

1ST INTERNATIONAL
SYMPOSIUM

OF



BIODIVERSITY
S T U D I E S

SYMPOSIUM ABSTRACT
E-BOOK

May 23-25, 2022



TAGEM
AR-GE & İNOVASYON 30.YIL

NATIONAL
BOTANICAL GARDEN
of TÜRKİYE

1st International Symposium of Biodiversity Studies

A Virtual Symposium

May 23-25, 2022

Hosted by the
National Botanical Garden of Türkiye, Ankara, TÜRKİYE

Symposium Abstract Proceedings

<https://isobist.org/>

1st International Symposium of Biodiversity Studies - 2022
Symposium Committee Members

Honorary President

Dr. Nevzat BİRİŞİK, General Director, General Directorate of Agricultural Research and Policies (TAGEM), Ankara, Türkiye

Symposium Chair

Dilaver ARSLAN, Director of the National Botanical Garden of Türkiye, Ankara, Türkiye

Organizing Committee (National Botanical Garden of Türkiye)

Dr. D. Özlem MAVİ İDMAN (Chair of the Committee)

Dr. Duygu MERMER DOĞU

Dr. Ece GÖKOK

Dr. Merve YILMAZ

Dr. Pelin ACAR

Merve DEMİRDÖĞEN

Rasim AKTAŞ

Tuğba UÇAR AKYÜREK

Tuğçe ALP

Tuğçe KARCI

Secretariat

Dr. Ece GÖKOK, National Botanical Garden of Türkiye, Ankara, Türkiye

Merve DEMİRDÖĞEN, National Botanical Garden of Türkiye, Ankara, Türkiye

1st International Symposium of Biodiversity Studies - 2022
Scientific Committee Members

Musa DOĞAN, Middle East Technical University, Ankara, Türkiye
İlkay ERDOĞAN ORHAN, Gazi University, Ankara, Türkiye
Charalambos NEOPHYTOU, University of Natural Resources and Life Sciences, Vienna, Austria
Nilgöl KARADENİZ, Ankara University, Ankara, Türkiye
Sezai ERCİŞLİ, Atatürk University, Erzurum, Türkiye
Maria VORONTSOVA, Royal Botanic Gardens, KEW, London, UK
Mehmet İhsan SOYSAL, Tekirdağ Namık Kemal University, Tekirdağ, Türkiye
Fikrettin ŞAHİN, Yeditepe University, İstanbul, Türkiye
İlkay DELLAL, Ankara University, Ankara, Türkiye
Andrea PIERONI, University of Gastronomic Sciences, Pollenzo, Italy
Zeki KAYA, Middle East Technical University, Ankara, Türkiye
Ahmet ALTINDAĞ, Ankara University, Ankara, Türkiye
Muhammad Akbar ANJUM, Bahauddin Zakariya University, Multan, Pakistan
Murat TUNÇTÜRK, Van Yüzüncü Yıl University, Van, Türkiye
Osman TUGAY, Selcuk University, Konya, Türkiye
Adam MATKOWSKI, Wroclaw Medical University, Wroclaw, Poland
Ruziye DAŞKIN, Uludağ University, Bursa, Türkiye
Yoshinori ASAKAWA, Tokushima Bunri University, Tokushima, Japan
Mehmet Zülfü YILDIZ, Adıyaman University, Adıyaman, Türkiye
Hasan GENÇ, Burdur Mehmet Akif Ersoy University, Burdur, Türkiye
Mert ELVERİCİ, Erzincan Binali Yıldırım University, Erzincan, Türkiye
Evren CABİ, Tekirdağ Namık Kemal University, Tekirdağ, Türkiye
Seher KARAMAN, Aksaray University, Aksaray, Türkiye
Serdar Gökhan ŞENOL, Ege University, İzmir, Türkiye
Gürkan SEMİZ, Pamukkale University, Denizli, Türkiye
Fatma GÜNEŞ, Trakya University, Edirne, Türkiye
Mehtap TEKŞEN, Aksaray University, Aksaray, Türkiye
Harun BAYRAKTAR, Ankara University, Ankara, Türkiye
İlhan AYDIN, General Directorate of Agricultural Research and Policies, Ankara, Türkiye
Ünal KARIK, Egean Agricultural Research Institute, İzmir, Türkiye
Ersen Aydın YAĞMUR, Manisa Celal Bayar University, Manisa, Türkiye
Emel ÖZKAN ÜNAL, Tekirdağ Namık Kemal University, Tekirdağ, Türkiye
Tomas NECAS, Mendel University, Brno, Czech Republic
Zuhal DİLAVER, Ankara University, Ankara, Türkiye
Gökhan KIZILCI, General Directorate of Agricultural Research and Policies, Ankara, Türkiye

