

LABORATORY OF ICHTHYLOGY& FISH DISEASES

Prof. F ATHANASOPOULOU DVM, MSC, PhD, dip. ECAAH



Our Diversity

- Marine mammals
- Fish
- Crustaceans
- Molluscs
- Sea food

Display/Entertainment
 Hobby

😐 Wild

- Farmed
- Can we be a unified organisation? Is it possible? I believe so













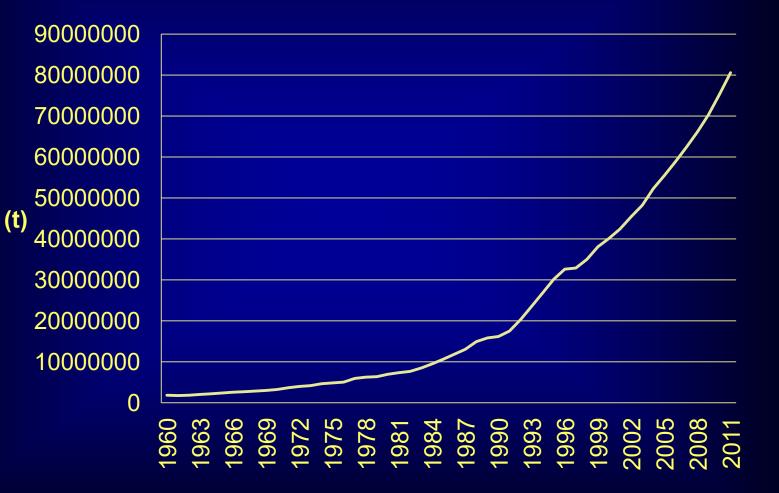


is09a654j fotosearch.com

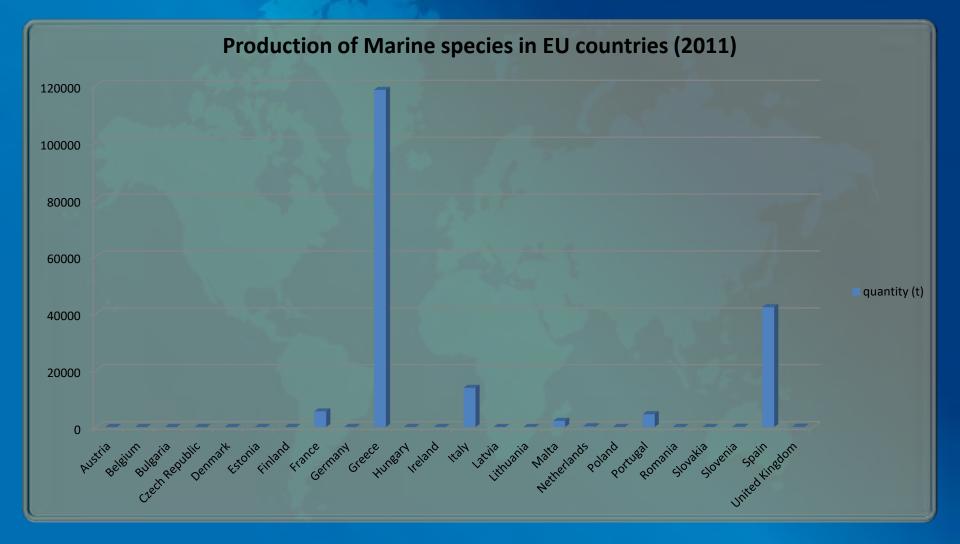


European region Countries

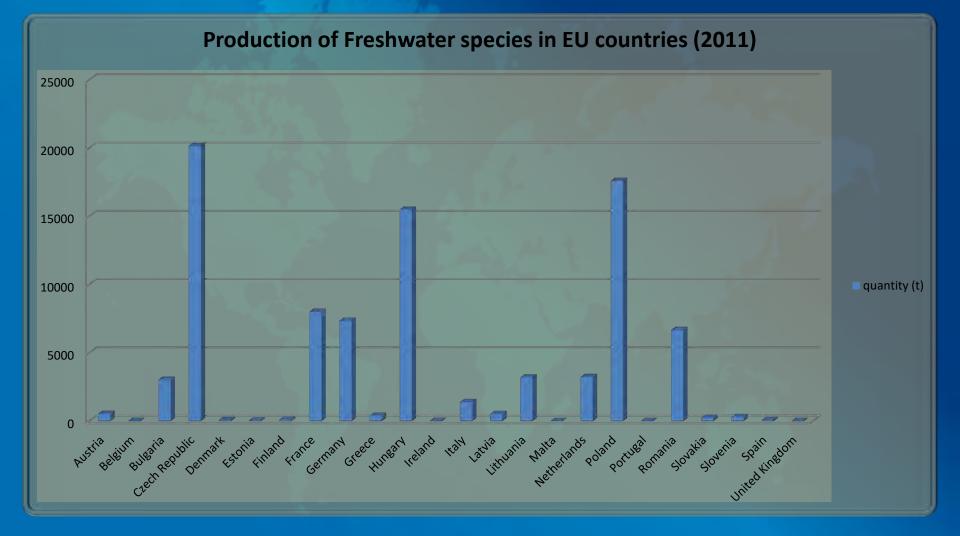
—Quantity (t)

