

ECPGR Activity Grant Scheme Proposal Form

Second Call

Activity Proposal

Activity	
Full title	Collaborative action for updating, documenting and communicating the cherry patrimonial richness in EU
Acronym (or short title)	EU.CHERRY
Duration of Activity (in months)	12
Starting date	March 2016

Applying Working Group(s)

Working Group	Indicate name and surname of Working Group Chair
1. Prunus	Daniela GIOVANNINI

Activity Coordinator

Activity Coordinator	
Name and Surname	Marine BLOUIN
Nationality	French
Current position	Engineer
Institute	French National Institute for Agricultural Research (INRA – FRA057)
Country	France
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Activity Partners

Please note that each partner needs to be a member of a Working Group's Pool of Experts to be eligible.

A maximum of 12 funded partners can be listed. For self-funded partners please use the separate box below.

Partner ID No.	Name and Surname	Institute	Country
1	Marine Blouin	French National Institute for Agricultural Research (INRA)	France
2	Daniela Giovannini	CREA-Fruit Growing Research Unit of Forlì	Italy
3	Sanda Stanivuković	Genetic Resources Institute of University of Banja Luka	Bosnia and Herzegovina
4	Frantisek Paprstein	Research and Breeding Institute of Pomology Holovousy Ltd.	Czech Republic
5	Hedi Kaldmäe	Estonian University of Life Sciences; Polli Horticultural Research Centre	Estonia
6	Monika Höfer	Institute for Breeding Research on Fruit Crops, JKI, Dresden	Germany
7	Gunars Lacis	Latvia State Institute of Fruit Growing	Latvia
8	Matthew Ordidge	University of Reading	United Kingdom
9	Felicidad Fernandez	East Malling Research (EMR)	United Kingdom
10	Marc Lateur	Centre Wallon de Recherches Agronomiques	Belgium
11	Stephan Weise	IPK Gatersleben (EURISCO manager)	Germany

Self-funded partners

Partner No.	Name and Surname	Institute	Country
12	Pavlina Drogoudi	Hellenic Agricultural Organization 'Demeter', Institute of Plant Breeding and Phytogenetic Resources, Dep. of Deciduous Fruit Growing in Naoussa	Greece
13	Teresa Barreneche	INRA-UMR Biologie du Fruit et Pathologie, Equipe Adaptation du Cerisier au Changement Climatique (A3C)	France

Description of Activity

Please address the following aspects: Background – Justification – Methodology or Approach – Expected impact.

Describe the Activity (max. 500 words):

Easy access to data on *Prunus* Genetic Resources (GR) has been a priority goal of the ECPGR *Prunus* WG since its establishment (Benediková and Giovannini, 2013). To facilitate users obtaining information on accessions of interest, the WG developed a tool, the European *Prunus* Database (EPDB), listing over 13,000 accessions (<http://www.bordeaux.inra.fr/euprunusdb/index.html>). However, despite the recent inclusion of hundreds of new accessions and improvements in EPDB's functionality (Balsemin, 2012), several critical issues remain to be addressed:

- Most accessions in EPDB are described only with Passport Data; consensus descriptors are needed to harmonize characterization and evaluation (C&E) data (deemed highly useful for users) across collections.
- Lack of harmonized morphological and genetic characterization hampers the implementation of the AEGIS *Prunus* Collection; harmonized genotyping (using a common set of effective markers) is needed to detect homonyms and synonyms within and across collections.
- EPDB is not fully synchronized with EURISCO, and inconsistencies among the accessions listed in the two DBs are frequent; since the evolution of EURISCO implies integration of C&E data, the future of EPDB should be planned in coordination with EURISCO.

Sweet cherry (*P.avium*) falls within *Prunus* WG responsibilities, and accessions currently included in the EPDB number 3,700, maintained across 16 EU countries. To complement the objectives of the ECPGR PRUNDOC project (Identification of a representative set of *Prunus domestica* accessions of European origin, well documented and characterized, to be included into the AEGIS system), EU.CHERRY project aims to develop the following actions:

Action_1. Increase the quality of data on sweet cherry accessions in the EPDB.

Partners will:

- agree a list of morphological descriptors to prioritize (FPD) in the C&E of the accessions in their collection;
- re-assess the ECPGR SSR marker-set proposed by Clarke and Tobutt (2008) for genotyping sweet cherry, with the aim of increasing the discriminatory effectiveness of the set;
- candidate 10-15 accessions each, most original from their country, and provide leaves for genetic characterization;
- compile the datasheet prepared by the EPDB manager with FPD-harmonized C&E data, for uploading into the EPDB.

Action_1 will be developed in collaboration with the COST Action FA1104 on Cherry, which will add significant further value to this ECPGR activity (detailed in Additional Remarks). COST members will also provide passport data and leaves of valuable cherry landraces from their country.

Action_2. Contribute to the establishment AEGIS *Prunus* collection

- The procedure being developed in PRUNDOC aims to establish criteria for acceptance of candidate accessions to the *Prunus* AEGIS collection and will be applied for validation on EU.CHERRY accessions.
- Accessions fulfilling criteria for acceptance will be flagged as candidates for inclusion in AEGIS.

Action_3. Establish better links between EPDB and EURISCO.

- EPDB and EURISCO curators will interact to define relevant propositions for future interoperability between the two DBs;
- EPDB manager will ensure coherence between the two DBs in relation to EU.CHERRY accessions and check coherence of other *Prunus* accessions;
- EPDB manager will prepare a data-sheet template that partners will compile with EU.CHERRY accessions passport data. Partners will forward to their National Focal Point for uploading into EURISCO.

