

Position Offered: PREDOCTORAL RESEARCHER

Project: *Massive precise Phenotyping and digitalization to improve crops*

Technological and scientific fields: plant stress responses, plant phenotyping, molecular biology

Location: Madrid. Pozuelo de Alarcón. Centro de Biotecnología y Genómica de Plantas (CBGP)
<https://www.cbgp.upm.es/index.php/en/about-us>

Research Group/PI: Regulation of lateral root development during nutrient deficiencies.
https://www.cbgp.upm.es/index.php/es/?option=com_content&view=article&id=27.

IP: Juan Carlos del Pozo

PROJECT SUMMARY

In the field of plant biotechnology, numerous genomic and molecular analysis techniques are available to study plant responses to environmental changes, both biotic and abiotic. However, phenotypic analysis remains limited in technological terms. In this project, we propose implementing and developing new methodologies for high-precision quantitative analysis using the CBGP phenotyping platform. This state-of-the-art unique platform in Spain allows measurement of growth, photosynthetic capacity, water levels, and stress in the aerial part of plants, as well as root systems using rhizotrons. Its use will enable precise quantification of the effects of different stresses and bioproduct treatments on crops, with the goal of increasing agricultural production and crop tolerance to adverse conditions and to infectious diseases. The main objective for the doctoral thesis will be:

- Analysis of Germplasm Bank Varieties in Response to High Temperatures.
- Analysis of Plant Varieties' Response to Bio-Stimulant Microorganisms Application.
- Molecular Response of Selected Varieties through Transcriptomic Analysis.
- Microbiome Analysis Associated with Selected Varieties through Metagenomic Analysis.
- Analysis of Plant Varieties' Response to Infection by Phytopathogenic Organisms (Viruses).
- Investigating resistance and tolerance responses to viral infection in crop varieties conferred by bio-stimulant microorganisms.

PROFESSIONAL PROFILE

Minimum requirements:

- Biology, biotechnology or science Bachelor
- High level of English

Merits to be considered:

Knowledge in statistics, skills in phyton programming and office. Communication skills and team work.

WHAT IS OFFERED

We offer a great opportunity to do the Thesis in two dynamic research groups, highly recognized at the national e international level, to work in an exclusive plant phenotyping platform in Spain. This will give you the opportunity to interact with diverse research groups and collaborate with ago-companies. We offer a specific training plan, taking courses in the biocomputational master of the UPM and also a training from Lemantec company for specific phenotyping programming. The Total number ETC in the 4 years will be about 260, including a supervise a non-supervise research plant, master courses, seminars, formative stay abroad of at least 3 months, etc.

Contract conditions:

Predoctoral Researcher contract of 4 years' duration. Gross annual salary of 23,871.33 €.

Start of contract: before 31 December 2024

PRINCIPAL INVESTIGATOR CONTACT

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