ISPARTA UYGULAMALI BİLİMLER ÜNİVERSİTESİ

EĞİRDİR SU ÜRÜNLERİ FAKÜLTESİ

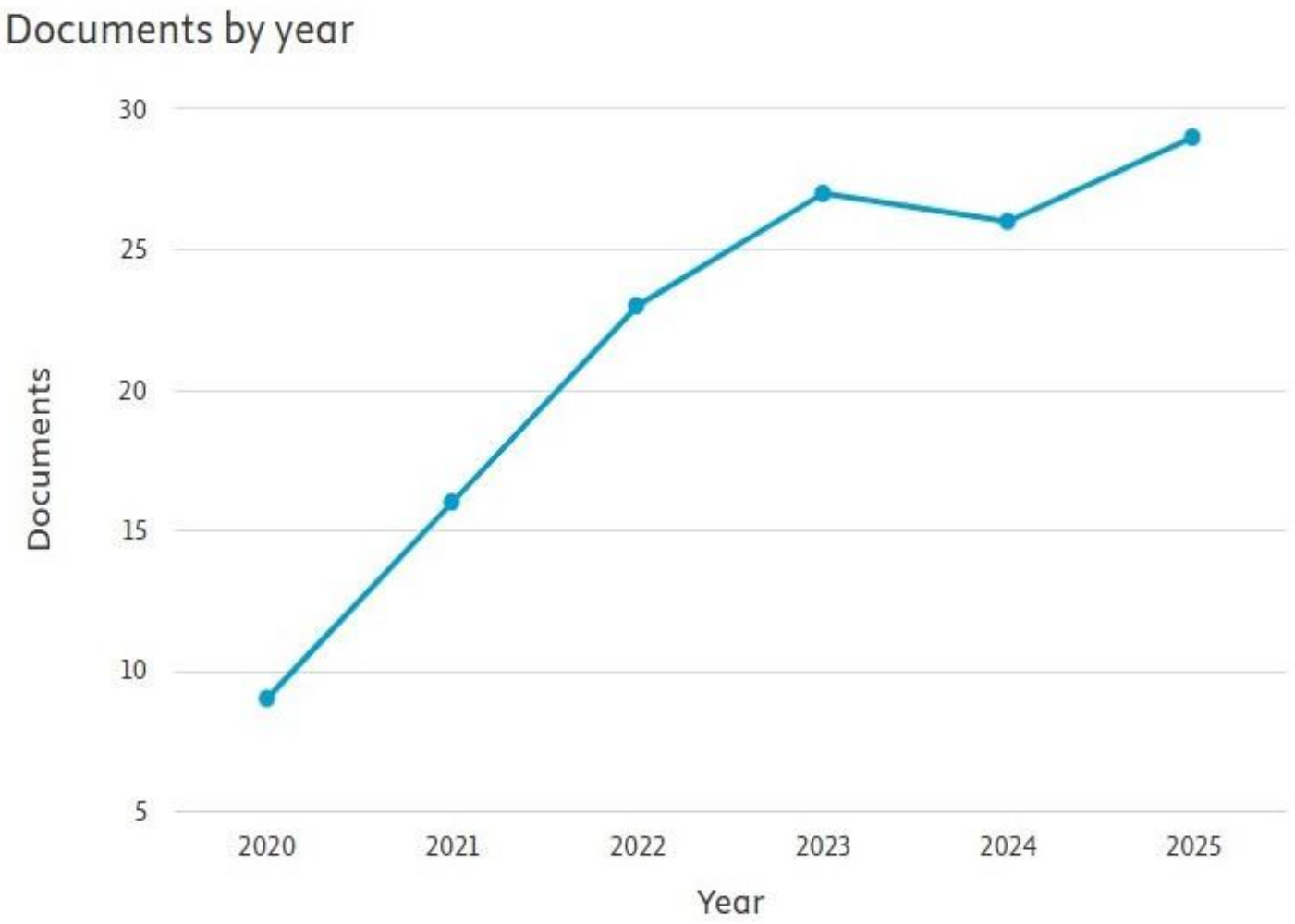
2025 YILI AKADEMİK KURUL TOPLANTISI

21 KASIM 2025

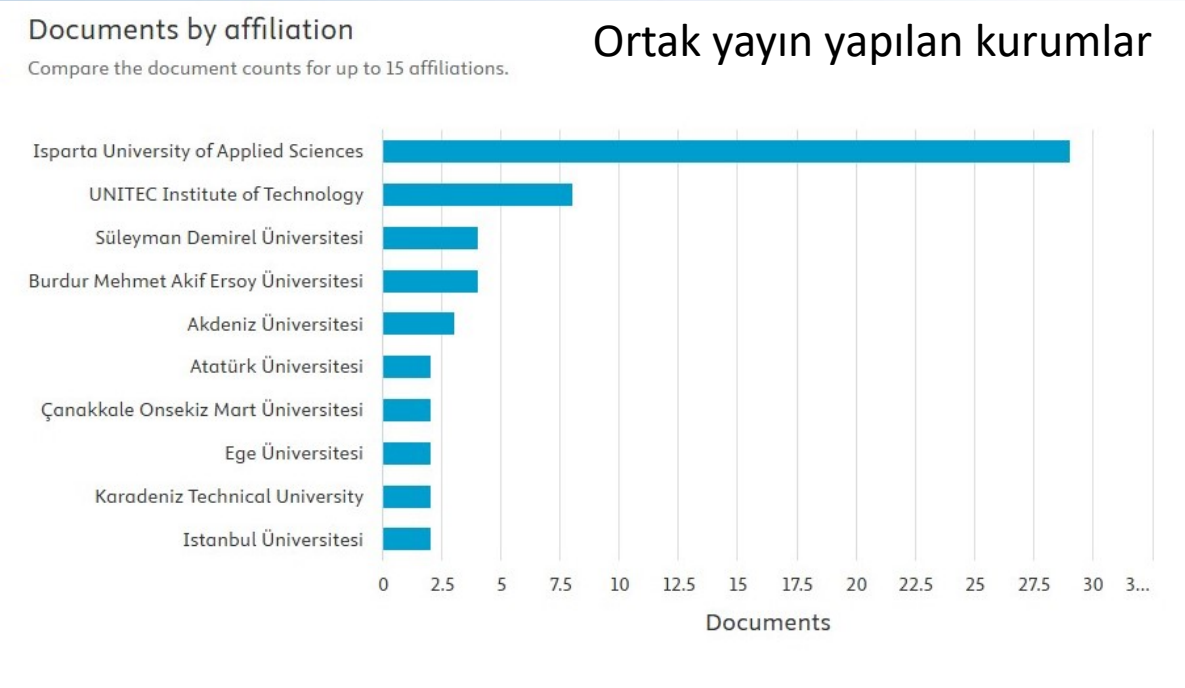
Akademik Faaliyetler Genel Durum

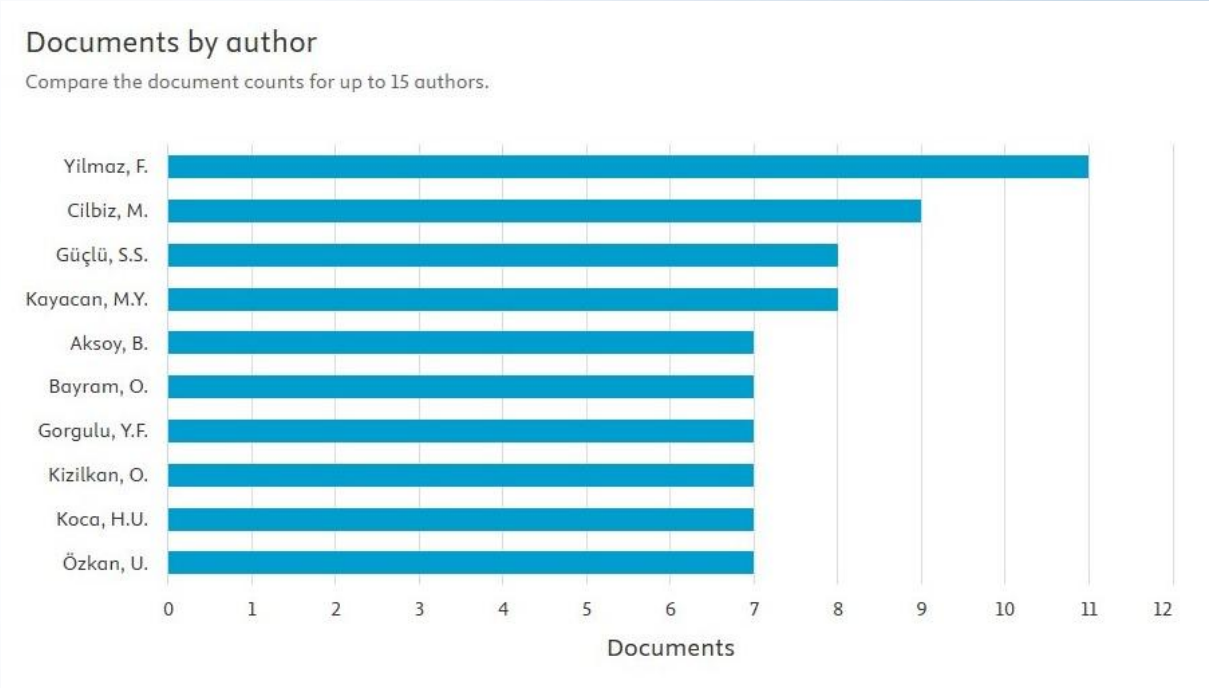
(SCOPUS)

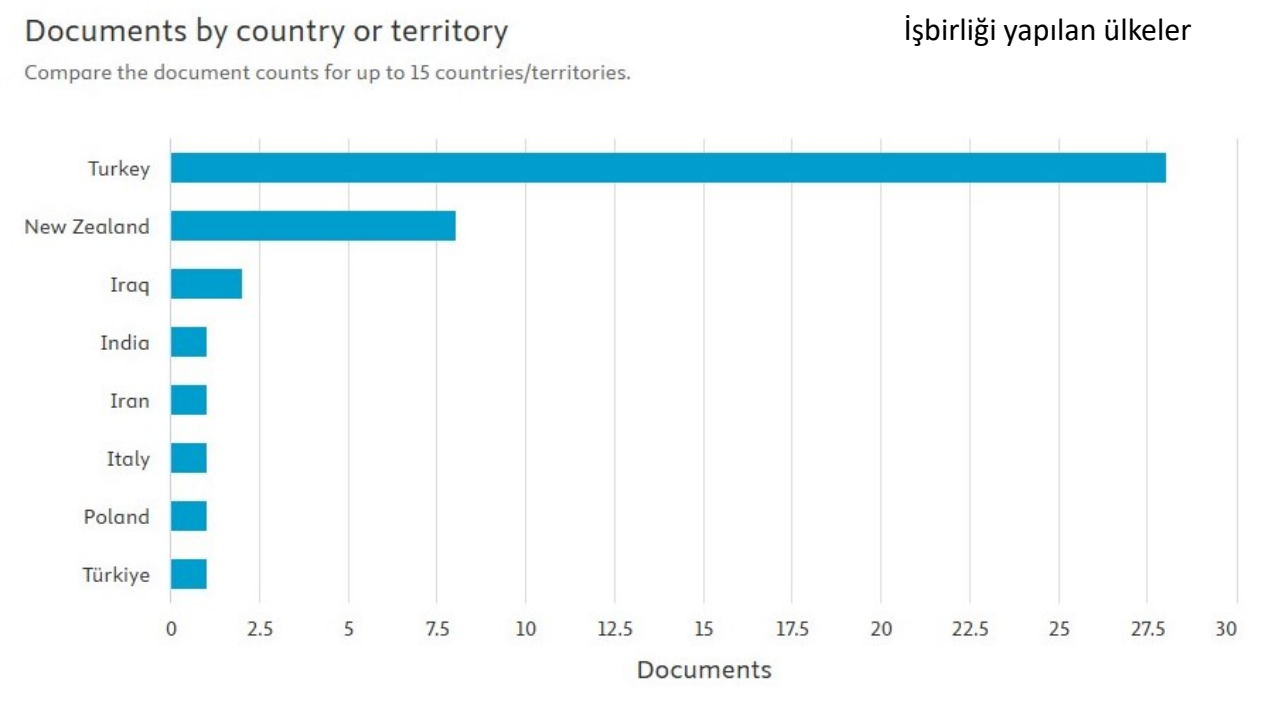
Year	Documents
2025	29
2024	26
2023	27
2022	23
2021	16
2020	9

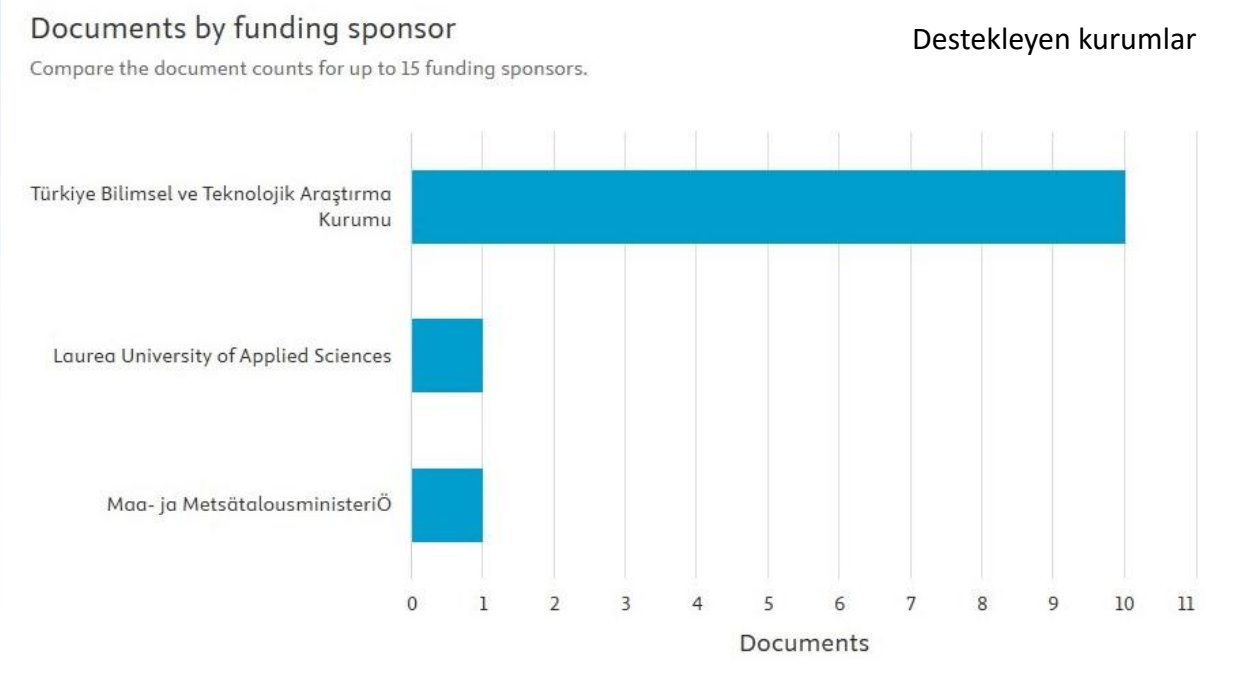


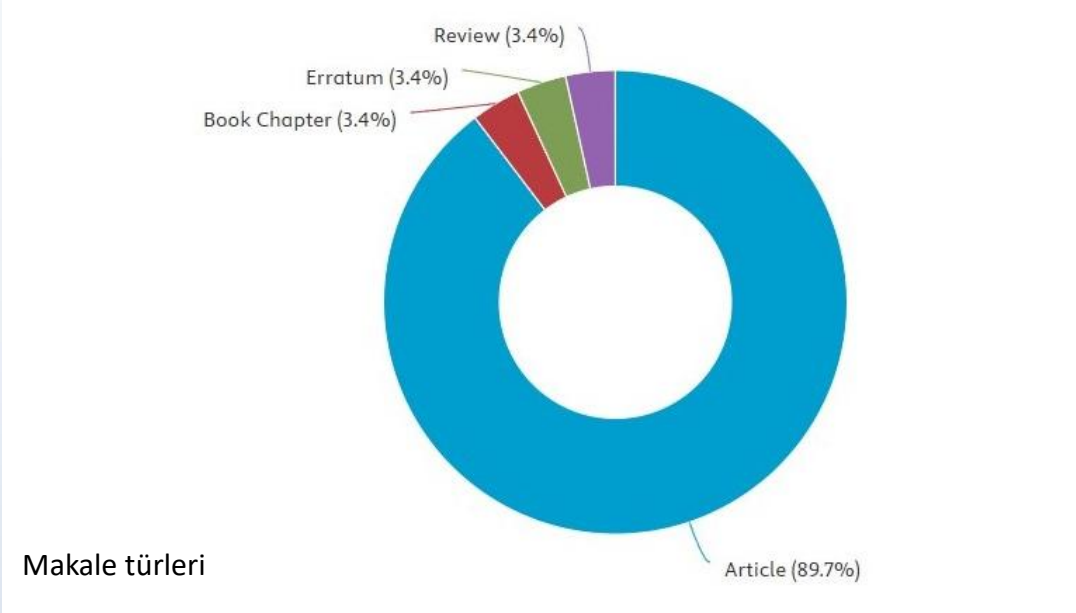
Ortak yayın yapılan kurumlar






Documents by country or territory
Compare the document counts for up to 15 countries/territories.
İşbirliği yapılan ülkeler
Turkey
New Zealand
Iraq
India
Iran
Italy
Poland
Türkiye
0
2.5
5
7.5
10
12.5
15
17.5
20
22.5
25
27.5
30
Documents