1st International Symposium of Biodiversity Studies - 2022
Scientific Committee Members

Rayda BEN AYED, University of Sfax, Sfax, Tunisia
Rahşan İVGİN TUNCA, Muğla University, Muğla, Türkiye
Sezer OKAY, Hacettepe University, Ankara, Türkiye
Mustafa ÖZDEMİR, Directorate of Plant Protection Central Research Institute, Ankara, Türkiye
Fatma Sezer ŞENOL DENİZ, Gazi University, Ankara, Türkiye
Bariş BANİ, Kastamonu University, Kastamonu, Türkiye
Aslı DOĞRU KOCA, Hacettepe University, Ankara, Türkiye
Hafize FİDAN, Food Technology University, Plovdiv, Bulgaria
Işıl ÖZDEMİR, Directorate of Plant Protection Central Research Institute, Ankara, Türkiye
Borut RUBINIĆ, Senior Nature Conservation Expert, Ljubljana, Slovenia
Mevlüde Alev ATEŞ, Ahi Evran University, Kırşehir, Türkiye
Hakan KARAARDIÇ, Alaaddin Keykubat University, Antalya, Türkiye
Aslı ÖZDİLEK YILMAZ, Atatürk University, Erzurum, Türkiye
Meryem Bihter BİNGÜL BULUT, Kırıkkale University, Kırıkkale, Türkiye
Uğur KEZİK, Karadeniz Technical University, Trabzon, Türkiye
Duygu DOĞAN, Pamukkale University, Denizli, Türkiye
Tuba ŞERBETÇİ, Çukurova University, Adana, Türkiye
Çiğdem KANSU, Tekirdağ Namık Kemal University, Tekirdağ, Türkiye
Ravish CHOUDHARY, Indian Agricultural Research Institute, New Delhi, India
Aynur KARAHAN, Directorate of Plant Protection Central Research Institute, Ankara, Türkiye
Sirel CANPOLAT, Directorate of Plant Protection Central Research Institute, Ankara, Türkiye
Geza BUJDOSO, Hungarian University of Agriculture and Life Science, Budapest, Hungary
Damla ZOBAR, Directorate of Viticulture Research Institute, Ankara, Türkiye
Erdoğan OĞUR, Egean Agricultural Research Institute, İzmir, Türkiye
Ahmet EFE, National Botanical Garden of Türkiye, Ankara, Türkiye
Dudu Özlem MAVİ İDMAN, National Botanical Garden of Türkiye, Ankara, Türkiye
Duygu MERMER DOĞU, National Botanical Garden of Türkiye, Ankara, Türkiye
Ece GÖKOK, National Botanical Garden of Türkiye, Ankara, Türkiye
Merve YILMAZ, National Botanical Garden of Türkiye, Ankara, Türkiye
Pelin ACAR, National Botanical Garden of Türkiye, Ankara, Türkiye

1st International Symposium of Biodiversity Studies - 2022
Sponsors



Seeing beyond



TEMLİK KIRTASIYE GIDA TİC. LTD. ŞTİ.



SEAL TEMİZLİK İNŞAAT GIDA KIRTASIYE İTH. İHR. LTD. ŞTİ.

