

# Prof. DİLEK ÜNAL

## Personal Information

**Office Phone:** [+90 228 214 2115](tel:+902282142115)

**Email:** [dilek.unal@bilecik.edu.tr](mailto:dilek.unal@bilecik.edu.tr)

**Web:** <https://avesis.bilecik.edu.tr/dilek.unal>

## International Researcher IDs

ORCID: 0000-0002-6915-9699

Yoksis Researcher ID: 51971

## Education Information

Doctorate, Ege University, Fen Bilimleri Enstitüsü, Hidrobiyoloji (Dr), Turkey 2004 - 2008

Postgraduate, Ege University, Fen Bilimleri Enstitüsü, Biyoloji (YI) (Tezli), Turkey 1999 - 2003

Undergraduate, Ege University, Fen Fakültesi, Biyoloji Bölümü, Turkey 1995 - 1999

## Dissertations

Doctorate, Evernia prunastri türünde ağır metal stresinin fotosentez üzerine etkisi ve DNA hasarının tespiti, Ege University, Fen Bilimleri Enstitüsü, Hidrobiyoloji (Dr), 2008

Postgraduate, Poliaminlerin bitki büyüme düzenleyicileri ile olası ilişkisi, Ege University, Fen Bilimleri Enstitüsü, Biyoloji (YI) (Tezli), 2003

## Research Areas

Life Sciences, Plant Biology, Plant Physiology, Biotechnology, Plant Biotechnology, Natural Sciences

## Academic Titles / Tasks

Professor, Bilecik Seyh Edebali University, Fen Fakültesi, Moleküler Biyoloji Ve Genetik, 2020 - Continues

## Academic and Administrative Experience

Bilecik Seyh Edebali University, 2013 - 2015

## Courses

BİYOKİMYA I, Undergraduate, 2016 - 2017, 2013 - 2014, 2012 - 2013

STRES BİYOLOJİSİ, Undergraduate, 2016 - 2017, 2013 - 2014

Bitki Moleküler Biyolojisi, Postgraduate, 2013 - 2014, 2012 - 2013, 2011 - 2012

Biyokimya II, Undergraduate, 2013 - 2014, 2012 - 2013

Biyokimya II Laboratuvarı, Undergraduate, 2013 - 2014, 2012 - 2013

Liken Biyolojisi, Postgraduate, 2013 - 2014  
Uzmanlık Alan Dersi, Postgraduate, 2013 - 2014, 2012 - 2013, 2011 - 2012  
Biyokimya I Laboratuvarı, Undergraduate, 2013 - 2014, 2012 - 2013  
Genel Biyoloji I, Undergraduate, 2013 - 2014, 2012 - 2013, 2011 - 2012  
Bitki Embriyolojisi, Undergraduate, 2013 - 2014  
Sistematik Biyoloji, Undergraduate, 2012 - 2013  
Hücre Biyolojisi II Laboratuvarı, Undergraduate, 2012 - 2013, 2011 - 2012  
Fizyoloji II, Undergraduate, 2012 - 2013  
Bitkilerde stres fizyolojisi, Postgraduate, 2012 - 2013, 2011 - 2012  
Doku Kültürü, Undergraduate, 2012 - 2013  
Genel Biyoloji I laboratuvarı, Undergraduate, 2012 - 2013, 2011 - 2012, 2010 - 2011  
Hücre Biyolojisi I laboratuvarı, Undergraduate, 2012 - 2013, 2011 - 2012  
Bitki Doku Kültürü, Doctorate, 2011 - 2012  
Model Organizmalar, Undergraduate, 2011 - 2012  
Genetik, Undergraduate, 2011 - 2012  
Mikoloji, Undergraduate, 2010 - 2011

## Advising Theses

ÜNAL D., Chlamydomonas reinhardtii kültürlerinde putresinin soğuk ve tuzluluk stresine toleranstaki rolünün belirlenmesi, Postgraduate, M.SÜLEYMAN(Student), 2017  
ÜNAL D., Xanthoria parietina'da alüminyum stresi altında fotosistem II D1 proteininin gen ifadesi ve glutatyon redüktaz aktivitesinde spermidinin rolünün araştırılması, Postgraduate, G.TELATAR(Student), 2014

## Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Dose-dependent Plant-promoting Effect of Macroalgae *Styopodium schimperi* Extracts in *Solanum lycopersicum* and Detection of Phloroglucinol Composition**  
ÜNAL D., GURBANOV R., Sevim G., Samgane G., Varış G., ÖZDEMİR KOÇAK F., Tuney-Kizilkaya I.  
Journal of Soil Science and Plant Nutrition, vol.23, no.2, pp.2018-2029, 2023 (SCI-Expanded)
- II. **Pb intoxicated biomolecular changes in *Cladonia convoluta* studied using 2DCOS infrared spectroscopy coupled with chemometric analysis**  
Karthikeyan S., GURBANOV R., ÜNAL D.  
Vibrational Spectroscopy, vol.119, 2022 (SCI-Expanded)
- III. **Bioremediation of Cadmium and Nickel from a Saline Aquatic Environment Using *Ceratophyllum demersum***  
Parnian A., Chorom M., Jaafarzadeh N., Anosheh H. P., Ozturk M., ÜNAL D., Yilmaz D. D., Altay V.  
Chiang Mai Journal of Science, vol.49, no.2, pp.339-347, 2022 (SCI-Expanded)
- IV. **Decolorization property of living Lichen *Evernia prunastri* on textile Acid Red P-2BX dye**  
Ünal D., Gül Ü. D., Silah H.  
International Journal of Environmental Science and Technology, vol.18, no.11, pp.3469-3478, 2021 (SCI-Expanded)
- V. **Transcriptome and translome changes in germinated pollen under heat stress uncover roles of transporter genes involved in pollen tube growth**  
Poidevin L., Forment J., ÜNAL D., Ferrando A.  
Plant Cell and Environment, vol.44, no.7, pp.2167-2184, 2021 (SCI-Expanded)
- VI. **Chloroplast-associated molecular patterns as concept for fine-tuned operational retrograde signalling**  
Unal D., García-Caparrós P., Kumar V., Dietz K.

- Philosophical Transactions of the Royal Society B: Biological Sciences, vol.375, no.1801, 2020 (SCI-Expanded)
- VII. **Seasonal variations of epiphytic flora, abscisic acid production and physiological response in the brown alga *Cystoseira foeniculacea* (Linnaeus) Greville** Variations saisonnières de la flore épiphyte, production d'acide abscissique et réponse physiologique chez l'algue brune *Cystoseira foeniculacea* (Linnaeus) Greville.  
Kozak A., ÜNAL D., Tuney-Kizilkaya I.  
Cahiers de Biologie Marine, vol.61, no.2, pp.169-179, 2020 (SCI-Expanded)
- VIII. **Cold acclimation of SnRK2.2 kinases mutant *Chlamydomonas reinhardtii***  
ÜNAL D., Cekiç F. O.  
Phycological Research, vol.67, no.3, pp.202-207, 2019 (SCI-Expanded)
- IX. **Polyamines as quality control metabolites operating at the post-transcriptional level**  
Poidevin L., ÜNAL D., Belda-Palazón B., Ferrando A.  
Plants, vol.8, no.4, 2019 (SCI-Expanded)
- X. **The biomolecular alterations in *Cladonia convoluta* in response to lead exposure**  
GURBANOV R., ÜNAL D.  
Spectroscopy Letters, vol.51, no.10, pp.563-570, 2018 (SCI-Expanded)
- XI. **Gamma-amino butyric acid metabolism under high temperature stress in two lichen species**  
Cekiç F., GÖREN SAĞLAM N., Torun H., YİĞİT E., ÜNAL D.  
Applied Ecology and Environmental Research, vol.16, no.5, pp.5529-5538, 2018 (SCI-Expanded)
- XII. **Response of *Triticum aestivum* to boron stress**  
LEBLEBİCİ S., ÜNAL D.  
Russian Journal of Plant Physiology, vol.64, no.6, pp.869-875, 2017 (SCI-Expanded)
- XIII. **Silver nanoparticles induced genotoxicity and oxidative stress in tomato plants**  
Çekiç F. Ö., Ekinci S., İnal M., ÜNAL D.  
Turkish Journal of Biology, vol.41, no.5, pp.700-707, 2017 (SCI-Expanded)
- XIV. **UV-B induces cell death in the lichen *Physcia semipinnata* (J.F.Gmel) *Physcia semipinnata* (J.F.Gmel)' de UV-B radyasyonunun hücre ölümü üzerine etkisi**  
ÜNAL D., UYANIKGİL Y.  
Turkish Journal of Biology, vol.35, no.2, pp.137-144, 2011 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Determination Of The Effects Of Combined Use Of *Paenibacillus* Sp. S1S22 Strain And *Ulva Lactuca* Extract On Growth Of Tomato Plant.**  
ÖZDEMİR KOÇAK F., SEVİM G., ÇİĞDEM U., ÜNAL D.  
Kahramanmaraş Sütçü İmam Üniversitesi Sosyal Bilimler Dergisi, vol.1, no.1, 2023 (Peer-Reviewed Journal)
- II. **Ameliorative effect of *Halopteris filicina* extracts on growth parameters and genomic DNA template stability of tomato (*Solanum lycopersicum*) under lead chloride stress**  
ÜNAL D., Sevim G., Varis G., Tuney-Kizilkaya I., Turkyilmaz Unal B., Ozturk M.  
Crop and Pasture Science, vol.73, no.8, pp.917-926, 2022 (Scopus)
- III. **Effect of gibberellin on some fatty acid profiles under nitrogen starvation in green algae *Chlorella vulgaris***  
Kabaoglu U., Aslan U. M., ÜNAL D.  
International Journal of Secondary Metabolite, vol.8, no.1, pp.11-19, 2021 (Scopus)
- IV. **Determination of photosynthesis-related and ascorbate peroxidase gene expression in the green algae (*Chlorella vulgaris*) under high-temperature conditions**  
Kizilkaya I. T., Akcaalan S., ÜNAL D.  
International Journal of Secondary Metabolite, vol.8, no.1, pp.59-69, 2021 (Scopus)
- V. **Biosorption of Acid Red P-2BX by lichens as low-cost biosorbents**  
Bayazit G., GÜL Ü. D., ÜNAL D.

