



CSIC- IATS

Research Infrastructure Information

www.aquaexcel.eu

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1 CSIC in AQUAEXCEL

1.1 Introduction

Operating institution:	Spanish National Research Council (CSIC): www.csic.es
Type Operating Institution:	Research Institute
Research Infrastructure(s):	Institute of Aquaculture Torre de la Sal (IATS)


1.2 Institute of Aquaculture Torre de la Sal (IATS)

Name of the infrastructure:	Institute of Aquaculture Torre de la Sal (IATS)
Location:	Torre de la Sal, Castellón, Spain
Web site address:	http://www.iats.csic.es
Contact:	Jose Miguel Cerdá-Reverter E-mail: aquaexcel.wp4@iats.csic.es Tel: +34-964319500
AQUAEXCEL TNA facility:	YES: facilities open for Access to external research groups within the framework of the AQUAEXCEL project.
Short description	Research Institute devoted to all aspects of Marine Mediterranean Aquaculture. It is provided with 4 wet units to conduct basic and applied research on fish reproduction pathology, nutrition and growth, live preys (IATS-EXP) as well as with several analytical labs (IATS-ANA).
Keywords	Biodiversity and Sustainability in Cultured Species; Fish Reproduction; Nutrition and Animal Health
Technical labs	<u>Histology service</u> : provides stained-histological slides from fixed or frozen material sent to the service <u>Artemia Cysts collection</u> : access to cysts from one of the largest available collections in Europe. <u>Animal husbandry service</u> : with technical support for running in vivo experiments. <u>SIEO service</u> : deals with informatics and scientific equipment issues.
Processing labs	Four full-equipped wet laboratories for necropsy and animal handling
EU projects	<ul style="list-style-type: none"> • AQUAMAX: Sustainable aquafeeds to maximise the health benefits of farmed fish for consumers • LIFECYCLE: Building a biological knowledge-base on fish lifecycles for competitive, sustainable European aquaculture • ARRAINA: Advanced Research Initiatives for Nutrition & Aquaculture • PROSPAWN: Implementation of natural spawning - improving quality of off-spring and animal welfare • REPROSEL: Reproduction protocols and molecular tools for mass spawning and communal rearing based selective breeding schemes applied to multiple-spawning marine fish
Number of researchers	16 permanent, plus an average number 20 post-docs and Ph.D. students
Number of technicians	7 permanent, plus an average number of 5 technicians under

	contract.
Lodging facilities	No
SERVICES - scientific support	Research projects should integrate within current research lines of IATS.
SERVICES - electronic databases	Yes: Web of Knowledge, Protozoological Abstracts, Full text access to articles from most editorials publishing articles related to aquaculture and fisheries. Electronic books in CSIC repository
SERVICES - quality assurance	N.A
Safety and ethical issues	All toxic and radiolabelled reagents are handled and disposed following national and EU safety rules. Fish experiments are carried out in accordance with national (Royal Decree RD1201/2005, for the protection of animals used in scientific experiments) and institutional regulations (CSIC, IATS Review Board), and the current European Union legislation on handling experimental animals.


1.2.1 Facility Unit 1 Information: IATS-EXP

Name Facility Unit 1	IATS Experimental facilities
TNA	YES
Contact (Researcher)	Jose Miguel Cerdá-Reverter E-mail: aquaexcel.wp4@iats.csic.es Tel: +34-964319500
URL	http://www.iats.csic.es
Postal Address	Torre de la Sal s/n. 12595 Ribera de Cabanes Castellón, Spain
General description	IATS-EXP consists of four wet halls with more than 250 tanks (from 3000 l to 30 l). Water quality (salinity, temperature, filtration, etc.) and light quality (photoperiod, intensity, etc.) will vary depending on the type of project and specific tanks in use. Experimental studies can be conducted with a great variety of species: gilthead sea bream, European sea bass, sole, turbot, zebrafish, <i>Aphanius iberus</i> , <i>Artemia</i> , rotifers, copepods, and a variety of algae.
Technical description	Automatic feeders are available for some tanks; effluent disinfection is provided at the Pathology hall. Algae, rotifers, copepods and <i>Artemia</i> are onsite produced for early life stages feeding. Feed is purchased from retailers
Remote monitoring & control	Under construction, not available yet for external users
Water and environmental conditions	Inlet water is pumped from the Mediterranean sea, sand filtered and oxygen is provided through compressed air and depending on the hall, additional filtering up to 0.2 µm and UV irradiation is available
Flowrate	General open sea flowrate: 60-90 m ³ /h. In recirculation systems,

	the flow is automatically controlled
Temperature	In most tanks water temperature ranges seasonally from 11°C to 28°C. Tanks with recirculation and heat/cooling systems allow automatic control of temperature
Salinity	37.5 ‰ with very slight fluctuations; it is monitored manually
Oxygen	70-80 %. In most cases it is monitored manually
pH	7.8-7.9, manually monitored
Light intensity and wavelength	It is not monitored in most cases. Most halls are provided with astronomic clocks to mimic sunrise and sunset in our latitude (40°5'N, 0°10'E). Light intensity is automatically controlled in the tanks devoted to the study of environmental control of reproduction.
Photoperiod	Natural photoperiod in most cases. It is controlled automatically in the tanks devoted to the study of environmental control of reproduction.
Fish measurements	Fish size and weight are measured manually, fish tags are registered automatically
Pictures/videos	

