions of *Vitis vinifera* as part of the European Collection

3.4. Oil and Protein Crops Network

Summary of AEGIS development status

The Fifth Meeting of the Working Group on Grain Legumes was held 7–8 May 2013 in Novi Sad, Serbia, involving 22 WG members and 3 observers. It was organized in collaboration with the Institute of Field and Vegetable Crops, Novi Sad. The meeting focussed on: the AEGIS Quality System, the genebank standards, the Central Crop Databases and the issue of sustaining the WG's momentum in the absence of future group meetings, which are not foreseen by the new mode of operation of ECPGR. Regarding AEGIS, tasks were split among the Database Managers of Lens, Lupinus, Piselous, Pisum and Vigna, who agreed to start identifying candidate accessions for inclusion in the European Collection, based on the criteria 'Country of origin', 'Sample status' and 'Accession name'.

The FAO Genebank Standards for Plant Genetic Resources for Food and Agriculture were presented and accepted by the Group as suitable for the AEGIS Quality System to be applied to grain legumes. It was suggested that more detailed standards be developed by the WG regarding the appropriate distance between plots during regeneration of self- and cross-pollinated grain legumes and the requirement that evaluations be carried out under low nitrogen conditions.

Progress of the Central Crop Databases was reported. It was shown that in some cases the databases have an added value that is not offered by the EURISCO catalogue, such as a larger amount of data, including characterization data and pictures of the accessions.

The future management of the WG was discussed with plans to involve a larger number of WG members to help share the responsibilities of maintaining a vibrant grain legume PGR focus within ECPGR and the wider community. Interest groups were created around the topics 'Use of grain legumes in sustainable agricultural systems', 'Exchange of germplasm for evaluation in different

environments and 'AEGIS Quality System development'. Crop-specific groups of interest were also established, with elected leaders who will coordinate future WG activities crop by crop for Arachis, Cicer, Glycine, Lathyrus, Lens, Lupinus, Pisum, Phaseolus, Vicia faba and Vigna with the support and guidance of the Chair and Vice-Chair. The WG plans to develop the WG webpages to include more information about members, institutes and genebanks and will also explore more social media outlets.

The Group welcomed the offer made by Mike Ambrose, UK, to continue to chair the group for a brief transitional period, with the intention of mentoring the potential successors during the upcoming transition phase during which ECPGR will change its mode of operation, while the WG will need to maintain its cohesion even without regular meetings. Gérard Duc, France, was reconfirmed as Vice-Chair.

The report of the meeting is available online.

The Netherlands included in the European Collection accessions of Lupinus (25), Pisum (300) and Vicia faba (96).

3.5. Sugar, Starch and Fibre Crops Network

Summary of AEGIS development status

Beta WG

Following the agreement of WG members to assist in the compilation of Beta and Patellifolia Most Appropriate Accessions (MAAs), it was proposed to use for this purpose a list of accessions suggested by the IPK genebank and a list of accessions sent by several genebanks to the French company Florimond Desprez in 2012. The latter accessions became part of the working collection of the French project AKER, a research initiative for sustainable improvement of sugar beet. Collection curators were asked by the WG Chair to accept or reject the MAA candidate status of each accession. However, WG members were not responsive to this initiative.

Fibre Crops (Flax and Hemp) WG

The Netherlands included 52 Linum accessions in the European Collection.

Medicinal and Aromatic Plants WG

Among the priority species selected by the WG, the European Collection contains 3 accessions of Artemisia conserved in Germany.

Potato WG

The final report of the project funded by the AEGIS Grant Scheme 'Identification of old potato clones having unreliable variety name by means of fingerprinting using microsatellite (SSR) markers to assist in setting up the AEGIS collection for potato cultivars' has still not been received by the Secretariat. Based on the fingerprinting of old potato clones, the project was to identify mislabelling or confirm the genetic uniqueness of the clones and indicate which of the fingerprinted varieties will be the most appropriate for inclusion in the European Collection. Results from the study can be anticipated as follows: SASA genotyped 379 clones from 8 European potato collections with 12 SSR markers. Additionally, the UK and Ireland donated 24 and 30 fingerprints of heritage varieties. The 433 accessions show 398 different profiles. The 26 duplication groups contain between 2 and 6 accessions. The largest group consists of blue-coloured varieties. In the case of the duplicate group Fortuna/Morgane_1985, it is unclear which one has been mislabelled. Profiles of crossing parents and/or offspring might resolve this issue. A complicating factor is that the Potato Pedigree Database (www.plantbreeding.wur.nl/potatopedigree/) indicates for the name Fortuna four different varieties.

