

POTATO WG REPORT FOR PHASE IX (2014-2018)

Submitted to the 15th Steering Committee Meeting, Thessaloniki, Greece, May 2018
by: Veli-Matti Rokka (Chair since 22 March 2017)

Date of compilation: 28 February 2018

1. CONTRIBUTION TO ECPGR OBJECTIVES

1.1. Achievements and success stories

Outcome 1. AEGIS is operational. Accessions in AEGIS are characterized and evaluated.

In October 2014, the AEGIS Competitive Grant project 'Identification of old potato clones having unreliable variety names by means of fingerprinting using microsatellite (SSR) markers to assist in setting up the AEGIS collection for potato cultivars' was finalized and its report placed on the [AEGIS Grant Scheme webpage](#). (see below, Working Group documents).

The aim of the project was to use microsatellite genotyping to assist in setting up the AEGIS collection for potato cultivars by means of fingerprinting old potato clones with questionable identity, to confirm or correct their cultivar names. Out of approximately 9000 *Solanum tuberosum* accessions included in EURISCO a total of 379 accessions from eight countries were genotyped with 12 SSR markers. Three recommendations had been made, including the use of 9 out of the 12 markers that had been used in the AEGIS study and thus to contribute to the establishment of a central SSR-fingerprint database.

The virtual European Collection contains 1968 *Solanum* accessions, including 1661 potatoes. Of them, 48% is cultivated material including landraces from Latin America. A number of 702 records are of *Solanum tuberosum*. Only 47 out of the 433 SSR-fingerprinted clones have currently been included in AEGIS. The ECPGR member states appear to be quite reluctant to mark accessions for AEGIS. For potato only 4 countries did so far, and only a reduced part of their potato germplasm, e.g. CGN decided to include only germplasm from Dutch origin. Table 1 below shows potato accession counts in EURISCO (2018-02-19). Genus and species determine if an accession can be considered to be potato germplasm.

Table 1. Potato accession counts in EURISCO and related SSR-screened accessions

INSTCODE	MLS potato	AEGIS potato	AEGIS <i>S. tuberosum</i>	SSR project	SSR & AEGIS
BEL002	1				
BEL023	353				
CHE001	121			25	0
CHE002	36				
CHE063	38				
CZE027	2460	143	143	39	18
DEU159	5576	1001	443	136	0
DEU400	18				
DEU483	12				
DEU526	4				
DEU567	6				
EST001	412				
EST006	395			4	0
FRA179				28	0
GBR165				135	0
GBR251	1048				
IRL012	386			30	0
ITA392	2				
LVA006	83			2	0
MNE001	1				
NLD037	1438	447	46		
POL002	245				
POL003	97				
POL047	97				
SWE054	85	70	70	34	29
TOTAL	12914	1661	702	433	47

1.2. Gaps or constraints identified

Gaps

For potato and presumably for other crops too, the virtual European Collection contains only a minor part of the MLS available germplasm. The ECPGR member states determine which accessions to mark for AEGIS. The ECPGR Potato Working Group can only stimulate and assist (like with the SSR project). Moreover, France, Spain and Russia are still not AEGIS members.

Constraint

The Chair from previous Phase did not re-apply for Phase IX. A new Chair was appointed in 2015 but could not carry out any activity and resigned in January 2017. The current Chair was nominated in March 2017.

2. GRANT SCHEME ACTIVITIES

- **Grant Scheme proposals (submitted: 0)**

3. OTHER ACTIVITIES (CROSS-WORKING GROUP ACTIVITIES, LINKS WITH OTHER NETWORKS, PROJECTS AND INITIATIVES)

- Genebanks have provided germplasm to the G2P-SOL EU project (2016-2021). It is expected that the results will stimulate the usage of the germplasm, which is currently hampered by the scarce publicly available information on the genetic variability.

The information on the website can be searched by variety name, or by selecting one or more required characteristics.

- **European Cultivated Potato Database (ECPD)** (<http://www.europotato.org/>)
In February 2018, the European Cultivated Potato Database (ECPD) was refreshed. The ECPD is an online database of potato varieties. The information that it contains can be searched by variety name, or by selecting one or more required characteristics. The information is indexed by variety, character, country of origin and contributor. The new site retains many of the features that users of the previous site are familiar with, including all the botanical and disease data provided by institutes throughout Europe. As part of the refresh the database managers at Science and Advice for Scottish Agriculture (SASA) have taken the opportunity to integrate the data from the 'botanical' database used within SASA for the purposes of Distinctness, Uniformity and Stability (DUS) testing in potato and based on UPOV Guidelines and CPVO Protocols. Users will therefore see two character sets within the new database as well as a different range of material, with the ECPD element continuing to focus on genetic resource varieties whilst the "botanical" element covers varieties passing through DUS.

4. WORKING GROUP DOCUMENTS AND PUBLICATIONS

AEGIS Grant Scheme Activity

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)

 [Final report \(October 2014\)](#)

Renewed website of the European Cultivated Potato Database (ECPD)

(see above, section 3)

5. EXPECTED ADDITIONAL ACHIEVEMENTS AND FUTURE ACTIVITIES