**IMAS MASTER Academic Year 2023 - 2024**

**Proposal of M2 Internship**

**PROJECT TITLE AND SUMMARY: Biochar impregnation to obtain slow release fertilizers and its application in horticultural fields (strawberry)**

The main objective of this internship is to develop, by relevant impregnation technologies, well-balanced biochar-based fertilisers for various purposes in horticulture. Different types of biochar will be characterized and used as supports for impregnation. The impregnated biochar will be prepared under different operation conditions, according to an appropriate experimental design, characterized, and then mixed with soil and tested as fertilisers. The effect of fertiliser dose and relevant parameters of amended soil on the crop growth/yield will be quantified based on statistical models.

**HOST UNIT:** Research Center for Studies of Food Quality and Agricultural Products, University of Agronomic Sciences and Veterinary Medicine

**MAIN ACTIVITIES:**

The student will work on how to statistically approach and design an experiment, impregnate the biochar with different inputs, in static or batch conditions at various levels of process factors, e.g., solid/liquid ratio, impregnation temperature, operating time, according to an appropriate experimental design. Relevant physicochemical parameters of impregnated material will be determined, e.g., nutrient content, bulk density, pH, porosity, electrical conductivity, water retention capacity. Moreover, tests of nutrient leaching will be conducted and compared for impregnated biochar and other fertilisers. The effects of impregnation factors on physicochemical parameters of impregnated biochar will be quantified based on statistical models. The effect of two amounts of biochar, with different impregnation materials, will be compared in a relevant soil test design with identical total-N application rate, with the aim of analysing the N release and uptake. These activities will be directly supervised by a senior team member, and the student will be expected to clearly prepare, setup, carry out, and document experiments, analyse and interpret the results, write a report. The student will also be expected to gather and analyze data and present regularly in one-on-one and group meetings.

**EXPECTED SKILLS:**

**-** General knowledge in fertilizers application and plant science, desired skills in statistical analysis;

- Attraction for experimental work.

- Strong work ethic, autonomy, organizational, and interpersonal skills, and the capacity to critically think about horticultural problems.

**INDEMNISATION:**

- based on EUR Implanteus Standards

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**Organization:** University of Agronomic Sciences and Veterinary Medicine, Research Center for Studies of Food Quality and Agricultural Products

**Location:** 59, Marasti Blvd., Bucharest, 011464, ROMANIA

**Duration:** 6 months

**Dates:** 01.03.2023 - 31.08.2023

**Level:** Master 2

**Internship profile:** Research