TABLE OF CONTENTS

PREFACE	1
INVITED SPEAKERS	2
Biodiversity as a major target in drug development and discovery – From nature to product.....	3
Climate change, biodiversity and agriculture: Risks and policy responses.....	4
The conservation of animal genetic resources, breeds at risk: Criteria and classification to assess the degree of endangerment of livestock breeds.....	5
Genetic adaptation and diversity in oaks: past, present and future.....	6
Using grass taxonomy to understand the history of Madagascar and build forest conservation and climate sustainable food systems.....	7
The importance of biodiversity in plant breeding.....	8
Species Action Plans - a tool for species conservation in Turkey.....	9
Developing bioformulations to replace chemical inputs used in crop production and protection in agriculture.....	10
ORAL PRESENTATIONS	11
BOTANY SESSION	11
Anther development and cytochemistry in <i>Hibiscus syriacus</i> L. (Rose of sharon).....	12
Evaluation of phenological and morphological properties of some Asian pear cultivars in the climatic conditions of south Moravia.....	13
New plant species of Adiyaman (Turkey) and surroundings.....	14
Diversity of <i>Sedum</i> L. in the flora of Ankara and its contribution to the ecosystem in the Central Anatolia Region.....	15
Defining the mitotic and meiotic biodiversity with ribosomal RNA genes in caper (<i>Capparis spinosa</i>).....	16
Secondary structure form of <i>ITS2</i> region: A significant labeling tool at all taxonomic levels.....	17
Petiole anatomy of the subspecies of <i>Acer hyrcanum</i> in Turkey.....	18
Trichome micromorphology of some <i>Minuartia</i> L. species in Turkey.....	19
<i>Lilium</i> taxa in Trabzon.....	20
Diversity of nuclear DNA content of stone fruits and their interspecific hybrids.....	21
Psychoactive plants utilized in shamanic culture.....	22
Characterization of repetitive DNA sequences in the genome of golden thistle (<i>Scolymus hispanicus</i> L.).....	23
Some morphological traits of <i>Asphodelus aestivus</i> Brot. at different slopes.....	24
Southeastern Anatolia Region research on determination, conservation and identification of vine genetic resources.....	25

Identification of selected bee forage plants using pollen morphological features from Khyber Pakhtunkhwa, Pakistan	26
ORAL PRESENTATIONS	27
CONSERVATION BIOLOGY SESSION.....	27
Turkish blanket bogs as national biodiversity conservation areas.....	28
Pollination biology of <i>Minuartia nifensis</i> (Caryophyllaceae).....	29
Impacts of climate on plant diversity in deserts of Sindh, Pakistan: Challenges and future prospects	30
Long-term conservation of two garlic (<i>Allium sativum</i> L.) local varieties of Turkey via cryopreservation	31
Genetic diversity and population structure of <i>Salix alba</i> across river systems in Turkey and their importance in conservation management.....	32
Reintroduction of a tabescent species for Turkey; a case study for Çelebi Lalesi (<i>Tulipa clusiana</i> DC.)	33
Status of indigenous fish species in the Kapna River, a tributary of the Shari-Goyain River in Bangladesh.....	34
Chloroplast genome diversity among wild species of agriculturally important crops, lentil, and chickpea	35
Evaluation of threatened diurnal raptor birds in Turkey.....	36
Cryopreservation of well-known Turkish medicinal & aromatic plant: <i>Origanum sipyleum</i> L.	37
ORAL PRESENTATIONS	38
ECOLOGY SESSION.....	38
Rooting and development performances of shoots from Indian fig (<i>Opuntia engelmannii</i>) plant with biochar supplementation in different media	39
A current ecological evaluation on the floristic characteristics and habitat structures for the wetland of Lake Uluabat	40
Pollinator diversity of the grassland communities from Mount Ergan (Erzincan, Türkiye)	41
Climate change and biodiversity.....	42
Ecological attributes of <i>Erodium sibthorpiatum</i> Boiss. subsp. <i>sibthorpiatum</i> and preliminary trials for conservation	43
Ecosystem services and biodiversity: Relations and interactions.....	44
Pollinators and plant preferences	45
ORAL PRESENTATIONS	46
HYDROBIOLOGY SESSION	46
Population characteristics of grooved carpet shell.....	47
A study on epilithic diatoms of Lake Van (Erciş/Adilcevaz) microbialites	48

