

# Mediterranean Aquaculture 2020

Rhodes, Greece  
October 18-21  
2011

Organised by the European  
Aquaculture Society  
Hosted by The Federation of Greek  
Maricultures and the Hellenic  
Centre for Marine Research

**Aquaculture Europe 2011** will be the most innovative event of European aquaculture to date, bringing together research institutions, academia and the industry. Sessions will address **vital questions affecting the development of Mediterranean aquaculture** over the next decade, with reviews of the importance of aquaculture in EU food production; the sustainability of aquaculture feeds and the implementation of selective breeding strategies in aquaculture. A review of current EU-funded research programmes will highlight their relevance to the current and future production practices.

Aquaculture Europe 2011 will **establish benchmarks for future research** that will lead to a clear foresight of the development dynamics of Mediterranean aquaculture 2020. The conference will include an international trade show, a Farmers' Day and a student workshop. It will also provide a platform to showcase European initiatives in aquaculture.

## Greece and Rhodes

Greece is the land of the twelve Olympian Gods, the cradle of Western civilization, the birthplace of sciences, philosophy, history and drama - and one of the leading aquaculture producers in the Mediterranean region. With total production in the region at more than 250.000 tonnes from the more than 1 billion fry stocked in Mediterranean waters, Greece and Turkey are the main producing countries, followed by Spain and Italy.

Greece (and Turkey) are also the major centres for juvenile production. Three 'mega hatcheries' with over 50 million juveniles operate in Greece and Turkey accounting for 20% of total production in the region. The 28 Greek and the 18 Turkish hatcheries therefore have major production themselves, but also import fry from Italy and France. Although Greece has a lower per capita consumption of seafood products than Portugal, Spain, France or Italy, the percentage of this consumption represented by sea bass and sea bream is the highest in the region (10.4%). The reliance on these two key species has led to market challenges in recent years and the opportunity for Mediterranean aquaculture is to expand consumption (of bass and bream) in the high fish consumption countries and to diversify the products for the 'more demanding' markets of northern Europe. With good spatial planning, increased production of other fish (marine and freshwater) and shellfish species and especially in the southern and eastern Mediterranean over the next 10 years may also be expected.

AE2011 will take place at the Rodos Palace Luxury Convention Resort, located just 12 km from Rhodes Diagora international airport. Rhodes can be reached directly from many European and international airports, or through Athens, and is only a short boat trip from the main aquaculture production sites in Turkey. The island is well known for the warmth of its welcome, its magnificent natural beauty and climate, its monuments and historical sites, as well as for its gastronomy.

We are sure that AE2011 delegates will have a memorable stay in Rhodes.



## AE2011 Thematic Sessions

The thematic sessions take place each morning of AE2011 and are plenary sessions. International speakers will present these thematic sessions, that 'open the debate' and pave the way for the parallel, technical sessions of contributed presentations in both oral and poster format.

- **Importance of aquaculture for EU food production.** A vision for the 2020 status of aquaculture in the Mediterranean and its role in providing high quality safe food for European citizens. The presentation will address the development of production in terms of sites, species and technologies to better balance the current trade deficit.
- **Nutrition and feeding.** An overview of recent and required developments in the feeding of species cultivated in Mediterranean waters.
- **Selective breeding.** Lessons learned from terrestrial animals and the status of the implementation of selective breeding programmes in (Mediterranean) aquaculture.

Information on the thematic speakers will be posted at [www.easonline.org](http://www.easonline.org)

## AE2011 Parallel Sessions (for submission of abstracts)

In addition to the thematic sessions, AE2011 also includes parallel and poster sessions grouped under four main areas - innovation in aquaculture; aquaculture and society; aquaculture systems and benchmarking aquaculture research.