Documents by funding sponsor
Compare the document counts for up to 15 funding sponsors.
Destekleyen kurumlar
Türkiye Bilimsel ve Teknolojik Araştırma Kurumu
Laurea University of Applied Sciences
Maa- ja MetsätalousministeriÖ
0
1
2
3
4
5
6
7
8
9
10
11
Documents


Review (3.4%)
Erratum (3.4%)
Book Chapter (3.4%)
Article (89.7%)
Makale türleri

Akademik Faaliyetler-2025	SCI	TR Dizin-Alan ind.	Projeler	Kitap B.	Atıflar	Ulusal-Uluslararası Bildiri	Ödül
Su Ürünleri Temel Bilimleri	14	8	8	4	300	18	1
Su Ürünleri Avlama ve İşleme Teknolojisi	12	9	7	6	217	7	
Su Ürünleri Yetiştiriciliği	14	5	15	1	595	11	
TOPLAM	**40**	**22**	**30**	**11**	**1073**	**36**	**1**

2024 Yılı Öğretim Üyesi Başına Düşen Yayın Sayısı **ESÜF 1,04**
2025 Yılı Öğretim Üyesi Başına Düşen Yayın Sayısı **ESÜF 1,49**
ÜNİVERSİTE:0,52

ETİK KURUL-»*SOCYEK-ISUBÜ Sucul Omurgalı Canlı Deneyleri Yerel Etik Kurulu*» ilk Toplantısını yapmış ve etik belgeleri verilmiştir.

T.C.
TARIM VE ORMAN BAKANLIĞI
Balıkçılık ve Su Ürünleri Genel Müdürlüğü

Sayı : E-75453017-050.04-16197494143248
Konu : İSUBÜ Sucul Omurgalı Canlı Deneyleri Yerel Etik Kurulu Yönerge Onayı

DAĞITIM YERLERİNE

İlgi : 20.09.2024 tarihli ve E-13111592-325.04.02-15907844 sayılı yazı.

Isparta Uygulamalı Bilimler Üniversitesi tarafından hazırlanarak, ilgi yazınız ile Sucul Omurgalı Canlı Deneyleri Merkez Etik Kurulunun (SOCMEK) onayına sunulan "*İSUBÜ Sucul Omurgalı Canlı Deneyleri Yerel Etik Kurulu Yönergesi*" incelenmiştir.

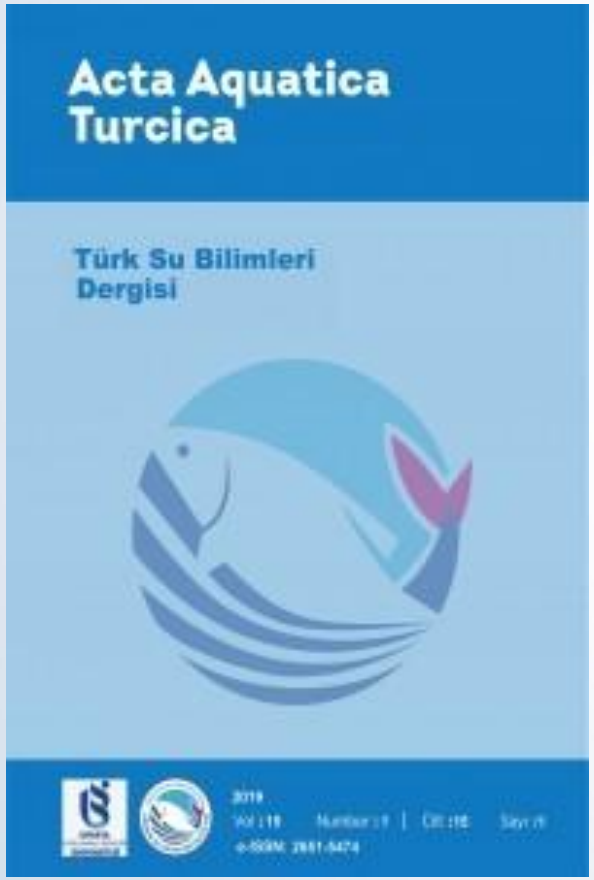
Bilimsel Amaçlar İçin Kullanılan Sucul Omurgalı Canlıların Refah ve Korunmasına Dair Yönetmeliğin SOCMEK'in görevleri başlıklı 31/B Maddesinin 1'inci fıkrasının (b) bendinde *"SOCYEK yönergelerini onaylamak ve 34 üncü maddeye göre feshetmek"* hükmü yer almaktadır.

Söz konusu hüküm kapsamında mezkur Yönerge, 25.07.2024 tarihinde Genel Müdürlüğümüz koordinasyonunda gerçekleştirilen SOCMEK toplantısında gündeme alınmış ve kurul tarafından incelenerek oy birliği ile onaylanmasına (Yönerge No: 2024/4) karar verilmiş olup yazımız ekinde gönderilmektedir.

Gereğini rica ederim.

Turgay TÜRKYILMAZ
Bakan a.
Genel Müdür

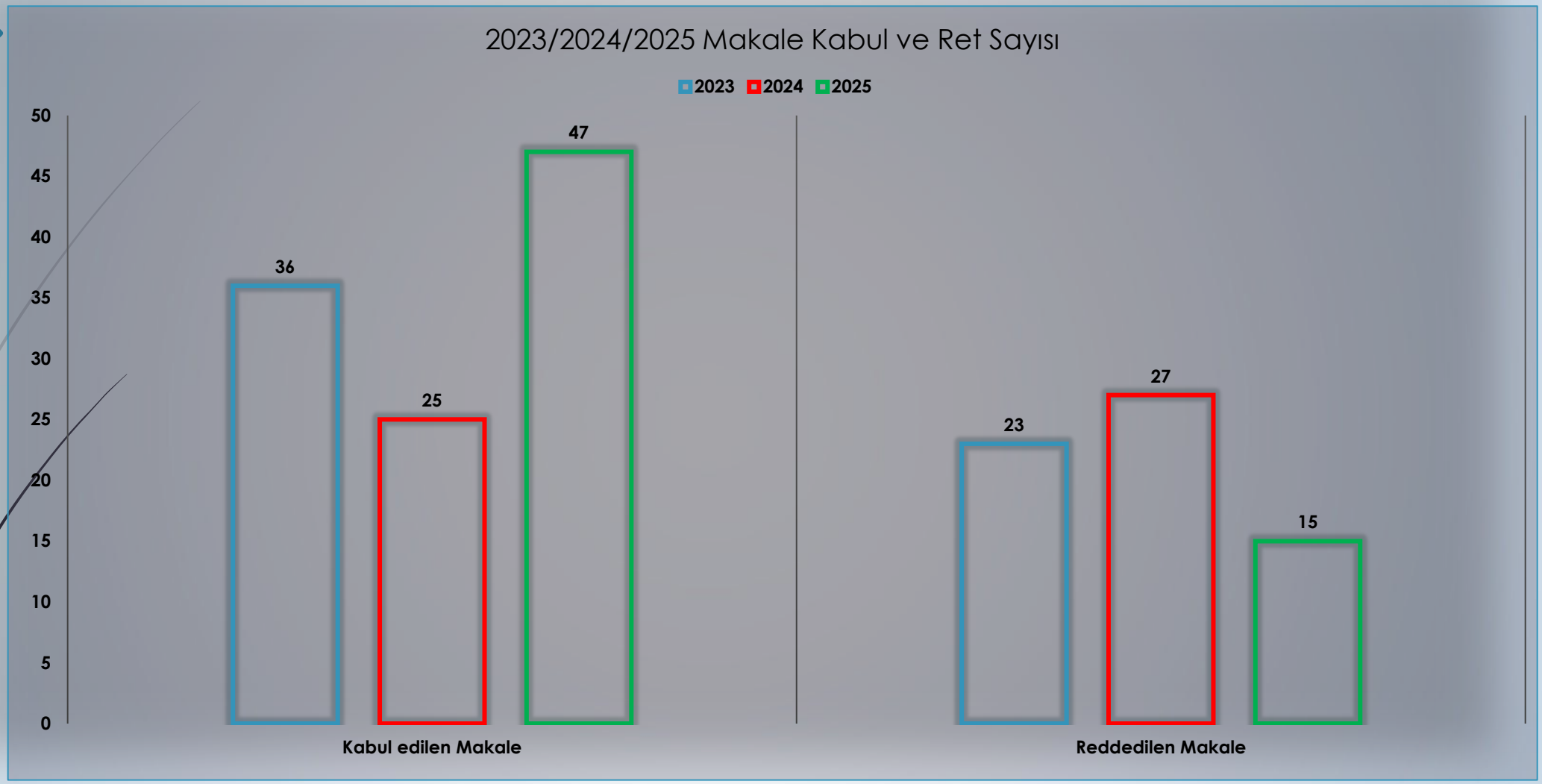
DERGİMİZ - ACTA AQUATICA TURCICA



Yılda 4 sayı çıkarmaktadır

1 Ocak 2025 tarihinden itibaren, sadece İngilizce dilinde yayınlar kabul edilmektedir

Clarivate Analytics (Thomson Reuters)-Zoological Record, Tr Dizin (Haziran 2016 sayısından itibaren), ROAD, Türkiye Atıf Dizini, DOAJ, Index Copernicus, DRJI, Google Scholar, OAJI, Crossref, MIAR, EZB Elektronische Zeitschriftenbibliothek," **indexleri tarafından taranmaktadır.**



2023 TOPLAM MAKALE SAYISI: 59
2024 TOPLAM MAKALE SAYISI: 52
2025 TOPLAM MAKALE SAYISI: 62 (Kasım2025'e kadar)

2023 — 2023 YILI

2023 — GELEN TOPLAM MAKALE:56

2023 — KABUL ORANI: %66

2023 — RET ORANI : %34

2024 — 2024 YILI

2024 — GELEN TOPLAM MAKALE:52

2024 — KABUL ORANI: %48

2024 — RET ORANI : %52

2025 — 2025 YILI

2025 — GELEN TOPLAM MAKALE:62

2025 — KABUL ORANI: %75

2025 — RET ORANI : %25

Yıllık Yabancı yazarlı makale gelme oranı 2024: %25
Yıllık Yabancı yazarlı makale gelme oranı 2025 :%34 (Kasım 2025’e kadar)

EĞİTİM & ÖĞRETİM

- **Yeni açılan dersler:**
- Üniversite Ortak Seçmeli Ders: **Türkiye Denizleri ve Tehlikeli Deniz Canlıları:** Dr. Öğretim Üyesi Sera Övgü Kabadayı Yıldırım
- **İşletmede Mesleki Eğitim Dersi : 2 KİŞİ**

2025 Yılı Akademik Yükselmeler

- Dr. Öğretim Üyesi Ergi BAHRİOĞLU
- Dr. Öğretim Üyesi Göknur SÜRENGİL
- Dr. Öğretim Üyesi Sera Övgü Kabadayı YILDIRIM
- Dr. Kamil ATSATAN

ETKİNLİKLER

24-25 Şubat 2025 Antalya GÜNKAF2025 Fuarına katılım

26 Mart 2025 Çarşamba günü, Isparta Uygulamalı Bilimler Üniversitesi Eğirdir Su Ürünleri Fakültesi ile Doğa Koruma ve Milli Parklar 6. Bölge Müdürlüğü'nün birlikte düzenlediği "2025 Yılı Dünya Su Günü" paneli gerçekleşti.

ZİDEK
Kurum Eğitim Çalıştayı gerçekleştirilmiştir.

Fakültemiz Akademisyenlerinden, Dr. Öğretim Üyesi Mete KUŞAT hocamız emekli olmuştur.

Üniversitemizin 7. Kuruluş Yıldönümü, Akademik Başarı Ödül Töreni ve 2024-2025 Akademik Yılı Biniş Töreninde, öğretim üyelerimiz binişlerini giymiş Doç. Dr. Salim Serkan Güçlü ‘Fen ve Mühendislik Bilimleri Bilim Ödülü’ üçüncülüğünü almıştır

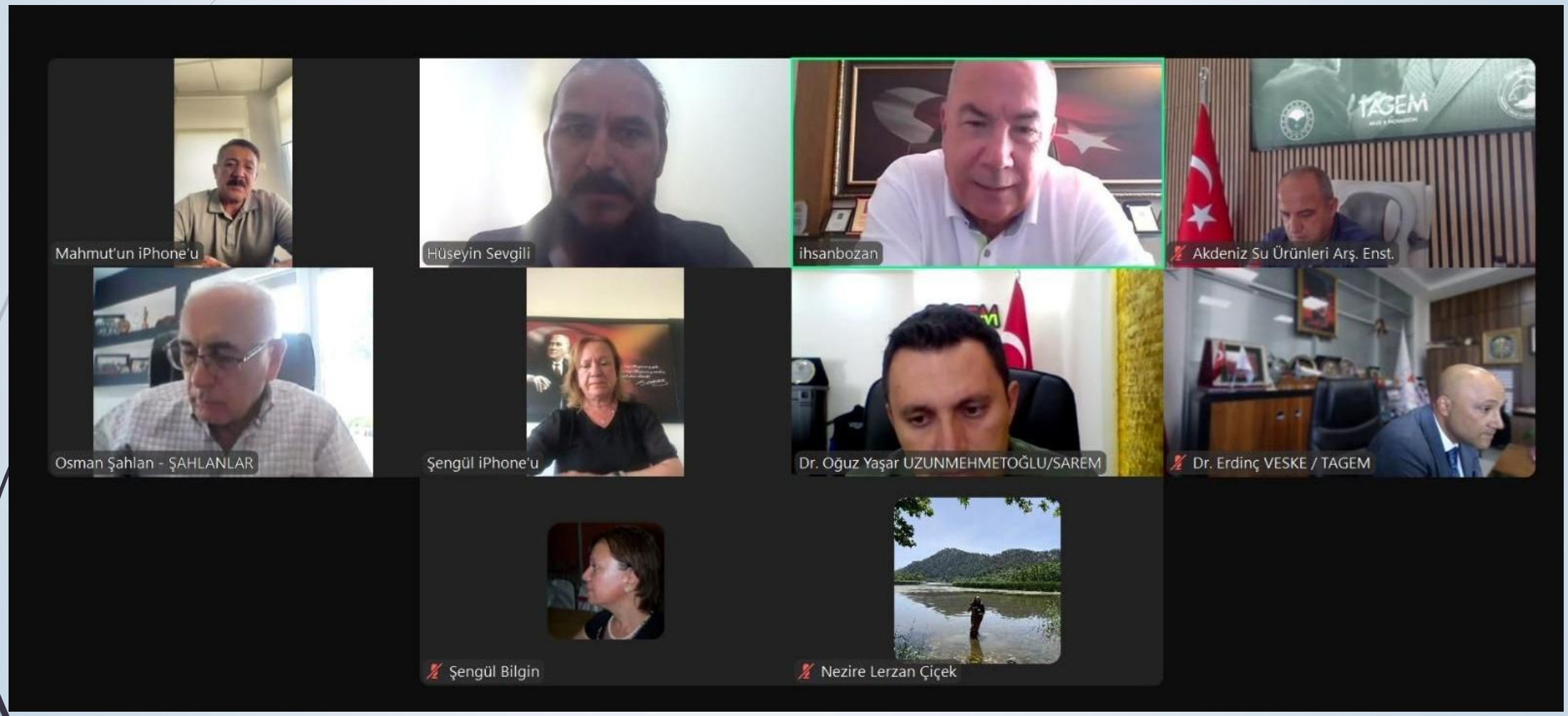
TÜBİTAK Bilim Söyleşileri kapsamında Deniz Anaları tanıtımı için “Şeffaf Krallık Deniz Anaları” başlıklı bilim söyleşisi düzenlenmiştir.

