

## Context and objectives

The goal of the project is to promote grain legume cultivation in Mediterranean countries. A collaborative interdisciplinary initiative is proposed to promote grain legume cultivation in Mediterranean countries. It includes biotechnologists, agronomists, plant breeders, crop physiologists, organic chemists and phytopathologists from Algeria, Egypt, France, Italy, Morocco, Portugal, Spain and Tunisia with the aim of evaluating currently and previously grown grain legume varieties for characteristics of importance to sustainable agriculture and to apply novel tools to integrate genetic resistance with other control practises in a concerted manner. Priority is given to the combination of increased yield and resistance to biotic and abiotic stresses, epidemiology and integrated management thus allowing for the production of leguminous crops of high value in crop rotations with low inputs and stable yields.

## Workplan

### Project activities include:

Evaluation of current and historic chickpea, common bean, faba bean, lentil and pea germplasm for characteristics of importance to sustainable agriculture in order to define the desired phenotypes suitable for each Mediterranean area.

### Coordinator:

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### Partners:

- Centre Régional de la Recherche Agronomique de Rabat, Institut National de la Recherche Agronomique (INRA), Morocco
- UMR IGEPP, Institut National de la Recherche Agronomique (INRA), France
- UMR LEG, Institut National de la Recherche Agronomique (INRA), France
- DISSPAPA Unit, Univ. of Naples Federico II, Italy
- Field Crop Laboratory, Institut National de la Recherche Agronomique de Tunisie (INRAT), Tunisia
- Center of Beja, Regional Field Crop Research (CRRGC), Tunisia
- Department of Agronomy and Plant Breeding, Institut Agronomique et Vétérinaire Hassan II (IAV), Morocco
- Plant Cell Biotechnology Laboratory, ITQB, Univ. Nova Lisboa, Portugal
- Sakha Agricultural Research Station, Agricultural Research Center (FCR-ARC), Egypt
- Department of Botany, Ecole Nationale Supérieure Agronomique (ENSA), Algeria

### Duration:

08/2012- 07/2015

### Grant:

€542,945

### Keywords:

legumes, breeding, crop protection, stress resistance, epidemiology

### Project website:

[www.ias.csic.es/medileg](http://www.ias.csic.es/medileg)

Development of new and reliable screening methods for the most relevant biotic and abiotic stresses in order to identify new sources of resistance and characterise the resistance mechanisms. The resulting germplasm will be of great interest in future breeding programmes.

Identification of new QTLs for yield and resistance/tolerance to stresses in pea. Studies on field stability of QTLs across diverse locations and genetic backgrounds will allow the development of specific markers for pyramiding and rapid screening.

Identification of primary inoculum sources explaining the recurrence of diseases and evaluation of new combinations of control methods (architectural features, cultural practices, resistance, etc.) for the management of the major legume diseases.

Development of integrated management of fungal diseases and broomrapes using fungal and plant metabolites.