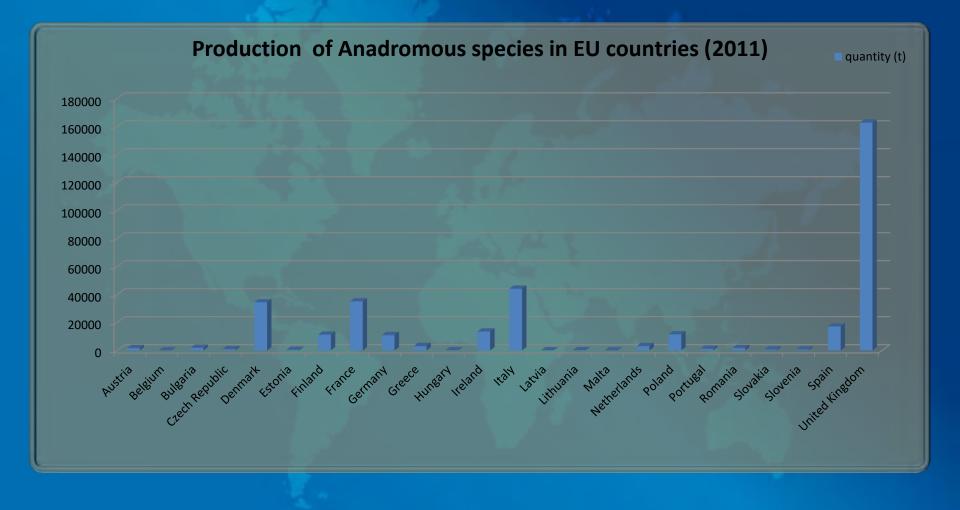




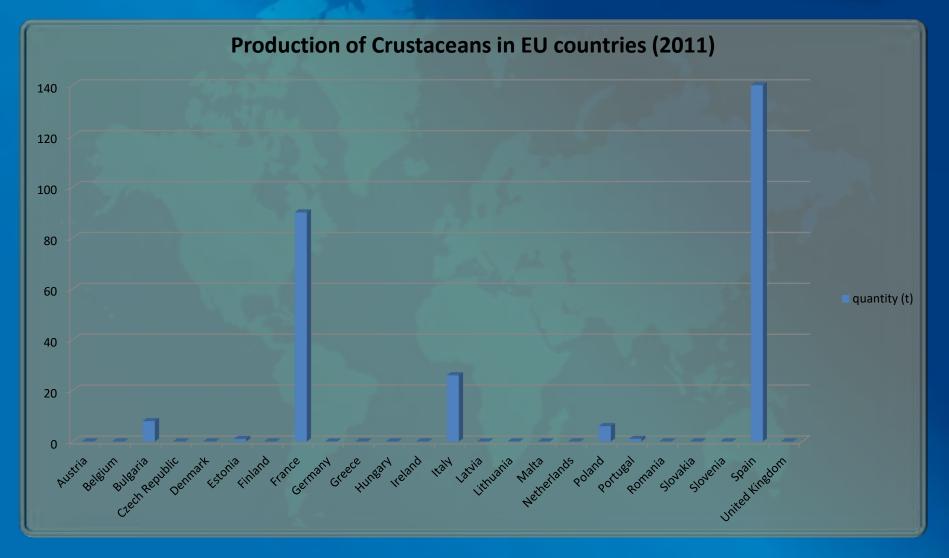




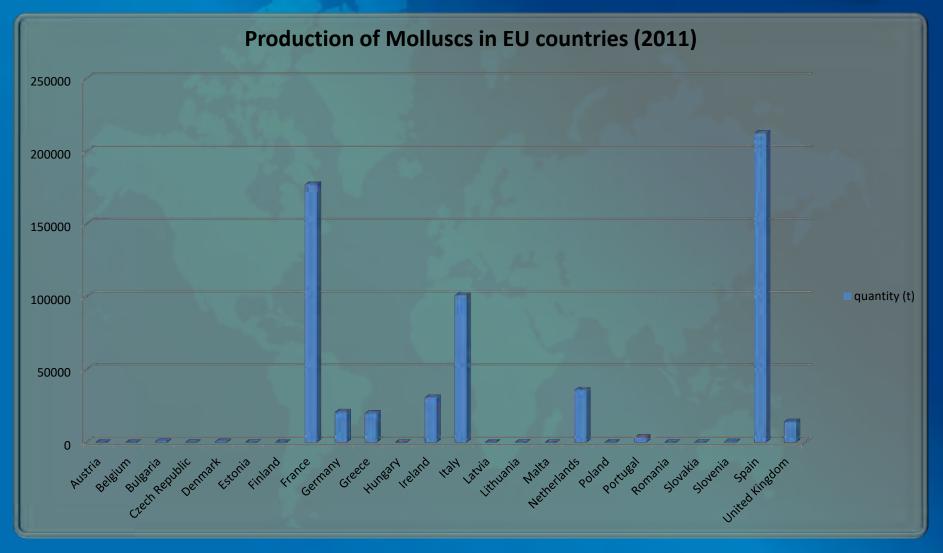




























Bivalve molluscs



Mytilus edulis & Mytilus galloprovincialis





Ostrea edulis

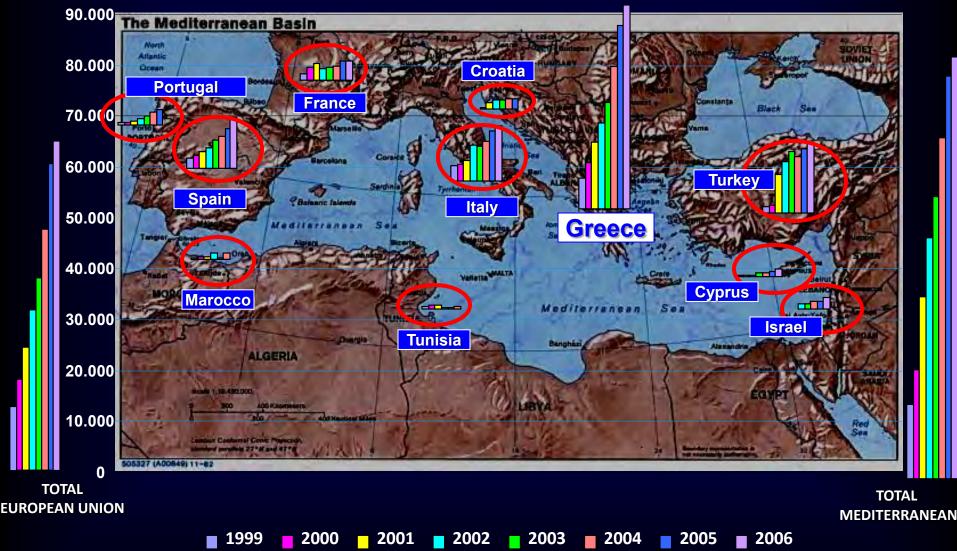








Seabream & Seabass in the European Union & Mediterranean



GREECE

- Population: 11,1 million.
- Consumsion of fish: 23.3 kg/yr.
- Seabass production (aquacuture)(: 49 000 tóvoi/yr (2007).
- Sea bream production (aquac): 71 000 tóvoi/yr (2007).
- Other cultured fish: trout 3 000 tóvoi/yr, eels 500 tóvoi/yr.
- Aquaculture is one of the larger sector of exports of Greece (2008).
- Gross income: over 500 million Euros/yr (2008).
- Employment :over 10.000 people in remote areas (2008)

Greek aquaculture is globally the highest producer in mediterranean species.

Greek Aquaculture

Seabream & seabass are the main species farmed, along with sharp snout sea bream, pandora, grey mullet, common dentex, red pongy and others.

They represent > 95% of the total marine fish production, while the rest species are produced in smaller quantities.

Close to **142,000 tons** of seabass and seabream were produced in Greece (2011) together with **300 million** juveniles. From this **75% of the 460 million** € (annual sales turnover), was exported and the rest sold to the domestic market.

The licensed farms that provide **10.000** working positions in rural areas away from towns. **7 companies** have been introduced in the Athens Stock Exchange and **15 of them** are listed in the top 100 Greek food companies.

Italy is the biggest market for sea bass and sea bream while significant quantities are being sold to France, UK, Spain, Germany, Belgium, Austria, Portugal, USA, Canada and Japan.

Seabass & seabream is **2nd largest** agricultural exported product after olive oil.

1. UNDERGRADUATE TRAINING

1.1. ICHTHYOLOGY & AQUACULTURE 1.2. AQUATIC ANIMAL HEALTH

The Department was established in 1988.

In 2001 Prof. F. Athanassopoulou was elected as Associate Professor at the Faculty of Veterinary Medicine and Head of the Department of Aquaculture, Aquatic Fauna and Aquatic Animal Health. In 2006 Dr. P. Pantazis was elected as Lecturer at the respective Department and in 2007 was officially appointed as member of the staff of the Department. In 2017 Dr. P. Pantazis moved to the Animal Husbandry dept.

2015: President of European College of Aquatic Animal Health – ECAAH) http://www.larissanet.gr/2015/01/13/diethnis-diakrisi-gia-kathigitria-tou-panepistimiou-thessalias/

The Department and its staff are well known in the Mediterranean area for the experience in fish disease research and diagnostics, and particularly in the field of parasitological diseases, treatments and histology.

The Department focuses on two main research activities:

•Management of the aquatic animal health, hygiene and quality of the final products and public health.

*Development and application of effective and innovative aquaculture techniques both in marine and freshwater environments.

Teaching strategies:

•Terminology of species and basic knowledge of anatomy and physiology of most commercially reared aquatic species and wild aquatic animals

 Good knowledge of the histology of all fish tissues and ability to recognize histologically other aquatic organisms.

•Knowledge of principles of aquaculture of most commercially reared aquatic species.

•Knowledge of principles on nutrition and breeding of most commercially reared aquatic species Terminology of aquatic diseases and international abbreviations of diseases

•Principles and differences of diagnosis in specific aquatic ecosystems, species and stage of culture.

• Principles, factors and associations involving disease outbreaks in farmed and wild aquatic species. Epidemiology principles in freshwater and marine cultured aquatic animals.

•Methods of sampling and dispatching pathological material according to disease diagnosis targets and farming systems.