Fakültemizde
Sektörel Buluşma Etkinliği yapıldı

5 Haziran Dünya Çevre Günü kapsamında “Sularımızdaki Plastik Kirliliği” başlıklı sunum gerçekleştirildi.

University of South Bohemia in České Budějovice Rektörü ve aynı zamanda Faculty of Fisheries and Protection of Waters öğretim üyesi olan Prof. Ing. Pavel Kozák,

Birim Danışma Kurulu Toplantısı Gerçekleştirildi.



Fakültemiz öğretim üyesi Dr. Sera Övgü KABADAYI YILDIRIM'ın Erasmus hareketliliği

UNIVERSITÀ DEGLI STUDI DELLA TUSCIA | DIPARTIMENTO DI SCIENZE ECOLOGICHE E BIOLOGICHE

AULA MAGNA, UNIVERSITY CAMPUS OF CIVITAVECCHIA

Exploring Marine Biodiversity in Turkey: From Benthic Invertebrates to Colonial Hydrozoans

Dr. **Sera Övgü Kabadayi Yildirim** is an Assistant Professor at *Isparta University of Applied Sciences*, Türkiye.

SÜLMER’DEN BAŞARI HABERİ

Isparta Uygulamalı Bilimler Üniversitesi (ISUBÜ) Tıbbi Sülük Uygulama ve Araştırma Merkezi (SÜLMER) Özbekistan Andican Devlet Üniversitesi akademisyenleri, merkezimizde aldıkları kapsamlı eğitimlerin ardından Eğirdir Su Ürünleri Fakültesi (ESÜF) öğretim üyesi ve SÜLMER Müdürü Doç. Dr. Mustafa Ceylan’ın danışmanlığında ülkelerinde proje desteği kazanarak Özbekistan'da Orta Asya'nın ilk Tıbbi Sülük Araştırma Merkezini kurdu.

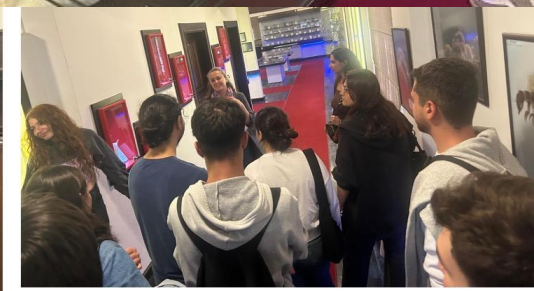
23–25 Eylül 2025 tarihlerinde **Fırat Üniversitesi Su Ürünleri Fakültesi ev sahipliğinde Elazığ'da gerçekleştirilen 23. Ulusal Su Ürünleri Sempozyumu'na** Eğirdir Su Ürünleri Fakültesi akademisyenleri, sempozyum kapsamında **bilimsel bildiri sunumlarıyla yer aldı**.






Eğirdir Su Ürünleri Fakültesi'nde 2025-2026 akademik yılı Öğrenci Oryantasyonu

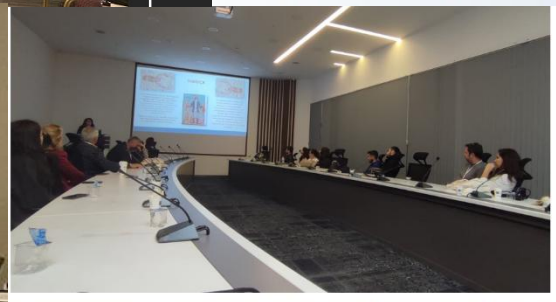





AquaLife of Türkiye tarafından organize edilen ‘7. su ürünleri seminerleri’ kapsamında fakültemizde seminer düzenlenmiştir.

Fakültemiz Öğretim Üyelerinin Uluslararası Sempozyuma Katılımı

Fakültemiz Öğretim Üyeleri ve öğrencilerinin
Ulusal Sempozyuma Katılımı



ISUBÜ’den kardeş ülke Azerbaycan’a teknik destek

‘Su Ürünleri Sektöründe Sertifikasyon’ başlıklı etkinlik

Dünyada her şey için, medeniyet için, hayat için, muvaffakiyet için en hakiki mürşit ilimdir, fendir

TEŞEKKÜR EDERİZ

ISPARTA UYGULAMALI BİLİMLER ÜNİVERSİTESİ

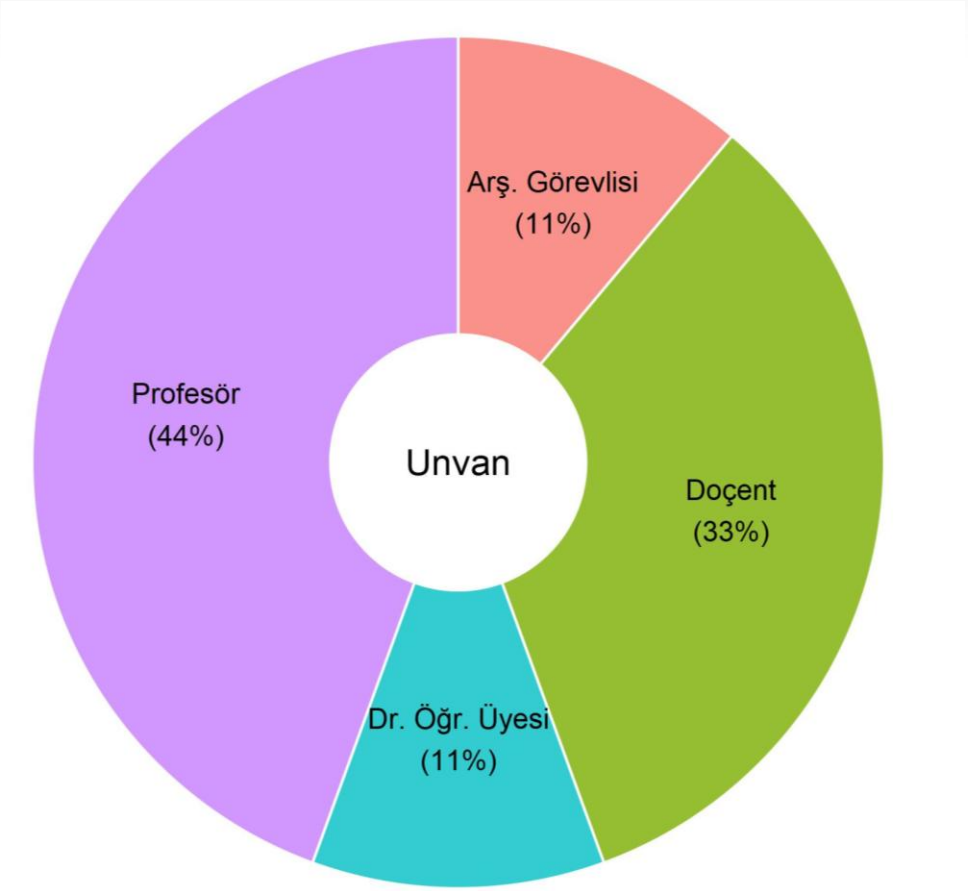
Eğirdir Su Ürünleri Fakültesi 2025 Yılı Akademik Kurul Toplantısı

Su Ürünleri Avlama ve İşleme Teknoloji Bölümü

Doç. Dr. Mehmet CİLBİZ

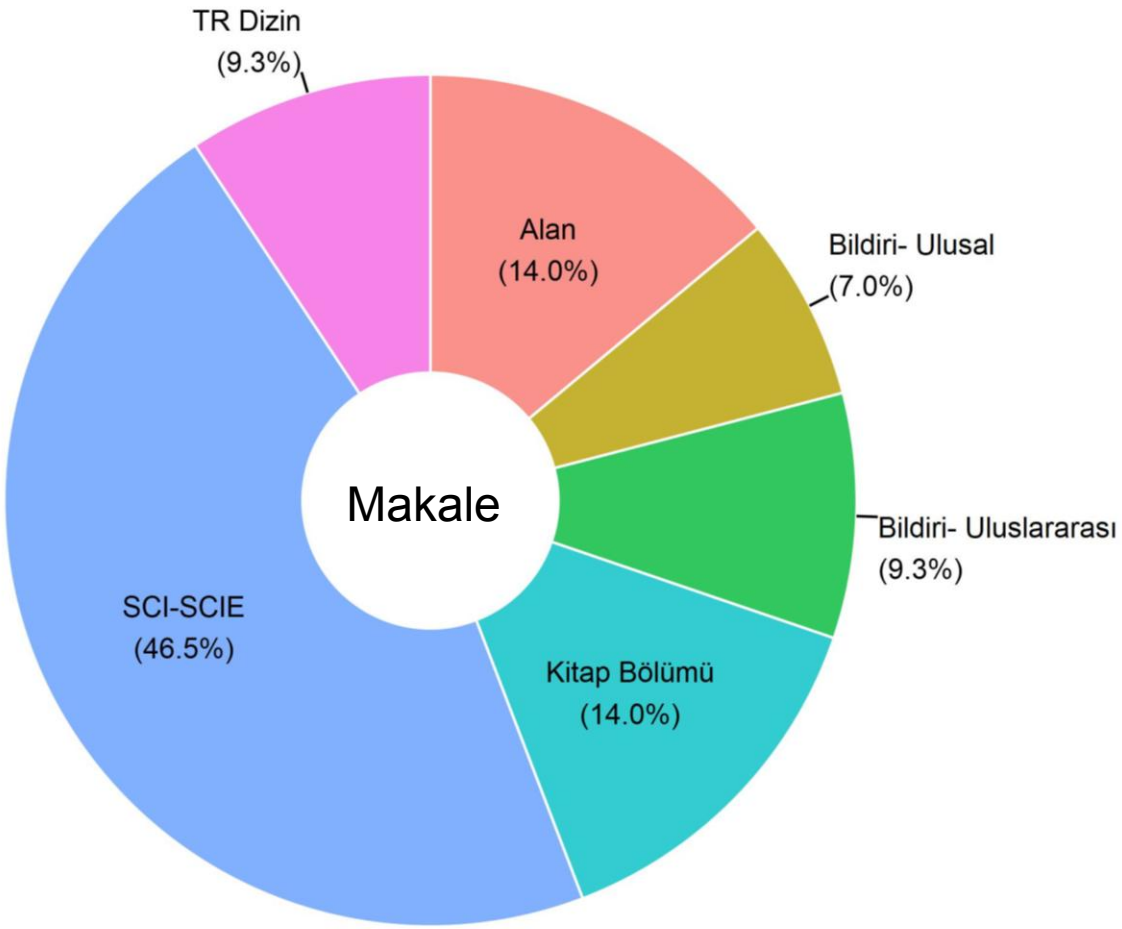
Akademik Kadro

Unvan	n
Profesör	4
Doçent	3
Dr. Öğr. Üyesi	1
Arş. Görevlisi	1



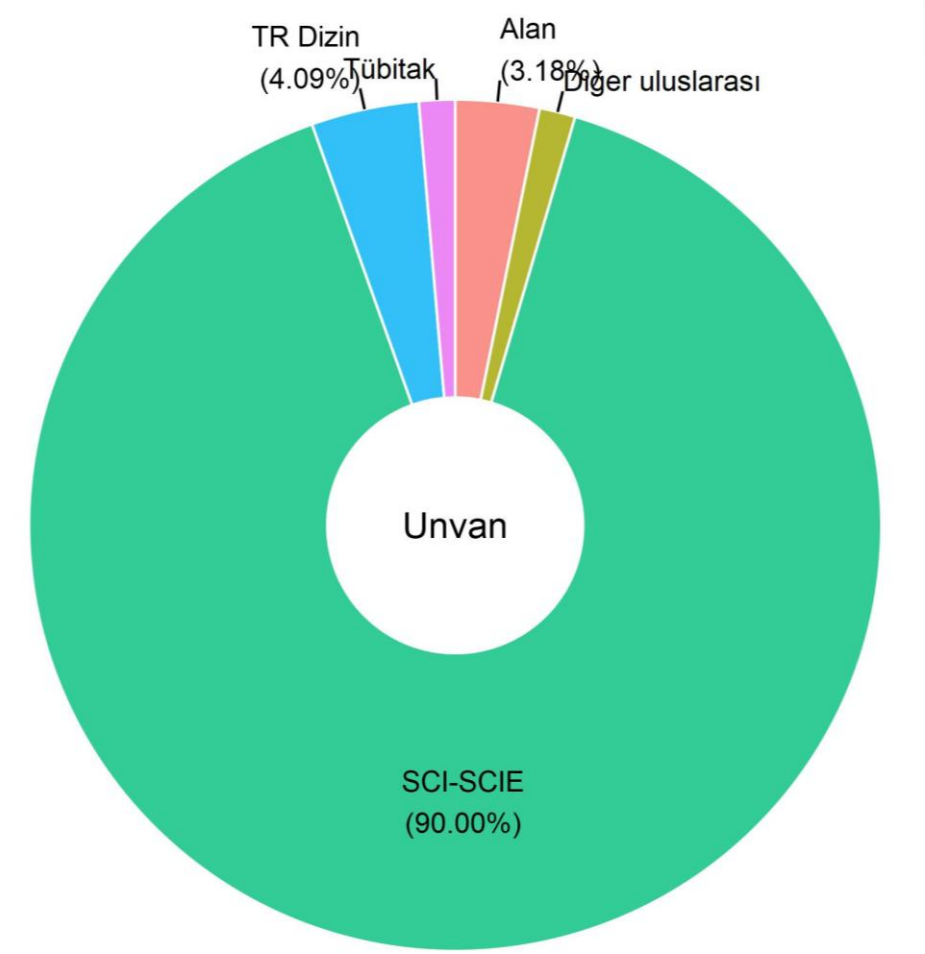
Bilimsel eserler

Dizin	N
SCI-SCIE	20
Alan	6
TR Dizin	4
Kitap Bölümü	6
Bildiri- Ulusal	3
Bildiri- Uluslararası	4



