

## FLORES

### Weed FLOral RESource potential and diversity in Mediterranean vineyards and olive agroecoABSYSs

#### ABSTRACT

The widespread decline of bees, bumblebees, hoverflies in cultivated landscapes over the last decades is a major concern considering their crucial role in pollinating cultivated and wild plants. However, emergent agroecological practices may support the recovery of floral resources and pollinator communities. For instance, the increasing use of wild species as service crops in vineyards and olive agroecosystems can enrich and diversify floral resources. Agronomy and agroecosystem management Animation of the network scientific community (scientific events, publication and dissemination costs...) Grant for scientific platforms ( including short term contracts as technicians) Institution name Dpt/faculty/lab name Institut Agro UMR CEFE Fellowships (doctoral, post-doctoral, internships, short-term contracts) Plant Biology Biology of plant biotic interactions in the Mediterranean cultivated landscapes. However, knowledge about the determinants of floral resources is scarce, especially in herbaceous species and weeds.

The general objective of the FLORES project is to quantify the floral resource potential of the major weed species found in Mediterranean vineyards and olive agroecosystems as a critical starting point to pollination. The project will use a functional approach of species diversity based on floral traits. The FLORES project will describe the floral functional diversity of Mediterranean weed species and will feed the emerging research on the flower economics spectrum. The FLORES project has four specific objectives: (1) create quantitative references on pollen and nectar productivity and quality of the dominant pollinated weed species found in Mediterranean vineyards and olive agroecosystems in the Occitanie region; (2) assess the diversity of weed floral traits related to plant phenology, attractiveness, accessibility, productivity, and their sensitivity to environmental conditions, especially drought; (3) determine methodological guidelines to improve the standardized measurement of floral traits in herbaceous species and (4) identify a baseline set of relevant floral traits easy to assess in the field.

The FLORES project will be conducted by the ABSys (Labex Agro) and CEFE (Labex CEMEB) joint research units which have complementary expertise on weed management and plant biodiversity analysis. The project will also be part of the Ph. D. project of Léa GENTY who evaluates the potential plant resources for pollinators and herbivores of weed communities in Mediterranean vineyards and olive agroecosystems. The FLORES project will implement three specific data acquisition strategies organized : literature survey (WP 1), data mining in trait databases and digital photographic libraries (WP 2), and a pot experiment on the 20-25 most abundant weeds found in Mediterranean olive groves and vineyards (WP 3). The general coordination, synthesis and dissemination of results will be conducted in the fourth WP (WP 4).

The FLORES project will produce two scientific publications and a methodological handbook and initiate new collaborations to build an open-access knowledge base on weed floral traits and resources. In a broader perspective, the project aims at promoting the conservation of wildflower diversity in agroecosystems through adapted weed management strategies to support global pollination in cultivated landscapes.

**Keywords :** Flower traits, Phenology, Pollinators, Nectar, Pollen

**Year :** 2021

**Project number :** 2101-052

**Type of funding :** AAP OS

**Project type :** AAP

**Research units in the network :**

**Start date :** 2022-01-01

**End date :** 2022-12-31

**Flagship project :** no

**Project leader :** Karim BARKAOUI  
**Project leader's institution :** CIRAD  
**Project leader's RU :** ABSYS

**Budget allocated :** 29 473 €  
**Total budget allocated ( including co-financing ) :** 29473 €  
**Funding :** Labex

## GOAL

The general objective of the FLORES project is to quantify the floral resource potential of the major weed species found in Mediterranean vineyards and olive agroecosystems as a critical starting point to biodiversity-based services like pollination. In addition, the project aims at promoting the conservation of wildflower diversity in agroecosystems through adapted weed management strategies to support global pollination in cultivated landscapes. From a scientific perspective, the FLORES project will describe the floral functional diversity of Mediterranean weed species and will feed the emerging ecological research on the flower economics spectrum.