

ECPGR Working Group / Task Force / Thematic Network

Progress report for the period June 2006 – June 2008

Prunus Working Group

I. RESULTS			
a. Comparison of workplan (milestones) versus results obtained			
Workplan (milestones)	Which results have been obtained?	Which aims/goals have not been (fully) reached?	Completeness ratio (%)
<p>Milestone 1 <i>The European Prunus Database (EPDB) – the Cherry database</i> - Revising the database and data sets as agreed during the Seventh Meeting of the WG - Incorporation of molecular descriptors - Update of cherry data and response to DB manager</p>	<p>During 2006 and 2007 the Cherry Database and data sets were revised. EURISCO descriptors, five AEGIS specific descriptors and molecular descriptors have been incorporated. New data sets were included. As a result the current Cherry Database contains 4,134 accessions from 31 institutions from 12 countries.</p>	<p>Updated information from some participants has not yet been received. Moreover existing data sets from many collections are far from complete. As a consequence the Cherry Database is still incomplete.</p>	<p>Estimated as 75%</p>
<p>Milestone 2 <i>The European Prunus Database – Other crops</i> - Preparation of preformatted Excel files for other crops and distribution to WG members and curators for filling in - Update of data and response to DB manager - Creation of other databases for other crops - Inclusion of updated data into each DB</p>	<p>The structure of the Plum Database was created in 2007, using the Cherry Database structure as a model.</p>	<p>Plum data sets have not yet been updated nor is the Plum Database yet online.</p>	<p>Estimated as 5%</p>

<p>Milestone 3 <i>Hold Ad Hoc Workshop on fingerprinting of Prunus, Malus/Pyrus and Vitis</i></p>	<p>The Fruit Network Workshop on Fingerprinting was held at East Malling Research, UK, in December 2006. Participants proposed a set of molecular markers and a set of reference accessions for each crop. The cherry set was subsequently reported at the Eucarpia meeting in Zaragoza, September 2007</p>	<p>The finalisation of the peach, almond, plum and apricot sets is in progress.</p>	<p>Estimated as 80%</p>
<p>Milestone 4 <i>Hold Ad Hoc Workshop on synonymy of Prunus, Malus/Pyrus and Vitis</i></p>	<p>The Fruit Network Workshop on Synonymy met in Gembloux, Belgium, in June 2008. Participants agreed a procedure to identify synonyms for cherry, pear and apple from the literature. They checked synonyms for 636 sweet cherry accessions already in the EPDB that were thought to belong to synonym groups. They also agreed a “euonym” and a “preferred name” for each accession. And finally the 636 accessions were attributed to 178 duplicate groups.</p>	<p>Only 23% of the 2,731 sweet cherry accessions included in the EPDB were studied. It should be easy to assign the “euonym” and the “preferred name” to the remaining accessions because these appear to be unique accessions or are well known.</p>	<p>Estimated as 80% (for sweet cherry)</p>
<p>Milestone 5 <i>Hold Ad Hoc meeting of the four Fruit Database Managers (Malus, Prunus, Pyrus and Vitis)</i></p>	<p>The four Fruit Database managers met in Gembloux, Belgium, in June 2008. They agreed to share some modules and to use the SynoPyrus software for aiding the resolution to solve synonymy problems.</p>	<p>Harmonization of databases has not yet been fully achieved.</p>	<p>Estimated as 80%</p>