•Differential diagnosis of diseases of aquatic animals in terms of clinical signs, necropsy and laboratory results

•Differences on welfare, immune system and disease diagnosis between terrestrial and aquatic animals.

Principles of prevention, treatment strategies and dose calculation in the aquatic environment.
Principles of toxicology and preventing pollution in the aquatic environment and the final product.

•Diagnosis of notifiable diseases and main legislation concerning fish farming, diseases of \star aquatic organisms and aquaculture products.

•Resolving different clinical cases.

UNDERGRADUATE TRAINING STUFF

HEAD: Prof. Fotini ATHANASSOPOULOU DVM, Msc, PhD, MRCVS

D.V.M. University of Thessaloniki, Greece, March 1981, 5 years

Post-graduate Certificate in Veterinary Microbiology, Parasitology and Infectious Diseases. University of Thessaloniki, Greece, June 1983, 18 months M.Sc. in Aquatic Veterinary Studies University of Stirling, U.K. July 1985, 1 year. Taught course.

Ph.D in Fish Pathology / Parasitology University of Stirling, U.K., January 1990, 4 years.

Dip. ECAAH (2015)

President of European College of Aquatic Animal Health – ECAAH) http://www.larissanet.gr/2015/01/13/diethnis-diakrisi-gia-kathigitria-toupanepistimiou-thessalias/

Lecturer: Panagiotis PANTAZIS

Ph.D. in Aquaculture Nutrition. Institute of Aquaculture - University of Stirling, Scotland, U.K (2000).
 B.Sc. in Agricultural Sciences -Animal Husbandry. The Agricultural University of Athens, Greece (1988).



Kolygas Markos. Ichthyologist . MSc. PhD, post doctoral research fellow

2010: M.Sc. in Aquatic Veterinary Studies (Aquaculture-Aquatic Animal Health), Faculty of Veterinary Science, University of Thessaly, Karditsa, Greece.
2010-present: PhD student in Fish Pathology. Employer: Competitive E.U. funded project "Heraclitus II", Research Committee, University of Thessaly, Karditsa, Greece.

PhD Thesis. Application of original therapeutic treatment for the effective control of ectoparasites in intensive farms of marine Mediterranean fish. Competitive E.U. funded project "Heraclitus II", Research Committee, University of Thessaly, Greece

Gourzioti Evgenia D.V.M. MSc. PhD, postdoctoral teaching assistant

09/2010 – 2014. PhD student in Fish Pathology. Employer: Competitive E.U. funded project "Heraclitus II", Research Committee, University of Thessaly, Karditsa, Greece.

2010-present: PhD Student in Fish Pathology. Laboratory of Ichthyology, Fish Diseases and Aquaculture, Faculty of Veterinary Science, University of Thessaly, Karditsa, Greece.

2010: M.Sc. in Aquatic Veterinary Studies (Aquaculture-Aquatic Animal Health), Faculty of Veterinary Science, University of Thessaly, Karditsa, Greece.

2007: D.V.M. Veterinary Medicine, Faculty of Veterinary Science, University of Thessaly, Karditsa, Greece.

Lambou Eirini D.V.M. MSc. PhD, postdoctoral teaching assistant

09/2010 – 2014. PhD student in Fish Pathology. Employer: Competitive E.U. funded project "Heraclitus II", Research Committee, University of Thessaly, Karditsa, Greece.

2010-present: PhD Student in Fish Pathology. Laboratory of Ichthyology, Fish Diseases and Aquaculture, Faculty of Veterinary Science, University of Thessaly, Karditsa, Greece.

2010: M.Sc. in Aquatic Veterinary Studies (Aquaculture-Aquatic Animal Health), Faculty of Veterinary Science, University of Thessaly, Karditsa, Greece.

2007: D.V.M. Veterinary Medicine, Faculty of Veterinary Science, University of Thessaly, Karditsa, Greece.

• Facilities / Equipment











































DIAGNOSTICS

Diagnostic services to aquaculture:

- Helpa SA, Freshwater farm, Epirus
- Selonda Intern. Peloponnese. Marine fish farm
- Nereus Fish farm, Hios and Peloponnese, Marine fish Farm
- Mante Fish Farm, Marine fish farm Volos.

UNDERGRADUATE TRAINING

TRAINING MATERIAL

- Samples from diagnostic work
- (min 1/week)
- Samples from research projects
- On-growing fish for laboratory purposes
- Histology and fixed samples from industry (2nd opinion)



2. POSTGRADUATE TRAINING

2.1. MSc COURSES

- Established in 2005
 by FEK : 56405/B7/1479/27-10-2005
- Started: March 2006
- Duration:: March
 2006 till 2020





ΕΦΗΜΕΡΙΣ ΤΗΣ ΚΥΒΕΡΝΗΣΕΩΣ

ΤΗΣ ΕΛΛΗΝΙΚΗΣ ΔΗΜΟΚΡΑΤΙΑΣ

ΤΕΥΧΟΣ ΔΕΥΤΕΡΟ

Αρ. Φύλλου 1479

27 Οκτωβρίου 2005

TEPIEXOMENA

ΑΠΟΦΑΣΕΙΣ

ΔΙΟΡΘΩΣΕΙΣ ΣΦΑΛΜΑΤΩΝ

ΑΠΟΦΑΣΕΙΣ

Apt6µ, 78136/B1

Αυτοδίκαιη δημουργία θέσεων ΔΕΠ στο Εθνικό και Καποδιστριακό Πανεπιστήμιο Αθηνών.

Ο ΥΘΥΠΟΥΡΓΟΣ ΕΘΝΙΚΗΣ ΠΑΙΔΕΙΑΣ ΚΑΙ ΘΡΗΣΚΕΥΜΑΤΩΝ

Έχοντας υπάψη:

Tre διατάξειε:

 α) Των άρθρων 45 παρ. 11 και 35 παρ. 1 και 2 του ν.
 1268/1962 (Α΄ 87) άπως το τελευταίο αντικαταστάθηκε με το άρθρο 79 παρ. 7β΄ του ν. 1566/1985 (Α΄ 167).

β) Του άρθρου 14 πάρ. 5 εδ. α του ν. 2817/2000 (Α΄ 78).

 γ) Του άρθρου 90 του κάδικα νομοθεσίας για την Κυβέρνηση κα τα κυβερνητικά άργανα, που κυράθηκε με το άρθρο πράτο του π.δ. 63/2006 (Α΄ 98).

2 Την υπ' αρθμ. 37876/215/264.2004 απόφαση του Πραθυπουργοί και της Υπουργοί Εθνικής Παιδείας και Θρησκευμάτων Καθορισμός αρμοδιοτήτων Υφυπουργών του Υπουργείου Εθνικής Παιδείας και Θρησκευμάτων (ΦΕΚ 606 τ.Β').

Τα έγγραφα του Πανεπιστημίου Αθηνών υπ' αριθμ.
 21277/5451/257.2005 και 19353/5450/29.6.2005

4 Το γεγονός ότι από την εφαρμογή της απόφασης αυτής δεν προκαλείται δαπά νη σε βάρος του κρατικού προϋπολογισμού, αποφασίζουμε

λρθρο μόνο

α. Διαποτώνουμε ότι στο Εθνικό και Καποδιστριακό Πανεπιστήμιο Λθηγκίαν έχουν δημιουργηθεί αυτοδίακαι δύο (2) θόσεις Διδακτικού Ερουνητικού Προσωπικού από με τατροιτή υσέμθεμαν Θόσεων Μέγια λύσης της υπαλληλικής σχέσης Βοηθών που υπηρετούσαν αντίστοιχαι στην Ιατρική Σχολήναι στο Τμήμα Ιστορίας και Αρχαιολογίας του Εθνικού και Καποδιστριακού Πανειπο τημίου Αθτικάν.