The following is a list of the sessions open for submission of abstracts. Examples of research areas that may be included in each session are shown as an indication. When considering submission of your abstract, **please select the session most suited to your contribution.**

### INNOVATION IN AQUACULTURE

- PS 01: Sustainable feeds and feeding management** - feeding systems and management, alternative nutrient sources, nutrient metabolism, feed technology, nutritional pathology, nutriomics...
- PS 02: Reproduction and breeding** - broodstock management, gamete quality, reproduction control and selective breeding programs.
- PS 03: Hatchery production** - larval rearing methods, weaning, fry quality, skeletal deformities, probiotics.
- PS 04: Health management** - Disease prevention and treatment, vaccines, alternative therapy and prophylaxis, epidemiology, mapping diseases.
- PS 05: Welfare management** - operational indicators, monitoring, rearing conditions, stress, harvesting, transportation...
- PS 06: Novel technologies** - biotechnology, nanotechnology, computer modelling, hybrid technologies with other ocean industries.
- PS 07: New species for aquaculture production (including ornamentals)** - production methods, product quality and markets.
- PS 08: Aquaculture engineering and technology** - offshore aquaculture, submersible cages, RAS, remote sensing and automation, feeding systems, grading, processing.
- PS 09: Tuna farming** - capture-based aquaculture, fattening, reproduction, larval rearing and feed development.
- PS 10: Zebrafish** and other laboratory fish models for aquaculture applications.

### AQUACULTURE AND SOCIETY

- PS 11: Aquaculture and the consumer** - product quality, awareness, safety, certification, markets and marketing issues, processing and presentation of aquaculture products.
- PS 12: Escapees** - Environmental effects and methods to trace, mitigate and prevent escapes.
- PS 13: Energy efficiency in aquaculture production** - renewable energy synergies.
- PS 14: Aquaculture governance** - policy and socio-economics.
- PS 15: Aquaculture planning** - establishing aquaculture as an equal user in coastal zone management.
- PS 16: Aquaculture business management (NEW)**

### AQUACULTURE SYSTEMS

- PS 17: Organic aquaculture** - standards, rearing methods, feeds, product quality and marketing.
- PS 18: More than fish** - use of aquaculture technologies for the production of products other than sea food (carbon capture, algae, bioactive compounds...)
- PS 19: Diverse freshwater aquaculture systems** - including salmonids, cyprinids, cichlids acipenserids...
- PS 20: Alternative aquaculture** - artificial reefs, restocking, sports and leisure...
- PS 21: Mollusc aquaculture** - genetics, diseases, new species, quality & food safety issues...

### BENCHMARKING EUROPEAN RESEARCH

- PS 22: EU Forum** (not open for abstract submission).

The **EAS Student Group** will organise a special forum and reception for students attending AE2011 to enable networking and exchange of ideas. The forum will have a dedicated programme and will include a special student reception. Students receive the full registration package plus the student reception. To qualify for the student rate, a copy of your student I.D. is required.

A special question and answer **EU Forum** addressing research funded by the European Community and chaired by staff of the European Commission.

European **Associations, networks & research projects** will also have a forum to hold meetings during AE2011.

# call for papers - deadline: April 15, 2011

Latest: Abstracts still being accepted, but be quick!

Aquaculture Europe 2011 encourages the submission of high quality oral and poster presentations. We strongly encourage authors to consider poster presentations because poster sessions will be an integral part of the programme. Papers submitted for "oral presentations only" may not be accepted as oral presentations due to the limited number of available time slots. **All abstracts must be in English - the official language of the conference.** No Abstract Book will be printed - a compilation CD will be provided to registered delegates.

Each oral presenter is entitled to no more than 15 minutes for a presentation, plus 5 minutes for questions. **Presenters should focus on the application and impact of their results for the sector.** Authors of studies involving proprietary products or formulations should present this information in workshops or the trade show. **Oral presentations should use Power Point.** Overhead and slide projectors and video players will not be available.

All presenters are required to pay their own registration, accommodation and travel expenses. **Aquaculture Europe can not subsidize registration fees, travel or hotel costs.**

## Instructions for preparation of 2-page abstracts

### Abstract Format - Please refer to the sample.

1. Title of paper: type in bold in upper-case letters (= full capitals) and the scientific names in the title in italics; leave two lines between title and author(s).
2. Author(s): the first letters of both first and last names must be capitalised; leave one line between author(s) and affiliation. Use \* after the presenting author.
3. Address and Email: (in point 9) leave two lines between affiliation and text. Only the e-mail address of the contact person should be provided.
4. Headings of sections: type bold (not in full caps); space above should be two single lines for the first section header and one and a half lines above all the other section headers; space below section header should be half a line (or 6pt) only.
5. Text: typing must be single spaced; space between paragraphs can be half a line (or 6pt); paragraphs should begin flush with the left margin of the text, not indented.
6. Maximum length: two pages
7. Page size: standard A4 paper (210mmX297mm) (portrait)
8. Margins: left margin=4.2cm; right margin=4.2cm; margin top=2cm; margin bottom=4cm.
9. Font: Times New Roman 10 point
10. Photos, Figures and Tables: should be included if relevant. They should be reduced to the appropriate size to fit on the page and should be clearly readable.