International Journal of Environmental Studies, vol.76, no.4, pp.608-615, 2019 (Scopus)

**VI. Effects of Nitrate toxicity on free Proline accumulation, chlorophyll degradation and photosynthetic efficiency in the green alga *Chlorella vulgaris***

TÜNEY KIZILKAYA İ., ÜNAL D.

International Journal of Secondary Metabolite, vol.6, no.1, pp.10-19, 2019 (Peer-Reviewed Journal)

## **Books & Book Chapters**

**I. The hormonal signaling molecules triggered by plant growth-promoting bacteria**

SEVİM G., ÖZDEMİR KOÇAK F., ÜNAL D.

in: *Phytohormones and Stress Responsive Secondary Metabolites ( 1. Basım)*, Munir Ozturk, Rouf Bhat, Muhammad Ashraf, Fernanda Tonelli, Bengu Unal, Gowhar Dar, Editor, Elsevier, pp.1-23, 2023

## **Refereed Congress / Symposium Publications in Proceedings**

**I. Polistren Mikroplastik Partiküllerinin İnsan Kolon Kanseri ve Bitki Fidelerinde Oksidatif Stres Üzerine Etkisinin İncelenmesi**

ÇAĞLAYAN S., ÜNAL D.

Çalıştay-Kimya ve Malzeme Alanında Güncel Gelişmeler, Turkey, 17 September 2023

**II. Effects of *Ulva lactuca* extracts on some properties of different plant-promoting bacteria**

ÖZDEMİR KOÇAK F., ÜNAL D.

4th EURASIA BIOCHEMICAL APPROACHES & TECHNOLOGIES (EBAT) CONGRESS, Antalya, Turkey, 03 November 2022, pp.207

**III. Investigation of In Vitro and In Silico Effects of Brown Algae Extracts on Cholinergic Enzymes Activity**

ÜNAL D., IŞIK M., TÜRKEŞ C., KIZILKAYA İ., BEYDEMİR Ş.

4th Eurasia Biochemical Approaches & Technologies (EBAT) Congress, Antalya, Turkey, 3 - 06 November 2022, pp.28

**IV. Determination of Changes in Intestinal Microbiota in Zebrafish Feeding on *Styopodium schimperi* Species by Metagenome Analysis**

ÖZDEMİR KOÇAK F., ÜNAL D., TÜNEY KIZILKAYA İ., KOYUN M.

