



**Hellenic Centre for Marine Research
(HCMR)**

Research Infrastructure Information

www.aquaexcel.eu

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1 HCMR in AQUAEXCEL

1.1 Introduction

Operating institution:	Hellenic Centre for Marine Research (HCMR), www.hcmr.gr
Type Operating Institution:	Research Institute
Research Infrastructure(s):	1. HCMR AquaLabs 2. HCMR Souda

1.2 HCMR Research Infrastructure 1: HCMR - AquaLabs

Name of the infrastructure:	HCMR- AquaLabs
Location:	Iraklio, Greece
Web site address:	www.hcmr.gr
Contact:	Dr Stavros Chatzifotis E-mail: stavros@hcmr.gr Tel: +30 2810 337766 More information/CV: http://www.hcmr.gr/upload_files/File/BIGCV_AQ_Chatzifotis_GB.pdf
AQUAEXCEL TNA facility:	YES
Short description	The Institute of Aquaculture (Crete) provides access to a modern infrastructure enabling multidisciplinary research on all life stages (genitors, eggs, larvae, juveniles, market size) of sea bass and sea bream and of 16 new promising species of 11 genus (D. dentex, P. pagrus, D. sargus, P. erythrinus, D. puntazzo, U. sciroso A. regius, S. umbra, S. dumerili P. americanus and E. marginatus). It also provides access to associated food chain technologies (microalgae, rotifers, artemia) and to innovative techniques or tools (self-feeders, mesocosms, photobioreactors, automation). Aqualabs are located at Gournes, 17 km from Heraklion.
Keywords	Hatchery, early developmental stages, nutrition, pathology, reproduction, behaviour, algae.
Technical labs	[Microscopy (fluorescence, inverted microscope, phase contrast) and stereoscopy equipped for photography, camera and image analysis- Physico-chemical analysis of water with electronic devices or photometer - Microbiology (cooled incubator, laminar flow, deep freezer, cooled centrifuge, colony counter). - biochemistry and nutrition (Kjeldhal unit, Soxhlet extractor, Hydrolysis unit, Fibertec, muffle furnace, oven) - Fish Physiology (ELISA, RIA enzymatic methods), haematology, endocrinology, speed vac - Histology (rotary tissue processor 12 stations (histokinette), embedding station, microtome, slide warmer plate, portable bench, top fume hood, staining system). - Fish behaviour, ethology, biorythms and welfare with electronic self-feeders linked to computerised data collector, tagging systems of fish (fish eagle) and cameras - computers for processing, analysis and presentation of data as well as redaction of reports
Processing labs	Non applicable
EU projects	REPRODOTT, COPEWELL, TROPOS
Number of researchers	7

Number of technicians	12
Lodging facilities	Hotel
SERVICES - scientific support	HCMR will make hotel reservations
SERVICES - electronic databases	Non applicable
SERVICES - quality assurance	AquaLabs is certified as facility for rearing and experimentation of marine organisms with codes EL 91-BIO-03 and 04
Safety and ethical issues	Non applicable

1.2.1 Facility Unit 1 Information: HCMR AquaLabs – Intensive Hatchery

Name Facility Unit 1	HCMR AquaLabs – Intensive Hatchery
TNA	YES
Contact (Researcher)	Nikos Papandroulakis E-mail: npap@hcmr.gr Tel: +302810337733, +302810337766 http://innovator.ath.hcmr.gr/newhcmr1/cv.php?id=28&resid=23
URL	www.hcmr.gr
Postal Address	Hellenic Center for Marine Research AQUALABS, 71500, Gournes Crete, Greece
General description	In the intensive hatchery experimentation on the larval stages of marine species (gilthead seabream, European seabass, meagre, Atlantic bluefin tuna and members of the sparidae family) is performed. The facility includes 8 closed water systems of 2x500 l tanks and 3 closed water systems of 3x2000 l tanks are used for larval rearing at high stocking larvae densities (50-200 individuals per l). The main applied method is the pseudo-green water rearing but also the clear water one is occasionally applied mostly for European seabass rearing or experimental purposes.
Technical description	Each system has control for temperature (ranges from 14 to 26 oC) and light (period and intensity). Automatic feeders for dry diets are installed in each tank. A computer based feeding system for live food is installed at the 500-l tanks zone
Remote monitoring & control	Non applicable
Water and environmental conditions	The water supply for the facility is mainly from borehole water of constant temperature (17-20 oC) and salinity (37 psu). Mechanically filtered seawater is also available that follows the natural seasonal variations in temperature and salinity.
Flowrate	This parameter is variable depending on the developmental stage of the reared individuals and it is manually controlled
Temperature	Each system has automatic control for temperature (ranges from 14 to 26 oC).
Salinity	Salinity is constant at (37 psu) for the borehole water. It ranges from 38-40 for the seawater
Oxygen	DO ranges form 80-120% saturation; it is controlled manually