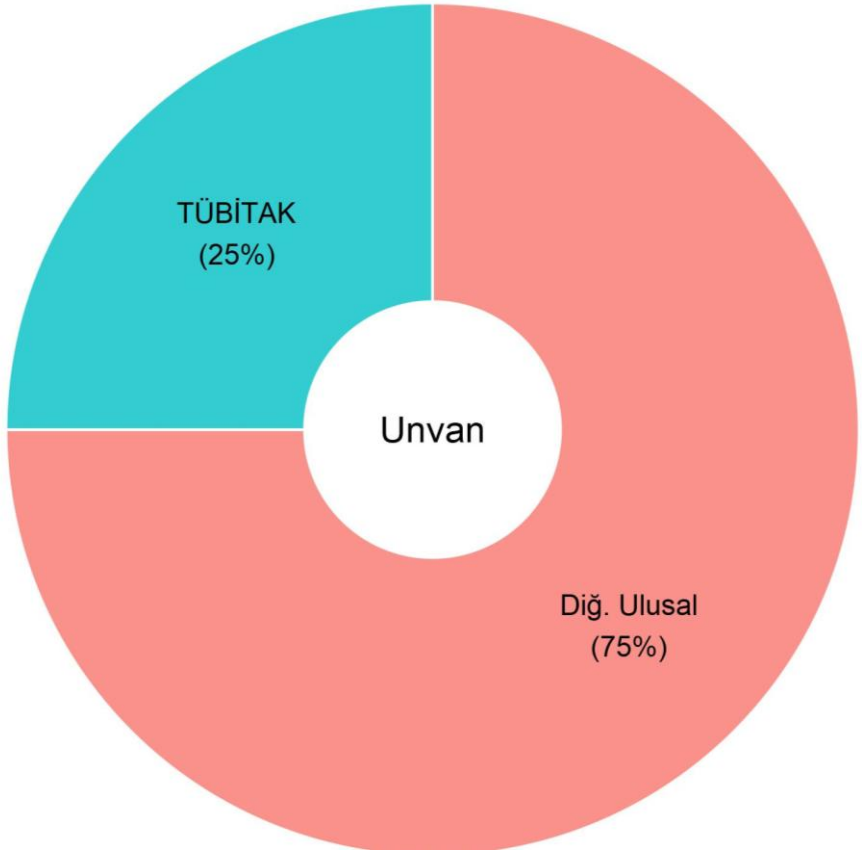
Eserlere yapılan atıflar

Atıf	N
SCI-SCIE	198
Alan	7
TR Dizin	9
Diğer uluslarası	3
Tübitak	3



Proje performansı

Unvan	N
TÜBİTAK	2
Diğ. Ulusal	6



Uluslararası ilişkiler

Azerbaycan Tarım Bakanlığı'nın daveti üzerine anabilim dalı öğretim üyelerimizden Doç. Dr. Mehmet Cilbiz 10-23.Ekim.2025 tarihleri arasında ülkenin iç sularındaki ticari balık stoklar hakkında incelemelerde bulunmuş; Azerbaycan Tarım Bakanı Sayın Mecnun MEMMEDOV'un da katıldığı bir toplantıda çalışma sonuçları değerlendirilmiştir.

Uluslararası ilişkiler

Erasmus+ Staff Mobility for Training (Personel Hareketliliği) kapsamında, Dr. Öğr. Üyesi Göknur Sürengil, 27 Kasım – 16 Aralık 2025 tarihleri arasında İtalya / Padova – Legnaro bölgesinde bulunan İtalya Venedik Deneysel Zooprofilaktik Enstitüsüde (IZSVe- Istituto Zooprofilattico Sperimentale delle Venezie - Experimental Zooprophylactic Institute of the Venezie) eğitim ve uygulamalı laboratuvar çalışmalarına katılacaktır.

"Monitoring of Biological and Chemical Hazards in Bivalve Molluscs and Fishery Products within the Framework of Official Food Safety Control" başlıklı çalışmada İtalya Adria Laboratuvarı ve Legnaro Merkezi Referans Laboratuvarları bünyesinde yürütülecek, araştırmacı ISO standartlarına uygun yöntemler, ileri kromatografi–kütle spektrometrisi sistemleri (LC–MS/MS), qPCR tabanlı patojen analizleri ve fitoplankton toksin izleme yöntemleri çalışılacaktır.

Teknik Geziler

Özellikle kafes ağları arzında ülkemizin önemli üreticilerinden birisi olan Ege Balık Ağları Fabrikasına ve iç su kaynaklarımızdaki başarılı bilimsel çalışmalarıyla ön plana çıkan Eğirdir Su Ürünleri Araştırma Enstitüsü Müdürlüğü'ne teknik ziyarette bulunulmuştur.

ISUBU Tarım Topluluğu tarafından düzenlenen “Olta Yapma Etkinliği”, öğrencilerin el becerilerini geliştirmelerine ve geleneksel balıkçılık yöntemlerini tanımalarına imkân sağlamıştır. Eğirdir Su Ürünleri Fakültesi'nin Su Ürünleri Avlama Bölümü Laboratuvarı’nda gerçekleştirilen eğitimi, Fakültemiz Öğretim Üyesi Doç. Dr. Habil Uğur KOCA vermiştir.

Katılımcılar, balıkçılıkta kullanılan oltaların yapım aşamalarını uygulamalı olarak öğrenmiş; böylece hem teknik bilgi edinmiş hem de sürdürülebilir su ürünleri yönetimi konusunda farkındalık kazanmışlardır. Etkinliğin koordinasyonu, ISUBU Tarım Topluluğu Danışmanı ve Ziraat Fakültesi Öğretim Elemanı Arş. Gör. Merve Mürüvvet DAĞ tarafından yürütülmüştür. Bu uygulamalı eğitim, öğrenciler arasında disiplinler arası etkileşimi güçlendirmiş ve sürdürülebilir balıkçılık anlayışının yaygınlaşmasına katkı sağlamıştır.

Q1-Q2 Makalelerden örnekler

Hydrobiologia
https://doi.org/10.1007/s10750-025-05918-x

AQUATIC PLASTIC POLLUTION

Factors influence on the catch efficiency of abandoned, lost or otherwise discarded fishing gears (*ALDFG*): a case from Turkish inland fisheries

Süleyman Oğuz Korkut · Mehmet Cilbiz · Kadir Çapkın

Contents lists available at ScienceDirect
Journal for Nature Conservation
journal homepage: www.elsevier.com/locate/jnc

Environmental drivers of lionfish catch efficiency in trammel net fisheries in the Southwest coasts of Türkiye

Zafer Tosunoğlu [a,b], Mehmet Cilbiz [c], Funda Kok [d,*], Ali Ulaş [a]

Turkish Journal of FISHERIES and AQUATIC SCIENCES

RESEARCH PAPER

Comparative Analysis of Various Trawl Codend Selectivity for Red Mullet (*Mullus barbatus*) and Whiting (*Merlangius merlangus*) in the Black Sea

Hamdi Moussa[1], Mehmet Cilbiz[2,*], Uğur Uzer[3], Celalettin Aydın[4], Taner Yıldız[3], İbrahim Tamer Emecan[1,5], F. Saadet Karakulak[3]

Food Analytical Methods (2025) 18:935–945
https://doi.org/10.1007/s12161-025-02768-0

RESEARCH

Quality Determination of Frozen-Thawed Shrimp Using Machine Learning Algorithms Powered by Explainable Artificial Intelligence

İsmail Yüksel Genç[1] · Remzi Gürfidan[2] · Enes Açikgözoğlu[3]

INVASIVESNET
Management of Biological Invasions (2025) Volume 16 Article in press

Research Article

An experimental approach to non-indigenous species management: testing the selectivity and capture efficiency of thick trammel nets for lionfish *Pterois miles* in the southern Aegean of Türkiye

Zafer Tosunoğlu[1,2], Mehmet Cilbiz[3], Funda Kok[2,4] and Ali Ulaş[1]

Aquat. Living Resour. 2025, 38, 10

https://doi.org/10.1051/alr/2025008
Aquatic Living Resources
Available online at: www.alr-journal.org

RESEARCH ARTICLE — OPEN ACCESS

Commercial vs. survey data in length-based stock assessment: insights from Turkish crayfish fisheries

Mehmet Cilbiz[1,*], Bayram Korkmaz[2] and Yıldız Bolat[1]

CSIRO PUBLISHING
RESEARCH PAPER
https://doi.org/10.1071/MF25133
MARINE & FRESHWATER RESEARCH

Otolith parameters and body size relationships of *Boops boops* Linnaeus, 1875 and *Nemipterus randalli* Russel, 1986 from the Antalya Bay, Mediterranean coast of Türkiye

Habil Uğur Koca[A], Seval Bahadir Koca[A], Mehmet Cilbiz[A] and Laith A. Jawad[B,C,*]

Contents lists available at ScienceDirect
Food Chemistry
journal homepage: www.elsevier.com/locate/foodchem

Quality prediction of seabream *Sparus aurata* by deep learning algorithms and explainable artificial intelligence

İsmail Yüksel Genç [a,*], Remzi Gürfidan [b], Tuncay Yiğit [c]

Contents lists available at ScienceDirect
Veterinary Parasitology: Regional Studies and Reports
journal homepage: www.elsevier.com/locate/vprsr

Original Article

Infestation and histopathology of *Anguillicola crassus* in European eel in the Lake Bafa, Türkiye

Şeydanur KAN [a,*], Ayşegül KUBİLAY [a], Salim Serkan GÜÇLÜ [a], Özlem ÖZMEN [b], Mehmet CİLBİZ [a], Habil Uğur KOCA [a]

TEŞEKKÜRLER !...

Su Ürünleri Temel Bilimleri Bölümü

Bölüm Başkanı: Prof.Dr. Fahrettin KÜÇÜK

Bölüm Öğretim Elemanları

- Prof.Dr.: 3
- Doç.Dr.: 2
- Dr.Öğretim Üyesi: 4
- Arş.Gör.Dr.: -
- Öğr.Görv: 1

Etkinlikler

- Fakültemiz öğretim üyesi Doç. Dr. Mustafa CEYLAN Sırbistan’da gerçekleşen 2nd International Congress on Innovative Approaches in Health Sciences kongresine sözlü bildiri ile katılmıştır.

Etkinlikler

- Fakültemiz Öğretim Üyesi Doç. Dr. Salim Serkan GÜÇLÜ ve Doktora öğrencisi Gözde ŞAVRAN; 8-11 Ekim 2025 tarihleri arasında, Karadağ Üniversitesi Fen-Matematik Fakültesi tarafından düzenlenen *“3. Güneydoğu Avrupa İhtiyoloji Konferansı-3rd Southeast European Ichthyological Conference (SEEIC 2025)”* adlı sempozyuma sözlü bildiriler ile katılmışlardır.

Etkinlikler

- Fakültemiz Öğretim Üyeleri Prof. Dr. Fahrettin KÜÇÜK ve Doç. Dr. Salim Serkan GÜÇLÜ 23. Ulusal Su ürünleri Sempozyumu’na 2 adet sözlü bildiri ile katılmışlardır.

YAYINLAR

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Occurrence of the invasive swim bladder parasite *Anguillicola crassus* in European eels (*Anguilla anguilla*) in Güllük Lagoon, Türkiye

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ARTICLE INFO

Keywords:
Abundance
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ABSTRACT

In the present study, the prevalence, mean intensity, and abundance of the nematode parasite *Anguillicola crassus* were investigated for European eels caught in the Güllük Lagoon, Muğla, Türkiye. Additionally, prevalence, mean intensity, and abundance data were examined for the data published from other European eel habitats in Türkiye. The same data was used to analyze the variations between freshwater and brackish water habitats. The first published research on *A. crassus* infestations was reported from the Ceyhan River (Türkiye) in 2005. 120 adult (sexually differentiated) *Anguilla anguilla* were collected between June 2023 and May 2024. Ten specimens were collected monthly to determine seasonal variations of *A. crassus* infection. During the study period, *A. crassus* was observed in all months except August 2023, March 2024, and April 2024. 14 % of the eels were found to be infected by A. *crassus*. Mean prevalences were 13.33 % ± 15.28, 20.0 % ± 10.0, 20.0 % ± 10.0, and 3.33 % ± 5.77 in summer, autumn, winter, and spring, respectively. Statistically significant differences were found for the prevalence data between spring-autumn (Mann-Whitney $U = 0.5$, $p < 0.05$) and spring-winter. Mean abundances in all samples were 1.63 ± 1.60, 3.63 ± 1.76, 2.80 ± 1.76, and 1.17 ± 2.02 for summer, autumn, winter, and spring, respectively. Mean intensities in all samples were 9.23 ± 8.59, 18.23 ± 4.13, 13.07 ± 4.78, and 11.67 ± 20.21 for summer, autumn, winter, and spring, respectively. There were no statistical differences between all seasons for abundance and mean intensity. *A. crassus* infestation was low in abundance and prevalence and probably affects the eel population less than in other habitats. However, in terms of mean intensity, it is suggested that it may cause stress in the life of infected eels individually, during the silvering process, and migration.

YAYINLAR

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https://doi.org/10.1007/s10499-025-02007-7

RESEARCH

Effects of temperature and thermal shock on growth and health of southern medicinal leech (*Hirudo verbana* Carena, 1820)

Mustafa Ceylan[1,2] · Emin Karataş[1,2] · Meryem Tunç[2,3] · Seval Bahadır Koca[1] · Hüseyin Sevgili[1] · Hasan Batuhan Emre Özdoğan[1,2] · Osman Çetinkaya[1] · Masoumeh Malek[4]

Received: 27 March 2025 / Accepted: 25 April 2025 / Published online: 6 May 2025

Abstract
The over-collection pressure on medicinal leech populations, coupled with habitat loss, has led to a decline in natural stocks, emphasizing the need for leech aquaculture and standardized production protocols. The effects of water temperature and thermal shock on leech aquaculture remain unclear, making standardization in leech aquaculture challenging. Understanding these effects is also crucial for assessing the impact of global warming on leech populations. This study investigated the impact of different temperatures and thermal shocks on the growth and health of medicinal leeches through two trials. In the first trial, leeches were cultured at four temperatures (15°C, 20°C, 25°C, and 30°C) to determine the optimal range. A quadratic linear decrease in final body weight was observed ($P_{Quadratic}=0.001$), with higher temperatures leading to increased regurgitation and cannibalism, and a lower proportion of healthy leeches. The optimal temperatures for the growth and health of leeches were found to be 18.7°C ($R^2=0.701$) and 19.7°C ($R^2=0.303$), respectively. In the second trial, leeches were kept at 18.7°C and exposed to thermal shocks at six temperatures (3.7°C, 8.7°C, 13.7°C, 23.7°C, 28.7°C, and 33.7°C) during triweekly water changes. No significant differences in final body weight were determined among groups ($P_{Anova}=0.799$). Interestingly, cold thermal shocks reduced regurgitation and cannibalism while increasing the proportion of healthy leeches. These findings highlight temperature and thermal shock as critical environmental factors in leech aquaculture. Maintaining temperatures between 18.7 and 19.7°C appears optimal, and cold thermal shocks may have beneficial effects on leech health.

Keywords Leech aquaculture · Global warming · Regurgitation · Cannibalism · Optimum temperature · Deformities

YAYINLAR

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https://doi.org/10.1007/s10499-025-02176-5

RESEARCH

Effects of blood source on growth, health, and water quality in the aquaculture of medicinal leech, *Hirudo verbana* Carena, 1820

Mustafa Ceylan[1,2] · Seval Bahadır Koca[1] · Hüseyin Sevgili[1] · Hasan Batuhan Emre Özdoğan[1,2] · Emin Karataş[1,2] · Merve Tunay[1,2] · Meryem Tunç[2,3] · Osman Çetinkaya[1] · Hamdi Balcı[4] · Cenk Aydın[5]

Received: 1 July 2025 / Accepted: 28 July 2025

Abstract
Medicinal leech aquaculture is gaining importance due to increased clinical demand and conservation concerns resulting from overharvesting. *Hirudo verbana*, a CITES-listed and commercially valuable species, requires nutritionally adequate, species-specific feeding strategies for sustainable production. Although leeches feed on various vertebrate hosts in nature, the effects of different blood sources and forms on their growth, health, and water quality remain poorly understood in leech aquaculture. This study evaluated the impacts of natural and heparinized blood from cattle, sheep, goat, and live frog on leech growth, digestive response, and water quality. A total of 315 leeches were fed monthly for 3 months using selected blood sources. Parameters including specific growth rate (SGR), regurgitation, mortality, deformities, and water quality were monitored. The highest SGRs were observed in heparinized cattle (3.83%) and natural goat blood (3.61%), while sheep blood resulted in the lowest (1.87%). Regurgitation was associated with high ash and moisture content and low basophil levels. A strong negative correlation ($r = -0.853$, $P < 0.05$) between basophils and regurgitation may indicate a potential biomarker for feed tolerance in medicinal leeches. Bloods with higher total protein and lower cholesterol and ash supported better growth. Groups fed with goat and sheep blood exhibited markedly higher conductivity and nitrogenous waste levels, especially ammonium. These findings emphasize the importance of blood composition in feed formulation for medicinal leeches and support the use of natural goat and heparinized cattle blood to enhance growth performance, health, and environmental outcomes in *H. verbana* aquaculture.

