

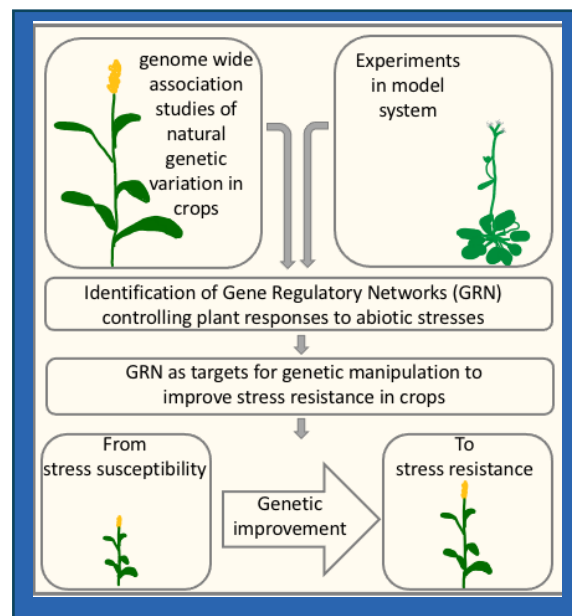
**Project title:** National Research Centre for Agricultural Technologies

**Acronym:** Agritech

**Partners:**

- IBPM-CNR: Giovanna Sessa\*
- IRET-CNR: Patrizia Brunetti
- ISB-CNR: Donato Giannino
- CREA-GB Roma Unit: Fabio D'Orso
- Università degli studi di Bari: Stefano Pavan

*giovanna.sessa@cnr.it*



**Description**

Climate changes are major source of environmental stress for plant organisms and increasingly challenged the agriculture. In particular, global warming negatively affects crop productivity and limits the use of arable land. Understanding the molecular mechanisms of response to environmental stress is fundamental to generating crops that are more resilient to climate change. Genetic/molecular studies in model systems and crop species provide relevant information on the regulatory networks underlying stress responses and can be used for the biotechnological improvement of crops through a translational approach (see diagram).

**Aims**

The studies aim to characterize the regulatory networks that control the growth and reproductive development of plants in response to different abiotic stresses. The information obtained on the key regulators of environmental responses will be transferred to two species of agronomic interest relevant for the national market (tomato and broccoli) with the aim of increasing their productivity in conditions of abiotic stress through genetic improvement.

**Expected results**

- Identification of regulators of reproductive development in broccoli through analysis of natural genetic variation and introgression of favorable traits into cultivars of interest.
- Identification of regulators of responses to environmental stress in tomato and generation of resistant lines through assisted evolution techniques.
- Use of microorganisms isolated from the rhizosphere of the hyperaccumulator fern *P. vittata* to increase tomato tolerance to arsenic.

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