pH	pH ranges form 7.7-8.5; it is controlled manually
Light intensity and wavelength	Light (intensity, wavelength) is controlled according to the particular experimental requirements with automatic switches
Photoperiod	Photoperiod is automatically controlled
Fish measurements	Length, weight, quality control, behaviour
Pictures/videos	Slides 10, 11

1.2.2 Facility Unit 2 Information: HCMR AquaLabs - MESOCOSM


Name Facility Unit 2	HCMR AquaLabs – MESOCOSM
TNA	YES
Contact (Researcher)	Nikos Papandroulakis E-mail: npap@hcmr.gr Tel: +302810337733, +302810337766 http://innovator.ath.hcmr.gr/newhcmr1/cv.php?id=28&resid=23
URL	www.hcmr.gr
Postal Address	Hellenic Center for Marine Research AQUALABS, 71500, Gournes Crete, Greece
General description	Rearing in Mesocosm serves for producing individuals used as control against other methodologies as they are closer to wild standard. Mesocosm is focusing on understanding the basic biological requirements of new species (e.g. greater amberjack, BFT) in order to develop the appropriate methodologies. In the Mesocosm hatchery experimentation on the larval stages of marine species (gilthead seabream, European seabass, meagre, Atlantic bluefin tuna, greater amberjack, and members of the sparidae family) is performed. The facility includes, six 40 m3 tanks.
Technical description	Each tank has control for temperature and light. Automatic feeders for dry diets are installed in each tank
Remote monitoring & control	Non applicable.
Water and environmental conditions	The water supply for the facility is mainly from borehole water of constant temperature (17-20 oC) and salinity (37 psu). Filtered seawater is also available that follows the natural seasonal variations in temperature and salinity
Flowrate	This parameter is variable depending on the developmental stage of the reared individuals and it is manually controlled
Temperature	Each system has automatic control for temperature (ranges from 16 to 22 oC)
Salinity	Salinity is constant at (37 psu) for the borehole water. It ranges from 38-40 for the seawater
Oxygen	DO ranges form 80-120% saturation; it is controlled manually

pH	pH ranges form 7.7-8.5; it is controlled manually
Light intensity and wavelength	Light (intensity) is partially controlled according to the particular experimental requirements
Photoperiod	Photoperiod is automatically controlled
Fish measurements	Length, weight, quality control, behaviour
Pictures/videos	Slide 13

1.2.3 Facility Unit 3 Information: HCMR AquaLabs – Behaviour and Nutrition

Name Facility Unit 3	HCMR AquaLabs – Behaviour and Nutrition / Rearing tanks
TNA	YES
Contact (Researcher)	Stavros Chatzifotis E-mail: stavros@hcmr.gr Tel: +302810337873, +302810337766 More info/CV: http://www.hcmr.gr/upload_files/File/BIGCV_AQ_Chatzifotis_GB.pdf
URL	http://www.hcmr.gr/listview2.php?id=99
Postal Address	Hellenic Center for Marine Research AQUALABS, 71500, Gournes Crete, Greece
General description	38 tanks of 500l capacity for behavioral and nutrition studies. Species: <i>Dicentrarchus labrax</i> , <i>Sparus aurata</i> , <i>Argyrosomus regius</i>
Technical description	24 tanks have a close system with temperature control (14 to 26 oC) and light (period and intensity)
Remote monitoring & control	Non Applicable
Water and environmental conditions	The water supply for the facility is mainly from borehole water of constant temperature (17-20 oC) and salinity (37 psu). Mechanically filtered seawater is also available that follows the natural seasonal variations in temperature and salinity
Flowrate	This parameter is variable depending on the developmental stage of the reared individuals and it is manually controlled
Temperature	Each system has automatic control for temperature (ranges from 14 to 26 oC)
Salinity	Salinity is constant at (37 psu) for the borehole water; it ranges from 38-40 for the seawater
Oxygen	DO ranges form 80-120% saturation; it is controlled manually.
pH	pH ranges form 7.7-8.5; it is controlled manually.
Light intensity and wavelength	Light (intensity, wavelength) is controlled according to the particular experimental requirements with automatic switches.
Photoperiod	Photoperiod is automatically controlled
Fish measurements	Length, weight, quality control, behaviour