β Οι κατά την ανωτέρω παράγραφο δημιουργηθείσες θέσεις ματαφέρονται σε Τμήματα του Κρύματος σύμφωνα με τα προβλεπάμενα στην παρ. δα του άρθρου 14 του ν. 3817/2000 (Α'78).

Η απόφαση αυτή να δημοσιευθεί στην Εφημερίδα της Κυβερνήσεως.

> Αθήνα, 13 Οκταβρίου 2005 ο γινηστητα ΣΠΥΡΙΔΩΝ ΤΑΛΙΑΔΟΥΡΟΣ

Аре́р. 66325/87

Τροποιτοίηση της υπ' αριθμ Β7/474/8.102001 (ΦΕΚ 1507) τΒ'(211.2000 υπουργικής απόφασης που αφορά το ΠΜΣ του τμήματος Επιστήμης Διαιτολογίας - Διατροφής του Χαροκοποίου Παναποτημίου με τίλο -ξοηριοσμότη Διατολογία και Διατροφή.

Ο ΥΦΥΠΟΥΡΓΟΣ ΕΘΝΙΚΗΣ ΠΑΙΔΕΙΑΣ ΚΑΙ ΘΡΗΣΚΕΥΜΑΤΩΝ

Έχοντας υπόψη:

Τις διατάξεις των άρθρων 10 έως 12 του ν. 2083/1992
 (ΦΕΚ 199 τ.Α΄ («Εκσυγχρονισμάς της Ανώτατης Ειπαί-





UNIVERSITY OF THESSALY SCHOOL OF HEALTH SCIENCES FACULTY OF VETERINARY MEDICINE

in conjunction with

Dept of Ichthyology and Fisheries Technological Institute of Epirus

Administration is held by the University of Thessaly, Faculty of Veterinary Medicine. *



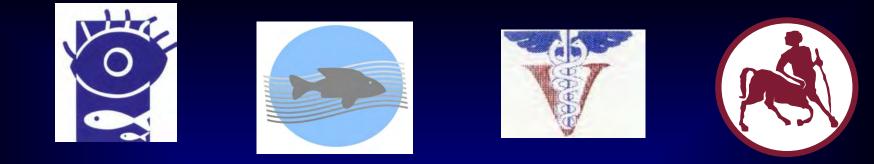




<u>Two specializations</u>: •Aquaculture •Aquatic Animal Health

•<u>Max number of students</u>: Aquaculture: 20. Aquatic Animal Health: 15

•Funds: The course is self funded (1500- now: 900 Euros per semester)



Organization / Administration

GSES: Specific GM of the faculty checks specific issues covered by law and the MSc regulations of the UTH.

EDE : special transfaculty committee: 5 members (3 UTH: (I. Pappas,G. Christodoulopoulos, A. Govaris) and 2 from TEI: I. Skoufos and C. Nathanailides







 Course is self funded
 10% budget returned as scholarships (10.000E)
 20.000E spent in upgrading lecture theaters & other buildings in the Faculty
 Operates through internal regulations of UTH









Scope, Objective:

1. To train students with the necessary knowledge related to aquaculture sector, present the most up to date, innovation methods of keeping animals, deep knowledge and understanding of the biology, physiology and welfare of the main species reared as well as the aquatic environment and the aquatic environment itself.

2. Understanding the principles of hygiene, public health and quality assurance methods related to aquaculture and its products.

3. Preparation for PhD studies





Open to:

University graduates of: Veterinary Medicine, Geotechnical studies, Biology, Environmental Studies, Technological Institute graduates –TEI-(animal production, fish production and related subjects).

TEI graduates must complete extra criteria (exams in certain subjects decided by the admissions committee).

All candidates must have a good knowledge of English proved either by formal qualifications or after taking examination organized by the Admissions Committee. Duration of studies:



2 years, running every 15 days at weekends, from Friday 4.00pm to Sunday 4pm. The taught course is 3 full semesters followed by 1 semester of Thesis.

The 1st semester is <u>common</u> for both specializations and is currently run in Arta town where the collaborating TEI Institution is located.

Then students separate; "Aquaculture" students continue to attend classes at the town of Arta "Aquatic Animal Health" students have classes in Karditsa where the Faculty of Veterinary Medicine is located. 2006-2008: 36 students 17 Male/ 19 Female mostly TEI graduates -6 vets out of 13



2008-2010 : 40 students 25 Male/ 15 Female Mostly TEI graduates -8 vets out of 15

2010-2012 : 36 students 18 Male/ 18 Female Mostly TEI graduates -13 vets out of 15



2012-2014 : 13 students mostly vets

2014-2016 : 10 students mostly vets









PUBLISHED WORK

In scientific journals: >90

In congresses: > 67

Books: 2+1

EXAMPLES:

•Pantazis, P., Benekos, G., & G. Papadomichelakis. 2014. Early weaning diets for gilthead sea bream (*Sparus aurata* L.) and their potential use in Hellenic marine fish hatcheries. *Aquaculture International*, 22(5), pp. 1621-1636. DOI: <u>http://link.springer.com/article/10.1007/s10499-014-9769-3</u> (I.F. 2012 – 1.037)

•Athanassopoulou, F., Pantazis, P. 2010. The potential of alternative aquaculture activities in the Karditsa Prefecture. Proceedings of the 2nd Developmental Congress of the Karditsa Prefecture, Karditsa Prefecture, 19-21 February 2010, Karditsa, pp. 387-391. ISBN 978-960-85579-6-3.

•Pantazis, P. & Benekos, G. 2011. Early weaning micro diets in sea bream *Sparus aurata* L. and their suitability for Hellenic marine fish hatcheries. 26th Annual Symposium of the Hellenic Society of Animal Production, Halkida, Greece, 12-14 October 2011, pp.102-103..

•Karamaligas, J.X., Pantazis, P.A. & Athanassopoulou, F., 2012. The effect of increased dietary rapeseed levels on the growth, survival, health and flesh quality of the common carp (*Cyprinus carpio* L.). Aquaculture America 2012, Las Vegas, Nevada, Feb 29-March 2, 2012, Book of Abstracts https://www.was.org/meetingabstracts/ShowAbstract.aspx?Id=25235

•Pantazis, P.A., Karamaligas, J.X. & Athanassopoulou, F., 2012. The effect of the dietary rapeseed levels on the growth, survival and flesh quality of the common carp (*Cyprinus Carpio* L.). 27th Annual Symposium of the Hellenic Society of Animal Production, Trikala, Greece, 3-5 October 2012.

•Pantazis, P.A., Georgia Kouneli, Markos Kolygas y Foteini Athanassopoulou. 2014. The effect of dietary probiotics on growth, survival and stress resistance of rainbow trout *Onchorynchus mykiss*. Memorias de "Primer Encuentro Nacional de Ictiología", Pontificia Universidad Católica del Ecuador Sede Esmeraldas, Escuela de Gestión Ambiental, (PUCESE), 24, 25 y 26 de Septiembre de 2014, Esmeraldas, Ecuador, pp. 25-27.