Potentially harmful algal blooms and mucilage events in marine waters of Çanakkale and Samsun Coasts, Turkey	49
Bioremoval of some heavy metals by using <i>Phormidium</i> sp. under confined and free suspended culture conditions.....	50
Lakes Region (Turkey) endemic fish habitats and problems.....	51
Two new records for the fish fauna of Yeşilırmak Basin (Samsun-Turkey).....	52
Algal biodiversity of Turkish blanket bogs	53
ORAL PRESENTATIONS	54
LANDSCAPE & FORESTRY SESSION.....	54
Ecosystem services and biodiversity of urban landscapes.....	55
Investigation of bird species in Southern İzmir's burned areas.....	56
Examination of steps to be considered in the performance of landscape planning works.....	57
Determining the change of diversity at the landscape level: The case of Denizli	58
Monitoring indicators for conservation and management of urban biodiversity	59
Integrated botanical garden concept	60
Identification of plants with allergic pollen in urban open green areas of Kahramanmaraş.....	61
First step activity for creating nature consciousness: A primary school application in Çanakkale ...	62
Mapping of the deforestation dynamics of Turkey.....	63
The use potential of flowering bulbs (<i>Allium</i> L. Subg. <i>Melanocrommyum</i>) in the flora of Turkey as ornamental plants.....	64
Potential use of some plant species growing naturally in Manavgat (Antalya) in landscape architecture applications in the context of maintaining biodiversity	65
Estimation of present and future distribution areas of <i>Malva sylvestris</i> L. according to climate change scenarios	66
An examination of local policies on the conservation of biodiversity: The case of Kayseri Metropolitan Municipality.....	67
Evaluations on the landscape of wetland ecosystems: The case of Lake Zinav	68
The potential of oleoresin production for Turkey forests'	69
ORAL PRESENTATIONS	70
MEDICINAL PLANTS SESSION	70
Investigation of antioxidant, enzyme inhibition and antimicrobial effects of <i>Ononis viscosa</i>	71
Latest decade's activity model: <i>C. elegans</i>	72
The biological activities of endemic <i>Ballota pseudodictamnus</i> subsp. <i>lycia</i>	73
Attitudes and practices of pharmacists regarding the use of herbal products	74
Investigation of bioactive phytochemicals and in vitro antimicrobial effects of <i>Matricaria chamomilla</i> L. and <i>Tripleurospermum decipiens</i> Bornm. on some urinary system pathogens.....	75
<i>In Vitro</i> cytotoxic potential of medicinal plant <i>Alangium salvifolium</i> against cancer cell lines.....	76

Ethnomedicinal plants for kidney disorder in Iraq and Turkey	77
Ethnomedicinal resources exploration, conservation, and utilization: Deserts perspective from Pakistan.....	78
Attitudes and practices of patients regarding the use of herbal products.....	79
Polyploidy studies in medicinal and aromatic plants.....	80
Bioactive diterpenes originated from Lamiaceae family plants.....	81
Breeding and variety development studies on medicinal, aromatic and dye plants in the flora of Turkey.....	82
Immortality mushroom (<i>Ganoderma lucidum</i>) as functional food.....	83
Investigation on biological activities of <i>Melissa officinalis</i> subsp. <i>altissima</i>	84
Faba bean (<i>Vicia faba</i> L.) on the way to becoming a medicinal plant.....	85
Turkish <i>Salvia</i> species and their pharmacological effects, ethnobotanical uses, chemical composition and endemism	86
Investigation on biological activity of <i>Thymus longicaulis</i> subsp. <i>longicaulis</i> var. <i>subisophyllus</i> and analysis of its phytochemical content by HPLC-DAD	87
ORAL PRESENTATIONS	88
MICROBIOLOGY SESSION.....	88
Environmental factors on biofilm production of clinical human pathogens.....	89
Microbial diversity in the environment: Molecular approaches for analysis.....	90
Hazelnut storehouse diseases and their control in some hazelnut storehouses in Fatsa District of Ordu Province	91
Enhancement of amino acid catabolism by microbial action during solid-state fermentation using the composite waste product: amino acid degradation in relation to volatile compounds character	92
Determination of in vitro sensitivity of <i>Pseudocercospora griseola</i> , the causative agent of bean angular leaf spot disease to some fungicides	93
Fungal diversity of some important disease agents in vineyard	94
Bacterial biodiversity in bean production areas.....	95
Microbial community composition of subsurface isolates	96
Identification, characterization, pathogenicity and prevalence of fungal disease agents and pests in <i>Medicago sativa</i> L. in Turkey.....	97
ORAL PRESENTATIONS	98
ZOOLOGY & ENTOMOLOGY SESSION	98
Investigation on Karakaya basin ornithofauna	99
Amphibian fauna of Mersin province (South Anatolia, Turkey).....	100
Endocrine chemicals as life threatening issue	101
Preliminary contribution to the knowledge of wild bees in Tunisia (Hymenoptera: Apoidea)	102

