**IMAS MASTER Academic Year 2023 - 2024**

**Proposal of M2 Internship**

**PROJECT TITLE AND SUMMARY: Effect of companion plants on the production and quality of organic strawberries and raspberries**

Berries production and quality are influenced by pre-harvest factors, especially problems associated with pests and diseases. Companion plants are an organic approach that can increase berries crop productivity, by minimizing the development of the pests in the field, helping maintain the soil’s fertility, attracting beneficial entomophagy as pollinators or predators, and also influencing the soil and crop through competition and production of biologically active plant compounds. Increasing biodiversity at both the microbial and plant levels will create a more resilient cropping system, which will result in higher yield of high-quality fruits. Each category of these services is fulfilled by different plant species, according to their chemical composition, flower morphology and ecological trials.

The productivity and quality of berries (strawberries, raspberries) grown in organic fields can be improved by companion plants in the form of flower strips (*Borago officinalis* L., *Ocimum basilicum*, *O. citriodourm*, *Tagetes patula*, *Trifolium resupinatum* L., *Lotus corniculatus* L.*, Onobrychis viciifolia Scop, Trifolium pratense* L.*, Thymus vulgaris* L.) or cover crops (*Trifolium subterraneum, Trifolium repens*). Mixtures of gramineous (*Trifolium repens* L. var. Pirouette, *Lolium perenne*, *Festuca rubra, Poa pratensis, Festuca rubra comutata*) represent intercropping species that increase the productivity, quality and sensorial characteristics of strawberries and raspberries.

Given the background, the aim of this internship is to evaluate the role played by the intercropping system with companion plants on the yield and quality of strawberries and raspberries. The internship follows research activities initiated in 2022-2023.

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

**MAIN ACTIVITIES:**

- The student will also perform research activities in the experimental field of the farm of Cooperativa Agricola Rodagria Produce (Calarasi, Romania) to collect berries samples and to measure yield parameters.

- Determination of yield and physical characteristics of berries (e.g., total yield, % damaged fruits, type of damage, average berry weight/size/diameter, dry matter, firmness).

- Evaluation of nutritional quality parameters representative for taste, colour, aroma (e.g., titratable acidity, total soluble solids, sugars, organic acids, vitamins, anthocyanins, antioxidant activity) by using specific methods (UV-vis, FTIR, HPLC).

- Interpretation and statistical analysis of the results.

- Research report writing.

**EXPECTED SKILLS:**

- Knowledge in the analysis of fruit/berry quality and plant chemistry

- Practical laboratory skills (working with glassware and balances, making solutions, dilutions, pipetting, calibration curves)

- Autonomy, organisation, rigour, team work and motivation for experimental and laboratory work.

**INDEMNISATION:**

- about 600 € / month

**CONTACT:**

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Organization: University of Agronomic Sciences and Veterinary Medicine of Bucharest (USAMV), Research Center for Studies of Food Quality and Agricultural Products

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

Duration: 6 months

Dates: 01.04.2023- 30.09.2023

Level: Master 6

Internship profile: Research