

ALLIUM WG REPORT FOR PHASE X (2019-2023)

Submitted to the 17th Steering Committee Meeting, Oeiras, Portugal, May/June 2023
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Date of compilation: 30 March 2023

1. CONTRIBUTION TO ECPGR OBJECTIVES

1.1. Achievements and success stories

- To efficiently conserve and provide access to unique germplasm in Europe through AEGIS and the European Collection

- 1,251 accessions of *Allium* are in AEGIS.

- The most represented is ***Allium cepa*** with **430** accessions (Germany (241), Italy (1), Netherlands (77), Nordic Countries (24), United Kingdom (87)).

Shallot - We found unique material of shallot with the ECPGR Grant Scheme Activity 'Safeguarding of potato onion (*Allium cepa* L. *Aggregatum* group) and garlic (*Allium sativum* L.) crop diversity in North Europe - Baltic region' (June 2017–June 2019). These accessions are potential candidates for AEGIS. We wait for the AEGIS Certification System with the parameters for the vegetatively propagated AEGIS accessions.

For garlic in the Czech Republic the [Progress report of the AEGIS model crop: Allium \(July2008\)](#) was used. This means that in one accession there are 40 plants in the field.

***Allium sativum*: 341** accessions (Czech Republic (82), Germany (259)). Many of these were chosen in the project EURALIVE

We identified new AEGIS accessions via the Grant Scheme Activity Garli CCS 'Genotyping-by-sequencing of the European garlic collection to develop a sustainable *ex situ* conservation strategy'.

***Allium ampeloprasum*: 151** accessions (Bulgaria (2), Germany (86), Netherlands (19), United Kingdom (44))

***Allium fistulosum*: 78** accessions (Germany (66), Nordic Countries (3), United Kingdom (9))

***Allium porrum*: 74** accessions (Netherlands (37), Nordic Countries (37))

***Allium schoenoprasum*: 81** accessions (Germany (30), Netherlands (10), Nordic Countries (41))

- To provide passport and phenotypic information of actively conserved European PGRFA diversity *ex situ* and *in situ* through the EURISCO catalogue

- We added passport and phenotype data to EURISCO via the ECPGR Grant Scheme Activity 'Safeguarding of potato onion (*Allium cepa* L. *Aggregatum* group) and garlic (*Allium sativum* L.) crop diversity in North Europe - Baltic region' (June 2017–June 2019).

- Communication within the *Allium* WG community is very important, for example discussing materials in safe duplication. The data are specified and supplemented. And these are entered into national and then international databases.

- Information from Greece: Greece has not signed the EURISCO DSA so it has not updated data found in the catalogue.

- The information in EURISCO is updated once a year by the National Focal Point

- To improve *in situ* conservation and use of crop wild relatives

- I have no information about *in situ* collections in the *Allium* WG.
- Some institutes use crop wild relatives for creating some hybrids
- In some countries, there are national projects focused on wild species, e.g. Spain. The most important is a comprehensive [project for the conservation of wild relatives of crops \(PSC\) in Sierra del Rincón](#). This project not only encompasses the technical aspects of conservation per se, such as the creation of genetic reserves and the collection of seeds, but also educational and social aspects, such as the training of professionals and the training of students in the environmental sector, agriculture and livestock, as well as the awareness and participation of the local population. One of the species included in this project is *Allium oleraceum* L. (Field garlic).
- To promote on-farm conservation and management of European PGRFA diversity
 - Bosnia and Herzegovina has on-farm conservation with shallot and onion
 - There are no known initiatives in this field. Some genebanks occasionally coordinate with farmers in the area to multiply *ex situ* conserved materials.
 - Interesting information came from Dumitru Blaga - Suceava Genebank, Banca de Resurse Genetice Vegetale Suceava (BRGV), Romania. Annually, through the project of reintroducing the old varieties into cultivation, they managed to distribute 10 varieties of the species *Allium sativum* L., which are provided to those who wish to be involved “de facto” in on-farm conservation activities. Thus, every year since 2009, they re-introduced at least 200 samples of 10 varieties from the species *Allium sativum* L. At the same time, breeders can benefit, on request, from the genetic material kept in the BRGV Suceava collection.
Starting with the 2023 distribution season, a questionnaire will be implemented, through which they will try to get as much data as possible about the user perception of the distributed varieties. This "accessions distribution" project was recognized and awarded nationally in the 2nd Gale Green Report, with the Excellence in Biodiversity Projects award.
- To promote use of PGRFA
 - Genebanks offer advice on the possible use of *Allium* genetic resources to researchers, farmers, agricultural associations, schools, urban gardeners, etc., also collaborating in specific research initiatives on *Allium* collections.
 - Distribution of old varieties to farmers
 - Publishing specialist articles for the general public
 - Prepare open days in genebanks
 - Participate in exhibitions
 - Cooperation with NGO