A contribute to the knowledge on mite diversity in Turkey: <i>Rhinothrombium nemoricola</i> (Acari: Tanaupodidae)	103
Biological diversity on velvet mites (Acari) of Ergan Mountain (Erzincan).....	104
Herpetofauna of Elazığ province	105
Translational biodiversity: Harnessing the venoms of Anatolian vipers in search of new bioactive molecules	106
Larvae co-occurrence of bufonid and ranid frogs in the same breeding water bodies in Northeastern Turkey	107
The relationship among heavy metal content, age, and body size of the Marsh frog, <i>Pelophylax ridibundus</i> in samples from İstanbul Province, Turkey	108
Mammalian Paleodiversity of Late Miocene Özlüce (Muğla) fauna.....	109
Demonstration of the antioxidant effect of <i>Plantago major</i> leaf extract on the invertebrate model organism <i>Galleria mellonella</i>	110
Amphibian and reptile species of Haspolat Wastewater Treatment Plant and surroundings in Northern Cyprus.....	111
The autochthonous chicken breeds of Turkey: Ispenç and Sultan fowls	112
Acari of bats (Rhinolophidae) collected from Bursa Province, North-western of Turkey	113
<i>In vitro</i> cytotoxic effects of <i>Montivipera xanthina</i> crude venom and fractions on HUVEC cell line	114

PREFACE

Dear colleagues and researchers,

The main objective of the ‘1st International Symposium of Biodiversity Studies’, in which a multidisciplinary approach is aimed in biological diversity researches, is to organize an event to celebrate ‘May 22 - The International Day for Biological Diversity’. The Symposium has the same name and perspective with the ‘Biodiversity Studies’ Journal, which is an international, peer-reviewed, accessible, free and scientific journal, published by National Botanical Garden of Türkiye.

The Symposium was organized as an online symposium and the official language of it was English. However, translation from English to Turkish and from Turkish to English was made by the translators during the Sessions. More than 400 registrations from different countries were made to the symposium from universities, public institutions and organizations, the private sector and non-governmental organizations.

The Symposium covered all the research areas that are subject of Biology, Agriculture, Forestry, Landscape and Pharmacy as Botany, Zoology, Mycology, Hydrobiology, Entomology, Forestry, Microbiology, Conservation Biology, Ecology and Medicinal Plants. Abstracts submitted from 11 different countries and 105 of them were accepted. Presented 96 abstracts of them are included in this Abstract E-Book. Also 8 invited speakers, who are experts of their specific research areas from different countries, presented their researchs published in this E-Book. Moreover, full-texts of some abstracts were evaluated to be published in the ‘Biodiversity Studies’ Journal.

I am thankful to the members of the Scientific Committee for all their valuable contributions to the Symposium. I also would like to thank Organizing Committee members for their hard work and the Sponsors for their supports to organize this Symposium.

Finally, I would like to thank all the participants of the ‘1st International Symposium of Biodiversity Studies’ for making the Symposium an efficient and sustainable platform for Biological Diversity.

I am looking forward to meet with all the researchers in the 2nd Biodiversity Studies Symposium.

Symposium Chair

Dilaver ARSLAN

ORAL PRESENTATIONS

MEDICINAL PLANTS SESSION

The biological activities of endemic *Ballota pseudodictamnus* subsp. *lycia*

Beyza Akduman^{1*} , Erkan Rayaman² , Beyza Nur Yılmaz¹ , Mizgin Ermanoğlu¹ ,
Bahar Gürdal³ , Turgut Taşkın¹ 

¹Marmara University, Faculty of Pharmacy, Department of Pharmacognosy, Istanbul, Türkiye.

²Marmara University, Faculty of Pharmacy, Department of Pharmaceutical Microbiology, Istanbul, Türkiye.

³Istanbul University, Faculty of Pharmacy, Department of Pharmaceutical Botany, Istanbul, Türkiye.