Uluslararası Marmara Fen Bilimleri Kongresi (IMASCON), Kocaeli, Turkey, 13 August 2022, vol.1, pp.18-19

**V. Green synthesis of graphane using rosehip extract.**

MİNDİVAN F., GÖKTAŞ M., ÜNAL D.

3RD INTERNATIONAL EURASIAN CONFERENCE ON BIOLOGICAL AND CHEMICAL SCIENCES, Turkey, 19 March 2020, pp.558-363

**VI. Kuşburnu ekstraktı kullanılarak grafenin yeşil sentezi**

MİNDİVAN F., GÖKTAŞ M., ÜNAL D.

3RD INTERNATIONAL EURASIAN CONFERENCE ON BIOLOGICAL AND CHEMICAL SCIENCES, 19 - 20 March 2020

**VII. Determination of *Streptomyces* VYN36 isolate plant growth promoting effect on *Solanum lycopersicum* (tomato)**

ÖZDEMİR KOÇAK F., ÜNAL D.

5th International Eurasian Congress on Natural Nutrition, Healthy Life and Sport (NATURAL'2019), Ankara, Turkey, 2 - 06 October 2019, vol.1, pp.788

**VIII. Removal Of Acid Red P-2 BX By Low-Cost Biosorbent: *Cladonia Convoluta***

GÜL Ü. D., Bayazıt G., ÜNAL D.

3. ICOCEE, 24 - 27 April 2018

**IX. TRİAZİN GRUBU İNSEKTİSİTLERİN BİYOSORBENTLER KULLANILARAK GİDERİMİNİN İNCELENMESİ**

SİLAH H., GÜL Ü. D., Özlü E., ÖZAKÇA D.

ESAN Eser Analiz Çalıştayı 2016, Sakarya, Turkey, 19 - 22 May 2016

**X. Farklı Liken Türlerinde Alüminyum Toleransının Belirlenmesi**

ÖZAKÇA D., LEBLEBİCİ S.

12. ULUSAL EKOLOJİ VE ÇEVRE KONGRESİ, Muğla, Turkey, 14 - 17 September 2015, pp.369

**XI. Farklı Borik Asit H<sub>3</sub>BO<sub>3</sub> Konsantrasyonlarının İki Farklı Buğday Çeşidinin Köklerinde Proline Birikiminden Sorumlu p5cS Geninin İfadesi ve Prolin Birikimi Üzerine Etkileri**

ÖZAKÇA D., LEBLEBİCİ S.

1. Ulusal Botanik Bitki Bilimi Kongresi, Antalya, Turkey, 23 - 28 October 2014, pp.52

**XII. Bilecik İlinde Yetişen Xanthoria Parietina Türünün rDNA ITS Bölge Analiz Yöntemiyle Popülasyon Genetik Çeşitliliğinin Belirlenmesi**

POYRAZ İ., ÖZAKÇA D.

22. Ulusal Biyoloji Kongresi, Eskişehir, Turkey, 23 - 27 June 2014

## Supported Projects

Işık M., Tüney Kızılkaya İ., Ünal D., Söyüt H., Beydemir Ş., TUBITAK Project, Makroalg Tabanlı Karbonik Anhidraz İzoenzimlerinin Saflaştırılması, İmmobilizasyonu ve Karakterizasyonu, 2022 - 2023

ÜNAL D., Project Supported by Higher Education Institutions, Arabidopsis thaliana'nın polen tüpü büyümesinde Endoplazmik retikulumda yüksek sıcaklığa bağlı yanlış katlanmış protein yanıtının belirlenmesi, 2018 - 2021

ÜNAL D., Project Supported by Higher Education Institutions, Xanthoria Parietina Türünde Poliamin Biyosentez Genlerinin Dizi Analizinin Yapılması, 2012 - 2014

ÜNAL D., Project Supported by Higher Education Institutions, Pisum Sativum'da Çeşitli Stres Koşullarına Bağlı DNA Hasarı ve Hücre Ölümünün Belirlenmesi, 2012 - 2014

## Metrics

Publication: 33

Citation (Scopus): 116

H-Index (Scopus): 7