Full guidelines can be found at [www.easonline.org](http://www.easonline.org)

### Posters have a prominent place in Aquaculture Europe meetings:

- Presenters that send a PDF or power point version of their poster four weeks before the conference will have their poster reviewed within the appropriate oral session.
- Special poster viewing with authors present is provided during the happy hours.
- Besides this, posters will be easily accessible during the lunch breaks.
- In the programme book, special mention will be made in the oral session lists of where the relevant posters can be found.
- Prizes will be awarded during the wrap-up session for Best Poster and Best Student Poster.

2 cm margin

**APPARENT DIGESTIBILITY OF ASTAXANTHIN IN ATLANTIC SALMON (*SALMO SALAR*) AND RAINBOW TROUT (*ONCORHYNCHUS MYKISS*), EFFECT OF SPECIES, TEMPERATURE, SALINITY AND DIETARY PIGMENT LEVEL.**

G. Strømnes, G. Bardon, O. Ram and W. Koppe

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**Introduction**

Flesh pigmentation in salmonids is dependent on species (Strømnes et al., 2006), dietary concentration of carotenoids, fish weight and time of feeding (Strømnes et al., 1996; Tørrisen et al., 1995), amongst others. The main effect of temperature and salinity factors influencing pigmentation of salmonids have been studied on rainbow trout. The present study was undertaken to study the effect of temperature, salinity and water temperature on apparent digestibility of astaxanthin in Atlantic salmon and rainbow trout and to investigate the effect of salinity on ADCax in Atlantic salmon.

**Materials and methods**

Atlantic salmon (mean weight 400 g) and rainbow trout (mean weight 560 g) were fed identical diets containing three different concentrations of astaxanthin (18, 38 and 55 mg/kg) in duplicate tanks. Salmon and trout were held in seawater either at 8 or 12°C, while trout were held in both freshwater and seawater at the same two temperatures. Fish were overfed for 13 days. At the end of the experiment, 20 fish were collected in duplicate from each tank. Samples were analysed for determination of apparent digestibility of astaxanthin (ADCax). The results are presented in an insert reader.

**Results**

Preliminary results show that ADCax was higher in rainbow trout than in Atlantic salmon, (figure 1).

Figure 1: Apparent digestibility of astaxanthin as a function of dietary astaxanthin. The graph shows two regression lines: one for Atlantic salmon (solid line) and one for rainbow trout (dashed line). The Atlantic salmon line is steeper and higher than the rainbow trout line.

4 cm margin

29.7 cm long

4.2 cm margin

at least partly that Atlantic salmon in the present rainbow trout (1992) trout reared in and others in compared to rainbow trout in Aquaculture, concentrations of use in Different rainbow trout in Atlantic salmon and astaxanthin and

Please submit your abstract online: [www.easonline.org](http://www.easonline.org)

If you are unable to submit online, please contact the Aquaculture Europe conference manager at [worldaqua@aol.com](mailto:worldaqua@aol.com) or fax +1 760 751 5003

## A major international trade exhibition especially for AE2011

Aquaculture Europe 2011 will feature a special international **trade exhibition**, organised by the European Aquaculture Society. Greek, Turkish and International companies will present the latest products and services for aquaculture.

Both **Standard and Corner booths** will be available and each booth is 6m<sup>2</sup> (3x2m) and features walls, carpet, two chairs and one table, spotlights, one power outlet, fascia identification sign and **two free passes for the AE2011 conference**.

A special **farmers' day** programme will be organised by the Federation of Greek Maricultures and the Turkish Muğla Fish Farmers Association and will have a special emphasis on aquaculture in the Mediterranean. This forum is designed to allow discussion of the issues raised.

