

ECO-INNOVATIVE AQUACULTURE SYSTEM TRAINING FOR EUROPEAN INDUSTRIAL DOCTORATES

EASYTRAIN ESR PROFILE

ESR 1

1) RECRUITING AND PhD ENROLMENT

- **Host institution (beneficiary):** Sparos (Portugal)
- **Supervisory committee:** L Conceicao (Sparos), FJ Sánchez Vázquez (UMU) and M Vidal (TILAMUR)
- **PhD awarding entity:** University of Murcia - UMU (Spain)
- **Duration:** 36 months

2) DESCRIPTION OF PhD RESEARCH PROJECT

- **Title:** Optimizing feed intake with organic diets.
- **Objective:** To design and evaluate new organic diets based on sustainable plant sources (e.g. Spirulina and quinoa). Fish feeding behaviour and feed preferences using multiple self-feeders will be used. To investigate dietary selection of new plant sources which fish will select according to their nutritional needs. Test feed formulations with different protein/energy and AA ratios, based on sustainable plant sources and other organic ingredients. Modelling feed intake and its regulation by feed composition. Model Species: Tilapia (Tilamur), Seabream/Seabass (Sparos)
- **Expected results:** (i) Formulation of new organic diets based on Spirulina and quinoa; (ii) Assessment of the acceptance of feeds by fish; and (iii) Modelling feed intake (temperature, fish size, feed composition)
- **Secondments:** 6 months in UMU (Spain) for doctoral training and design/analysis of diets; and 9 months in TILAMUR (Spain) to test diets in a farm

3) REQUIREMENTS AND SELECTION CRITERIA

- *Mobility and academic rules*
- *Knowledge and experience in fish aquaculture*
- *Solid theoretical knowledge of fish nutrition, data analysis, statistics and mathematical modelling*
- *Preferably with experience in industrial environment and fish rearing*
- *Good level of English proficiency (understood, spoken and written)*
- *Skills in scientific writing (reports, papers, etc.) and data presentation*
- *Be highly motivated*
- *Creativity and high level of independency*
- *Team spirit and collaborative predisposition*
- *Reference letters*

4) ADDITIONAL INFO

The PhD programme at Murcia University:

The normal duration of a PhD in Spain is 3 years. All our PhD students are enrolled in the PhD Programme in “Integration and Modulation of Signals in Biomedicine”. The ESR will be also provided with training organized by the International School of Doctorate, which is a structure that offers complementary and interdisciplinary activities to PhD students.

Research at the SPAROS research group:

Sparos Lda is a technology-driven SME dedicated to the development of new products and tailored nutritional solutions for the aquaculture market. It offers the alliance of a strong scientific background in the areas of fish nutrition and aquaculture, with a flexible pilot-scale feed technology platform. SPAROS has an intense R&D effort, including the development of tools, focusing on biomarkers and mechanistic modelling and omic technologies, to predict biological performance, welfare and feed utilization of fish under different nutritional and environmental scenarios. For more information about SPAROS: www.sparos.pt

Research at the UMU research group:

Both freshwater and marine facilities will be available to investigate fish physiology in chronolabs where the main environmental signals (light and temperature) will be tightly controlled. Self-feeding systems and fish behavioural analysis tools will be also available. A research support service (ACTI) brings together the units and sections with instruments on molecular biology, image analysis, tissue cultivation, etc. Additional information about the research carried out by the IP can be found here: <https://orcid.org/0000-0002-2366-9714>