TEACHING STUFF Internal : more 10 - faculty UTH and 7 -TEI External: 20









 \star

 \star

FACILITIES



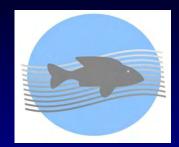
















 \star

 \mathbf{X}

CURRICULUM

1nd Semester (common) Total ECTS: 30

 \mathbf{x}

| Subject title | Hours of Teaching | ECTS |
|--|----------------------|------|
| Aquatic Environment | 30 | 4 |
| Biology of cultured aquatic animals | 25 | 3 |
| Aquaculture Systems | 30 | 4 |
| Genetics and Breeding | 15 | 2 |
| General Principles of Aquatic Animal Health and Diagnostics | 25 | 3 |
| Mediterranean nutrition | 30 | 4 |
| Quality Assurance in Aquaculture- HACCP systems | 15 | 2 |
| Special lectures / Invited speakers mainly from abroad | 25 | 3 |
| Bibliographic paper to be submitted (on a specific subject) | - | 5 |
| TOTAL | 195 | 30 |







Msc Course in "Aquaculture"









2nd Semester



| Subject | Hours of Teaching | ECTS |
|---|----------------------|--------|
| Design of farms | 25 | 3 |
| Design of hatcheries | 25 | 3 |
| Broodstock management and Genetics | 20 | 2 |
| Nutrition | 30 | 5 |
| Lagoon management | 20 | 3 |
| Applied nutrition of aquatic organisms | 20 | 5 |
| Laboratory practice, farm visits | 40 | 9 |
| TOTAL | 135 | 30 ★ 🗡 |
| | | |

3rd Semester

Total ECTS:30

 \star

X

| Management and Economics of aquaculture enterprises | 30 | 4 |
|---|-----|----|
| Alternative methods of aquaculture | 30 | 4 |
| Seminars / educational visits to various farms and installations related to aquaculture | 50 | 7 |
| Research project (to be submitted as a Thesis in the end of 4 th semester) | _ | 15 |
| TOTAL | 110 | 30 |
| | | |

Msc Course in : "Aquatic Animal Health "











2nd Semester : Total ECTS 30

| Subject | Hours of Teaching | ECTS |
|---|----------------------|-----------|
| Infectious diseases of aquatic animals I (Microbiology) | 25 | 5 |
| Λοιμ Infectious diseases of aquatic animals II (Parasitic Diseases) | 30 | 4 |
| Infectious diseases of aquatic animals III (Viral, RLO's, <i>Chlamydias</i> etc, non infectious diseases) | 25 | 4 |
| Immunology of aquatic animals | 30 | 4 |
| Principles in Pathology | 20 | 3 |
| Pathology of aquatic animals and mammals | 20 | 3 |
| Special lectures/ seminars | 20 | 3 \star 🖈 |
| Practicals, laboratory training /seminars | 30 | 4 🖈 |
| TOTAL | 200 | 30 🛨 |

3nd Semester : Total ECTS 30

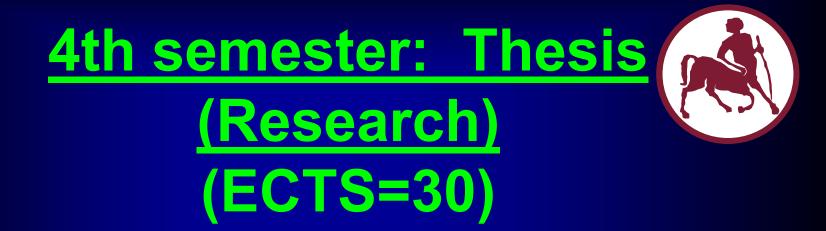
| | 2 | |
|---|---|--|
| [| 5 | |
| Ĭ | 2 | |
| | | |

 \star

 \star

 \bigstar

| Principles in Pharmacology and Therapeutics | 20 | 3 | |
|---|-----|----|--|
| Fisheries hygiene, incl. Bivalves and all aquaculture products | 25 | 3 | |
| Seminars / educational visits to various farms and installations related to aquaculture | 40 | 6 | |
| Research project and laboratory training in advanced laboratory methods | | 15 | |
| TOTAL | 105 | 30 | |



Total MSc Thesis Aquaculture: 20+ 17

Total MSc Thesis Aquatic Animal Health: 15+12



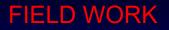
LABORATORY WORK











ΙΧΘΥΟΚΑΛΛΙΕΡΓΗΤΙΚΟ ΚΕΝΤΡΟ ΑΧΕΛΩΟΥ Α.Ε.

Εναλλακτικός τουρισμός στις εκβολές του Αχελώου



Στον ιδιαίτερης ομορφιάς χώρο, ο άνθρωπος είναι & νοιώθει κομμάτι της φύσης, φίλος, συγκάτοικος & θαυμαστής της άγριας ζωής.









- · Wapzya
- Πεζοπορία
- Φωτογραφία
- Παρατήρηση πουλιών
- Етіакгуп аг.
- αρχαιολογικούς χώρους
- Επαγγελματική σύσκεφη
- Γαστρονομικές απολούσεις

<u>GIS-Fish Seminar</u> Date: Saturday, 24-1-2009 Place: Veterinary Faculty, University of Thessaly, Karditsa, Greece (<u>http://www.vet.uth.gr/english/index.html</u>)





•The Msc is awarded after successful completion of 120 (ECTS).



















PHOTOS / HAPPY MOMENTS











 \star









大

















OUR LAB

3. RESEARCH PROJECTS

2000 - TODAY Minimum: 13







•«Study of the development of reared *Diplodus sargus* in Ionian Sea , In Argolikos and Evoikos Bay and in the Santoni Lagoon, (Corfu) in relation to the wild population". Greek Ministry of Technology & Research. Principal Investigator for UTH. 2002

•Diagnosis, epidemiology and control of an enteric myxosporosis of commercial Mediterranean fish. EEC project Quality of life, 2002-2006). Principal Investigator for Greece.

"Study of the ecology and identification of metazoan parasites of marine mediterranean fish in relation to intensive farming conditions" Greek-Italian collaboration, GSRT, (1999-2001). Principal Investigator.
«Study of the toxicity & pathological effects of ivermectin against the parasites: *Lernathropus kroyeri* και *Anilocra physodes*, of sea bass *Dicentrarchus labrax*. L" Simi Fish Farm project. (1997-1998). Principal Investigator.

«Diagnosis, epidemiology and control of an enteric myxosporosis of commercial Mediterranean fish». EEC project. "Quality of life", This project has just started. Principal Investigator for Greece, (2002-2005). "SEARCH FOR MARKERS FOR NEURONAL DISEASES IN FISH WITH SPECIAL FOCUS ON POTENTIAL PRION" GSRT,, Greek-German collaboration (2002-2004). Principal Investigator.

«Identification of Noda virus in cultured sea bass (*Dicentrarchus labrax* L.) with PCR method and molecular characterization of the virus». (2002-2003). Funded by the University of Thessaly (UTH). Principal Investigator

Disease interactions and pathogen exchange between farmed and wild aquatic animal populations- a European network. (DIPNET), contract number: QLK2-2004-006598. Participant in word package. <u>http://www</u>. dipnet.info 2006-2008. Partner.

PANDA- EU Framework Programme 6 (contract number SSPE-CT-2003-02329).<u>www.europand.nethttp://www.easonline.org/feapf/_panda</u> Participant in word package.2006-2008. Partner. Establishment of a databank of pathogenic bacteria in Greek fish farms. Ministry of Agriculture (2007-2009). In collaboration with the Aristotelian University of Thessalonica and the Marine Research Institute, Athens. Principal investigator for University of Thessaly.