A series of short **workshops** organised by EU-funded projects and other relevant initiatives will take place in the exhibition area and specifically targeted towards exhibitors and trade show visitors.

October 18 Tuesday	October 19 Wednesday	October 20 Thursday	October 21 Friday
Move in noon-18.00	Move in 08.00-10.00		
	Trade show open 10.00-19.00	Trade show open 10.00-19.00	Trade show open 10.00-16.30
Opening & Welcome 18.00-20.00	Happy hour 17.30-19.00	Happy hour 17.30-19.00 Presidents' reception 19.00-22.00	Move out 16.30-19.00

For booth information, reservation and advertising opportunities, please contact Mario Stael, AE2011 European Exhibit Sales Manager.

Tel/fax.: 32-9-2334912

E-mail: [mario.stael@scarlet.be](mailto:mario.stael@scarlet.be) [www.marevent.com](http://www.marevent.com)

**AE2011 also provides SPONSORSHIP OPPORTUNITIES to suit all budgets.**

<please contact Alistair or Mario for more>

### Your Aquaculture Europe conference registration includes:

- Admission to all conference sessions and to the trade exhibition
- Delegates kit
- Abstract CD - no abstract book will be published
- Refreshment breaks
- Admission to Welcome & Presidents' receptions
- Students receive the full registration package. To qualify for the student rate, a copy of your student I.D. is required

*Only pre-registered delegates are guaranteed delegates kit and abstract CD.  
Spouse registration does not include these two items.*

**REGISTER ONLINE: [www.easonline.org](http://www.easonline.org)  
or return this form by fax to : +1-760-751-5003**

- If online registration is not possible, return both sides of this form with payment to the address on the next page
- Registration can be faxed (fax: +1-760-751-5003) if paying by credit card (fax both sides)
- Use one form per person
- Cancellation of registration must be received - in writing - no later than September 15, 2011.
- Refunds for registration fees will be subject to a 20% handling fee & will be processed after the conference. No refund will be made for cancellations received after September 15, 2011 or for "no shows". After September 15, 2011, no refunds will be made for professional or personal emergencies, flight cancellations, denied visa, weather related cancellation or other travel emergencies. Fees for memberships are non-refundable.

PLEASE PRINT CLEARLY OR TYPE ALL REQUESTED INFORMATION

**BADGE INFORMATION:** (As you want your name badge to read - no title please)

First Name \_\_\_\_\_ Surname (Family Name) \_\_\_\_\_

Company or Institution \_\_\_\_\_  
(Limited to 40 letters & spaces)

City \_\_\_\_\_ State/Prov \_\_\_\_\_ Country \_\_\_\_\_

**MAILING INFORMATION:** Email \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State/Prov \_\_\_\_\_ Postal Code \_\_\_\_\_ Country \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_ Title: (circle one) Dr. Mr. Ms. Mrs.  
*Include country code and city code*

Type of registration	Register by June 30 2011	Register by September 1 2011	After September 1 2011	* To qualify for Member Rate you must be an EAS or WAS member in good standing (please tick overleaf). .....
EAS Member rate*	€ 395	€ 445	€ 495	Trade show access is included in the full conference registration rate
EAS Student Member rate* (Include copy of Student ID)	€ 125	€ 170	€ 225	
Special Rate for Greek Nationals (must be EAS members)	€ 250	After June 30, normal registration rates apply		<b>TOTAL REGISTRATION FEE</b> € _____
Non-Member rate	€ 495	€ 545	€ 595	
Student non-member rate (Include copy of Student ID)	€ 175	€ 225	€ 275	
Spouse rate Name _____	€ 225	€ 275	€ 325	

AE2011 trade exhibition: free for registered delegates of the Aquaculture Europe 2011 conference.

**Trade Show Pass Only** - valid whole period: €50  
- per day: €20 Available on-site

Membership dues - enter amount from membership application on other side if applicable € \_\_\_\_\_

Do not post registration after September 15<sup>th</sup> 2011 or fax after October 1<sup>st</sup> 2011. After October 1<sup>st</sup> bring this form with you to register onsite. **TOTAL AMOUNT € \_\_\_\_\_**

Registration confirmation and receipt will be emailed after processing.  
Any enquiries regarding registration should be sent to the EAS conference director at [worldaqua@aol.com](mailto:worldaqua@aol.com)

PAYMENT METHOD: all fees must be paid to the order of Aquaculture Europe 2011 without charges for the beneficiary.

