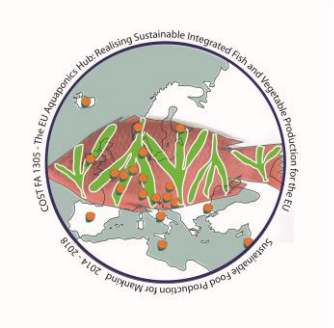
EUROPEAN COOPERATION IN SCIENCE AND TECHNOLOGY



The EU Aquaponics Hub is a four year networking Action that unites a heterogeneous group of scientists, researchers and SMEs from across the EU and around the globe to better understand the state of knowledge in aquaponics in Europe and around the world and to facilitate innovation and education in this field of sustainable fish and vegetal food production.

Training School 1
Aquaponic trials: improving water quality and plant production through fish management and diet

25 – 29 May 2015

Universidad de Las Palmas de Gran Canaria, Spain

Background

Aquaponics is an emerging method of local food production in the EU and worldwide, using closed integrated production systems to grow vegetables and fish at large and small scales of production and in urban contexts. The EU Aquaponics Hub aims to lead the research agenda through the creation of a networking group of expert researchers, industry scientists, engineers, economists, aquaculturists and horticulturalists, and contribute to the training of young aquaponic scientists. Despite the recent growth and interest in aquaponics, considerable efforts are still required in order to understand and optimise the science of combining aquaponic fish production with vegetal production. One of the key research questions is how to improve fish feed and feeding in order to optimise water quality for plant production.

This training school will consist of a number of lectures and practical classes on the principles of aquaculture in aquaponic systems. Participants will be introduced to the current commercial problems of aquaponics, and the importance of good fish management and fish feed in order to achieve optimum water quality for hydroponic plant cultivation. Topics will include fish diets, the nutritional content of aquaponic feeds, and alternative sustainable ingredients, in relation to large- and small-scale aquaponic systems as well as those suitable for urban contexts. Round table discussions will facilitate dialogue on a number of key topics and will provide a platform for the exchange of information pertinent to the trainees' research interests. These debates will generate a series of key points that will help to define issues and topics for future discussion and research.

The training school will be delivered by Professor Lidia Robaina, University of Las Palmas de Gran Canaria, and Ulrich Ricardo Knaus, University of Rostock, Germany.

The lectures and practical classes will be mainly conducted in the Experimental Tilapia & Aquaponic Unit and the Aquafeed & Processing Pilot Plant, both located at the Aquaculture Research Group Facilities of the University of Las Palmas de Gran Canaria, Telde, Gran Canaria, Spain.

Programme

Sunday 24 May
Trainees arrive in Gran Canaria

Monday 25 May

08:00-08:15	Transport from Hotel & Residence to the institute
08:30-09:00	Registration
09:00-11:30	Welcome and introduction to the training programme: Assistant Professor Lidia Robaina, Local Organizer Welcome to the Marine Scientific Technological Park of the University of Las Palmas de Gran Canaria: Gabriel Mejías, Dean of the University Technological Park Welcome to the Aquaculture Research Group: Professor Marisol Izquierdo, Head of the Group The trainees will present themselves, their background and their research interests
11:30-12:00	Coffee break
12:00-14:00	Lecture: Review of current commercial aquaponic problems. Principles and practical applications of aquaculture in aquaponic systems. Professor Lidia Robaina, University of Las Palmas de Gran Canaria, and Ulrich Ricardo Knaus, University of Rostock
14:00-15:30	Lunch break
15:30-17:30	Practical class: Set up of an aquaponic experimental trial. What to know about the fish part of the system (I). Assistant Researcher Angel Segade, University of Las Palmas de Gran Canaria

Tuesday 26 May

08:00-08:15	Transport from Hotel & Residence to the institute
09:00-11:00	Lecture: Fish management and fish feeding for water quality (I). Ulrich Ricardo Knaus, University of Rostock
11:00-11:30	Coffee break
11:30-13:30	Practical class: How fish and water quality can influence biomass production. Ulrich Ricardo Knaus, University of Rostock
13:30-15:00	Lunch break
15:00-17:30	Practical class: Set up of an aquaponic experimental trial. What to know about the fish part of the system (II). Assistant Researcher Angel Segade, University of Las Palmas de Gran Canaria

Wednesday 27 May

08:00-08:15	Transport from Hotel & Residence to the institute
09:00-11:00	Lecture: Diets and ingredients in EU aquaponics: from large-scale to small-scale and urban systems (I). Professor Lidia Robaina, University of Las Palmas de Gran Canaria
11:00-11:30	Coffee break
11:30-13:30	Lecture: Fish management and fish feeding for water quality (II). Ulrich Ricardo

Knaus, University of Rostock

13:30-15:00 Lunch break

15:00-17:30 Practical class: Non-conventional ingredients or nutrients for aquaponic fish diets in the EU. Valorization and processing in a pilot production system. Professor Lidia Robaina, Assistant Researcher Angel Segade and Technician Francisco Javier Robaina, University of Las Palmas de Gran Canaria

Thursday 28 May

08:00-08:15 Transport from Hotel & Residence to the institute

09:00-10:30 Lecture: Diets and ingredients in EU aquaponics: from large-scale to small-scale and urban systems (II). Professor Lidia Robaina and Assistant Researcher Angel Segade, University of Las Palmas de Gran Canaria

10:30-11:30 Coffee break

11:30-13:30 Lecture: Factors affecting the stability of aquaponic systems and the relevance of statistics. Ulrich Ricardo Knaus, University of Rostock

13:30-15:00 Lunch break

15:00-16:00 Round-table discussion about fish feeding and feed formulations and alternative sustainable ingredients for large-scale, small-scale and urban systems

16:00-17:00 Review of the Training School

17:00-17:30 Course conclusions

20:00 Social dinner and tour to visit to the old town (Vegueta)

Friday 29 May

Field trip to visit the Algae Biotechnology and Alternative Energy Sources Departments at the Canaries Technological Institute located in the south of the island.

Saturday 30 May

Trainees depart

Eligibility

Applicants must be resident in a COST country: Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom and the former Yugoslav Republic of Macedonia. The nationality of the applicant is not a bar to eligibility. Preference will be given to postgraduate students and postdoctoral researchers.

Financial support

COST Action FA1305 is offering 15 places on the training school on a competitive basis. Successful applicants will be offered a maximum grant of €1200 as a contribution towards the costs of travel, accommodation and meals. The exact award offered will depend on the cost of travel as this differs considerably across eligible countries. Successful applicants from the University of Las Palmas de Gran Canaria will be offered a maximum grant of €200 as a contribution towards the costs of meals. Please note that the grant will be paid by bank-to-bank transfer **after** the course has been completed.

Logistics

Trainees will be responsible for making their own travel arrangements, and for providing adequate insurance cover (personal, travel and medical) for the whole duration of the training course and travel period.

Hotel rooms have been reserved at a cost of €210 for the week (bed and breakfast). Trainees must pay for their own rooms upon arrival.

How to apply

Send a letter of application stating your reasons for wanting to take part in this Training School to Lidia Robaina (lidiarobaina@ulpgc.es) and Sarah Milliken (S.Milliken@greenwich.ac.uk) by **Friday 24 April 2015**. The letter should be accompanied by a 1-2 page CV which should include your personal details, education background, current university address (if applicable), training/work experience, publications (if applicable), email address and Skype name.