<p>Milestone 6 <i>Definition of guidelines for inclusion of photographs in EPDB</i></p>	<p>During the Fruit Synonymy Workshop in Gembloux, Belgium, in June 2008, the participants agreed a common methodology for taking studio photographs of fruit.</p>	<p>The guidelines have yet to be circulated.</p>	<p>Estimated as 50%</p>
<p>Milestone 7 <i>Participation of the Prunus subgroup in AEGIS meeting</i></p>	<p>The <i>Prunus</i> AEGIS group met in Radzików, Poland, in July 2008. Before the meeting a preliminary list of the Most Appropriate Accessions was generated, using the results of the Synonymy Meeting and using the EPDB as a tool. The group commented on the practicalities of implementing AEGIS and formulated draft Quality Standards. A report has been submitted to ECPGR.</p>	<p>The list of MAAs is still provisional because no countries have yet signed the AEGIS Memorandum of Understanding and the data sets need to be completed by the relevant curators.</p>	<p>Estimated as 80%</p>
<p>Milestone 8 <i>Ad Hoc Workshop on in situ and on-farm conservation of Prunus, Malus/Pyrus and Vitis</i></p>		<p>This Workshop has not yet been organized.</p>	<p>0%</p>
<p>Milestone 9 <i>Compilation of Prunus Newsletter, issue 6</i></p>	<p>Some members of the <i>Prunus</i> WG wrote articles and submitted them to the compilers in 2007.</p>	<p>The <i>Prunus</i> Genetic Resources Newsletter has not yet been compiled.</p>	<p>Estimated as 30%</p>
<p>Milestone 10 <i>Preparation of EU proposal</i></p>	<p>Gembloux, with inputs from East Malling and other institutes, prepared a proposal for GENRES funding in 2006.</p>	<p>The proposal was not successful.</p>	<p>99%, but unsuccessful</p>

b. Contribution to the four ECP/GR priorities for Phase VII

1. Characterization/evaluation (including modern technologies)

Thanks to the *Ad Hoc* Workshops on synonymy, at which photographic guidelines were established, and on fingerprinting, at which standard microsattellites and reference cultivars were agreed, methodologies to incorporate photographic and molecular data in the ECCDBs were agreed, not just for *Prunus* but for *Malus* and *Pyrus* too.

2. Task sharing

The main focus for task sharing is the AEGIS initiative which envisages a virtual decentralized genebank with different institutes taking responsibility for different cultivars with minimal duplication. The AEGIS *Prunus* subgroup participated in the AEGIS meeting held at Radzików in Poland in July 2008. It prepared a preliminary list of Most Appropriate Accessions, commented on the practicalities of implementing AEGIS and drafted quality standards. Many points are applicable to *Malus*, *Pyrus* and *Vitis*. The *Prunus* progress report on the implementation of AEGIS has been submitted to ECPGR.

3. *In situ*/on-farm conservation and development

So far, the *Prunus* Working Group has paid little attention to *in situ*/on farm conservation, regarding the characterization and documentation of the *ex situ* collections as being of greater priority. The planned workshop on *in situ*/on farm curation, in *Prunus*, *Malus/Pyrus* and *Vitis* has not yet been organized. However, after the Bonn meeting of Crop Co-ordinating Networks, a project on *in situ* conservation, called AEGRO, was proposed for GENRES funding by Birmingham and Quedlinburg with wild cherry as one of the models; this proposal was successful.

4. Documentation and information

The upgrading of the database, the incorporation of data for more than 4,000 cherry accessions, the resolution of synonyms, the incorporation of certain descriptors for EURISCO and the development of descriptors for molecular and photographic data and for AEGIS all represent valuable advances in the improvement of documentation. At the moment vegetatively propagated crops are insufficiently represented in thematic Networks, e.g. Documentation and Information WG, *In Situ* and On Farm Conservation WG. Therefore we recommend that such crops should be represented in those Working Groups.

c. Relevance (regional / international)

Did your work and/or outputs have inter-regional dimension? (if it did, give precisions)

Certainly, much of the work concerned with harmonization, the central database and the AEGIS concept has an international dimension.

d. Lessons learnt (recommendations)

Which lessons learnt are also relevant for other Working Groups?