Keywords Aquaculture nutrition · Blood composition · Specific growth rate · Regurgitation · Basophil count · Water quality

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The highest altitude occurrence of *Salariopsis fluviatilis* (Teleostei: Blenniidae) detected so far: Kızılırmak River-Black Sea basin (North of Türkiye)

by

Salim Serkan Güçlü[1,*,a],
Muhammet Gaffaroğlu[2,b],
Muradiye Karasu-Ayata[3,c]

Abstract

A resident population of *Salariopsis fluviatilis* was discovered in the upper basins of the Kızılırmak River, the largest river in Türkiye. Samples with total lengths ranging from 22.24 mm to 90.86 mm were collected and examined. This discovery was the highest altitude record of both the genus *Salariopsis* and the species *S. fluviatilis*, with an

YAYINLAR

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First record of the doctor fish in Antalya (Türkiye) outside its natural distribution range: Taxonomic identity and potential ecological risks

Salim Serkan Güçlü[a,*], Nehir Kaymak[b] and Gökhan Kalaycı[c]

[a]*Faculty of Eğirdir Fisheries, Isparta University of Applied Sciences, Isparta, Türkiye;* [b]*Department of Biology, Faculty of Science, Akdeniz University, Antalya, Türkiye;* [c]*Faculty of Fisheries, Recep Tayyip Erdoğan University, Rize, Türkiye*

(Received 6 May 2025; accepted 31 August 2025)

YAYINLAR

DOI: 10.1002/ar.70067

RESEARCH ARTICLE

The Anatomical Record | American Association for Anatomy | WILEY

Morphological and anatomical analysis of skeletal anomalies in demersal fishes of Antalya Bay, Türkiye

Salim Serkan Güçlü[1] | Laith A. Jawad[2,3] | Deniz İnnal[4]

[1]Isparta University of Applied Sciences, Eğirdir Fisheries Faculty, Isparta, Türkiye

[2]School of Environmental and Animal Sciences, Unitec Institute of Technology, Auckland, New Zealand

Abstract

This study reveals novel skeletal deformities in two marine fish species (*Nemipterus randalli* and *Pomadasys stridens*) from Antalya Bay, Türkiye, linking them to potential impacts on locomotion and ecological fitness. Major

YAYINLAR

DOI: 10.1111/azo.12545

ORIGINAL ARTICLE

Acta Zoologica WILEY

Osteological insights on Turkish *Pseudophoxinus* species and *Egirdira nigra* (Teleostei: Leuciscidae)

Salim Serkan Güçlü[1] | Laith A. Jawad[2] | Fahrettin Küçük[1]

[1]Isparta University of Applied Sciences, Eğirdir Fisheries Faculty, Türkiye

[2]School of Environmental and Animal Sciences, Unitec Institute of Technology, Auckland, New Zealand

Abstract

The present study aims to provide a comprehensive comparative analysis of the vertebral column, fin structure and caudal skeleton of 21 species of *Pseudophoxinus* and *Egirdira nigra* (Family: Leuciscidae) collected from various freshwater loca-

YAYINLAR

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ORIGINAL ARTICLE

Acta Zoologica WILEY

Scanning electron microscopy analysis of the developmental, inter- and intraspecific variation in the otoliths of *Anguilla anguilla* (Linnaeus, 1758) collected from Bafa Lake in Western Anatolia, Türkiye

Salim Serkan Güçlü[1] | Habil Uğur Koca[1] | Mehmet Cilbiz[1] | Laith A. Jawad[2]

[1]Eğirdir Fisheries Faculty, Isparta University of Applied Sciences, Isparta, Türkiye

[2]School of Environmental and Animal Sciences, Unitec Institute of

Abstract

This study aimed to identify unique traits, grounded in a thorough description of the sagitta otolith of *Anguilla anguilla*, to characterize its ontogenetic stages between juvenile and preadult individuals. Twenty-one characteristics were desig-

YAYINLAR

DOI: 10.1111/azo.12538

ORIGINAL ARTICLE

Acta Zoologica WILEY

Skeletal deformities in *Sparus aurata* from Türkiye: Incidences from Bafa Lake and the Aegean Sea

Salim Serkan Güçlü[1] | Laith A. Jawad[2] | Habil Uğur Koca[1] | Mehmet Cilbiz[1] | Celalettin Aydın[3]

[1]Eğirdir Fisheries Faculty, Isparta University of Applied Sciences, Isparta, Türkiye

[2]School of Environmental and Animal Sciences, Unitec Institute of Technology, Auckland, New Zealand

Abstract

The first record of the abnormalities ankylosis (fusion of vertebrae), lordosis (V-shaped curvature of the vertebral column), kyphosis (Λ-shaped curvature), and kypholordosis (the presence of both conditions) have been reported in two

YAYINLAR

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Turkish Journal of Bioscience and Collections

Research Article

Open Access

Assessment of the Growth Patterns of *Luciobarbus graecus* (Teleostei) in the Upper, Middle, and Lower Basins of the Three Rivers in Türkiye

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Salim Serkan Güçlü [1] & Zekiye Güçlü [2]

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YAYINLAR

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Research Article **Araştırma Makalesi**

The First Report of Non-Indigenous Catfish, *Bagarius bagarius* (Family: Sisoridae) in the Inland Waters of Northeastern Iraq

Kuzeydoğu Irak'ın İç Sularında Yerli Olmayan Yayın Balığı *Bagarius bagarius*'un (Familya: Sisoridae) İlk Tespiti

Laith A. Jawad[1,*], Ahmed M. Al-Dirawi[2], Salim Serkan Güçlü[3], Omer F. Al-Sheikhly[4]

YAYINLAR

BİYOLOJİK İZLEMEDE GÖSTERGE ALGLER VE BAZI ÖZELLİKLERİ

Nezire Lerzan ÇİÇEK[1]

YAYINLAR

ALABALIK ÇİFTLİKLERİ VE AKARSU EKOSİSTEM SAĞLIĞI: KSU ÇAYI (ISPARTA) ÖRNEĞİ

Nezire Lerzan ÇİÇEK[1]

YAYINLAR

Assessing ASC certification in rainbow trout aquaculture: Implications for water quality and environmental management

Servet Hazırbulan[1]

Osman Çetinkaya[2]

2209-A Projeleri

Işıklı ve Gökgöl Sulak Alanının Epifitk Algleri Ve Bazı Fizikokimyasal Değişkenlerle İlişkisi,

Yürütücü: Dilara YETİK

Danışman**: Dr. Öğretim Üyesi Nezire Lerzan ÇİÇEK**

İnsan Yapısı Deniz Yapıları ve Doğal Kayalık Kıyılardaki Egzotik ve Yerli Balık Türlerinin Baskınlık Değerlendirmesi,

Yürütücü: Ahmet Bülbül

Danışman: **Dr. Öğretim Üyesi Ufuk Gürkan YILDIRIM**

Alabalık Yetiştiriciliğinde Karşılaşılan Bazı Patojenlerin DNA Barkotlama Yöntemiyle Tanımlanması,

Yürütücü: Sude ÖZDEMİR

Danışman: **Dr. Öğretim Üyesi Ergi BAHRİOĞLU**

Tübitak 1001- 1002 ve TAGEM Devam Eden Projeler

1- **TÜBİTAK-1001:** Tıbbi Sülük Yetiştiriciliğinde Görülen Morfolojik Deformasyonların Nedenleri ve Sülüklere Etkilerinin Araştırılması. No: 123O439. Yürütücü: **Doç. Dr. Mustafa CEYLAN**

2- **TÜBİTAK-1002A**: "Türkiye'nin Batı Akdeniz Bölgesindeki Bazı Akarsulara Yılan Balığı Yavrularının [*Anguilla anguilla* (L. 1758)] Göçünün 25 Yıllık Değişiminin Belirlenmesi» Yürütücü: **Prof. Dr. Fahrettin KÜÇÜK, Doç. Dr. Salim Serkan GÜÇLÜ, Dr. Öğretim Üyesi Ergi BAHRİOĞLU, Dr. Öğretim Üyesi Ufuk Gürkan YILDIRIM, Dr. Öğrencisi Gözde Şavran**

3- **TAGEM**: Işıklı Baraj Gölü'nün limnolojik olarak incelenmesi. Danışman: **Prof.Dr. Osman ÇETİNKAYA**, Araştırmacı: **Dr. Öğr. Üyesi . Lerzan ÇİÇEK**

Tamamlanan Projeler

1- TÜBİTAK-1002A: Göksu Irmağı Üzerindeki Su Yapılarının Su Kalitesi Ve Balık Popülasyonlarına Etkisinin Araştırılması, Yürütücü: **Prof. Dr. Fahrettin KÜÇÜK, Dr. Öğrencisi Gözde Şavran**

2- BİDEB-2209-A: Antalya balıkçı barınağında dağılım gösteren fouling organizma türlerinin belirlenmesi. Danışman:**Dr. Öğr. Üyesi. Sera Övgü KABADAYI YILDIRIM**

3- BİDEB 2209-A "Işıklı ve Gökgöl Sulak Alanının Epifitk Algleri ve Bazı Fizikokimyasal Değişkenlerle İlişkisi". Danışman **: Dr. Öğr. Üyesi N. Lerzan ÇİÇEK**

TEKNİK GEZİLER

- Limnoloji dersi kapsamında Fakültemiz 2. sınıf öğrencileri, Ders Sorumlusu Doç. Dr. Salim Serkan GÜÇLÜ ve Laboratuvar Sorumlusu Öğr. Gör. Deniz KARA eşliğinde, Çivril (Işıklı) Gölü'ne teknik bir gezi gerçekleştirmişlerdir.

TEKNİK GEZİLER

- Fakültemiz "Tıbbi ve Farmasötik Su Canlıları" adlı ders kapsamında öğretim üyesi Doç. Dr. Mustafa Ceylan nezaretinde Sağlık Bakanlığı tarafından sülük uygulaması yönüyle ruhsatlandırılan Dr. Hatice Karaköse Örnek özel kliniğine teknik ziyarette bulunmuşlardır.

TEKNİK GEZİLER

- Limnoloji dersi kapsamında Fakültemiz 2. sınıf öğrencileri, Ders Sorumlusu Doç. Dr. Salim Serkan GÜÇLÜ ve Laboratuvar Sorumlusu Öğr. Gör. Deniz KARA eşliğinde, Köprüçay Nehri'nin önemli su kaynaklarından biri olan Başpınar Kaynağı'na teknik bir gezi gerçekleştirmişlerdir.

TEŞEKKÜR EDERİZ

ISUBÜ

Eğirdir Su Ürünleri Fakültesi

Su Ürünleri Yetiştiriciliği Bölümü

Akademik Kurul-2025





Su Ürünleri Yetiştiriciliği Bölümü

Prof. Dr. Seçil METİN
Bölüm Başkanı

Prof. Dr.: 9 **Doç. Dr.:** 2 **Dr. Öğr. Üyesi:** 2 **Arş. Gör.:** 2

Bölüm Akademik Faaliyetleri

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Effect of *Capsicum annuum* on antioxidant activity, oocyte development and resistance against *Aeromonas hydrophila* in jewel cichlid (*Hemichromis guttatus*)

Nalan Ozgur Yigit, Secil Metin, Behire Isıl Didinen, Ozlem Ozmen & Rahime Aslankoc

Scientific Reports **15**, Article number: 28032 (2025) | Cite this article

Abstract

This study aimed to determine the effects of 3%, 7%, 11%, and 15% red pepper (*Capsicum annuum*) supplementation to diet on antioxidant, oocyte development and disease resistance against *Aeromonas hydrophila* A210 of jewel cichlid (*Hemichromis guttatus*). Fifteen fish (3.43 g ± 0.03) were stocked to each aquarium and fed ad libitum for 90 days. At the end of the trial, the number of mature oocytes increased by adding 11% and 15% red pepper to the diets. ($P < 0.05$). Fish fed diets containing 11% and 15% red pepper showed a significant rise in superoxide dismutase (SOD) activity ($P < 0.05$). In addition, fish fed diets containing 3% and 11% red pepper showed disease resistance against *A. hydrophila* in jewel cichlids. After challenge with *A. hydrophila*, cumulative mortality rates in fish fed with diets containing 3%, 7%, and 11% red pepper were significantly reduced compared to the control group ($P < 0.05$). Therefore, using 11% red pepper is appropriate to provide resistance against *A. hydrophila* infections, increase fertility and antioxidant levels in jewel cichlids (*Hemichromis guttatus*).

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RESEARCH

Investigation of the probiotic effects of *Lactobacillus sakei* 2–3 and *Candida zeylanoides* Y12-3 strains in rainbow trout (*Oncorhynchus mykiss*, Walbaum 1792)

Mohanad Dheyaa Taha[1] · Behire Işıl Didinen[2] · Sevdan Yilmaz[3] · Mert Gürkan[4] · Osman Nezih Kenanoğlu[5]

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Abstract

This study aimed to assess individual and combined effects of candidate probiotic strains *C. zeylanoides* Y12-3 and *L. sakei* 2–3 on growth, hematological parameters, serum immunological parameters, serum biochemistry, histopathology, histomorphology, expression of immune and antioxidant enzyme genes, and disease resistance against *L. garvieae* in rainbow trout. The fish were fed four different feeds (control, *L. sakei* 2–3, *C. zeylanoides* Y12-3, and *L. sakei* 2–3 + *C. zeylanoides* Y12-3) for 60 days. At the end of the experiment, growth parameters, serum glucose levels, serum lysozyme activity, and expression of immune and antioxidant enzyme genes were significantly increased in the probiotic groups. Additionally, triglyceride levels decreased in the probiotic groups compared to the control group, whereas serum ALT levels did not change. The villus width and the number of goblet cells increased in the proximal intestines of the fish in *C. zeylanoides* and *L. sakei* + *C. zeylanoides* groups. *L. sakei* 2–3 showed higher superoxide anion production, expression of immune genes (IgM, IL-B1, lysozyme, TNF-α, HSP70) in the kidney, antioxidant enzyme genes (GPX, GST, SOD) in the liver compared to *C. zeylanoides*. TNF-α, HSP70), and antioxidant enzyme genes (GPX, GST, SOD) compared to *C. zeylanoides*. *L. sakei* and the combination of *L. sakei* + *C. zeylanoides* provided resistance to *L. garvieae* compared to the control group. However, *C. zeylanoides* was similar to the other two probiotic groups regarding disease resistance against *L. garvieae*. However, histopathological examinations revealed reversible changes in the proximal intestine, anterior kidney, and liver of fish in the *C. zeylanoides* and *L. sakei* + *C. zeylanoides* groups. Hence, future studies are still required to explore the effects of shorter-term use of the *C. zeylanoides* strain in rainbow trout to prevent undesirable effects on tissues. In brief, the findings, as mentioned above, showed that *L. sakei* 2–3 and *C. zeylanoides* Y12-3 could be potential probiotic candidates for use in rainbow trout farming. Moreover, the probiotic effects of both strains on different fish species should also be studied.