1.2.2 Facility Unit 2 Information: IATS - ANA

Name Facility Unit 2	IATS – Analytical facilities
TNA	YES
Contact (Researcher)	Jose Miguel Cerdá-Reverter E-mail: aquaexcel.wp4@iats.csic.es Tel: +34-964319500
URL	http://www.iats.csic.es
Postal Address	Torre de la Sal s/n. 12595 Ribera de Cabanes Castellón, Spain
General description	IATS-ANA includes 9 analytical laboratories, equipped with all

	the scientific appliances and devices to conduct most of the techniques and analyses involved in research in aquaculture: microscopy, histology, immunohistochemistry, ISH immunoassays, gas and liquid chromatography, PCR and RT-PCR and other molecular techniques, in vitro cell and eukaryotic culture, isotopic assays, micromanipulation, etc
Technical description	<p>Analyses include:</p> <ol style="list-style-type: none"> 1) Characterization of parasitic diseases of marine fish. Analyses cover: Histopathological characterization of the host-parasite interaction; Taxonomic and phylogenetic characterization of the parasite; Characterization of the host immune response; Development of molecular diagnostic methods. 2) Thorough scientific auditing of larval food quality, especially of live preys. 3) Study of larval lipid requirements, lipid metabolism and larval condition through biochemical and “omic” tools. 4) Histological characterization of sea bass gonads at different developmental stages starting at early stages. 5) Genome wide gene expression analysis using customized sea bream PCR-arrays and oligoarrays. 6) “In silico” search of biomarkers in a seabream transcriptomic database. 7) Specific sea bream and sea bass assays for GH and IGFs
Pictures/videos	

1.3 Modality of access

1.3.1 IATS – EXP

A typical user group of IATS-EXP will have to designate a contact person for the set up of the project with the officer liaison of the discipline involved. This previous contact is essential to know the specific and detailed services required for the project, and to integrate it into the scheduling of the research groups and other external users which use the infrastructure. The unit of access is weeks per person and it is defined as the number of weeks each person in a project is using a set of experimental tanks, which will include the preparatory work of the experiment, the technical support

during the experimental time and access to sampling wet labs, autonomous desk, computer, fax, copy machine, etc., information about safety and security rules and procedures. Users will receive access to all necessary live animals, equipment and consumables to complete their research project, as agreed in their project proposal. In addition, users will be provided with any necessary technical assistance, training and advice on methodologies, experimental design and data analysis. Users will be integrated in a research group and expected to collaborate in all the research process including report and article writing and publishing. The visiting scientist will receive a workplace including internet access, and receive support in finding living accommodation.

The access offered will include assessment by technical and scientific personnel, and will depend on the type of project. Users will be welcomed and introduced by the officer liaison and will be integrated in the scientific group related to the subject of the project. The support would vary depending on the actual degree of autonomy of the user in respect to efficiency and security aspects. Users will have the opportunity to consult, have advice and interchange ideas with scientific staff with expertise on most of the disciplines in Aquaculture, with notable excellence in: Morphological and molecular diagnosis of marine fish parasites; Fish immune response and immunomodulation, Methodologies and skills in biochemistry, immunology, cellular and molecular biology to study and control fish reproduction, food intake and growth; Transgenesis using model species as a tool for gene expression and function; Artemia; Fish larviculture and nutritional enrichment of live preys. Thus, users will have the opportunity of learning how to run a project under the best experimental conditions and to apply this knowledge to their own infrastructures back to their countries.

1.3.2 IATS - ANA

A typical user group will have to designate a contact person and define precisely which techniques are to be applied in the project. The unit of access includes the previous holding space of the samples to be analysed (if necessary), the scientific and technical support and the access to autonomous desk, computer, fax, etc., and information about safety and security rules and procedures. This access could be combined with access to IATS-EXP or to other experimental facilities offered by other partners of AQUAEXCEL. A typical project will have 1 user and an average stage of 4 weeks. Users will receive access to all necessary equipment and consumables to complete their research project, as agreed in their project proposal. In addition, users will be provided with any necessary technical assistance, training and advice on methodologies, experimental design and data analysis. Users will be integrated in a research group and expected to collaborate in all the research process including report and article writing and publishing. The visiting scientist will receive a workplace including internet access, and receive support in finding living accommodation.

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species as a tool for gene expression and function; Artemia; Fish larviculture and nutritional enrichment of live preys.

1.4 Unit of access

IATS-EXP: weeks. One user with an average duration of use of installations for 3 months. The user will typically stay at the installation during an average time of 2 weeks, one at the beginning of the project and another at the end. Unit of access is defined as one person per week giving access IATS-EXP to use a set of experimental tanks, which includes the preparatory work of the experiment and the technical support during the development of the project.

IATS-ANA: weeks. One person per week giving access to the analytical labs to analyse samples and additional support as specified above.