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## Working group on Solanaceae

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# Report of a Vegetables Network

Third Meeting, 10-12 November 2009, Catania, Italy

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Related presentations available online can be downloaded at  
<http://www.ecpgr.cgiar.org/Networks/Vegetables/VegNet.htm>

## WORKING GROUP ON SOLANACEAE

*Willem van Dooijeweert and Marie-Christine Daunay*

### Participants

Working Group members	Armenia	Karine Sarikyan
	Austria	Wolfgang Palme
	Azerbaijan	Saida Sadaqat Sharifova
	Estonia	Ingrid Bender
	France	Marie-Christine Daunay
	Italy	Giambattista Polignano
	The Netherlands	Willem van Dooijeweert
		Gerard van der Weerden
	Romania	Gicuta Sbîrciog
	Russian Federation	Irina Khrapalova
	Turkey	Lerzan Gül Aykas

### Introduction

After a short welcome by the Chair (W. van Dooijeweert, The Netherlands) and Vice-Chair (M.C. Daunay, France), all attending members briefly introduced themselves.

The members for Albania, Bulgaria, Czech Republic, Germany, Greece, Poland and the United Kingdom attended the VEGNET meeting but chose to attend other WG sessions.

The Chair emphasized that members of the Solanaceae Working Group (SOLWG) were representing their country and not only their own institute. He realized that in Phase VIII much input is required of the members and urged everybody who was not able or had no time to fulfil tasks, to contact the Chair or Vice-Chair in order to search for solutions.

### Interaction with National Coordinators

A round table discussion focused on the interaction of each participant with their respective National Coordinator (NC). The majority of the members reported of a good information exchange about ECPGR issues, the interaction being generally optimal when the NC is located in the same institute as the ECPGR member. Representatives from Austria and Romania mentioned poor interaction with the NC and France was reported to be without an NC at the moment.

### Recommendations

- In order to strengthen the link between ECPGR members and their NCs, it was decided to provide all NCs with the SOLWG reports from now on in two ways: (i) Chair and Vice-Chair will send the official report to all members and NCs, and each member will separately provide their NCs with an individual summary of the meeting.
- Concerning AEGIS, the important role of the NCs was emphasized since it is their responsibility to inform all relevant national institutions about their potential participation in AEGIS as associated members. Additionally, the ratification of the Memorandum of Understanding (MoU) must be coordinated by the NC with the relevant national administration. Therefore, it is important that ECPGR members remind their NC of their duties.

## Solanaceae databases

Three database managers out of four attended the meeting. Each of them presented the current state of the art of the database (DB) for which they are responsible.

### **Tomato DB**

It was made available and searchable online at the end of 2007. In 2009 an extra option was added which makes it possible for end-users to find probable duplicates. The taxonomic nomenclature used by the stakeholders was reviewed and transformed into the taxonomy used by GRIN and Mansfeld. The original taxonomy used by the donors was entered into a new field entitled "Received As". Also the minimum morphological descriptors agreed upon by the WG (available online at [http://www.ecpgr.cgiar.org/Workgroups/solanaceae/Solanaceae\\_descriptors.pdf](http://www.ecpgr.cgiar.org/Workgroups/solanaceae/Solanaceae_descriptors.pdf)) were added and the fields were made searchable online. So far, the DB includes characterization data for the collections from the Czech Republic, Estonia and the Netherlands.

### **Eggplant DB**

The structure and the software used have been revised. The output is an improved end-user interface, including easily searchable passport data, minimum morphological descriptors and access to pictures of many accessions. Modifications have been made according to what was agreed at the previous meeting in Olomouc, Czech Republic (June 2007). New fields for both the MLS status (species belonging or not to the Multi-Lateral System) and AEGIS status have been added as well. The content of the Eggplant DB will be limited to accessions belonging to subgenus *Leptostemonum* with a few exceptions, including pepino (*Solanum muricatum*) for which the accessions with evaluation data will be kept in the database.

### **Capsicum DB**

The content of the DB was presented in terms of completeness of major passport fields and consistency with EURISCO content. Since the DB was made available on the Internet, the DB manager requested twice, by email, missing passport data from relevant SOLWG members. It seems there must have been technical problems because none of the attending members remembered having received these requests. The fields for the minimum morphological descriptors and AEGIS are not included in the DB yet.