The *Ad Hoc* workshops were attended by participants from all three fruit WG; so developments in markers, synonymy and photographs can proceed in concert in *Malus/Pyrus* and *Vitis* as well as *Prunus*. And the meetings of the four database managers at the Bonn meeting of the Crop Co-ordinating Networks and at Gembloux will help the databases develop common functions. The *Prunus* experiences of AEGIS, eg in choosing MAAs and developing quality standards, will be relevant to these other WGs. The 2006 report of the AEGIS *Prunus* group was presented to the chairs, vice-chairs and database managers of these WGs to inform them of the direction in which the *Prunus* group is moving and the intention is to circulate the 2008 report likewise. Three points raised by the AEGIS *Prunus* group that are relevant to the other WGs are:

- 1- Clarification of the existing synonyms is very important to help identify the MAAs to be included in the AEGIS European Collection.
- 2- Clarifications of the EURISCO descriptors "Country of origin" (for cultivars) and "Accession name" (for wild accessions) are essential.
- 3- The flow of information between curators, ECCDB, EURISCO and National Focal Points (NFPs) needs to be clarified.

Work on genetic resources of additional fruit crops such as *Fragaria* and *Ribes* is proceeding outside ECPGR with funding from COST and the EU. Interaction with these genetic resources groups is desirable and integration into ECPGR should be considered in due course.

II. ANALYSIS	
a. Bottlenecks	
What were the experienced bottlenecks?	How do you plan to solve the bottlenecks?
1. In general, the Working Group is most active during the periodic Working Group meetings and in the few months just before and after.	To some extent, the <i>Prunus</i> Genetic Resources Newsletter can help maintain some momentum between meetings. Another approach would be to increase the frequency of Working Group meetings.
2. Not all those attending Working Group meetings contribute to the formal discussions – two meetings of 12 enthusiastic participants could be much more productive than one meeting of 24 people of mixed enthusiasm levels.	To some extent, we have addressed this by using some of the funds available for <i>Ad Hoc</i> meetings on particular topics; these have had the additional advantage of involving members of the <i>Malus/Pyrus</i> and <i>Vitis</i> WG.
3. It can be hard work for the database manager to extract data sets from curators, even from those belonging to the Working Group.	One solution, probably outside the scope of current funding arrangements, would be for the database manager to have a budget from which they could pay a few hundred Euros for a dataset. Another solution would be to abandon the aim of comprehensive coverage and just deal with the co-operative curators.
4. Much of ECPGR's genetic resources policy – whether concepts of <i>in situ</i> conservation or individual descriptors – seems to have been developed with very little recognition of the particular features and requirements of vegetatively propagated crops.	As the Fruit Network Co-ordinating Group suggested at the meeting of the NCGs in Bonn in March 2006, there should be representatives of vegetatively propagated crops on each of the thematic Networks. This should also help improve the flow of information from the thematic Networks.
b. Internal support needed (Secretariat, Steering Committee, other Working Groups, etc.)	
<p>The <i>Prunus</i> Working Group received good support from the secretariat. Relations between the <i>Prunus</i> Working Group and the Steering Committee are nebulous and it has been suggested that members of the Steering Committee could take a lead, e.g. in advocating the AEGIS concept at national level. Co-operation between the <i>Prunus</i>, <i>Malus/Pyrus</i> and <i>Vitis</i> groups were greatly strengthened at the NCG meeting in Bonn in March 2006 at which various decision to harmonise approaches and share expertise were taken and at the subsequent <i>Ad Hoc</i> Workshops on Fingerprinting and Synonymy. Also at the Bonn meeting, it was clear that many of the crop groups, whether fruit, vegetables or cereals, face common problems relating to documentation and databases, but there was little opportunity to explore this further. As mentioned above, better interactions with the Thematic Networks could be achieved if the latter included representatives of vegetatively propagated crops.</p>	

c. External resources needed (collaboration, external funding)

The current workplan was developed in accord with the budget agreed with ECPGR and the payments in kind expected as national contributions. The BIODIFRUIT and AEGIS proposals for EU GENRES funding would have provided desirable extra funds, but unfortunately they were not successful.

A workplan for Phase VIII has been formulated that focuses on the steps needed to implement AEGIS in cherry. The expected costs exceed what is likely to be available from ECPGR and in kind; so supplementary funding is needed.