EVALUATION OF IMPORTANT MEDITERRANEAN CROPS UNDER DIFFERENT ENVIRONMENTS

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CONTEXT & CHALLENGES
(Based on literature review)

Agriculture in the Mediterranean region
- Agriculture is facing an increasing number of challenges that limit the prospects for maintaining biodiversity and food production (Ceccarelli et al, 2010).

Climate change and plant genetic resources
- The diversity contained within plant genetic resources provides the variability needed for adaptation and will serve as a key element in maintaining food production under novel temperature, precipitation and disease conditions (Bradshaw & Holzapfel, 2006).
- The investigation of plant genetic resources for drought tolerance and high temperature resistance will promote their utilization in cultivation and in breeding programs (Grando et al, 2001).
OBJECTIVE & HYPOTHESES

Objective(s) / Research question(s)

- Cultivation under different environments and evaluation of landraces and cultivars with primary significance for the Mediterranean countries’ agriculture.
- Development of a cooperation network between the countries.

Hypotheses

- Through the characterization and evaluation of the germplasm emphasis will be given on adaptation of genetic resources to a higher level of abiotic stresses and their utilization in pre-breeding programs for the integration of their beneficial characteristics in new varieties, suitable for the future climate conditions and for sustainable agriculture.
OBJECTIVE & HYPOTHESES

Conceptual framework

Genetic resources

Cultivation and Evaluation

New cultivars

ARIMNet2 Young Researchers Seminar, 30 May - 3 June 2016, Montpellier, France
METHODOLOGY

Morphological characterization and evaluation of agronomic traits

- The characterization and evaluation of the cultivars will take place in *ex situ* experimental fields at the different Mediterranean institutes and farms in collaboration with a farmers’ network in order to make estimations for genotype x environment interactions for specific traits.

Molecular and biochemical characterization

- Molecular characterization is going to take place, in order to assess the genetic variability and relationships between the different cultivars and biochemical methods will be used in quality components characterization.

INVolVEMENT OF STAKEHOLDERS

- A better integration between the research sector and the stakeholders will be achieved with the enhancement of the cultivation of the most well adjusted cultivars at the farm, which products will be addressed to markets, and their utilization in breeding programs.
EXPECTED RESULTS / IMPACT
(INNOVATION)

Increase production and productivity
- Introduce in the cultivation appropriate varieties.
- Meet the significant increase in global food demand.

Improve the sustainability and address environmental issues
- Improve the efficiency of resources.
- Protect the agricultural biodiversity and reduce the climate change impacts.

Succeed a functional interface between stakeholders
- Strengthen networking and clustering.
- Facilitate the dissemination of knowledge and best practices.
- Fasten communication between research and agriculture.

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PROPOSED PARTNERSHIP

Partner 1: Italy, France, Spain, Portugal or other EU country

- Partners from the EU countries could contribute to the molecular and biochemical characterization of the cultivars.

Partner 2: Egypt, Morocco, Tunisia or other non EU country

- Partners from non EU countries could help with the implementation of field experiments under different environments, the morphological characterization of the cultivars and the evaluation of their agronomic traits.
Thank you for your attention!