### **Recommendations**

- The Eggplant and Tomato DBs have reached an advanced stage of development. The *Capsicum* DB needs the inclusion of the minimum morphological descriptors and of the AEGIS fields. The *Physalis*, *Cyphomandra* and Pepino DB manager will be informed about the progress of the other crop DBs and requested to upgrade those he is responsible for, to similar standards.
- The DB managers will extract the data given by each donor in an Excel file and send this specific part back for checking and updating the information in order to improve the quality and quantity of the data given. Especially the fields "Origin country" and "Donor number" need to be checked. This action to improve the quality of the Solanaceae databases is scheduled to be completed before the next meeting of the SOLWG, planned in March 2011.
- The DB managers will send a template of the minimum morphological descriptors to all members of the SOLWG. All WG members are requested to translate their characterization data into the minimum descriptors where possible and send the data back using the template provided.

- If relevant and possible, the DB managers are recommended to submit a short paper to *Solanaceae Newsletter*, an electronic leaflet edited by Cornell University, to inform the Solanaceae scientific community about the state of the art of European DBs and the facilities they offer.

## AEGIS

### **General issues**

AEGIS issues were summarized and discussed. The whole Group reconfirmed the importance of AEGIS and the intention to work according to AEGIS as much as possible. However, since not all topics in the AEGIS concept are completely clear, it was decided to move forward in a step-by-step approach. After having summarized AEGIS issues, in particular the Memorandum of Understanding (MoU) and Most Appropriate Accessions (MAAs), the discussion brought forward the importance of first updating the European Central Crop Databases (ECCDBs) and further improving the quantity and quality of the information they contain: 1) country of origin is often confused with the donor country; 2) passport data should be completed when possible, in particular with donor numbers which help in identifying MAAs.

### **Recommendation**

- The actions to be undertaken to improve the quality of the DBs are described in the above section "Recommendations" for the Solanaceae databases.

### **Memorandum of Understanding (MoU)**

All members were asked about the signature process of the MoU in their country. Azerbaijan, Estonia and the Netherlands have already signed. Turkey, Italy, Austria and Armenia are in the process of signing. For France, Romania and Russian Federation, the attending members could not provide information.

### **Recommendation**

- Whatever the state of the MoU signatures, all members are requested to discuss MoU issues with their NC, with the following specifications:
  - **MoU already signed:** make sure the NC contacts the relevant institutions in order to get their agreement to become an AEGIS associate member.
  - **Signature on the way:** make sure the signature process is finalized and make sure the NC contacts the relevant institutions in order to get their agreement to become an AEGIS associate member.
  - **Unknown status of MoU signature:** emphasize the importance of MoU signature to the NC, make sure the signature process is started and make sure the NC is aware that afterwards he/she will have to contact the relevant institutions in order to get their agreement to become an AEGIS associate member.

### **Identification of Most Appropriate Accessions (MAAs)**

A round-table discussion concluded that the most efficient strategy is the following: DB managers will use the passport data of the ECCDB to identify potential unique accessions as well as potential duplicates and submit this first list to each WG member, for confirmation and/or corrections.

**Recommendations**

- The status of each accession can be proposed by the DB manager in various different ways: (i) by sorting out the relevant passport fields or (ii) by using algorithms if available. The next step is to send each WG member an Excel file for analysis and refinement of the status of the accessions of his/her germplasm.
- The responsibility of each WG member will be to ensure that this file is analysed by the respective stakeholder and then to correct, confirm or complete each accession's status. These issues will be discussed at the 2011 meeting.
- The way to move forward regarding the set of probable duplicate accessions will be discussed at the 2011 meeting. Several criteria can be used to choose MAAs (e.g. on the basis of the passport data, and/or via extra research like growing and comparing accessions together, and/or via molecular analysis) and the best criteria or set of criteria has to be decided.

**A Quality System (AQUAS)**

A first overview of seed storage and regeneration is available in the report of the ad hoc meeting of the SOLWG held in Bari, Italy, September 2004.<sup>4</sup> This overview needs to be updated and completed in order to adapt to the AEGIS AQUAS requirements.