Study of the residue levels of antibiotics in Greece, private company award (2009): Principal Investigator. AquaTT- EEC project: Training (undergraduate and postgraduate) in Aquaculture in Europe. Partner for Greece. (2010). Partner

"HERACLEITOS" RESEARCH PROGRAM (PhD Thesis research grant), Ministry of Education (2010). «Implementation of innovative therapeutic treatments for the successful management of ectoparasitosis in intensive Mediterranean aquaculture systems». PhD supervisor

HERACLEITUS II (PhD Thesis research grant): "Study of Myxobacteriosis in intensive fish farming " 2007-13. SUPERVISOR

COOPERATION 2011-2015 : "Use of antibacterial agents for prevention and therapy of common diseases of cultured fish and determination of their affectivity of and safety" Principal Investigator

THALIS- EEC GRANT: "Mechanisms of immunopathology in natural kand experimental infections of fish with Noda virus". 2013-2016. Coordinator

PUBLICATIONS 2000-2017:

Approx. 120++



- Athanassopoulou, F., Ragias, V., Roth, M., Liberis, N., and Hatzinikolaou, S. (2002). Toxicity and pathological effects of orally and intraperitoneally administered ivermectin in sea bass D. labrax L. Diseases of Aquatic Organisms 52(1), 69-76.
- Athanassopoulou, F., Ragias, Tavla, J. Christofilloyannis, P.& N. Liberis (2001). Preliminary trials on the efficacy of ivermectin against Lernathropus kroyeri (Crustacea) in cultured sea bass D. labrax L. Aquaculture Research, 32,77-79.
- *Speare, D., Athanassopoulou, F., Daley, J. & Sanchez, J.G. (1999). A preliminary investigation of alternatives to Fumagillin for the treatment of Loma salmonae in rainbow trout. Journal of Comparative Pathology 121, 241-248.
- Athanassopoulou, F., Bouboulis, D.& Martinsen, B. (2001). In vitro treatments of deltamethrin against the isopod parasite Anilocra physoides, a pathogen of seabass D. labrax. L. The Bulletin of the European Associaton of Fish Pathologists 21 (1) 26-29.



- Tyrpenou, AE, Rigos, G. & Athanassopoulou, F. (2002). Determination of chloramphenicol residues in gilthead seabream Sparus aurata L. tissues by HPLC-PDA. Journal of liquid chromatography & related technologies 25 (4) 655-663.
- * Athanassopoulou, F., R. Cawthorn, K. Lytra. (2002). Amoeba –like infections in cultured marine fishes: systemic infection in pompano Trachinotus falcatus L. from Singapore and gill disease associated with Paramoeba sp. in sea bream Sparus aurata L. from Greece. Journal of Veterinary Medicine, 49, 411-412.
- Athanassopoulou, F., Billinis, C., Psychas, V., Karipoglou, K. (2003). Viral encephalopathy and retinopathy of Dicentrarchus labrax L. farmed in freshwater in Greece. Journal of Fish Diseases 26, 361-365.
- Athanassopoulou, F., Billinis, C., Th. Prapas (2004A). Important disease conditions of new ly cultured species in intensive freshwater farming conditions in Greece: First incidence of Noda virus infection in Acipenser sp. Diseases of Aquatic Organisms 60, 247-252.

- *Athanassopoulou, F., D. Speare R. J. Cawthorn, R. MacMillan & B. Despres. (2004B). Pathology of Anophryoides haemophila (Scuticociliatida: Orchitophryidae), parasite of American lobster Homarus americanus kept under experimental conditions. Aquaculture 236(1-4), 103-117.
- Athanassopoulou, F., Bouboulis, D.& Martinsen, B. (2004C). Experimental treatments of sea bass D. labrax L. infected with the isopod Ceratothoa oestroides with diflubenzuron and deltamethrin. Journal of Applied Ichthyology 20, 314-317.
- Athanassopoulou, F., E. Karagouni, E. Dotsika, V. Ragias, J. Tavla, P. Christofilloyanis, I. Vatsos. (2004d). Efficacy and toxicity of orally administrated anti-coccidial drugs for innovative treatments of Myxobolus sp. infection in sharpsnout sea bream Puntazzo puntazzo. Diseases of Aquatic Organisms, 62 (3), 217-226.
- Athanassopoulou, F, E. Karagouni, E. Dotsika, V. Ragias, J. Tavla, P. Christofilloyanis (2004 E). Efficacy and toxicity of orally administrated anti-coccidial drugs for innovative treatments of Polysporoplasma sparis Sitja-Bobadilla & Alvarez-Pellitero1885 infection in Sparus aurata L. Journal of Applied Ichthyology, 20 (5), 345-354.

- *Athanassopoulou, F, D. Groman, Th. Prapas, O. Sabatakou. (2004F).
 Pathological and epidemiological observations on Rickettsiosis in cultured sea bass (Dicentrarchus labrax L.) from Greece. Journal of Applied Ichthyology. 20(6,) 525-529.
- G Rigos, I Nengas, M Alexis and Athanassopoulou, F. (2004g). Bioavailability of oxytetracycline in sea bass, Dicentrarchus labrax (L.). Journal of Fish Diseases 27 (2) 119 223
- G. Rigos, Tyrpenou, I. Nengas, A. E. M. Alexis, Athanassopoulou, F and G. M. Trois. (2004H) Poor bioavailability of oxytetracycline in sharpsnout sea bream Diplodus puntazzo. Aquaculture 240 (1-4), 629-639.
- Ragias, V. Tontis, D., Athanassopoulou, F. (2004i). Incidence of an intense Caligus minimus Otto 1821, C. pageti Russel, 1925, C. mugilis Brian, 1935 and C. apodus Brian, 1924 infection in lagoon cultured sea bass (Dicentrarchus labrax L.) in Greece. Aquaculture 242(1-4) 727-733.
- Karagouni, E., Athanassopoulou F., P. Tsagozis, E. Ralli, Th. Moustakareas, K. Lytra and E. Dotsika (2005a). The impact of a successful anti-myxosporean treatment on the phagocyte functions of juvenile and adult Sparus aurata L. INTERNATIONAL JOURNAL OF IMMUNOPATHOLOGY AND PHARMACOLOGY 18(1) 121-132.

- Karagouni, E., F. Athanassopoulou, A. Lytra, C. Komis, E. Dotsika (2005B). Parasitostatic/parasiticidal and immunomodulatory effect of innovative treatments against Myxobolus sp. infection in Diplodus puntazzo Couvier. Veterinary Parasitology 134, 215-228.
- Ragias, V., Athanassopoulou F., Sinis, A.(2005) Parasites of Mugilidae spp. Reared under semi-intensive and intensive conditions in Greece. Bulletin of European Association of Fish Pathologists 25 (3) 107-115. IF=0.6.
- Ragias, V., Athanassopoulou, F., Di Cave, D., Vagianou, S., Rigos, G., Golomazou, E., Papathanasiou, G., Georgoulakis, J. (2005c). Report of Sparicotyle chrysophrii Van Beneden and Hesse 1863, Atrispinum seminalis Euzet and Maillard 1973 and Polylabris tubicirrus Paperna and Kohn 1964 (Monogenea) on captive sea bream (Sparus aurata) and sharpsnout sea bream (Diplodus puntazzo) in coastal Greece and Italy. European Association of Fish Pathologists Bulletin of European Association of Fish Pathologists 25(6), 256-261
- Ragias, V., Govaris, A., Athanassopoulou, F., Sabatakou, O. (2005d). The pathological evaluation of saddled Sea Bream (Oblada melanura) caught by explosives, and their chemical and qualitative changes during storage on ice. Folia Veterinaria, 49, 3: 155-160

- Golomazou, E, Athanassopoulou F, Karagouni E, Tsantilas, H. & Karamanis D. (2006a) Efficacy and toxicity of orally administrated anti-coccidial drug treatment on Enteromyxum leei infections in sharpsnout sea bream, Diplodus puntazzo C. ISR J AQUACULT-BAMID 58(3) 157-169
- Golomazou E, Athanassopoulou F, Karagouni E, Tsagozis. P., Tsantilas.H., Vagianou, S. (2006b) Experimental transmission of Enteromyxum leei Diamant, Lom and Dykova, 1994 in sharpsnout sea bream, Diplodus puntazzo C. and the effect on some innate immune parameters AQUACULTURE 260 (1-4): 44-53
- Golomazou E, Athanassopoulou F, Vagianou S, Sabatakou, O., Tsantilas, H., Rigos, G., Kokokkiris, L (2006c) Diseases of white sea bream (Diplodus sargus L.) reared in experimental and commercial conditions in Greece TURK J VET ANIM SCI 30 (4): 389-396
- Vagianou S., Athanassopoulou F, Ragias V, D.Di Cave, L. Leontides & E. Golomazou. (2006) Prevalence and pathology of ectoparasites of mediterranean sea bream and sea bass reared under different environmental and aquaculture conditions. ISR J AQUACULT-BAMID 58(2) 78-88.