The European Collection includes 625 Solanum tuberosum accessions (438 conserved in Germany, 141 in Czech Republic and 46 in the Netherlands) and 1030 wild Solanum sp. accessions (523 conserved in Germany and 507 in the Netherlands).

3.6. Vegetables Network

Summary of AEGIS development status

Allium WG

Ongoing activities of the WG, such as a survey on the status of landrace conservation, prioritization of the wild relatives of the crop species within the genus *Allium* and selection of accessions worth being flagged as European accessions did not make significant progress.

The European Collection includes 387 accessions conserved by Czech Republic (82), Germany (154) and the Netherlands (151).

Brassica WG

The European Collection includes 673 accessions conserved by the Netherlands.

Cucurbits WG

The Manager of the Cucurbits Database attempted to use the database to select candidate European Accessions. Unfortunately this time-consuming exercise was not successful: although some countries agreed on the sets of selected accessions, no additional accessions were eventually flagged in EURISCO.

The European Collection contains a total of 2109 Cucurbits accessions, representing 1173 *Cucumis*, 745 *Cucurbita* and 191 *Citrullus* accessions conserved by Germany (1853) and the Netherlands (256).

Leafy Vegetables WG

European Collection of leafy vegetables. The AEGIS European Collection already includes nearly 1500 leafy vegetable accessions (mainly *Lactuca*), conserved in Germany and in the Netherlands. Other countries are at different stages in the process of proposing candidate accessions. The Group agreed on the latest procedure proposed by the ECPGR Secretariat to emphasize the primary role of the individual countries in the selection of AEGIS accessions. The main role of the WG will be the analysis of gaps and duplicates in the Collection, once established, and the planning for its management on a regional scale. A survey of regeneration and safety duplication needs of the WG genebanks was planned.

The European Collection includes a total of 1406 Leafy Vegetables accessions, representing 1127 *Lactuca*, 169 *Spinacia* and 110 *Cichorium* accessions, overall conserved by Germany (458) and the Netherlands (948).

Solanaceae WG

The European Collection includes a total of 731 Solanaceae accessions, representing 411 tomato, 268 *Capsicum* sp. and 52 eggplant accessions conserved by Germany (441) and the Netherlands (290).

Umbellifer Crops WG

The Second Meeting of the Working Group on Umbellifer Crops was held 26–28 June 2013 at the N.I. Vavilov Research Institute of Plant Industry (VIR) in St. Petersburg, Russian Federation. Fifteen participants from eleven countries attended the meeting.

As a result of an AEGIS-funded project, the WG selected 1281 *Daucus carota* cultivar accessions to be proposed for inclusion in the European Collection. This number represents 43% of the eligible accessions analysed from the existing datasets. The AEGIS Associate Members holding the proposed accessions would be encouraged to actually include them in the European Collection. Additionally, each WG member agreed to prepare lists of accessions that their countries' genebanks were ready to conserve as part of the European Collection.

4. AEGIS INITIATIVE FOR “A EUROPEAN GENE BANK INTEGRATED SYSTEM”

- AEGIS Membership

By the end of December 2013 the 33 countries listed below had returned their signed MoU to Bioversity International. A total of 54 AEGIS Associate Membership Agreements between institutions holding ex situ accessions and the respective National Coordinators were concluded in 26 AEGIS member countries, compared to 46 Associate Members and 19 countries respectively in 2012. The number in brackets following the member country names below indicates the number of Associate Members in those countries:

Albania (2), Austria (1), Azerbaijan (2), Belarus (9), Belgium (1), Bosnia and Herzegovina (0), Bulgaria (1), Croatia (1), Cyprus (1), Czech Republic (8), Denmark (1), Estonia (3), Finland (1), Georgia (1), Germany (3), Hungary (1), Iceland (1), Ireland (0), Latvia (0), Lithuania (0), Montenegro (0), the Netherlands (2), Norway (1), Poland (1), Portugal (0), Romania (1), Slovakia (1), Slovenia (5), Sweden (1), Switzerland (1), Turkey (1), Ukraine (0) and the United Kingdom (3).

