Proposal for a Master thesis

How biostimulants can reduce water and fertilizer consumption of lettuce and tomato?

ISA Lille is one of the 8 members of an Interreg 2 Seas project financed by the European Union. This project called Bio4Safe gather scientific and professional structures from the Netherlands, England, France and Belgium. The french partners for this project, mostly involved in the student management are ISA Lille, engineering school of agriculture hosting the Master thesis candidate, and Pôle Légumes Région Nord, experimental platform for legume production.

Context and objectives

We can find today on the agricultural market some products called « biostimulants ». These products are sold for different applications on specific crops (legumes, horticultures, flowers,…). Biostimulants are for example able to reduce water and fertilizer consumption by these crops.
Nevertheless, it appears that this market is not clear for professionals and there is a lack for scientific evidence and proofs of functioning of one molecule on different crops. It is now important to have these evidences and proofs of concept, one of the objectives of the project.
This work will also help the European administration in their work and considerations aiming at giving a clear framework for the use of biostimulants and clarify the market.

In this context, the objectives are:

- To test the application of five biostimulants, of which three from seaweed extracts, on lettuce and tomato.
- To measure the impact of the use of these products on water and fertilizer consumption by the crops.
- To test different tools and sensors to follow the crop physiology and propose the best available solution for professionals.

Méthodology and tasks

Selected candidate will have to

- participate with other colleagues in the setting up of the experiment at Pôle Légumes
- follow the crop behavior (field work + sensors)
- perform lab measurements in Lille and/or in Ghent; for example yield measurements, physiological markers, nitrogen – phoshorus and water consumption, measurements of nutrient and water use efficiency,…
- test the different sensors and select the most suitable for the professionals. Also propose new sensors for the next steps
- take part in the project animation, meetings,…

Profile

Master 2 student in agriculture
Interest for agronomy and experimental work
Deductive and analytical skills.
Driver licence

Practicals

This internship will be hosted by ISA Lille and the selected student will be followed by Sitraka ANDRIANARISOA (sitraka.andrianarisoa@yncrea.fr; 0359566900) and Bertrand VANDOORNE (bertrand.vandoorne@yncrea.fr), lecturer-researchers

Starting date around March 2018 if possible, 6 months

Send your CV and cover letter to the above contacts (before 15th of December)