



Introduction to EUROPEPLAND

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**Council for Agricultural Research and Economics
CREA**

Research Centre for Vegetable and Ornamental Crops

*EUROPEPLAND– Implementing a trans-EUROpean
PEPper LANDrace collection for resilient agriculture*

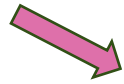
30 October 2024, Almeria, Spain



The Project



<https://www.ecpgr.org/working-groups/solanaceae>



Grant Scheme Activities

Phase XI

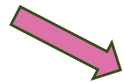
- **First Call (2023)** • Implementing a trans-EUROpean PEPper LANDrace collection for resilient agriculture (EUROPEPLAND)

Working Group activities and related events

March 2024

The EUROPEPLAND Activity, submitted by the Solanaceae Working Group for funding under the First Call of the Phase XI ECPGR Activity Grant Scheme, was selected by the Executive Committee and approved in March 2024.

<https://www.ecpgr.org/working-groups/solanaceae/europepland>



Implementing a trans-EUROpean PEPper LANDrace collection for resilient agriculture

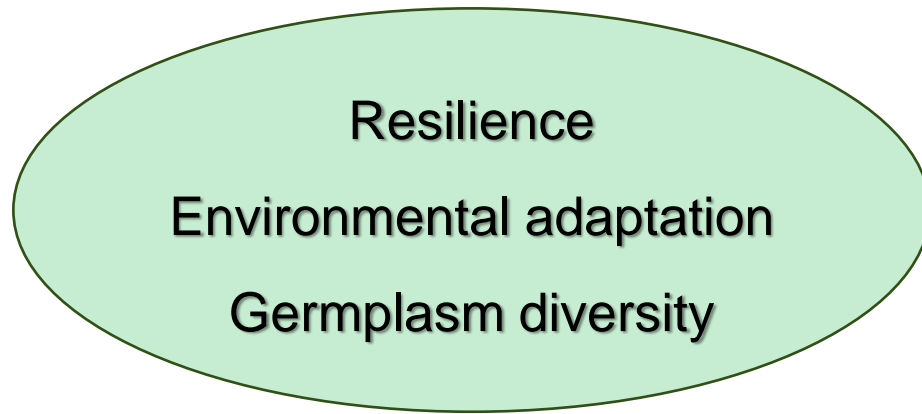
Activity Coordinator: Pasquale Tripodi

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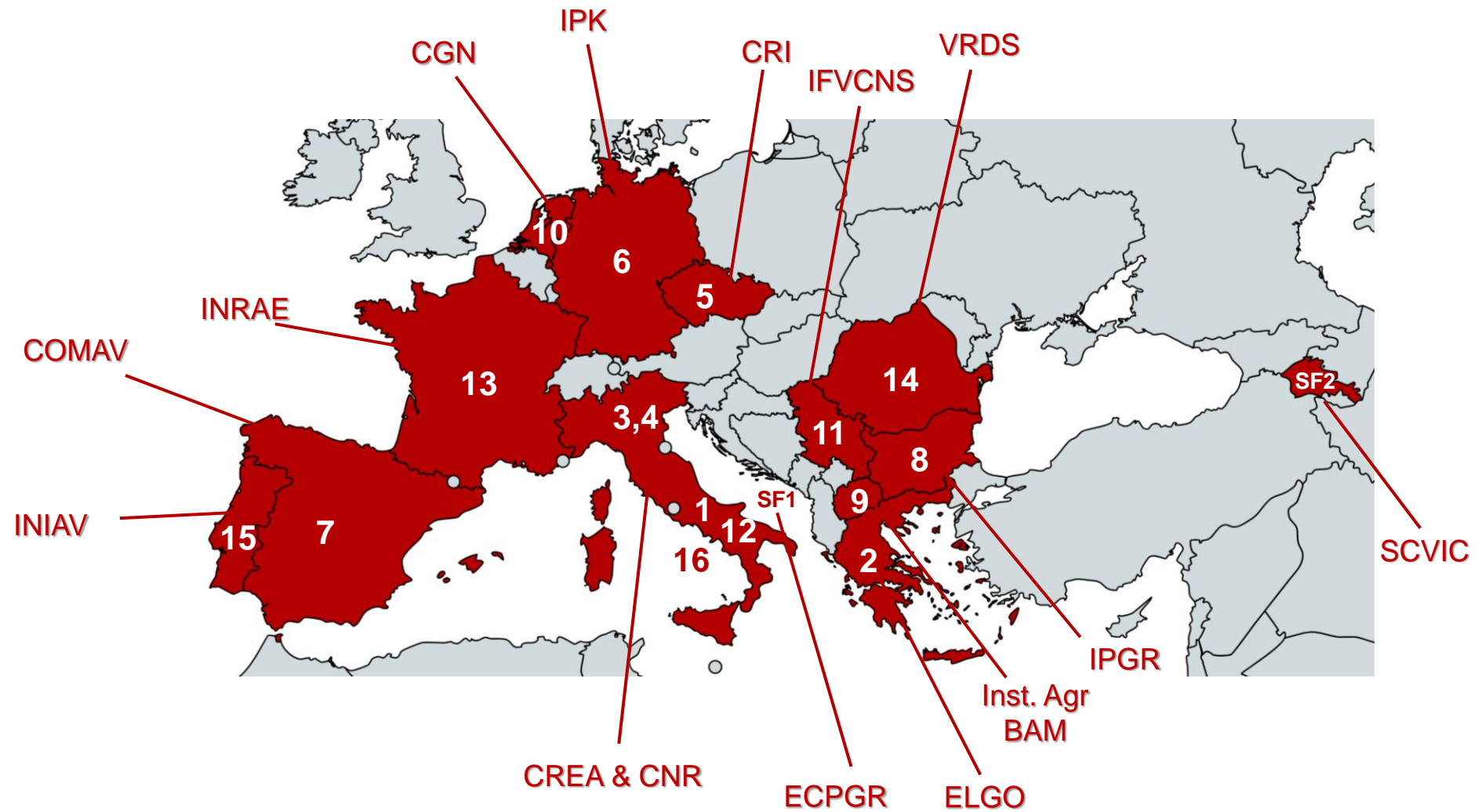
- [Activity proposal \(895,8 KB\)](#)