**Recommendations**

- The Chair and Vice-Chair will incorporate all the already available information into a questionnaire template as elaborated by the *Brassica* AEGIS Model Crop Group. The information already obtained by the *Brassica* WG from many stakeholders will be copied. As the issue of getting information about genebank operating protocols is common to all six VEGNET WGs, it was decided to coordinate this task at VEGNET level before the next first meeting of a VEGNET Working Group (March 2010, *Brassica* WG). The VEGNET Coordinator and Vice-Coordinator will schedule this task for each WG of VEGNET.
- When the complete overview of genebank management protocols is ready, it will be used in the next SOLWG meeting planned in March 2011, for the discussion about common management standards for the WG. The attending members agreed that as many generic standards as possible and only few species-/crop-specific standards must be used.

**Safety-duplication**

Safety-duplication is a very important part of AQUAS. It is needed to ensure the safety of germplasm at all times. It is also a requirement for any AEGIS accessions. An update of the safety-duplication status of the germplasm of each stakeholder will be acquired via the AQUAS questionnaire, and will reveal the targeted actions to be undertaken during Phase VIII. A small part of the SOLWG budget was reserved to improve the coverage of safety-duplication.

**Recommendation**

- Each SOLWG member will receive the AQUAS questionnaire and will be requested to inform the Chair and Vice-Chair about potential problems concerning safety-duplication of their germplasm. If needed, members can obtain financial support for labour, packages and mailing the seed, if they want to send safety-duplicates to another institute under a

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<sup>4</sup> Daunay MC, van Dooijeweert W, Maggioni L, Lipman E, compilers. 2006. Report of a Working Group on Solanaceae. *Ad hoc* Meeting, held jointly with the Fifth Meeting of the EGGNET Project, 17 September 2004, Bari, Italy. International Plant Genetic Resources Institute, Rome, Italy.

black box agreement. The funds provided cannot be higher than a few hundred euro per applicant.

## Public awareness

An important concern of the SOLWG is related to public awareness. An outstanding example was given by the Austrian member of the SOLWG, W. Palme, who reported about the 2009 display of and information on several cultivated Solanaceae. A set of accessions representing the diversity of the targeted species (eggplant, tomato, *Cyphomandra* and *Physalis*) was donated by several SOLWG members and grown at the Vegetables Department, Höhere Bundeslehr- und Forschungsanstalt für Gartenbau (HBLFA) in Schönbrunn, Vienna, Austria. An overview was given of all the activities ranging from field visits, presentation of fruits, and culinary workshop to an exhibition in an Art Museum. Austria's initiative is an excellent example of how the awareness of the importance of genetic resources by growers, gardeners and public interest can be successfully raised.

## Recommendations

- Non-governmental organizations (NGOs) are often closer to the public audience than other institutions. Therefore each member of the SOLWG will be asked to provide a list of the NGOs active in their country for vegetable genetic resources. A questionnaire concerning this matter will be sent out by the Austrian member.
- This list will be published on the SOLWG Web site as an ongoing activity. During the meeting of 2011, actions to improve public awareness with the help of NGOs will be discussed.
- Important achievements of the SOLWG and/or outstanding inputs of individual members should be published in the *Solanaceae Newsletter*. The SOLWG Vice-Chair has good cooperation with the newsletter and will coordinate this topic. All members are requested to provide material of interest for publication.
- The 2009 Austrian initiative deserves being summarized, and submitted for publication in *Chronica Horticulturae*, the quarterly journal of the International Society for Horticultural Science (ISHS).

## Conclusions

- At the extraordinary meeting of the Vegetables Network Coordinating Group meeting held 18 April 2008 in Wageningen, The Netherlands, in preparation for the Eleventh ECPGR Steering Committee meeting, it was planned to have a SOLWG meeting in 2011.<sup>5</sup> After an inventory of the offers to organize this meeting, it was agreed to hold it in March 2011 at the Aegean Agricultural Research Institute (AARI) in Izmir, Turkey.
- The agenda of the next meeting will deal with the 2010 achievements of the SOLWG and the planning of the tasks to be fulfilled during the rest of Phase VIII.