Visa    Mastercard    American Express

Card # \_\_\_\_\_ Expiry Date \_\_\_\_\_ Name on Card \_\_\_\_\_

Card Billing Address \_\_\_\_\_ City \_\_\_\_\_ Zip \_\_\_\_\_ Country \_\_\_\_\_

Date \_\_\_\_\_ Signature \_\_\_\_\_

For bank transfer details, contact: [worldaqua@aol.com](mailto:worldaqua@aol.com)

*If you wish to pay by cheque, please contact Conference Director John Cooksey beforehand. A surcharge of €25 will be applied and this should be added to the final amount.*

Name \_\_\_\_\_

Membership: please check the box(es) for which you are a current member. Membership in any of these associations qualifies you for the Member Rate on the registration fees. **You can join EAS before registering** to qualify for the Member Rate.

European Aquaculture Society    World Aquaculture Society

**EAS MEMBERSHIP APPLICATION**    New Application    Renewal

## Join the EUROPEAN AQUACULTURE SOCIETY (EAS)!



**EAS MEMBERSHIP** includes automatic receipt of the Aquaculture Europe Magazine (quarterly), annual membership list, reductions on international aquaculture press and websites (Fish Farming International, Fish Farmer, Eurofish, Havbruk, ContactDirect.com, Seafoodintelligence.com), as well as **BIG REDUCTIONS ON REGISTRATION** for EAS and WAS co-organised meetings, etc. The peer reviewed Journal Aquaculture International (bimonthly) can be obtained as a part of the specific individual membership.

### EAS Membership Categories

(membership is from January to December each year. New members joining at any time of the year receive all material for the calendar year)

	Standard	Reduced Rate**
<input type="checkbox"/> EAS Individual* Membership	€ 80	€ 55
<input type="checkbox"/> EAS Individual Membership, incl. AI	€ 135	€ 110
<input type="checkbox"/> EAS Institutional* Membership	€ 300	€ 200
<input type="checkbox"/> EAS Life Membership ***	€ 720	-
<input type="checkbox"/> EAS E-member	€ 10	

(E-membership does NOT allow for member rate for AE2011 conference registration)

**Total Amount for EAS Membership: € \_\_\_\_\_**

Please enter this amount under 'Membership Dues' section on opposite side of form.

\* Peer-reviewed scientific Journal "Aquaculture International" (AI) not included

\*\*- Individuals if aged 30 or under (proof of age required). Also for individuals residing in European and non-European Mediterranean countries with Gross National income (GNI) lower than US\$ 10.000 per capita. These countries are: Albania, Algeria, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Egypt, Iran, Latvia, Lebanon, Lithuania, Libya, Macedonia, Moldova, Montenegro, Morocco, Poland, Romania, Russia, Serbia, Slovak Republic, Syria, Tunisia, Turkey, Ukraine.

- Institutes if based in one of the above mentioned countries.

\*\*\* Life membership offers the general EAS benefits (AI not included) for full lifetime duration.

more at [www.easonline.org](http://www.easonline.org)

## European Aquaculture Society (EAS)



The EAS is an international non-profit association dedicated to the promotion of contacts and the exchange of information amongst all involved or interested in aquaculture in Europe.

Established in 1976, the society's primary activities include publication of a quarterly magazine, publication of a series of special publications, publication of an international scientific journal and participation in the development of sustainable aquaculture in Europe through various EU projects and initiatives.

[www.easonline.org](http://www.easonline.org)

## Federation of Greek Maricultures (FGM)



The Federation of Greek Maricultures (FGM) represents the Greek aquaculture enterprises that produce Mediterranean euryhaline fish species and mainly Gilthead sea bream and European sea bass. It constitutes a professional association and is member of Federation of European Aquaculture Producers (FEAP).