1.3 HCMR Research Infrastructure 2: HCMR - Souda

Name of the infrastructure:	HCMR- Souda
Location:	Hania, Greece
Web site address:	www.hcmr.gr
Contact:	Nikos Papandroulakis Email: npap@hcmr.gr Tel: +302810337733, +302810337766 Website: http://innovator.ath.hcmr.gr/newhcmr1/cv.php?id=28&resid=23
AQUAEXCEL TNA facility:	YES
Short description	<p>The sea facility of the Institute is located in Souda Bay approx 120 Km West of AquaLabs where a concession of 4H exists. It is certified as aquaculture facility from the veterinary authority with code GR94FISH0001.</p> <p>There are several types of polyethylene cages 16 6mx6m [each of which can be subdivided to 4 3x3], 2 circular with 10m diameter and 1 cage of 640 m3 submerged at 40m. The supporting facilities comprises of a boat, a platform with motor and crane, an anchored platform with hutch, photovoltaic panels for energy, and a warehouse on land. Standard rearing methodologies are applied while feeding is performed either manually or with feeders.</p>
Keywords	Cage aquaculture, Mediterranean
Technical labs	Non applicable
Processing labs	Non applicable
EU projects	COPEWELL, TROPOS
Number of researchers	1
Number of technicians	3
Lodging facilities	NO
SERVICES - scientific support	<p>Souda facility is operating as part of the Institute of Aquaculture and therefore researches using the cage facility will have the analytical support of the Aqualabs as presented before. The following facilities will be used to support of researchers on site when using the access areas:</p> <ul style="list-style-type: none">- physico-chemical analysis of water with electronic devices- Fish Behaviour, and welfare monitoring with echo sounders and cameras
SERVICES - quality assurance	The facility is certified as aquaculture unit from the veterinary authority with code GR94FISH0001.
Pictures/videos	

1.4 Modality of access

Visitors planning to perform experiments in the Aqualabs facilities will provide an experimental plan for their work in collaboration with Aqualabs researchers in the project. This will enable planning of activities in relation to other Aqualabs's activities. The visitors will, once they arrive, have the same access to the facilities, equipments and technical support as any of the HCMR researchers already working in the facilities.

Aqualabs offers the possibility for researchers, students and trainees to learn the techniques for rearing of marine fish larvae, live food production, fish behaviour etc. The users of the AQUAEXCEL infrastructure will be provided access to internet, desk, and will be offered the possibility to work with the different groups of activities in the Institute of Aquaculture.

The following laboratory facilities will be used of support of researchers using the access areas:

- Microscopy (fluorescence, inverted microscope, phase contrast) and stereoscopy equipped for photography, camera and image analysis
- Physico-chemical analysis of water with electronic devices or photometer
- Microbiology (cooled incubator, laminar flow, deep freezer, cooled centrifuge, colony counter).
- Biochemistry and nutrition (kjeldhal unit, Soxhlet extractor, Hydrolysis unit, fibertec, muffle furnace, oven)
- Fish Physiology (ELISA, RIA enzymatic methods), haematology, endocrinology, speed vac
- Histology (rotary tissue processor 12 stations (histokinette), embedding station, microtome, slide warmer plate, portable bench, top fume hood, staining system).
- Fish Behaviour, Ethology, biorythms and welfare with electronic self-feeders linked to computerised data collector, tagging systems of fish (fish eagle) and cameras
- Computers for processing, analysis and presentation of data as well as redaction of reports]

1.5 Unit of access

One week represents the access of installation for the duration of one week. In the installation of Aqualabs projects will be run with an average duration of three weeks.