- Tsantilas, H., A. D. Galatos, F. Athanassopoulou, N. N. Prassinos. (2006). Efficacy of 2-phenoxyethanol as an anaesthetic for two size classes of white sea bream, Aquaculture, 253 (1-4), 64-70. Diplodus sargus, and sharpsnout sea bream, Diplodus puntazzo C.
- Kokokiris L, Fostier A, Athanassopoulou Petridis D, Kentouri M. (2006) Gonadal changes and blood sex steroids levels during natural sex inversion in the protogynous Mediterranean red porgy, Pagrus pagrus (Teleostei : Sparidae) GEN COMP ENDOCR 149 (1): 42-48
- Munoz, P., Cuesta A., Athanassopoulou F., Golomazou E., Crespo S., Padros F., Sitja-Bobadilla A., Albinana, G., Esteban, A., Esteban MA;
 Alvarez_pellitero, P., Meseguer, J.(2007) Sharpsnout sea bream (Diplodus puntazzo) humoral immune response against the parasite Enteromyx m leei (Myxozoa). Fish and shellfish immunology, 23 (3), 636-645u.
- Katharios, P., M. Garaffo, K. Sarter, F. Athanassopoulou, C.C. Mylonas and P. Divanach. (2007) Sustained treatment of sharpsnout sea bream Diplodus puntazzo with reproductive steroids caused high mortalities due to heavy infection of Ceratomyxa diplodae (Protozoa: Myxosporea). Journal of fish Diseases, 27(1), 43-47.

- Bitchava, K., Xylouri, E., Fragkiadaki, E., Athanassopoulou, F., Papanastassopoulou, M., and Sabatakou, O. (2007b). First incidence of clinical signs of nodavirus infection in sea bream, Sparus auratus L. Isr. J. Aquacult. Bamidgeh 59(1), 3-9.
- E. Xylouri, Y. P. Kotzamanis, F. Athanassopoulou, Li Dong, I. S. Pappas, A. Argyrokastritis, Ei. Fragkiadaki (2007). Isolation, characterization and sequencing of nodavirus from sturgeon (Acipenser gueldestaedI L.) reared in fresh water facilities in Greece. The Israeli Journal of aquaculture Bamidgeh 59 (1), 37-42.
- Kosti, E., Perdikaris, C., Athanassopoulou, F., Chantzaropoulos, A., Vavatsikos, M., Ergolavou, A., Bitchava, K., Paschos, I. (2008) Use of Prussian carp, Carassius gibelio, pituitaries in the artificial propagation of female common carp, Cyprinus carpio. Acta Ichthyologica Et Piscatoria, Volume 38 (2), 121-125
- Golomazou, E., Athanassopoulou, F., Karagouni, E., Kokkokiris, L. (2009). The effect of seasonality on health and growth of a new recorded Myxobolus species, infecting cultured sharpsnout sea bream Diplodus puntazzo C. in Greece. Turkish Journal of Veterinary and Animal Sciences. 33(1), 1-5.

- Athanassopoulou F., Pappas I. S., Bitchava K. (2009) An overview of the treatments for parasitic disease in Mediterranean aquaculture. In: The use of veterinary drugs and vaccines in Mediterranean aquaculture. C. Rogers, B. Barusco (eds). CIHEAM Journal Options Méditerranéennees. Series A 86, 223 p.
- C. Nathanailides, O.Lopez-Albors, D. Lenas, F. Athanassopoulou (2010). Changes in cytochrome C oxidase (CCO) and lactate dehydrogenase (LDH) enzyme activity of white epaxial as shelf-life predictive indices during ice storage of sea bass (Dicentrarchus labrax L.). Italian Journal of Food Science 22(2) 200-204.
- Costas Perdikaris, Cosmas Nathanailides, Evangelia Gouva, Ugwemorubong Ujagwung Gabriel, Konstantina Bitchava, Fotini Athanassopoulou, Ageliki Paschou, Ioannis Paschos (2010): Size-relative Effectiveness of Clove Oil as an Anaesthetic for Rainbow Trout (Oncorhynchus mykiss Walbaum, 1792) and Goldfish (Carassius auratus Linnaeus, 1758) Acta Vet. Brno 2010, 79: 481-490 http://actavet.vfu.cz/79/3/0481/
- KOLYGAS, M.N., GOURZIOTI, E., VATSOS, I.N. and ATHANASSOPOULOU, F., 2012. Identification of Tenacibaculum maritimum strains from marine farmed fish in Greece. Veterinary Record, 170(24), pp. 623.

- M. Yiagnisis, N. Solomakos, K. Bitchava, M. N. Alexis and F. Athanassopoulou, 2011. Vibrio alginolyticus, V.parahaemolyticus, V.vulnificus and Photobacterium damselae ssp. damselae isolated from marine fish in Greece. Journal of Applied Ichthyology. Pending publication
- Gourzioti E., Kolygas M.N., Athanassopoulou F., Babili V. (2014). Tenacibaculosis in aquaculture farmed marine fish. Journal of the Hellenic Veterinary Medical Society. Acceptance. Pending publication.
- Gourzioti E., Kolygas M.N., Athanassopoulou F. (2014). Study of the seasonality and the infection rate from the bacterium T. maritinum, in farmed marine fish in Greece. Journal of the Hellenic Veterinary Medical Society. Pending publication.
- Bakopoulos V., Nikolaidis A., Kolygas M. Athanassopoulou F. (2017). Contribution to the parasites and associated pathology of wild Serranidae from the Aegean Sea. Journal of the Hellenic Veterinary Medical Society. Accepted in Press.
- M.N. Kolygas E. Lambou D. Doukas, D. Tontis, I. Pappas, E. Gourzioti, V. Bakopoulos, E. Kakava, F. Athanassopoulou (2017). First incident of Squamous cell carcinoma in Brown meagre (Sciaena umbra, L.), a new candidate species for aquaculture in Mediterranean. Comparative findings of keratin demonstration through different staining methods. Journal of Fish Diseases (submitted).

 \star

PhD students:









PhD students:

Kostantina Bitchava DVM, MSc, PhD

09/2010 – 2014. PhD student in Fish Pathology. Employer: Competitive E.U. funded project "Heraclitus II", Research Committee, University of Thessaly, Karditsa, Greece.
2010-present: PhD Student in Fish Pathology. Laboratory of Ichthyology, Fish Diseases and Aquaculture, Faculty of Veterinary Science, University of Thessaly, Karditsa, Greece.
2010: M.Sc. in Aquatic Veterinary Studies (Aquaculture-Aquatic Animal Health), Faculty of Veterinary Science, University of Thessaly, Karditsa, Greece.
2007: D.V.M. Veterinary Medicine, Faculty of Veterinary Science, University of Thessaly, Karditsa, Greece.

Golomazou Eleni - Agruculturist

2002: BSc - Animal Production (Ichthyology).

PhD (2007): Study of seasonality and prevalence of myxosporida infections in wild fish populations and study of the innate immune response of *Diplodus puntazzo* experimentally infected with *Enteromyxum leei*, Diamant, Lom & Dykova 1994.

PhD students:

Yiagnisis Mary. Biologist

June 1994-now. Research Scientist, Marine Microbiology Responsible, Aquaculture Institute, Nutrition and Pathology Laboratory, Hellenic Centre for Marine Research. December 2006-2011. PhD Candidate in Fish Pathology-Ichthyology, Veterinary School, University of Thessaly, Karditsa, Greece.

