

UMBELLIFER CROPS WG REPORT FOR PHASE X (2019-2023)

Submitted to the 17th Steering Committee Meeting, Oeiras, Portugal, May/June 2023
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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
WG members were able to maintain regeneration activities of umbellifer crops, even during the disruption of the SARS-Cov-2 pandemic. Not all members reported totals but the following figures were provided by responding members:
 - 20 accessions (BPGV-IANIA, Portugal)
 - 17 accessions (NordGen)
 - 47 accessions regenerated, 17 new accessions collected (CITA, Spain)
- To provide passport and phenotypic information of actively conserved European PGRFA diversity *ex situ* and *in situ* through the EURISCO catalogue
The pandemic hindered the completion of the wealth of data collected during a previous project (CarrotDiverse) – BGPV Portugal reported 39 accessions were characterized in this project and the upload of data to EURISCO is still pending. Additionally, thirty fennel accessions were characterized within the project PDR2020-7.8.4-FEADER-042741 ‘Conservation and Improvement of Aromatic and Medicinal Plants’. NordGen reported 60 accessions characterized as part of the EVA Carrot project. These data will eventually be made public after the embargo has elapsed.
- To improve *in situ* conservation and use of crop wild relatives
One member reported collection activity for CWR: Collecting missions in Czechia and Slovakia take place every year. Crop Wild Relatives are monitored, collected and maintained in situ (VURV, Czech Republic)

*To promote on-farm conservation and management of European PGRFA diversity
No activity on this topic was reported by WG members.*
- To promote use of PGRFA
WG members engage in routine distribution activities; few members reported figures of distributions during this period. BGPV (Portugal) indicated all accessions transferred under sMTAs. CITA (Spain) distributed 213 accessions under the sMTA or a simplified MTA (depending on the user category).

VURV (Czech Republic) reported the promotion of PGRFA use by the organization of open field days, alongside international exhibitions and provision of germplasm free of charge to farmers, breeders and researchers.)

1.2. Gaps or constraints identified

Nordgen identified that there are very few wild accessions of *Daucus carota* in the NordGen collection from the countries Denmark, Finland, Faroe Island, (Greenland?), Iceland, Norway, Sweden, Åland

The final analysis of data collected as part of the CarrotDiverse activity in Phase VI proceeded slowly due to the impacts of the pandemic and staffing changes within key project partners. This work is being written up and publications on the data collected on wild carrots will be submitted to scientific journals. Characterization data will also be submitted to EURISCO.

2. GRANT SCHEME ACTIVITIES, WG MEETINGS AND EVA ACTIVITIES

- **Grant Scheme proposals (submitted:0; approved:0)**
- **Total number of partners involved: n/a**
 - ECPGR-funded: n/a
 - Self-funded: n/a
- **Meetings held**

European Evaluation Network (EVA) – Carrot Network:

 - 1st Annual project meeting, 11 May 2020, online
 - 2nd Annual project meeting, 20 April 2021, online
 - 3rd Annual project meeting, 28-30 September 2022, Schagen and Warmenhuizen, the Netherlands
- **Reports and related data**
 - [Report of 1st EVA Carrot Project meeting, 11 May 2020](#)
 - [Report of 2nd EVA Carrot Project meeting, 20 April 2021](#)
 - [Report of 3rd EVA Carrot Project meeting, 28-30 September 2022](#)
- **Funds mobilized**
 - ECPGR granted funds: n/a
 - Inputs in-kind declared in Grant activities: n/a

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

- **Cross-Working Group activities:**

Charlotte Allender attended GRIN-Global Workshop 2021 for European Genebanks (GRIN-Global II) as an online participant – the workshop was held from 18-21 October

2022 in the Czech Republic coordinated by Ludmila Papoušková. This was an excellent opportunity to share knowledge and experience of GRIN Global as a data management system for genebanks, and WG members are available to share experiences with any other collections who wish to adopt it.

- **Others:** none

4. WORKING GROUP DOCUMENTS AND PUBLICATIONS

The following publications were reported by WG members:

Sofia J. Silva, Jasmine Barata, Violeta R. Lopes, Ana M. Barata, Arlindo Gomes, Lúcia Silva, and Ana Luísa Fernando, (2022), “Chemical Composition of the Essential Oils in Portuguese *Daucus Carota* Subspecies” in 1st International FibEnTech Congress (FibEnTech21) New opportunities for fibrous materials in the ecological transition, KnE Materials Science, pages 72–79. DOI 10.18502/kms.v7i1.11610

Silva, S. J.; Silva, L.; Lopes, V. R.; Barata, A. M. Gomes, A.; Fernando, A. L. (2022, abril). Volatile Compounds of *Daucus carota* from Portugal analysed by HS-SPME-GC-MS. Poster presented in 14th National Organic Chemistry Meeting & 7th National Medicinal Chemistry Meeting, da Divisions of Organic Chemistry and Medicinal Chemistry of the Portuguese Chemical Society, Costa da Caparica.

Silva, S. J.; Barata, J.; Lopes, V. R.; Barata, A. M.; Gomes, A.; Silva, L.; Fernando, A. L. (2022, março). Antioxidant activity, total phenolic and flavonoid content of umbels from Portuguese *Daucus carota*. Poster presented in III Colóquio Nacional de Plantas Aromáticas e Medicinais (CNPAM2022) da Escola Superior Agrária do Instituto Politécnico de Castelo Branco, Castelo Branco.

Gracia A, Sánchez AM, Jurado F, Mallor C. 2020. Making Use of Sustainable Local Plant Genetic Resources: Would Consumers Support the Recovery of a Traditional Purple Carrot? *Sustainability* 2020, 12, 6549. doi:10.3390/su12166549

MJ Díez, JV Valcárcel, E Solbes, E Muñoz, J Prohens, A. Vela, C. Mallor. 2020. Bancos de semillas y diversidad: el caso de la zanahoria. *Agricultura, revista agropecuaria*, 1043: 44-50.

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

- To preserve the genetic integrity of the Portuguese Genebank’s umbellifer collection, namely *Daucus* spp., *Coriandrum* spp. and fennel.
- To promote the regeneration of the umbelliferous collection and its valorization, such as *Daucus* spp. in the EVA Carrot network and to disseminate the preserved Portuguese umbelliferous collection through publications.