Keywords Rainbow trout · Probiotic · Yeast · Lactic acid bacteria · Disease resistance · *L. garvieae*

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Extended author information available on the last page of the article

Springer

Bölüm Akademik Faaliyetleri

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Investigation of histological effect of dietary black cumin (*Nigella sativa* L., 1758) on *Cornu aspersum* (Müller, 1774)

Gülden Yazar [a] and Ayşegül Kubilay [b]

[a]General Directorate of Agricultural Research and Policies (TAGEM), Mediterranean Fisheries Research, Production and Training Institute, Antalya, Türkiye; [b]Department of Aquaculture, Eğirdir Fisheries Faculty, Isparta University of Applied Sciences, Isparta, Türkiye

ABSTRACT

The histological effects of feeding rations prepared with different contents (0.5%, 1% and 2%) of black cumin (*Nigella sativa* L., 1758) on *Cornu aspersum* (Müller, 1774) have been investigated. We conducted feeding trials for 30 days with feeding 600 individuals of *Cornu aspersum* with an average weight of 15 g ± 0.01 of food that contained varying amounts of black cumin equivalent to 0.5%, 1% and 2% of total food mass. Histological examinations were made of muscle, intestine, and hepatopancreas tissues for all groups fed with black cumin. While cells of the control group were normal, we observed histopathological effects in the organs of those individuals that were fed with diets containing different amounts of black cumin. These effects were proportional to the applied dose of cumin. Based on our observations, we recommend the use of 0.5% of black cumin in the feeding regimen of *Cornu aspersum* during cultivation as this does not cause any histologically negative effects.

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KEYWORDS
Hepatopancreas; intestinal; medicinal plants; muscle; terrestrial snail

Introduction

Cornu aspersum, consumed as a source of food with high protein content, is an important species used in food, medicine, and cosmetics (Barker et al. 2001; Capinera 2012; Yıldırım et al. 2004). In recent years, feeding studies have sought to reduce the cultivation costs for this species and to increase and accelerate production. Snail farming is considered an alternative farming activity in many countries, offering farmers an additional source of income and contributing to social cohesion. The increasing human population, growth and development of living organisms, improving the microflora of the intestines, and increasing the utilisation rate of food (İpçak et al. 2017). The compounds contained in black cumin have antibacterial, antifungal, antiviral, antiprotozoal, antihistamine, antioxidant, anti-inflammatory, and analgesic, anticancer and mutagenic, anti-nephrotoxic, respiratory, and immune effects, antidiabetic, antiulcer, cardiovascular system, antiparasitic and immune stimulating properties (Ali and Blunden 2003; Çetin 2023).

Previous studies examined the effects of 1% metal-

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RESEARCH ARTICLE

Infectious Pancreatic Necrosis Virus (IPNV) in Rainbow Trout (*Oncorhynchus mykiss* Walbaum, 1792): Molecular Detection and Histopathology

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ABSTRACT

This study aimed to investigate the presence of Infectious Pancreatic Necrosis Virus (IPNV) in samples collected from three rainbow trout farms in the Aegean Region of Türkiye, using the Real-Time Reverse Transcription Polymerase Chain Reaction (rRT-PCR) method. A total of 60 moribund rainbow trout, weighing between 0.5 and 120g, were selected for the study between March and April 2023. Of these, 30 were analyzed using rRT-PCR, and 30 were subjected to histopathological examination. For the rRT-PCR analysis, whole fish weighing 10g or less were placed in sterile phosphate-buffered saline (PBS) containing antibiotics (10,000 IU/ml penicillin + 10 mg/ml streptomycin). Fish weighing over 20g, tissue samples from the pancreas, kidney, spleen, and liver were collected. For histopathological examination, the abdomens of smaller fish were cut open, and liver, pancreas, intestines, and gills of larger fish were fixed in 10% formalin solution for identification. Clinical and necropsy findings in the moribund fish included ascites, dark coloration, exophthalmos, skin lesions, eye hemorrhages, muscular atrophy, gill anemia, petechial hemorrhages in internal organs, kidney wasting, yellow exudate, liver hemorrhage, and splenomegaly. The rRT-PCR results indicated a 100% prevalence of IPNV in sampled fish from each of the three farms, in different weight categories. Histopathological examination revealed pathological changes in the pancreas, liver, stomach, intestines, and gills, with notable necrotic foci particular observed in the acinar cells of the pancreas, as well as the presence of inclusion bodies in liver. As a

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Original Article

Infestation and histopathology of *Anguillicola crassus* in European eel in the Lake Bafa, Türkiye

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ARTICLE INFO

Keywords:
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Larval stage
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ABSTRACT

This study aimed to first detect and histopathologically confirm the *Anguillicolacrassus* parasite in European eel (*Anguilla anguilla*) from Bafa Lake in the Aegean region of Türkiye. As a result of external and internal parasitological examinations performed on 22 individuals with a weight of 42.08–1264.54 g and a length of 31.80–85.30 cm, the presence of parasites was detected. In macroscopic and microscopic examinations, the parasite *A. crassus* was found in the muscle, intestinal system, brain and swim bladder of the eels. The prevalence was found to be 35 %. Histological examinations confirmed the presence of *A. crassus* in the gills and intestinal system. In the examined silver and yellow eels, *A. crassus* eggs, mostly called L1 and L2 forms of *A. crassus*, were detected in the gills, intestinal system, and muscle. The adult form (L3-L4) was seen in the swim bladder and intestinal system. This study includes the first detection of the *A. crassus* parasite in eels in Bafa Lake. The unique value of this study is especially evident in the presence of parasites in the muscle, brain, gill and intestinal systems of eels.

1. Introduction

The life cycle of the catadromous European eel (*Anguilla anguilla*) is very complex. Numerous nations on the shores of Europe and North Africa are home to it (Moriarty and Dekker, 1997). The larvae of Leptocephali hatch in the Sargasso Sea, which is home to this type of eel. The larvae cross the Atlantic Ocean to get at the continental slopes of Europe and Africa after passively drifting for roughly 5000–6000 km due to ocean currents (Zydlewski and Wilkie, 2012). Yellow eels change into migratory silver eels as they become older, returning to the sea to breed before dying (Tesch, 2003). The idea of panmixia in European eels is well accepted and has been thought about for a while (Bianchini et al., 2009; Wirth and Bernatchez, 2003).

Having inhabited the waters of the European continent for at least 800,000 years, *A. anguilla* is currently dealing with several issues, and its output has significantly decreased over time (Kettle et al., 2008). The European eel is now protected by the IUCN (International Union for Conservation of Nature) Red List as a critically endangered species due around the world (Pike et al., 2020). Therefore, CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) also governs international trade (Diekmann et al., 2019). In accordance with CITES, the Turkish Ministry of Agriculture and Forestry has limitted the export among of European eel in to 100 tons for 2020 (CITES, 2022). In this sense, in addition to its ecological importance, survival of the species is also vital from an economic standpoint.

Compared to cultured environments, natural aquatic habitats are particularly vulnerable to both accidental and intentional species introductions and resulting invasions (Gherardi et al., 2008; Emre, 2024; Yıldırım et al., 2024). Confined environments such as lakes are prone to the spread of parasitic diseases due to the proximity of parasitic hosts (Faliex and Morand, 1994).

Anguillicola crassus is a nematode parasite that infects eels. This species is a member of the Anguillicolidae Family, *Anguillicola* Genus. *A. crassus* was first identified in *Anguilla japonica* in Asia, but is now known to infect more than 5 species of eel (Lefebvre et al., 2012; Moravec, 2006; Sasal et al., 2008). *Anguillicola crassus* has 4 different life

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Identification of *Staphylococcus warneri* from rainbow trout (*Oncorhynchus mykiss* Walbaum, 1792) using proteomics–based MALDI–TOF MS

Identificación de *Staphylococcus warneri* en trucha arcoiris (*Oncorhynchus mykiss* Walbaum, 1792) mediante espectrometría de masas MALDI–TOF basada en proteómica

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Bölüm Akademik Faaliyetleri

Reviews in Aquaculture

REVIEW OPEN ACCESS

An In-Depth Analysis of the Finfish Aquaculture in Türkiye: Current Status, Challenges, and Future Prospects

İlhan Aydın[1] | Rafet Çağrı Öztürk[2,3,4] | Orhan Tufan Eroldoğan[5] | Murat Arslan[6] | Yahya Terzi[2,4] | Sevdan Yılmaz[7] | Gürkan Diken[8] | Önder Yıldırım[9] | Türker Bodur[10] | Nejdet Gültepe[6] | Ömer Alper Erdem[11] | Ece Evliyaoğlu[5] | Ömerhan Dürrani[2] | Sinem Gülen[12] | Esin Batır[12,13,14] | İlhan Altınok[2,3,4] | Hüseyin Sevgili[8]

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Keywords: bibliometric | blue food | climate change | legislation | sustainability | Turkish salmon

ABSTRACT

Aquaculture emerges as a crucial solution for addressing the global food shortage of an estimated 10 billion people by 2050. In Türkiye, aquaculture plays a significant role in supporting the economy and ensuring food security. Over the past two decades, finfish production in Türkiye surged from 61,163 to 547,505 t, generating $1.7 billion in export revenue across over 100 countries. This growth has been driven by technological advancements, robust governmental support, and increasing global demand for aquaculture products. However, the sector also faces persistent challenges, including the need to enhance sustainability, mitigate ecological impacts, and manage finite resources. As Europe's leading fish producer, the Turkish aquaculture sector must continue to innovate and expand to meet the demands of a growing population. Despite the expanding research on Turkish finfish aquaculture, there is no comprehensive review that consolidates both scientific progress and sectoral developments. This study fills that void by combining a bibliometric analysis of 1958 scientific publications from 1983 to 2023 with an in-depth sectoral evaluation, providing a holistic understanding of the Turkish aquaculture sector. The bibliometric analysis highlights key research areas, trends, and knowledge gaps, while the sectoral overview examines production trends, dynamics of the feed industry, technological innovations, and economic factors. It also addresses challenges such as climate change impacts, reliance on imported feed ingredients, and disease issues, discussing potential avenues for sustainable growth through innovation, policy reforms, and technological integration. This review serves as a valuable resource for researchers, policymakers, and industry stakeholders, offering insights into the current state and future directions of finfish aquaculture in Türkiye.

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RESEARCH

Effects of blood source on growth, health, and water quality in the aquaculture of medicinal leech, *Hirudo verbana* Carena, 1820

Mustafa Ceylan[1,2] · Seval Bahadır Koca[1] · Hüseyin Sevgili[1] · Hasan Batuhan Emre Özdoğan[1,2] · Emin Karataş[1,2] · Merve Tunay[1,2] · Meryem Tunç[2,3] · Osman Çetinkaya[1] · Hamdi Balcı[4] · Cenk Aydın[5]

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Abstract

Medicinal leech aquaculture is gaining importance due to increased clinical demand and conservation concerns resulting from overharvesting. *Hirudo verbana*, a CITES-listed and commercially valuable species, requires nutritionally adequate, species-specific feeding strategies for sustainable production. Although leeches feed on various vertebrate hosts in nature, the effects of different blood sources and forms on their growth, health, and water quality remain poorly understood in leech aquaculture. This study evaluated the impacts of natural and heparinized blood from cattle, sheep, goat, and live frog on leech growth, digestive response, and water quality. A total of 315 leeches were fed monthly for 3 months using selected blood sources. Parameters including specific growth rate (SGR), regurgitation, mortality, deformities, and water quality were monitored. The highest SGRs were observed in heparinized cattle (3.83%) and natural goat blood (3.61%), while sheep blood resulted in the lowest (1.87%). Regurgitation was associated with high ash and moisture content and low basophil levels. A strong negative correlation ($r = -0.853$, $P < 0.05$) between basophils and regurgitation may indicate a potential biomarker for feed tolerance in medicinal leeches. Bloods with higher total protein and lower cholesterol and ash supported better growth. Groups fed with goat and sheep blood exhibited markedly higher conductivity and nitrogenous waste levels, especially ammonium. These findings emphasize the importance of blood composition in feed formulation for medicinal leeches and support the use of natural goat and heparinized cattle blood to enhance growth performance, health, and environmental outcomes in *H. verbana* aquaculture.

Keywords Aquaculture nutrition · Blood composition · Specific growth rate · Regurgitation · Basophil count · Water quality

Bölüm Akademik Faaliyetleri

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RESEARCH

Effects of temperature and thermal shock on growth and health of southern medicinal leech (*Hirudo verbana* Carena, 1820)

Mustafa Ceylan[1,2] · Emin Karataş[1,2] · Meryem Tunç[2,3] · Seval Bahadır Koca[1] · Hüseyin Sevgili[1] · Hasan Batuhan Emre Özdoğan[1,2] · Osman Çetinkaya[1] · Masoumeh Malek[4]

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Abstract
The over-collection pressure on medicinal leech populations, coupled with habitat loss, has led to a decline in natural stocks, emphasizing the need for leech aquaculture and standardized production protocols. The effects of water temperature and thermal shock on leech aquaculture remain unclear, making standardization in leech aquaculture challenging. Understanding these effects is also crucial for assessing the impact of global warming on leech populations. This study investigated the impact of different temperatures and thermal shocks on the growth and health of medicinal leeches through two trials. In the first trial, leeches were cultured at four temperatures (15°C, 20°C, 25°C, and 30°C) to determine the optimal range. A quadratic linear decrease in final body weight was observed ($P_{Quadratic}=0.001$), with higher temperatures leading to increased regurgitation and cannibalism, and a lower proportion of healthy leeches. The optimal temperatures for the growth and health of leeches were found to be 18.7°C ($R^2=0.701$) and 19.7°C ($R^2=0.303$), respectively. In the second trial, leeches were kept at 18.7°C and exposed to thermal shocks at six temperatures (3.7°C, 8.7°C, 13.7°C, 23.7°C, 28.7°C, and 33.7°C) during triweekly water changes. No significant differences in final body weight were determined among groups ($P_{Anova}=0.799$). Interestingly, cold thermal shocks reduced regurgitation and cannibalism while increasing the proportion of healthy leeches. These findings highlight temperature and thermal shock as critical environmental factors in leech aquaculture. Maintaining temperatures between 18.7 and 19.7°C appears optimal, and cold thermal shocks may have beneficial effects on leech health.

Keywords Leech aquaculture · Global warming · Regurgitation · Cannibalism · Optimum temperature · Deformities

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IJA

AKIN M, BAHADIR KOCA S, ATSATAN K, ÖZDOĞAN HBE, SEVGİLİ H, DEWİ AK. Effect of Different Incubators and Temperature on Artificial Incubation of Crayfish *Pontastacus Leptodactylus* (Eschscholtz, 1823) Eggs. *Israeli Journal of Aquaculture - Bamidgeh*. 2025;77(3):312-319. doi:10.46989/001c.144795.

