BELLOTTI GABRIELE

KEY-WORDS:
PLANT-MICROBES INTERACTIONS,
SOIL MICROBIOLOGY,
BIOCONTROL AGENTS

PROFILE

I am a second-year PhD student in microbiology specialized in the use of plant growth promoting rhizobacteria and fungi (PGPR/PGPF) to boost plant defense, improve plant nutrition.

AFFILIATION

Department of Sustainable Food Process (DiSTAS)
Università Cattolica del Sacro Cuore

LANGUAGES

Mother language

Level C1

Basics

HOW TO REACH ME

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Prof. Edoardo Puglisi

PROJECT TITLE

Priming plant immune responses with soil-borne microorganisms eliciting Induced Systemic Resistance

Steps of the research

- Isolation of Plant-Growth-Promoting Rhizobacteria and Fungi.
- Identification of microbial genetic features involved in plant growth or plant protection.
- Determination of plant-host interactions markers in the rhizosphere through Omics sciences: Metagenomic, Metabolomic, Proteomic, Transcriptomic.
- Validation of microbial selection methodologies
- Determination of product applicability on crop productions.

Main Results

Phenotyped 400+ bacterial and fungal isolates for PGP activity, tested various application methods and formulations, and studied synergistic effects with non-microbial biostimulants. Successfully applied PGPR/F on seeds (seed priming) or plants and obtained promising results in pot and field trials with different crop plants.

Research Contribution

Unravelling mechanisms of plant-microbe interactions is crucial for developing effective biopesticides and biostimulants, which can be integrated into sustainable crop management practices to reduce the use of synthetic products in agriculture.

Collaborations

Université Bourgogne Franche-Comté (UBFC)

Why should you care?

Understanding the role of PGPR in plant-microbe interactions can help us improve crop productivity, reduce environmental pollution, and promote sustainable agricultural practices.