1.2. Gaps or constraints identified

- When the NCs appoint (nominate) members of the WG, they should inform the WG members
- If there are several representatives from one state, they could know each other in person
- NC should nominate to appoint WG members who are really interested in the job
- Question of safe duplication, mainly in vegetatively propagated species.

GRANT SCHEME ACTIVITIES, WG MEETINGS AND EVA ACTIVITIES

- **Grant Scheme proposals (submitted:1; approved:1 (Dec 2022))**
 - [Garli CCS - Genotyping-by-sequencing of the European garlic collection to develop a sustainable *ex situ* conservation strategy](#) (in collaboration with the Cryopreservation and the Documentation & Information WGs; 6th call)
- **Total number of partners involved in Grant Scheme: 19 from 14 countries**
 - ECPGR-funded: 16 from 15 countries
 - Self-funded: 5 from 3 countries
- **Meetings held**
Eighth *Allium* Working Group meeting: 11-12 October 2022, Skierniewice, Poland
- **Total number of partners involved in Working Group meeting: 17 from 13 countries**
 - ECPGR-funded: 14 from 12 countries
 - Self-funded: 3 from 2 countries
- **Reports and related data**
Report of a Working Group on *Allium*, Eighth Meeting, 11-12 October 2022, Skierniewice, Poland is available on the ECPGR website: <https://www.ecpgr.cgiar.org/resources/ecpgr-publications/publication/report-of-a-working-group-on-allium-eighth-meeting-11-12-october-2022-skierniewice-poland-2023>
- **Funds mobilized**
 - ECPGR granted funds: € 59,997
 - Inputs in-kind declared in Grant activities: € 78,620
 - Working Group meeting: € 8,100

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

Through the Garli CCS Activity, we started a collaboration with the Cryopreservation and the Documentation & Information WGs

3. WORKING GROUP DOCUMENTS AND PUBLICATIONS

- Ruņģis, D., Leino, M.W., Lepse, L. *et al.* 2020. [Genetic of European potato onion \(*Allium cepa* var *Aggregatum* G. Don\) collections](https://doi.org/10.1007/s10722-020-01014-2). Genet Resour Crop Evol. <https://doi.org/10.1007/s10722-020-01014-2>
- Stavěliková H. 2019. [Česnek provází lidstvo od nepaměti](#) (1,2 MB) [*Garlic has been accompanying mankind since time immemorial*]. Zahrádkář 11/2019:30-32.
- Lepse L. 2019. [Gimenes sīpolu un ķiploku daudzveidības saglabāšana Ziemeļeiropas – Baltijas valstu reģionā](#) (3,0 MB)[*Safeguarding of potato onion and garlic crop diversity in North Europe - Baltic region*].

- Nybom, H., Lācis, G. 2021. Recent Large-Scale Genotyping and Phenotyping of Plant Genetic Resources of Vegetatively Propagated Crops. *Plants*, 10, 415. <https://doi.org/10.3390/plants10020415>
- Juškevičienė D, Karklelienė R, Radzevičius A. 2019. Biodiversity and productivity of potato onions (*Allium cepa* var. *Aggregatum* g. Don). *Acta Horticulturae* 1251:91-96. DOI: 10.17660/ActaHortic.2019.1251.11R.M.

4. EXPECTED ADDITIONAL ACHIEVEMENTS AND FUTURE ACTIVITIES THAT COULD CONTRIBUTE TO THE IMPLEMENTATION OF THE PGR STRATEGY FOR EUROPE

Based on the results of the current project, we will identify new AEGIS accessions and find duplicates in the collections.