Original Research Articles

Effect of Different Incubators and Temperature on Artificial Incubation of Crayfish *Pontastacus Leptodactylus* (Eschscholtz, 1823) Eggs

Mustafa AKIN[1,a], Seval BAHADIR KOCA[1], Kamil ATSATAN[1], Hasan Batuhan Emre ÖZDOĞAN[1], Hüseyin SEVGİLİ[1], Amanda Kusuma DEWİ[2]

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Keywords: Crayfish, artificial incubation, incubators, temperature, *Pontastacus leptodactylus*

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Israeli Journal of Aquaculture - Bamidgeh

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This study aimed to investigate the effectiveness of different temperatures and incubators on the incubation of *Pontastacus leptodactylus* eggs. Eggs were collected from a total of 150 broodstock with an average weight of 52.59 ± 12.26 g and length of 13.23 ± 1.48 cm. A total of 470 eggs were placed in each incubator. Four different incubator types were used in the experiment, and each group was studied with four replications; 1. Biolife Turbojet Star X6 (biolife), 2. Jar with a flat-screen bottom, 3. Platform with a screen bottom and 4. Aquarium containing a flat-screen chamber. Only incubator number 1 had a water current that moved the egg in a certain vibration, whereas the others (2, 3, and 4) did not move the eggs. All incubators were tested at two different temperatures 15.5 oC and 19.5 oC. In both temperature regimens, a water flow of 19 ml/sec was provided to the tanks containing all incubators. Two-way ANOVA analysis revealed that the influence of temperature was not significant ($p > 0.05$) in terms of hatching rate, but the incubator and interaction terms were significant ($p < 0.05$). Significant effects of temperature and incubators without an interaction ($p < 0.001$) were the case for the stage II survival rate. The best hatching rate was in the Biolife incubators at both temperatures. The highest hatching rate was observed at 15.5 °C (86.74%), followed by 74.68% at 19.5 °C, while the lowest hatching rate was recorded in the aquarium, with no hatching at 15.5 °C. These groups were followed by a platform with 49.57% at 15.5 oC, an aquarium with 42.55% at 19.5 oC, jar with 41.77% at 19.5 oC, a platform with 28.01% at 19.5 oC, and jar with 14.04% at 15.5 oC. The survival rate at the stage II larval was highest in Biolife with 54.82% at 19.5 oC, while the worst was in jars and aquariums at 15.5 oC. Biolife system that moved the crayfish egg during the incubation gave better results at both temperatures. Our recommendation is that egg-moving systems should be preferred for the incubation of crayfish eggs.

Bölüm Akademik Faaliyetleri

Marine & Freshwater Research

CONTENT

Volume 76, Issue 15
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Previous Article

Article Contents

RESEARCH ARTICLE | 10 OCTOBER 2025

Otolith parameters and body size relationships of Boops boops Linnaeus, 1875 and Nemipterus randalli Russel, 1986 from the Antalya Bay, Mediterranean coast of Türkiye

Habil Uğur Koca, Seval Bahadir Koca, Mehmet Cilbiz, Laith A. Jawad

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+ Author & Article Information

Mar Freshwater Res (2025) 76 (15): MF25133.

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Context

Morphometric analysis aids species, population, and stock differentiation. There is a lack of information on the relationship between fish size and otolith size for most of the species in Antalya Bay, Türkiye.

Aims

Explore fish size–otolith variable relationships.

Methods

Samples of two fish species from Antalya Bay, Türkiye, were collected for otolilth and fish size determination.

Acta Zoologica

ORIGINAL ARTICLE | Full Access

The developmental changes in the otolith morphology of four members of the family Scorpaenidae from the Antalya Bay, Mediterranean coast of Türkiye

Habil Uğur Koca, Seval Bahadir Koca, Laith A. Jawad

First published: 05 January 2025 | https://doi.org/10.1111/azo.12532

SECTIONS PDF TOOLS SHARE

Abstract

Otoliths from four species of scorpaenids–*Helicolenus dactylopterus* (Delaroche, 1809), *Scorpaena elongata* Cadenat, 1943, *Scorpaena notata* Rafinesque, 1810, and *Scorpaena scrofa* Linnaeus, 1758–were collected from Antalya Bay along the Mediterranean coast of Türkiye. The fish were captured using a commercial bottom trawl net with a mesh size of 44 mm (22 mm in the cod end). The fishing grounds varied in depth from 40 to 160 meters. Scanning electron microscopy (SEM) images were utilized to analyse the otoliths' characteristics. Twenty-one distinct features were defined to describe their shapes. Among these, 8 characteristics were consistent across both juvenile and adult otoliths, while 13 features exhibited developmental variation. The results reveal four types of variations: ontogenetic, interspecific, intraspecific, and sexual dimorphism. A comparison with previously documented otoliths of these species from different regions indicates a uniformity intraspecifically across extensive geographic ranges, suggesting that these characteristics are valuable for identification purposes. The diagnostic features of the otoliths can aid in confirming species identity. Additionally, a SEM-based iconography of

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Investigating otolith mass asymmetry in four fish species from Antalya Bay, Mediterranean coast of Türkiye

by

Habil Uğur Koca[1,a], Seval Bahadir Koca[1,b], Mehmet Cilbiz[1,c], Laith A. Jawad[2,*,d]

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Abstract

Otolith weight (OWe) asymmetry plays a crucial role in the vestibular function of the inner ear, potentially affecting its performance. Typically, OWe asymmetry values range from −0.2 to +0.2 (−0.2 < X < +0.2). In this study, we collected 136 fish specimens from the Gulf of Antalya, located along the Mediterranean coast of Turkey, which included the species *Nemipterus randalli*, *Boops boops*, *Scorpaena elongata*, and *Scorpaena notata*. Our findings revealed that the level of OWe asymmetry in these four teleost species increases with the total length (TL) of the fish. Evaluating OWe asymmetry is essential for understanding its potential impact on larval settlement in this significant fishing region. The results also showed that *N. randalli* and *B. boops* exhibited lower levels of OWe asymmetry compared with *S. elongata* and *S. notata*. Environmental factors, which indirectly influence somatic growth and otolith formation, may explain the significant differences observed, as the species inhabit distinct environments.

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AUTHOR CORRECTION

Check for updates

Correction to: Would dependency on fossil fuels affect food security and sustainable production in aquaculture? Cultural energy use and energy use efficiency for earthen pond European seabass (*Dicentrarchus labrax* L., 1758) production

Gürkan Diken[1,2] · Hayati Koknaroglu[3] · Ergi Bahrioğlu[1]

Published online: 14 December 2024

Correction to: Aquaculture International (2023) 31(5):3023–3053
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This article unfortunately contained a mistake. The value reported as '0.0035' for Truck in Table 2 (page 3031) should be '0.00083'.

The original article has been corrected.

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The original article can be found online at https://doi.org/10.1007/s10499-023-01242-0.

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Bölüm Akademik Faaliyetleri

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RESEARCH

Comparative study on albino and pigmented rainbow trout (*Oncorhynchus mykiss*): growth, non-specific immunity, disease resistance, and related gene expressions

Muhammet Hayati Kayhan[1] · Ergi Bahrioğlu[1] · Öznur Özil[1]

Received: 21 July 2024 / Accepted: 15 August 2024 / Published online: 13 November 2024

Abstract
Studies are showing that albinism has negative effects on growth and immunity in rainbow trout, and there are also studies showing the opposite. Therefore, in this study, a comparison has been made between the albino (AA), normal pigmented (PP), mixtures (Mix), and their crossbreds (AP and PA) of rainbow trout in terms of growth performance, non-specific immune system parameters, mRNA relative expression levels, and disease resistance. Regarding the non-specific immune system parameters examined, the albino group (AA) showed the highest lysozyme, NBT, and IgM levels, while the normal pigmented (PP) group exhibited the lowest values. The lowest mortality rate was observed after the challenge test in the AA group (16%), followed by PA (30.66%), Mix (32.00%), and AP (36.00%), with the highest mortality rate recorded in the PP group (52.00%). The results obtained from experimental research have been confirmed through molecular analyses. The expression level of IL-8 showed the highest level in the AA group (6.05 ± 1.95^{a}), followed by PA (4.44 ± 1.60^{ab}), Mix (3.04 ± 0.72^{bc}), and AP (1.29 ± 0.23^{c}) groups compared to the PP group (onefold). There was no statistical difference among the groups regarding growth performance (except for specific growth rates and final weights) and IGF-1 mRNA expression levels. In conclusion, the study suggests that albinism does not have a detrimental effect on rainbow trout. In addition, the observation of a strong non-specific immune system in albinism could promote more efficient and sustainable aquaculture.

Keywords IL-8 · IGF-1 · Albinism · Lysozyme activity · NBT · Relative percent survival · *Vibrio anguillarum*

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The on growth, histology of intestinal and hepatopancreas of using black soldier fly (*Hermetia illucens*) larvae meal in the diets of *Pontastacus leptodactylus* juvenile

Hasan Batuhan Emre Özdoğan[a], Seval Bahadir Koca[a], Özlem Özmen[b], Kamile Gonca Erol[c], Remziye Özkök[c], Oğuz Yaşar Uzunmehmetoğlu[c], İsmail Hakkı Öztuna[c], Habil Uğur Koca[a], and Nalan Özgür Yiğit[a]

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ABSTRACT
In 60 days of feeding, a trial was conducted to evaluate the effects on liver, gut histology, and growth performance of using defatted black soldier fly *Hermetia illucens* (BSF) larvae meal as a fish meal (FM) protein alternative in the diet of *Pontastacus leptodactylus*. Fish meal protein was replaced with BSF meal protein at 0%, 20%, 40%, 60%, 80%, and 100%. Six hundred crayfish with an initial weight of 0.033 g were randomly divided into 24 experimental groups with four repetitions. There were no significant differences observed in cheliped, molting numbers, or survival rates between the groups ($p > .05$). However, adding more than 60% BSF to feeds caused pathological findings in the hepatopancreas, and the intestines. The results of this study showed that 40% defatted BSF meal can be used as a protein source replacement for fish meal protein without affecting the survival rate and growth of *P. leptodactylus* juveniles.

KEYWORDS
Growth performance; insect meal; *hermetia illucens*; *pontastacus leptodactylus*; histomorphology

Introduction

Fishmeal protein is the main ingredient in aquatic feeds. An increasing demand for fish meal (FM) has resulted in pressure on natural stocks. Therefore, the marine ecosystem and global fish stock are now endangered

Bölüm Akademik Faaliyetleri

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Foeniculum vulgare ve Origanum onites Uçucu Yağ Nanoemülsiyonlarının Bakteriyel Balık Patojenlerine Karşı Antibakteriyel ve Antibiyofilm Aktivitesinin Tespiti

Öznur DİLER[1] Lokman AKIN[1] ve Öznur ÖZİL[1]

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Araştırma Makalesi

Sorumlu Yazar
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Öz
Bu çalışmada, su ürünleri yetiştiriciliğinde mortalitelere sebep olan *Aeromonas hydrophila, Vibrio anguillarum, Photobacterium damselae, Lactococcus garvieae, Staphylococcus warneri* ve *Vagococcus salmoninarum* patojenlerine karşı *Origanum onites* (OEO) ve *Foeniculum vulgare* (FEO) uçucu yağlarının ve nanoemülsiyonlarının antibakteriyel aktivitesi, virülens faktörü olan biyofilm üretiminin tespiti ve antibiyofilm aktivitesinin belirlenmesi amaçlanmıştır. OEO ve FEO uçucu yağ ve nanoemülsiyonlarının antibakteriyel etkileri disk difüzyon yöntemi ile incelenmiştir. Tüm patojenlere karşı OEO güçlü antibakteriyel etki göstermiştir. Bu etkinin nanoemülsiyon formunda daha da güçlendiği görülmüştür. Özellikle OEO uçucu yağ nanoemülsiyonunun pozitif kontrol grubuna göre daha güçlü etkisi nedeniyle *A. hydrophila, L. garvieae, V. anguillarum* ve *P. damselae* bakterilerinin neden olduğu hastalıklarda doğal bir tedavi edici ürün olarak kullanılabileceği belirlenmiştir. Bakteriyel balık patojenlerinin biyofilm üretimi tüp yöntemi ile incelenmiş olup *V. salmoninarum* ve *S. warneri* türlerinde biyofilm üretimi pozitif olarak tespit edilmiştir. OEO uçucu yağının antibiyofilm aktivitesi için mikroplak yöntemi uygulanmıştır ve konsantrasyonlara bağlı olarak biyofilm aktiviteyi engellediği belirlenmiştir.

Anahtar Kelimeler: Tıbbi bitki, bakteriyel balık patojenleri, disk difüzyon yöntemi, biyofilm, mikroplak yöntemi

Antibacterial and Antibiofilm Activity of *Foeniculum vulgare* and *Origanum onites* Essential Oil Nanoemulsions Against Bacterial Fish Pathogens

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Year: 10, No: 4, 2025 (392-400)
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ARAŞTIRMA MAKALESİ RESEARCH PAPER

Molecular identification of *Saprolegnia ferax* isolated from rainbow trout eggs in Turkey and antifungal activity of *Hypericum perforatum* and *Zingiber officinale* essential oils

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Atıf yapmak için: **Özil, Ö., Bahrioğlu, E., & Bayrak, H. (2025).** Türkiye'de gökkuşağı alabalığı yumurtalarından izole edilen *Saprolegnia ferax*'ın moleküler teşhisi ve *Hypericum perforatum* ve *Zingiber officinale* uçucu yağlarının antifungal aktivitesi. *Anadolu Çev. Hay. Bil. Derg.*, ***10***(4), 392-400. https://doi.org/10.35229/jaes.1656489

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Abstract: Saprolegniales is an order of oomycetes, and their life is completely dependent on water, hence, they are often called "water molds". This order has both pathogenic and saprophytic lifestyles. Saprolegniasis is one of the biggest problems for the aquaculture industry, especially in hatcheries for rainbow trout (*Oncorhynchus mykiss*) production. Malachite green was successfully used to control *Saprolegnia* infection. However, Saprolegniasis has become a serious problem on aquaculture after its ban on the EU due to its toxicity and carcinogenic effects. In this study, the pathogenic fungus *Saprolegnia ferax* isolated from rainbow trout (*Oncorhynchus mykiss*) eggs was identified using molecular methods for the first time in Turkey. In addition, the susceptibility of the identified *S. ferax* strain to essential oils of *Hypericum perforatum* (St. John's wort) and *Zingiber officinale* (ginger) was determined. DNA barcoding was performed with ITS1-ITS4 primers for molecular identification of the isolated fungal species. DNA sequences obtained from the NCBI GenBank were used to construct a phylogenetic tree. The disk diffusion and tube dilution methods were used to determine the antifungal activities of essential oils. While ginger essential oil showed antifungal activity with a Minimum Inhibitory Concentration (MIC) of 15.62 µl/ml and Minimum Lethal Concentration (MLC) of 250 µl/ml, the MIC value of St. John's wort essential oil was found to be 125 µl/ml, the MLC value was 1000 µl/ml. The findings indicate that ginger essential oil may be considered an effective natural antifungal agent against *S. ferax*.

Keywords: Antifungal activity, disc diffusion, ITS region, medicinal herbs, tube dilution.

Türkiye'de gökkuşağı alabalığı yumurtalarından izole edilen *Saprolegnia ferax*'ın moleküler teşhisi ve *Hypericum perforatum* ve *Zingiber officinale* uçucu yağlarının antifungal aktivitesi

Öz: Saprolegniales, suya tamamen bağımlı olarak yaşayan bir oomycetes (yumurta mantarları) takımıdır ve bu nedenle genellikle "su kalıbı" olarak adlandırılırlar. Bu takım, hem patojenik (hastalığa neden olan) hem de saprofitik (çürükçül) yaşam tarzları geliştirmiştir. *Saprolegnia* enfeksiyonları (Saprolegniasis), özellikle gökkuşağı alabalığı (*Oncorhynchus mykiss*) üretimi yapılan kuluçkahanelerde, su ürünleri endüstrisi için en büyük problemlerden biridir. *Saprolegnia* enfeksiyonunu kontrol altına almak için malaşit yeşili başarıyla kullanılmıştır. Ancak, toksik ve kanserojen etkileri nedeniyle Avrupa Birliği'nde yasaklanmasının ardından Saprolegniasis ciddi bir sorun haline gelmiştir. Bu çalışmada gökkuşağı alabalığı (*Oncorhynchus mykiss*) yumurtalarından izole edilen *Saprolegnia ferax* türü patojenik mantar türü Türkiye'de ilk defa moleküler yöntemlerle teşhis edilmiştir. Ayrıca çalışmada, teşhis edilen *S. ferax* suşunun *Hypericum perforatum* (kantaron) ve *Zingiber officinale* (zencefil) uçucu yağlarına karşı duyarlılığı belirlenmiştir. İzole edilen mantar türünün moleküler teşhisi amacıyla ITS1-ITS4 primerleri ile DNA barkodlama yapılmıştır. Filogenetik

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Original Article

Anesthetic efficacy of *Mentha piperita* and *Mentha spicata* essential oils on rainbow trout (*Oncorhynchus mykiss*)

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Abstract
In the present study, anesthetic effects of *Mentha piperita* and *Mentha spicata* essential oils were investigated on rainbow trout. For this purpose, five treatments of the essential oils (50, 100, 200, 300 and 500 mg L^{-1} concentrations) and one control (2-phenoxyethanol; 0.3 ml L^{-1} concentration) have been used for rainbow trout (*Oncorhynchus mykiss*; mean weight of 15 g). In addition, the mean lethal doses (10 minutes LC_{50} concentration) of the essential oils were also determined. *Mentha piperita* and *M. spicata* essential oils at 200, 300 and 500 mg L^{-1} doses showed better anaesthetic effect than control ($p < 0.05$). The ideal anesthetic dose of each essential oil was 200 mg L^{-1} ($p < 0.05$). At this concentration, deep anesthesia (Stage IV) induction time for *M. piperita* and *M. spicata* on rainbow trout were found as 169.66 s and 65.0 s, respectively. The recovery times at 200 mg L^{-1} concentration were 188.0 s for *M. piperita* and 65.33 s for *M. spicata*. The lethal dose of both essential oils in fish was 150 mg L^{-1}. This study suggests that the essential oils of *M. piperita* and *M. spicata* are both effective anesthetic agents for rainbow trout.