ECPGR Objective(s)

Objectives must be feasible and achievable within the project timeline. Please list here the corresponding number(s) of the ECPGR Outcome(s) and/or Output(s) and/or Activities to which your proposed Activity will contribute. The logframe describing ECPGR objectives is available from the website.

List ECPGR outcomes, outputs, activities to which this Activity contributes:
OUTCOME 1: AEGIS is operational - Accessions in AEGIS are characterized and evaluated
Output 1.2: AEGIS collections established
Output 1.5; activity 1.5.3: Services for characterization, evaluation and/or phenotyping of AEGIS accessions provided to AMs
OUTCOME 2 : Quantity and quality of data in EURISCO, including in situ and on-farm data, have been increased. Functionality of EURISCO meets users' expectations.
Output 2.2: C&E data in EURISCO included, with high quality and wide coverage
Output 2.4: Users' expectations explored and functionalities of EURISCO increased
OUTCOME 5 Relations with users of germplasm are strengthened
Output 5.4; activity 5.4.1: Research partnerships established between genebanks and researchers, including through EU projects

Expected products

List concrete products and results that are obtained by the Activity

Expected products/results
ECPGR agreed list of First Priority Descriptors (FPD), useful to harmonize description of sweet cherry accessions of the EU collections
Improved effectiveness of the ECPGR set of SSR markers for genotyping sweet cherry accessions of the EU collections
Minimum Passport data and SSR genetic profiles of up to 350 sweet cherry EU patrimonial accessions uploaded into EPDB
Harmonized C&E data of about 150 accessions selected in EU.CHERRY; Homonyms and Synonyms detected, if any
Report on the phenotypic and genetic diversity of the sweet cherry patrimonial accessions analysed
Validation of the PRUNDOC guidelines/procedure for the selection of AEGIS sweet cherry accessions, using EPDB as a tool
First core of EU sweet cherry accessions candidates to entering AEGIS identified
Establishment of a more effective collaboration between EPDB and EURISCO managers and definition of propositions for the future development of the EPDB
Data sheets with minimum passport data of EU.CHERRY accessions filled and sent to the National Focal Point for uploading into EURISCO catalogue.
Report and Power Point presentations of the EU.CHERRY Kick-off meeting uploaded into the <i>Prunus</i> ECPGR website
Documents, protocols and relevant outcomes developed in EU.CHERRY will be made publically available through ECPGR website

Workplan for the proposed period of the Activity

Brief description of meetings and/or main actions of the Activity.

Type of Action (indicate if "meeting" or "other action")	Description
1. other action	Pre-Selection of 10-15 sweet cherry accessions by participants
2. meeting	- Agreement on the set of EU sweet cherry accessions to include in the project; - Agreement on a list of First Priority Descriptors for sweet cherry; users - Re-assessment of the SSR marker set proposed by Clarke and Tobutt (2008) in the light of the outcomes of applicative experiences (EU.CHERRY partners, with interaction of COST FA1104 members involved in task 2).
3. other action	Characterization of the accessions according to the FPDs agreed for sweet cherry (EU.CHERRY Partners)
4. other action	Collection and delivery of leaves from all accessions included in the project to EMR lab for genotyping (EU.CHERRY and COST partners)
5. other action	Genotyping all the accessions with the revised SSR set. Scoring, rounding allele sizes, molecular data compilation (EMR lab, UK).
6. other action	Compilation of minimum passport, historical C&E data and SSR profiles of EU.CHERRY accessions in a pre-formatted sheet and uploading into the EPDB (EPDB Manager)
7. other action	Report on the morphological and genetic diversity of the sweet cherry accessions analysed in EU.CHERRY Project
8. other action	Application of the procedure developed in PRUNDOC to select AEGIS accessions (EU.CHERRY partners)
9. other action	Redaction of proposition for the future of EPDB linked to evolution of EURISCO, and sending passport data of EU.CHERRY accessions to EURISCO catalogue (EPDB curator, EU.CHERRY partners through their National Focal Points linked with EURISCO curator)

Additional remarks

Indicate any additional remark(s) that is/are important for the evaluation/implementation of the proposed Activity

Remarks:
<p>The EU.CHERRY project will be conducted in collaboration with the COST ACTION FA1104 'Sustainable production of high-quality cherries for the European market' (https://www.bordeaux.inra.fr/cherry/), aimed to develop innovative strategies to safeguard European cherry production through active networking. This will add further value to the ECPGR funded activity and will align the ECPGR efforts within the research and breeding community.</p> <p>COST Action FA1104, ending in 2016, complements the scope and objectives of EU.CHERRY Project. Action FA1104 gathers the most important EU experts on sweet and sour cherry, as well as extra-EU experts. The <i>Prunus</i> Chair is a member of the Management and Executive Committees in said Action and is also responsible for the implementation of task 2 'Prioritise the characterisation of the most promising genetic resources for breeders'. Several members of the <i>Prunus</i> WG are participating to various Action FA1104 activities and, in particular, involved in task 2. Moreover, COST members participating to task 2 will contribute to EU.CHERRY Project by providing passport data and leaves for SSR analysis of a selected set of accessions from their country, to be included in EPDB.</p> <p>In line with this Action FA1104 will support in full the cost of EU.CHERRY kick-off meeting, which</p>

will be organized in concomitance with the COST Action General Meeting already planned in April 2016 in Naoussa (Greece). EU.CHERRY meeting will have a dedicated session; however, opportunities for interactions among scientists participating to the two networks will be highly valorized.

The outputs of the event will be disseminated in collaboration with the COST FA1104.

**Please send the completed form together with the budget table to the
Chair of the submitting Working Group for submission of the Activity proposal.**