



BactPlant



Towards a sustainable agriculture by increasing plant tolerance to biotic stress under climatic change (2016 – 2019)

Overall budget: 1,345 k€

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ARIMNet & ARIMNet2 meeting – 14-16 March 2016, Lisbon, Portugal



CONSORTIUM

- **Reims University - URCA - France (Coordinator)**

Skills : Plant-microbe interactions, biological control (abiotic and/or biotic stress), molecular biology, microscopy, plant physiology ;

- **Université du Littoral Côte d'Opale - ULCO - France**

Skills : Bread wheat-powdery mildew (*Blumeria graminis* f. sp *tritici*) interaction, molecular biology, biochemistry, cytological analysis ;

- **Institut Supérieur d'Agriculture de Lille - ISA - France**

Skills : Bread wheat-septoria tritici blotch (*Zymoseptoria tritici*) interaction, biochemistry, cytological analysis, molecular biology ;

- **Acolyance (agricultural cooperative) - France**

Skills : Varietal selection, crop protection, alternative methods, field trials, agronomy ;

CONSORTIUM

- **National Agronomic Institute of Tunisia - INAT - Tunisia**

Skills : Durum wheat-septoria tritici blotch (*Zymoseptoria tritici*) interaction, *Fusarium* spp, biotechnology, molecular biology ;

- **Institut National de la Recherche Agronomique - INRA - Morocco**

Skills : Biological control of post-harvest diseases, interaction between *Phytophthora* /rootstocks and soil salinity, seed borne diseases of legumes ;

- **Institut Agronomique et Vétérinaire Hassan II - Morocco**

Skills : New challenges to the control of pest and disease invasions in relation to climate change, post harvest diseases and their control.

PROJECT OBJECTIVES

Objective 1

- Increase wheat tolerance against *Septoria tritici* blotch (STB) and powdery mildew (PM) under climatic change context by using efficient biological control agents (BCA) ;

Objective 2

- Breaking up regional and national barriers by endorsing a Mediterranean network for optimal efficiency of multisite experimental trials.

SCIENTIFIC APPROACHES

PGPR (Plant Growth Promoting Rhizobacteria) screening

- High antifungal activity (PM and STB) ;
- Ability to induce resistance in plant ;
- Characterization of induced defence markers using cytological, biochemical and molecular approaches.

Bacterized plants or seeds production

- Release of resilient bacterized plantlets/seeds to PM and STB under climate change context.

EXPECTED IMPACT & INNOVATION

Crop management benefits

- Cultivars and agricultural practices adapted to drought and heat conditions: optimization of water and fertilizer uses, and reduction of production costs ;

Environment impact benefits

- Sustainable production systems, reduction of external inputs, improving water and land uses, and preserving biodiversity ;

Human life benefits

- Improving product quality and consumer's health, increasing income, food security and knowledge to support for decision making process.



Thank you for your attention!