It was founded in 1991 and FGM aim is to promote the interests of the sector in Greece and abroad. It officially represents the sector to Public Authorities, Institutions and Organisations. It participates in aquaculture research and educational programs and it supports the dissemination of information to its members. FGM also organizes campaigns for the presentation and promotion of Greek Mariculture industry.

[www.fgm.gr](http://www.fgm.gr)

## Hellenic Centre for Marine Research (HCMR)



The Institute of Aquaculture is one of the five institutes of the Hellenic Center for Marine Research (HCMR), which is the main public research organization in the area of marine sciences.

The activities of the Institute of Aquaculture include (a) research in all aspects of the rearing of established and potential Mediterranean marine species (reproduction, larval rearing, on-growing, nutrition and feeding, diseases and health management), (b) provision of products and services to the aquaculture industry and government agencies and (c) training of undergraduate and graduate students.

[www.hcmr.gr](http://www.hcmr.gr)

## AE2011 Steering Committee

Chair: Panos Christofilogiannis (AQUARK)

Members: Michael Chatziefstathiou (PASTI), John Cooksey (MFC), Yves Harache (EAS), Sachi Kaushik (INRA), Levent Kayi (Skretting), Alistair Lane (EAS), Constantinos Mylonas (HCMR), Ioannis Nengas (HCMR), Mario Stael (MFC) and Akis Ventiris (FGM).

## AE2011 Programme Co-Chairs

Constantinos Mylonas (HCMR) and Sachi Kaushik (INRA).

## AE 2010 Local Organising Committee

Ioanna Argyrou (NAYS), Panos Christofilogiannis (AQUARK), Elena Mente (University of Thessaly), Constantinos Mylonas (HCMR), Ioannis Nengas, Nikos Papandroulakis (HCMR), Michalis Pavlidis (University of Crete) and Giorgos Rigos (HCMR).  
All photos courtesy of Constantinos Mylonas, HCMR

## Tentative schedule

### Tuesday October 18<sup>th</sup> - Registration and set up day

Registration open	noon - 18.00
Exhibitor move in	noon - 18.00
Poster set-up	14.00 - 18.00
Opening Ceremony & Welcome drink	18.00 - 20.00

### Wednesday October 19<sup>th</sup>

Registration open	07.30 - 18.00
Plenary session	09.00 - 10.00
Trade show open	10.00 - 19.00
Coffee Break	10.00 - 10.30
Parallel Sessions	10.30 - 12.30
Lunch and Posters	12.30 - 14.30
Parallel Sessions	14.30 - 17.30
Poster Session Happy Hour	17.30 - 19.00
Student Reception	19.00 - 21.00

### Thursday October 20<sup>th</sup>

Registration open	08.00 - 17.30
Plenary session	09.00 - 10.00
Trade show open	10.00 - 19.00
Coffee Break	10.00 - 10.30
Parallel Sessions	10.30 - 12.30
Farmers' Day	10.30 - 17.30
Lunch and Posters	12.30 - 14.30
Parallel Sessions	14.30 - 17.30
Poster Session Happy Hour	17.30 - 19.00
Presidents' Reception	19.00 - 22.00

### Friday October 21<sup>st</sup>

Registration open	08.00 - 15.30
Plenary session	09.00 - 10.00
Trade show open	10.00 - 16.30
Coffee Break	10.00 - 10.30
Parallel Sessions	10.30 - 12.30
Lunch and Posters	12.30 - 14.30
Parallel Sessions	14.30 - 16.30
Plenary Wrap-up & Poster Awards	16.30 - 17.30
Farewell Happy Hour	17.30 - 19.00

The Rodos Palace Hotel is our conference hotel and we have secured excellent rates. Our local partner FREI SA CONGRESS TRAVEL will manage all hotel bookings and tours and can also assist with travel, transportation and other local assistance.

Hotel information and booking is available at [www.easonline.org](http://www.easonline.org)

Remember to book your hotel early!

### AE2011 further information:

Conference programme: [ae2011@aquaculture.cc](mailto:ae2011@aquaculture.cc)

Registration: [worldaqua@aol.com](mailto:worldaqua@aol.com)

Trade exhibition: [mario.stael@scarlet.be](mailto:mario.stael@scarlet.be)

Accommodation and travel: [ae2011@frei.gr](mailto:ae2011@frei.gr)