

Provisional Programme:

Day 3

9:00 - 9:45	Carry-over of specific nutrients from broodstock to eggs and larvae (Sofía Engrola, CCMAR, Carlos Mazorra, TINAMENOR)
10:00 - 10:45	Feeding broodstock with low fish oil diets: effects on the progeny along the whole life cycle (Marisol Izquierdo, ULPGC)
11:00 - 11:15	Coffee break
11:15 - 12:00	Permanent and semi-permanent effects of first feeding low fishmeal and fish oil diets (Stephane Panserat, INRA)
12:00 - 13:00	Final discussion and debate
13:00 - 14:30	Lunch
14:30 - 17:30	Practice: Egg nutrients manipulation and criteria to determine broodstock performance and predict larval and juvenile growth (Tatiana Kalinovski, ULPGC)

ARRAINA Course

Long Term Effects Of Low Fishmeal And Fish Oil Diets Across Life Stages



Practical information

- The course fee for PhD candidates is €595 and for participants from the industry €1485. The price includes tuition, course materials, coffee/tea, lunches, drinks and a closing dinner on Friday.
- **ARRAINA** will offer up to 20 grants of 500€ each. Applicants should contact Ms Geertje Schlaman (arraina.afi@wur.nl) before November 30th 2015.
- **CIHEAM** will offer up to 4 grants of travel and lodging to Non-EU participants from Mediterranean countries that should be requested to Prof. Marisol Izquierdo.
- The organisation will assist to organize accommodation for the participants. Please contact Ms Natalia Carqué (ncarque@proyinves.ulpgc.es).
- **Registration.** You are invited to request your registration (before 30th November 2015). After this date you will receive the details about location, payment, programme and participants list. Registration and information Prof. Reda Saleh (reda-saleh@hotmail.com) or Prof. Marisol Izquierdo (marisol.izquierdo@ulpgc.es).

Las Palmas de Gran Canaria

Canary Islands - Spain **13-15 January 2016**

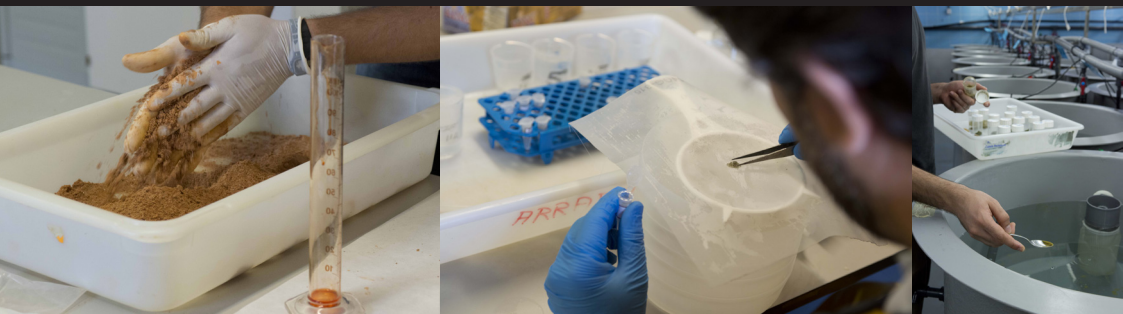
■ Course leader: Marisol Izquierdo, ULPGC.

The most recent advances on the effects of long term feeding with low fish meal and fish oil diets in in several moments of the life cycle in different aquaculture species of commercial importance will be discussed. The course will review the existing knowledge in this area and will include the most recent advances produced by the **ARRAINA** project. The participants will also benefit from the modern aquaculture facilities of ULPGC (<http://www.giaqua.org/fitu>) to undertake practical lessons.



This project has received funding from the European Union's Seventh Programme for research, technological development and demonstration.





Topics to be covered include:

- growth performance of fish fed low fishmeal and fish oil diets for a long term,
- their physiological and metabolic consequences,
- utilisation of effective indicators to predict fish performance, fish welfare and health fillet quality and environmental impacts,
- micronutrients relevance,
- broodstock nutrition and larval development.

The course will comprise 11 lectures of 45min followed by 15 min discussions, 3 practical lessons of 3 h and a final Oxford debate among participants.

Target group:

The course is directed to professionals from the industry, to students from research institutions and universities related to fish farming and feed production.



Provisional Programme:

Day 1

08:00 - 08:45	Registration of Participants
08:45 - 09:00	Few words on ARRANA
09:00 - 9:45	Growth performance of salmonids and freshwater fish fed low fishmeal and fish oil diets from first feeding to harvest (Genevieve Corraze, INRA)
10:00 - 10:45	Effect of feeding marine fish with low fish meal and fish oil diets for the whole on-growing period (Lidia Robaina, ULPGC)
11:00 - 11:15	Coffee break
11:15 - 12:00	Metabolic consequences of long term feeding with novel diets (Douglas Tocher, University of Stirling)
12:15 - 13:00	Reliable criteria and biomarkers to predict the effects of feeding low fishmeal and fish oil diets (Jaume Pérez, CSIC)
13:15 - 14:45	Lunch
14:45 - 17:30	Practice: Novel methods to assess fish quality (María José Caballero, ULPGC)

Day 2

9:00 - 9:45	Micronutrient supplementation in low fishmeal and fish oil diets (Kristin Hamre, NIFES)
10:00 - 10:45	Assessment on carry over of contaminants from feed to fish (Bente Torstesen, NIFES)
11:00 - 11:15	Coffee break
11:15 - 12:00	Welfare of fish fed low fishmeal and fish oil diets (Daniel Montero, ULPGC)
12:15 - 13:00	Modulation of pathogenesis and infection in fish fed low fish meal and fish oil diets (Silvia Torrecillas, ULPGC)
13:15 - 14:45	Lunch
14:45 - 17:30	Practice: Pathogen challenge in a biosecurity station (Silvia Torrecillas, ULPGC)