- European Collection

The following AEGIS documents were developed and finalized after several rounds of electronic consultation between the Secretariat and the Steering Committee, and eventually published on the AEGIS website:

- Safety duplication Policy for the accessions to be included in the European Collection (February 2013)
- Revised simplified procedure for the selection and flagging of accessions for the European Collection (December 2013)
- Guidelines for distribution of material from the European Collection (December 2013)

Accessions included in the European Collection during 2013 were in total 11 381:

- The Netherlands: 5864
- Germany: 5373
- Czech Republic: 144

Together with 143 Czech and German accessions already included in 2012, the total at the end of 2013 was 11 524.

- AEGIS Competitive Grant Scheme

Two AEGIS-funded projects were finalized in 2013. Reports are published on the AEGIS and ECPGR websites:

- 'Establishment of the European Forages Collection' (MTT AgriFood Research, Finland). A second workshop took place 9–11 April 2013 at NordGen, Alnarp, Sweden.
- 'Improving the prerequisites for a European rye collection' (Nordic Genetic Resources Centre (NordGen), Sweden). The following material was provided: Final report (July 2013); Appendixes: Maintenance; Characterization descriptors for Rye, finalized December 2013; AEGIS Rye list.

The final report is still missing for one project:

- 'Identification of old potato clones having unreliable variety name by means of fingerprinting using microsatellite (SSR) markers to assist in setting up the AEGIS collection for potato cultivars' (Centre for Genetic Resources (CGN), the Netherlands).

- AQUAS (AEGIS Quality System)

- a. Two institutes completed the template for an operational genebank manual in 2013: Bundessortenamt (Federal Plant Variety Office), Germany (May 2013) and AGROSCOPE Changins-Wädenswil (ACW), Switzerland (June 2013). The manuals are available from the [AEGIS website](#). Others in preparation: Crop Research Institute (CRI) Prague, Czech Republic; Estonian Crop Research Institute, Jõgeva, Estonia; John Innes Centre, Norwich, UK and Nordgen.
- b. As reported previously, ECPGR experts participated actively in the preparation of the international genebank standards. The draft Genebank Standards for PGRFA were adopted by FAO's Commission on Genetic Resources for Food and Agriculture at its Fourteenth Regular

Session on Thursday 18 April 2013. These standards include the following components: 1) orthodox seed germplasm, 2) field genebank and 3) in vitro cultures and cryopreservation. They will help genebanks worldwide to conserve plant diversity in a more efficient and cost-effective manner. Based on a decision by the Steering Committee to complement these generic standards with crop-specific standards, the WGs were asked to assess the FAO standards and to propose any crop-specific additions in order to allow for more effective conservation. The following WGs have agreed on crop-specific standards that have been uploaded onto the AEGIS website: Allium, Leafy Vegetables, Umbellifer crops, Vitis and Wheat

- Meetings attended

The Secretariat attended several WG and other meetings, including Grain Legumes, Umbellifer Crops and Leafy Vegetables, and made presentations on the concept and the status of the European Collection as well as on genebank standards. These presentations are available on the AEGIS website and from the respective WG meeting webpages.

- AEGIS Advisory Committee

This Committee was originally set up in 2009 to provide strategic and technical oversight to the Secretariat over the establishment and operation of AEGIS. Its members were Anke van den Hurk, Dave Astley, Gert Poulsen, Ladislav Dotla il and Vladimir Megli . The ExCo agreed during its Fifth Meeting (November 2013) that the tasks so far assigned to the AEGIS Advisory Committee could be largely taken up by the ExCo itself, with the understanding that whenever specific tasks of a more technical nature should arise, the ExCo might decide to delegate these to a temporary ad hoc committee.