*Corresponding author e-mail: beyzanurakduman@marun.edu.tr

Abstract

The genus *Ballota* L. (Lamiaceae) includes species known as boz ot, bal otu, nemnem otu and have medicinal uses among the people. Additionally, it known to be used by the public in the treatment of cough, asthma, headache, nausea, hemorrhoids, wounds and burns. *Ballota* taxa have various phytochemical classes such as essential oils, iridoids, saponins, terpenoids, flavonoids, phenolic acids, tannins, and organic acids. *Ballota pseudodictamnus* subsp. *lycia* is one of the endemic species growing in southwestern Turkey. As a result of our research on the literature a limited number of studies have been found on the biological activities of this species. The aim of this study is to examine the antioxidant, antimicrobial, anticholinesterase and anti-urease activities of different extracts (petroleum ether, chloroform and methanol) obtained from the aerial part of *B. pseudodictamnus* subsp. *lycia*. DPPH, CUPRAC, and FRAP techniques were used to examine the antioxidant properties of plant' extracts. The extracts' anti-urease, anticholinesterase and antimicrobial activity were determined using the Indophenol, Ellman and agar well diffusion method techniques, respectively. While the petroleum ether extract obtained from plant, was found to be effective against *S. aureus*, *S.epidermidis* and *E. faecalis* strains; its chloroform extract was effective against *S.aureus* and *S.epidermidis* strains and its methanol extract was found to be effective against *Acinetobacter baumannii* strains. It was found that the plant' methanol extract showed the highest antioxidant activity when compared to the other extracts.

Keywords: *Ballota pseudodictamnus* subsp. *lycia*, antioxidant activity, antimicrobial activity, enzyme inhibition

Investigation on biological activities of *Melissa officinalis* subsp. *altissima*

Gülsüm Koç^{1*}, Erkan Rayaman², Şükran Özdatlı Kurtuluş³, Mizgin Ermanoğlu¹,
Beyza Nur Yılmaz¹, İsmail Şenkardeş⁴, Turgut Taşkın¹

¹Marmara University, Faculty of Pharmacy, Department of Pharmacognosy, Istanbul, Türkiye.

²Marmara University, Faculty of Pharmacy, Department of Pharmaceutical Microbiology, Istanbul, Türkiye.

³University of Health Sciences, Faculty of Pharmacy, Department of Pharmaceutical Toxicology, Istanbul, Türkiye.

⁴Marmara University, Faculty of Pharmacy, Department of Pharmaceutical Botany, Istanbul, Türkiye.

*Corresponding author e-mail: gulsumkoc65@gmail.com

Abstract

The genus *Melissa* is used as antibacterial, sedative, digestive aid, carminative, diaphoretic and bile secretion enhancer. It is included in the composition of the preparations used during nervous digestive system disorders, psychosomatic heart disorders and migraine. The flowering branches and leaves of *Melissa officinalis* L. subsp. *altissima*. are used as carminative, sedative and its antipyretic effects. It is also used in vascular occlusion, stomach aches, heart ailments, kidney inflammation, cholesterol, blood pressure, and diabetes. According to our knowledge there are not enough studies on these species grown in Turkey. The aim of this study is to examine the antioxidant, cytotoxic, anticholinesterase, anti-urease and antimicrobial activities of plant' various extracts obtained by using the sequential maceration method. In the determination of antimicrobial activity well diffusion method on 6 gram negative, 4 gram positive and 3 yeast strains was used. DPPH, CUPRAC and FRAP techniques were used to examine the antioxidant properties of plant' extracts. The extracts' anticholinesterase, cytotoxic and anti-urease activity were determined using the Ellman, MTT and Indophenol techniques, respectively. In addition, the phenolic contents of the extracts were determined by FCR method. It was found that petroleum ether extract of the plant was effective against *Enterococcus faecalis* and *Staphylococcus aureus* strains and ethyl acetate extract were effective against *Staphylococcus aureus* strains. The methanol extract of the plant exhibited the highest antioxidant activity when compared to other extracts. It was determined that the petroleum ether extract of *Melissa officinalis* L. subsp. *altissima* has stronger acetylcholinesterase and urease enzyme inhibition potential than its other extracts. Furthermore, in this study the ethyl acetate extract of the plant was found to have high cytotoxic activity.

Keywords: *M. officinalis* subsp. *altissima*, antioxidant activity, enzyme inhibition, cytotoxic activity