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<sup>5</sup> See the "PROJECT PROPOSALS ECPGR SOLANACEAE WORKING GROUP FOR PHASE VIII" ([http://www.ecpgr.cgiar.org/SteeringCommittee/SC11/Budgets/SolanaceaeWG\\_ProjectProposa1\\_PhaseVIII.pdf](http://www.ecpgr.cgiar.org/SteeringCommittee/SC11/Budgets/SolanaceaeWG_ProjectProposa1_PhaseVIII.pdf))



## Workplan 2009-2010

### General

Topics detailed	Actions	Foreseen achievements	Time schedule	Members involved
Communication between SOLWG members and their National Coordinator (NC)	Members report individually to their NC about the Third VEGNET Meeting (Catania, Nov. 2009)	Awareness of NC of ECPGR and AEGIS matters	ASAP after return home	All members having attended VEGNET 2009 meeting
	Members remind their NC to ask national institutions for MoU associate membership	MoU associate members identified for each country	To be launched after MoU is signed by NC or relevant national office	All members

### Progress Solanaceae databases

Topics detailed	Actions	Foreseen achievements	Time schedule	Members involved
Improve quality of passport data	Send extracted Excel file to each member for updating and improving data quality	Improved quantity and quality of passport data in order to identify unique accessions and duplicates (and later, MAAs)	Next meeting, March 2011	DB managers and all members
New fields to be added	Adapt structure of DB to include new fields for minimum descriptors, possible duplicate, MAA, species name as provided by the stakeholder	Databases upgraded for the AEGIS concept	Next meeting, March 2011	DB managers of <i>Capsicum</i> , <i>Physalis</i> , <i>Cyphomandra</i> and Pepino
	Provide members with a template of minimum descriptors to be filled in and sent back to DB managers	Inclusion of searchable morphological descriptors	Ongoing	DB managers and all members

### AEGIS

Topics detailed	Actions	Foreseen achievements	Time schedule	Members involved
Memorandum of Understanding	Contact NC about status of MoU in each country	Better overview of countries who are going to participate in AEGIS and better informed NC	January 2010	Members of countries who have not signed the MoU
Associate member to Memorandum of Understanding	Inform NC that associate members to MoU need to be identified	Institutes sign associate membership to MoU	After signature of MoU by the country	Members of countries who intend to sign or have signed the MoU

**AEGIS (cont.)**

Topics detailed	Actions	Foreseen achievements	Time schedule	Members involved
Identification of probable unique accessions and probable duplicates	Passport data in the Solanaceae Databases will be sorted.	Probable unique accessions and probable duplicates will be identified	Next meeting, March 2011	Database managers
Search for probable unique accessions and probable duplicates	An Excel file per collection holder, with the accessions' status proposed by the DB managers will be sent to each WG member	Improved list with probable unique accessions and probable duplicates identified	Next meeting, March 2011	All members
<b>Towards the definition of AQUAS for the SOLWG: first step</b>	Survey of genebank management protocols. The Brassica template will be filled with all available information and sent again to all members to check and fill in.	First overview of all institutions seed regeneration and conservation protocols: made available online	Next meeting, March 2011	Coordinated at the Network level. After finishing the complete list of all institutions in the Vegetable Network, members will be asked to update the file
	Define generic and crop-specific standards	Define protocols for minimum quality management	2011-2013	All members
<b>Improve safety-duplication</b>	Survey of remaining not duplicated collections, identification of bottlenecks and find solutions	See Wageningen 2008 project proposals for SOLWG (project B): all collections safety-duplicated	Phase VIII	Chair and Vice-Chair, all members

**Solanaceae genetic resources, scientific and public awareness**

Topics detailed	Actions	Foreseen achievements	Time schedule	Members involved
An overview of NGOs per country	Each member will be asked to provide information about NGOs in their country. A complete list will be published on the SOLWG Web site.	Good overview of all NGOs in Europe dealing with Solanaceae in order to seek future cooperation to improve public awareness	March 2011	Chair + one member of the WG
Communication of SOLWG with the scientific and horticulturists' community	Publish papers on important achievements of the SOLWG or SOLWG members, e.g. in the <i>Solanaceae Newsletter</i> and <i>Chronica Horticulturae</i> (ISHS)	SOLWG achievements known worldwide and referred to (CCDBs, minimum descriptors, minimum standards for regeneration and conservation, etc.)	Phase VIII	All members coordinated by Vice-Chair
Communication with the general public	Members share information by writing articles in general journals, by organizing special events	Public better informed about Solanaceae Genetic Resources and international actions.	Phase VIII	All members coordinated by Vice-Chair