1985. Master of Science in Biological Oceanography, University of Athens, Greece.

1981. Bachelor of Science in Biology (University of Patras, Greece)

Gourzioti Evgenia. D.V.M.

09/2010 – 2014. PhD student in Fish Pathology. Employer: Competitive E.U. funded project "Heraclitus II", Research Committee, University of Thessaly, Karditsa, Greece. **2010-present:** PhD Student in Fish Pathology. Laboratory of Ichthyology, Fish Diseases and Aquaculture, Faculty of Veterinary Science, University of Thessaly, Karditsa, Greece.

2010: M.Sc. in Aquatic Veterinary Studies (Aquaculture-Aquatic Animal Health), Faculty of Veterinary Science, University of Thessaly, Karditsa, Greece.

2007: D.V.M. Veterinary Medicine, Faculty of Veterinary Science, University of Thessaly, Karditsa, Greece.

OUR LAB

Kolygas Markos. Ichthyologist

2010: M.Sc. in Aquatic Veterinary Studies (Aquaculture-Aquatic Animal Health), Faculty of Veterinary Science, University of Thessaly, Karditsa, Greece.
2010-2015: PhD student in Fish Pathology. Employer: Competitive E.U. funded project "Heraclitus II", Research Committee, University of Thessaly, Karditsa, Greece.

PhD Thesis. Application of original therapeutic treatment for the effective control of ectoparasites in intensive farms of marine Mediterranean fish. Competitive E.U. funded project "Heraclitus II", Research Committee, University of Thessaly, Greece

2007. B Sc- Tech Icthyologist, First Class Honours Degree (8.53) Technological Educational Institute of Epirus, Faculty of Aquaculture & Fisheries, Igoumenitsa (Greece)

2011- now. Undergraduate student in Faculty of Veterinary Science, University of Thessaly, Karditsa, Greece.

PhD students: Eirini Lampou D.V. M.



2/2013- 2017. PhD student in fish Pathology. Employer: Competitive E.U. funded project "Thalis", Research Committee, University of Thessaly, Karditsa, Greece.
EPIDEMIOLOGICAL SURVEILLANCE OF NODA VIRUS IN FISHES AND BIVALVES OF GREEK TERRITORIAL WATERS, AND STUDY OF VIRAL PATHOGENESIS IN SEA BASS, Dicentrarchus labrax
2017. M.Sc. in Aquatic Veterinary Studies (Aquaculture-Aquatic Animal Health), Faculty of Veterinary Science, University of Thessaly, Karditsa, Greece.
2011. D.V. M. Veterinary Medicine, Faculty of Veterinary Science, University of Thessaly, Karditsa, Greece.

Moustaka Eirini-Rafailia Biologist

2017-now. PhD Candidate in Fish Pathology-Ichthyology2016. Bachelor of Science in Biological Applications & Technology (University of Ioannina, Greece)

PhD students:

- **Dimitris Bouziotis Ichthyologist**
- **02/2015** present: Ph.D student in Fish Immunology.
- Part of Ph.D. thesis was funded by the European Social Fund and National Resources by the Action "THALES – Education And Lifelong Learning" NCQD 2007-2013, MIS 375267
- **05/2013** present: Laboratory of Cellular Immunology, Hellenic Pasteur Institute, Athens, Greece.
- **11/2014:** M.Sc. in Aquatic Veterinary Studies (Aquaculture-Aquatic Animal Health), Faculty of Veterinary Science, University of Thessaly, Karditsa, Greece Master thesis in Laboratory of Cellular Immunology, Hellenic Pasteur Institute, Athens, Greece.
- The diplomatic thesis was funded by the European Social Fund and National Resources by the Action "THALES – Education And Lifelong Learning" NCQD 2007-2013, MIS 375267

 \star

2009: B.Sc. in Ichthyology, Technological Institute of Epirus – Department of fisheries Thesis in Hellenic Center for Marine Research (HCMR)

PhD students:



Elias Tsadilas : DVM 2003: DVM Italy 2011: PhD: USE OF ANAESTHETIC AGENTS IN EUROPEAN SEA BASS (*Dicentrarchus labrax L.)*,THEIR ABILITY TO MINIMIZE STRESS, AND THEIR EFFECT ON THE IMMUNE SYSTEM AND GROWTH.

Gouva Litsa Ichthyologist- Technologist
2008: M.Sc. in Aquatic Veterinary Studies (Aquaculture-Aquatic Animal Health),
Faculty of Veterinary Science, University of Thessaly, Karditsa, Greece.
1990: B Sc- Tech Ichthyologist, Technological Educational Institute of Epirus, Faculty of Aquaculture & Fisheries, Messolonghi, (Greece).
6/2015: Member of the laboratory teaching staff in the field of aquaculture.
Technological Education Institute of Epirus, Department of Agricultural Technology.
1994-2001: Breeding and reproduction of Cyprinids. Ichthyologist- Technologist in Louros aquaculture station. ★



COLLEGE OF AQUATIC ANIMAL HEALTH- EBVS



THE COLLEGE

<u>The primary objectives of the College shall be to advance aquatic animal medicine /health in Europe. This covers all aquatic animals:</u>

- fish, aquatic mammals, shellfish, shrimp and aquatic invertebrates whether ornamental, cultured or wild.
- water quality, welfare, zoonoses, therapeutics and relative legislation.

<u>It aims</u> at the improvement and promotion of the quality of veterinary practice through contacts of general practitioners with registered specialists.

by:

a) *Establishing guidelines for the post-graduate education* and experience required as a prerequisite to become a specialist in the specialty of aquatic animal health.

b) *Examining and authenticating veterinarians as specialists* in aquatic animal health to serve the veterinary patient, its owner and the public in general, by providing expert care for all aquatic animals with medical diseases.

c) Encouraging research and other contributions to knowledge relating to pathogenesis, diagnosis, therapy, prevention, welfare, zoonoses and control of diseases directly or indirectly affecting aquatic animals (fish, mammals, shellfish, shrimp and aquatic invertebrates) whether ornamental, cultured or wild and promoting communication and dissemination of this knowledge thus providing improved services to the public and industry.



II. We have a sufficient body of potential Diplomates to form a College



COLLEGE OF AQUATIC ANIMAL HEALTH- EBVS

History of ECAAAH

2009 formation of the 1st organizing Ad hoc committee (Prof Roberts, Prof. Athanassopoulou, Dr. Rodger, Dr. Berthe and Dr. Sands
2010 first docs produced constitution & By laws, letter of intend to EBVS (Romagnoli), letter from Dr Forbes from the poultry College, reply from ECAAH, appointed liaison officers, not very helpful....

14/11/2013 Submitted the first docs P&Ps, constitution & Bylaws rewritten according to new docs of EBVS

11/4 -16/4 2014 EBVS MEETING representation of ECAAH by myself, appointment of Pr. Tobias & Prof Alexandersen as liaison officers (L.O.)

31/1/14 Comments from LO's, rewrite of docs, made corrections! 17&18/4/2014 AGM EBVS : Profs Athanassopoulou and Palic, powerpoint presentation of ECAAH provisional acceptance after vote!

9/2014 Provisional recognition of ECAAH, (letter from the CEO) Dr Raptopoulos recommended some more changes, corrections done and 29/1/15 Final docs sent 4/2015 AGM EBVS presentation and acceptance!!! 1/2015 Electronic elections of Board, Official board of ECAAH formed 1/2015 Call for de facto diplomates, 5 years duration 26/2/2015 fees paid to EBVS 6 skype meetings of the board, acceptance of first de facto diplomates, 6/2017 1st AGM meeting of ECAAH!!

* *









.....thank you

Dr F. Athanassopoulou DVM, MSc, PhD, MRCVS

Laboratory of Ichthyology & Fish Diseases School of Health Sciences Faculty of Veterinary Medicine University of Thessaly, Greeceσας ευχαριστώ