ECPCR SOLANACEAE WORKING GROUP
Solanaceae

Rationale



- Landraces represent a valuable resource for breeding cultivars better adapted to diverse environments and more resilient to climate change
- Mediterranean basin of Europe is a Centre of secondary diversification for pepper
- No availability of pepper core collection for European local varieties
- Need to implement genomics to existing passport data (Milner et al 2019 Nat Gen, Tripodi et al PNAS, 2021)



Valorization of European genetic resources promoting their use for breeding purposes facilitating the use of pepper germplasm for sustainable use

Building a core collection



High representativeness

Multiplication
Safety storage

- P1 - Support to countries to identify and include material into AEGIS, including regeneration and safety-duplication.

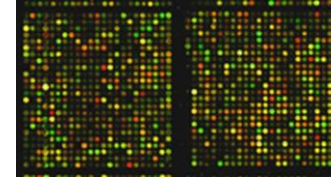
Table 3: Consolidating and sustaining ex situ conservation

DNA extraction, plate preparation (centralized)



Seeds (MTA)
Leaves

Genotyping Array (10K Illumina)



- P1 - Continuation of existing EVA Networks.

Table 5: Promoting sustainable use of PGR

Combine data



Quality, Abiotic Stress

Phenotyping (IPGRI)

- P1 - Compilation and transfer of existing Characterization and Evaluation data to EURISCO.

Table 4: Strengthening a comprehensive information system for plant genetic resources for food and agriculture (Documentation)

Workplan



Task	Year	2024				2025												2026							
	Main activity/Month	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8
T1	Core collection establishment																								
T2	Seeds/Leaf exchange																								
T2	DNA extraction																								
T2	Genotyping																								
T2	Plant grown and phenotyping																								
T3	Data integration/analysis																								
T4	Meetings																								

Tomorrow 31 October 9:00 – 10:30 am

- phenotyping
- genotyping
- data management
- data analysis

Link with other projects



G2P-SOL



EUROPEPLAND



BRESOV

EVA

European Evaluation Network



Short presentation of the institute

- ❑ CREA was established in 2015, from the merging of CRA (Council for Agricultural Research) and INEA (National Institute of Agricultural Economics), two country-wide institutions active since mid of last century”.
- ❑ The new organization foresees 12 research centers (6 related to specific supply chains and 6 dedicated to horizontal topics) which are forming a capillary network of structures throughout the country
- ❑ To deal with the great challenges of the twenty-first century related to food production sustainability, following the principles of the circular, bio-based economy through a multidisciplinary approach that includes innovation transfer
- ❑ The Research Centre for Vegetale and Ornamental Crops carries out research with integrated and multidisciplinary approaches for genetic improvement, biodiversity enhancement, agronomic innovation and eco-compatible defense of horticultural, aromatic, floricultural – ornamental species.

Short presentation of the institute



Project activities on pepper

- **GenHort(2013-2015) – MUR**
 - Chilli pepper, genetics and breeding
- **RGV/ORFLORA, others (since 2017) – Masaf**
 - Management of PGR
- **EVApepper (2021-2024) – ECPGR**
 - Pepper genomics
- **AGRITECH (2023-2025) – MUR**
 - Breeding for enhance pepper quality
- **Pepic (2015-2017) – Masaf**
 - Chilli pepper, genetics and breeding
- **G2PSol (2016-2021) – Horizon2020**
 - Breeding, genomics and phenotyping
- **ProGRACE (2023-2025) – Horizon2020**
 - Resequencing of a ~400 pepper core collection
- **EUROPEPLAND (2024-2026) – ECPGR**
 - Pepper genomics, enhancement PGR

CREA pepper landraces collection



*Thanks for your
attention*