Keywords: essential oil; *Mentha piperita*; *Mentha spicata*; natural anesthesic; rainbow trout

Bölüm Akademik Faaliyetleri

THEORETICAL AND APPLIED APPROACHES IN AGRICULTURE, FOREST AND AQUATIC SCIENCES

Dönüştür E-imza theoreti...page=36

Chapter 3

The Role of Natural Plant Based Sources in the Pigmentation of Aquarium Fish

Muhammet Hayati KAYHAN [1]

ABSTRACT

In the aquarium fish industry, coloration holds significant importance in terms of both aesthetic appeal and commercial value. Since fish are unable to synthesize pigments such as carotenoids internally, the use of natural products as external sources of these compounds has become increasingly widespread. Natural pigments are predominantly derived from plants and not only enhance coloration but also support the immune system and overall health of fish. Various plant-based products—including carrot, red pepper, spirulina, purslane, and marigold—are used for this purpose, offering a safer and more environmentally friendly alternative to synthetic pigments. This study summarizes scientific research conducted on different fish species and highlights that natural pigments can exhibit effects comparable to or even superior to those of synthetic counterparts. In this context, the broader use of natural pigment sources in the aquarium fish industry is recommended, and the importance of further research in this field is emphasized. This study focuses on the utilization of plant-derived products as natural pigment sources in the coloration of aquarium fish.

BOOKCITES

BOOKCITES

Sürdürülebilir Balık Sağlığında Nanoteknolojiye Dayalı Uygulamalar: Biyosentezlenmiş Nanopartiküllerin Kullanımı

Ziraat, Orman ve Su Ürünleri Alanında Akademik Araştırmalar

Yazarlar: Pınar Yıldırım, Ayşegül Kubilay

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Bu Bölümün Yer Aldığı Kitap

BÖLÜM 14

Sürdürülebilir Balık Sağlığında Nanoteknolojiye Dayalı Uygulamalar: Biyosentezlenmiş Nanopartiküllerin Kullanımı

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Bölüm Akademik Faaliyetleri

KEKİK (*ORİGANUM VULGARE*) VE ZAMBAK (*İRİS GERMANİCA*) YAĞININ *STAPHYLOCOCCUS WARNERİ*, *AEROMONAS HYDROPHİLA* PATOJENLERİNE KARŞI *IN VİTRO* ANTİMİKROBİYAL AKTİVİTESİ

Şeydanur Kan[1]*, Ayşegül Kubilay[1], Muhammet Mustafa Şenel[1], Nimet Kara[2]

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TÜRKİYE'DE KÜLTÜRÜ YAPILAN GÖKKUŞAĞI ALABALIKLARI (*ONCORHYNCHUS MYKİSS* WALBAUM, 1792)'NDA İNFEKSİYOZ PANKREATİK NEKROZİS VİRUSÜNÜN DURUMU

Şeydanur Kan[1]*, Ayşegül Kubilay[1], Ali Özdamar[1], Yakup Yıldırım[2]

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GİRİŞ

Su ürünleri üretimi dünyada ve ülkemizde önemli bir sektör haline gelmiş olup ortalama her yıl %10'dan fazla büyüme göstermektedir. (FAO, 2020). Gökkuşağı alabalığı (*Oncorhynchus mykiss* Walbaum, 1792) üretimi ülkemizde 1970 yılından itibaren artarak devam etmektedir. 2024 yılında gökkuşağı alabalığı (*O. mykiss*)'nın iç sulardaki üretim miktarı 156.758 ton/yıl, denizdeki üretim miktarı ise 66.055 ton/yıla ulaşmıştır (TUİK, 2024). Üretim miktarının artmasına paralel olarak infeksiyoz hastalıkların çeşidi ve hastalıkların görülme sıklığı da artış göstermektedir. İnfeksiyoz hastalıklar arasında yer alan viral etkenlere bağlı balık hastalıkları yüksek mortaliteye sebep olmaktadır. İnfeksiyöz pankreatik nekrozis virüsü, hem deniz hem de tatlı su balıklarında, yumuşakça ve kabuklularda hastalık oluşturabilen bir virüs olarak bilinmektedir. İnfeksiyoz pankreatik nekrozis virüsü (IPNV) gökkuşağı alabalıklarında sıklıkla görülen bir hastalık olmakla birlikte geniş bir yayılım göstermektedir. Türkiye'de elektron mikroskobu ve histopatolojik incelemeler sonucunda gök-

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EMPLOYMENT STATUS OF FEMALE FISHERIES ENGINEERS IN TÜRKİYE: AN ANALYSIS OF ACADEMIA, PUBLIC, AND PRIVATE SECTORS

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October 29 –31, 2025, Belgrade, Serbia

ANTIPARASITIC EFFECTS OF *Artemisia absin*
THE TREATMENT OF HEXAMITIOSIS IN RA
TROUT (*Oncorhynchus mykiss*) CULTURE

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Bölüm Akademik Faaliyetleri

6

ISPARTA'NIN DÜNÜ, BUGÜNÜ, YARINI – III

KİRAZ / ÇOK AMAÇLI SALON 1 – SU ÜRÜNLERİ OTURUMU — **31 Ekim 2025 Cuma**
Oturum Başkanı: Prof. Dr. Şengül Bilgin — **09:00 – 10:30**

Isparta İlinde Su Ürünleri İşleme Tesislerinin Gelişimi ve Gelecek Perspektifi
Göknur Sürengil, Şengül Bilgin ve Levent İzci

Isparta'nın Su Ürünleri Yetiştiriciliğindeki Rolü
Hasan Batuhan Emre Özdoğan

KİRAZ / ÇOK AMAÇLI SALON 1 – SUCUL CANLILAR ve SU ÜRÜNLERİ OTURUMU — **31 Ekim 2025 Cuma**
Oturum Başkanı: Prof. Dr. Ayşegül Kubilay — **10:45 – 12:15**

Isparta'nın Tıbbi Sülük Sektöründeki Yeri
Mustafa Ceylan

Köprüçay Irmağı'nın Kaynak Bölgesindeki Ekolojik Değişim ve Sucul Habitat Kayıpları
Gözde Şavran, Ufuk Gürkan Yıldırım, Salim Serkan Güçlü, Fahrettin Küçük, Yunus Ömer Boyacı ve Sera Övgü Kabadayı Yıldırım

Isparta'nın Sucul Bitkileri: Yayılış, Ekoloji, Kullanım, Fırsatlar ve Tehditler
Osman Çetinkaya ve İbrahim Özdal

Eğirdir Gölü Tatlısu İstakozu (Astacusleptodactylus)'nun Mevcut Durumu, Ekonomik ve Ekolojik Önemi
Öznur Özil, Şeydanur Kan, Öznur Diler ve Ayşegül Kubilay

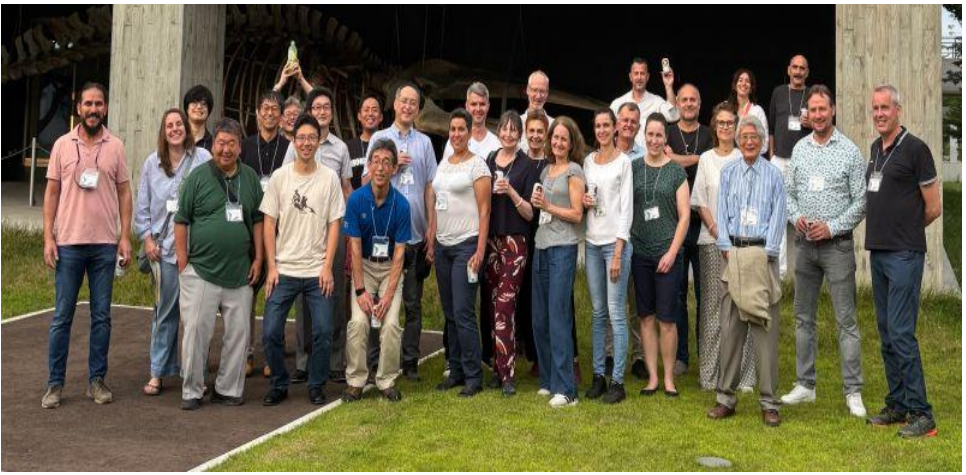
	Proje adı	Proje Konusu	Yürütücü	Başlangıcı	Proje Durumu
1	TÜBİTAK (2515 COST Aksiyon Üyeleri Ar-Ge Destek Programı)-125O131	Türkiye Su Ürünleri Yetiştiricilik ve İşleme Sektöründe Mavi Ekonomi: Sürdürülebilir Mavi Gida, Yenilikçi Stratejiler ve Sosyal Eşitlik	Prof. Dr. Hüseyin SEVGİLİ	03/06/2025	Devam ediyor
2	TÜBİTAK 1004 - Mükemmeliyet Merkezi Destek Programı	Tr.Aqua: Gıda Arzı Güvenliği Çerçevesinde Su Ürünlerinde Yenilikçi Ve Sürdürülebilir Uygulamalar Gökkuşağı Alabalıklarından (Oncorhynchus mykiss) Aday Probiyotik Mayaların İzolasyonu ve Probiyotik Etkilerinin Araştırılması	Prof. Dr.Behire Işıl Didinen	15/05/2023	Devam ediyor
3	TÜBİTAK 1003 - Öncelikli Alanlar	Arıtılmış Evsel Atıksularda Yetiştirilen Alg ve Su Mercimeğinin Gökkuşağı Alabalığı Yemlerinde Balık Unu Ve Soya Küspesi Yerine Kullanımı	Faruk PAK	01/11/2023	Devam ediyor
4	TÜBİTAK 1001 / 747606	Isı stresinin Nil tilapyasında (Oreochromis niloticus) testis ve spermlerdeki epigenetik değişimler ve sperm parametreleri üzerine etkisinin incelenmesi	Doç.Dr. Mehmet ÖZBEK	25/01/2024	Devam ediyor
5	TÜBİTAK 1001 / 123O439	Tıbbi Sülük Yetiştiriciliğinde Görülen Morfolojik Deformasyonların Nedenleri ve Sülüklere Etkilerinin Araştırılması	Doç.Dr. Mustafa CEYLAN	01/10/2023	Devam ediyor
6	TÜBİTAK 1002	Gökkuşağı Alabalığında (Oncorhynchus Mykiss, Walbaum 1792) Debaryomyces Nepalensis 17-1 ve Debaryomyces Hansenii 17-2 Maya Suşlarının Probiyotik Etkilerinin Araştırılması	Prof. Dr.Behire Işıl Didinen	15/08/2025	Devam ediyor
7	TÜBİTAK 1002-125O854	Isı Stresinin Nile Tilapyasında (Oreochromis niloticus) Sperm Proteomu Üzerine Etkisi	Dr. Öğretim Üyesi Zafer USTA	2025	Devam ediyor

8	TAGEM/HAYSÜD/T1/24/A7/P2/7049	Granyöz (Argyrosomus regius) Yetiştiriciliğinde Yaşama Oranının Artırılması	Dr. Gülden YAZAR	2023	Devam ediyor
9	TAGEM	Avrupa Levreği (Dicentrarchus labrax) Larva Üretimi İçin Yerel Hammaddeler ile Hazırlanan Canlı Yem Formülasyonlarının Geliştirilmesi	Adem Özmen	2024	Devam ediyor
10	TAGEM/HAYSÜD/T1/24/A7/P2/6753	Kapalı devre sistemde kerevit (Pontastacus leptodactylus Eschscholtz,1823) yetiştiricilik tekniklerinin geliştirilmesi	Dr. Kamile Gonca EROL	01/01/2024	Devam ediyor
13	TAGEM	Doğada ve Kültür Ortamında Yetişen Tatlısu ıstakozu Pontastacus leptodactylus (Eschscholtz, 1823)'un Mikrobiyom analizleri	İsmail Hakkı ÖZTUNA	01/01/2023	Devam ediyor
14	BAP- DOKTORA PROJESİ	SPİRODİKLOFEN'İN SAZAN BALIKLARI (Cyprinus carpio, LİNNAEUS 1758) ÜZERİNDEKİ HİSTOPATOLOJİK, SERUM BİYOKİMYASAL PARAMETRELERİ ve ANTİOKSİDAN ENZİM AKTİVİTELERİ ÜZERİNE ETKİLERİ	Prof. Dr. Öznur DİLER		Tamamlandı.
15	BAP/ 1203-KARDEP-25	Isı Stresine Maruz Kalan Nil Tilapyasında (Oreochromis niloticus) Beyin ve İlişkili Nöral Yapılarda Transkriptomik Analiz	Dr. Öğretim Üyesi Zafer USTA	10/2025	Devam ediyor

Prof. Dr. Hüseyin SEVGİLİ

Second annual meeting in Cesenatico (Italy)
28-30 May 2025 09 July 2025

IX Global Fishery Forum & Seafood Expo (Russia), Saint Petersburg, Expoforum Ec



EEL SUPPORT Training School
Hakodate (Japan)

Aquaculture Europe 2025, September 22 - 25, 2025, Valencia, (Spain) (2 adet özette yazar)

Prof. Dr. Öznur DİLER

15th International symposium 'Modern Trends in Livestock Production was realized in 29th-31 October 2025, Belgrade, Republic of Serbia. **Antiparasitic Effects of *Artemisia absinthium* L. in the Treatment of Hexamitiosis in Rainbow Trout (*Oncorhynchus mykiss*) Culture was presented at 31 October 2025 in oral session, 10.40-11.00 am.**

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MARINE AQUATIC ECOSYSTEMS

WHEN?: 5th and 6th May 2025
WHERE?: IZSVE, Padova, Italy

The 2nd High-Performance Workshop of the Action took place on 5th and 6th May 2025 at the Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe), located in the city of Legnaro, Padova (Italy). The Istit Zooprofilattico Sperimentale delle Venezie (IZSVe) is an Italian public health institute that conducts diagnostic and research activities and provides services in the fields of animal health, food safety and zoonoses. The 2nd High-Performance Workshop of the Action took pla on 5th and 6th May 2025 at the Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe), located in the city of Legnaro, Padova (Italy). The Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe) is an Italian public health institute that conducts diagnostic and research activities and provides services in the fields of animal health, food safety and zoonoses.

Group photo of 1st day attendees in Legnaro

KATILIMLARINIZ VE İLGİNİZ İÇİN TEŞEKKÜR EDERİZ.

Süngülerle, silahlarla ve kanla kazandığımız askeri zaferlerden sonra, kültür, bilim, fen ve ekonomi alanlarında da zaferler kazanmaya devam edeceğiz.

Gazi M. Kemal