

Book of Abstracts



# 8<sup>th</sup> Balkan Botanical Congress

4-8 July 2022

The National and Kapodistrian  
University of Athens, Main Building  
Athens, Greece

[www.bbc2022.org](http://www.bbc2022.org)



*Hymenonema laconicum*  
Boiss. & Heldr.  
(Asteraceae)

#### ORGANISERS

Section of Ecology & Systematics  
and Section of Botany,  
Department of Biology



HELLENIC REPUBLIC  
National and Kapodistrian  
University of Athens

EST. 1837



Section of Pharmacognosy  
and Chemistry of Natural Products,  
Department of Pharmacy



HELLENIC REPUBLIC  
National and Kapodistrian  
University of Athens

EST. 1837

#### CO-ORGANISERS



ELGO-DIMITRA



INTERBALKAN  
ENVIRONMENT CENTER



*Hymenonema laconicum*  
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(Asteraceae)

## Welcome Letter

Dear colleagues,

**On behalf of the Organising Committee of the BBC 2022, we have the pleasure and honour of inviting you to the 8<sup>th</sup> Balkan Botanical Congress, which will be held for the first time in Athens, Greece, on July 4-8, 2022.**

This year, the organisation of the congress is undertaken by the **Section of Ecology & Systematics and Section of Botany, Department of Biology** of the **National and Kapodistrian University of Athens** together with the **Hellenic Botanical Society**. Different Botanical Institutions from Greek Universities and Public Research Bodies serve as co-organisers. Our aim is to meet and connect with all scientists involved in the research of plant life of the Balkan Peninsula, after a long period of social distancing. Therefore, we are working towards a face-to-face Congress, with due respect to all prevention and control measures of the covid-19 pandemic.

This educative, scientific meeting puts an emphasis on the uniqueness of the Balkan Botany. The rich flora and diverse vegetation serve as a stable ground for research and experimentation and sustains conservation. We hope that the **8<sup>th</sup> Balkan Botanical Congress** will provide an excellent opportunity to present the latest results and share research experience. In addition, it is the ideal meeting place to network and interact, to develop new or strengthen existing collaborations with colleagues from different countries of the Balkan Region and beyond.

The congress scientific program will include invited lectures, oral and poster presentations, covering various research fields, such as Plant Anatomy and Physiology, Plant Systematics, Plant Molecular Biology and Genetics, Floristics, Vegetation and Phytogeography, Conservation Botany and Plant Invasions, Phytochemistry, Plant Resources and Utilization, Agronomy and Forestry, Botanical Collections and Botanic Gardens, History and Ethnobotany and Cryptogamic Botany.

Athens, the historic capital city of Greece, sets the ideal scenery for **the congress, which will be hosted in the central domains of the National and Kapodistrian University of Athens**, the oldest in Greece. The university offers contemporary venues of international standards and high-level services.

We are confident that we will deliver an inspiring and memorable event and are looking forward to welcoming you to the **8<sup>th</sup> Balkan Botanical Congress** in Athens in 2022!

On behalf of the Organizing Committee,

**Theophanis Constantinidis**  
Section of Ecology & Systematics  
National and Kapodistrian  
University of Athens

**Ioannis-Dimosthenis Adamakis**  
Section of Botany  
National and Kapodistrian  
University of Athens

**Panayotis Dimopoulos**  
Hellenic Botanical Society

## Organisers



### The National and Kapodistrian University of Athens

The [National and Kapodistrian University of Athens](#) is the oldest state institution of higher learning in Greece, and among the largest universities in Europe. It was officially founded on April 14th, 1837, and is the first University not only of Greece but both the Balkan peninsula and the Eastern Mediterranean region. The **8<sup>th</sup> Balkan Botanical Congress** will be co-organised by the Section of Ecology and Systematics and Section of Botany Department of Biology.



### The Hellenic Botanical Society

The [Hellenic Botanical Society \(HBS\)](#) was founded in 1980 and is based in Athens (Faculty of Biology, National and Kapodistrian University of Athens). The logo of the Society depicts the head of Theophrastus (371-286 BC), ancient Greek philosopher and founder of Botany. The Society has approximately 210 members and has organised a significant number of Scientific Symposia and Congresses from 1980 till today in various Greek cities. According to its statute, the objectives of the Hellenic Botanical Society are:

- > the advancement of all sectors of botanical science
- > the advancement of botanical research in Greece
- > the protection of the Greek flora
- > the advancement of the achievements in Greek botanical research

## co-Organisers



### Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, National & Kapodistrian University of Athens.

The main objectives of the [Department of Pharmacy](#) are to promote education and research into the pharmaceutical sciences and technology, and to that end it continually promotes improvements/changes in the curriculum in line with the changes in the nature/demands of the pharmaceutical profession.



### Institute of Plant Breeding and Genetic Resources - ELGO-DEMETER

The [Institute of Plant Breeding and Genetic Resources \(IPB&GR\)](#) is part of the Hellenic Agricultural Organization-Demeter (ELGO-DEMETER) supervised by the Ministry of Agriculture. Its main research targets include the preservation, evaluation, and exploitation of genetic resources and the development of new cultivars with improved yield, quality, and adaptation. Its research aims to produce and transfer knowledge for the development of integrated crop production and solve modern agricultural problems. Furthermore, it conducts research in the areas of crop protection and sustainable agriculture, driven by the need of reducing production costs and protecting the environment.



### Interbalkan Environment Center

[i-BEC](#) is a non-profit and mission oriented international organisation and a public-private network that links local communities and countries in the wider Balkan area, with EU and UN agencies. i-BEC supports and co-develops with Aristotle University of Thessaloniki state of the art technologies and innovative research, for sustainable management of natural resources and environmental protection. i-BEC promotes a collaborative approach to sustainable management and protection of natural resources that fosters harmonious socio-economic development in Greece, the broader Balkan region and beyond.

## Thematic Topics

- > Agronomy and Forestry
- > Botanic Gardens and Botanical Collections
- > Conservation Botany and Plant Invasions
- > Cryptogamic Botany
- > Floristics and Phytogeography
- > Palynology and Paleobotany
- > Phytochemistry and Plant Natural Compounds
- > Plant Anatomy and Development
- > Plant History and Ethnobotany
- > Plant Molecular Biology and Genetics
- > Plant Physiology and Ecophysiology
- > Plant Resources and Utilization
- > Plant Taxonomy, Biosystematics and Evolution
- > Vegetation Science and Plant Ecology

## Scientific Committee

**Ioannis - Dimosthenis Adamakis** – Department of Biology, National & Kapodistrian University of Athens, Greece

**Evgenios Agathokleous** – Department of Ecology, Nanjing University of Information Science & Technology, China

**Emilia Apostolova** – Institute of Biophysics and Biomedical Engineering, Bulgarian Academy of Sciences, Sofia, Bulgaria

**Gülriiz Bayçu** – Department of Biology, University of Istanbul, Turkey

**Sandro Bogdanović** – Department of Agricultural Botany, University of Zagreb, Croatia

**Nicolaos Christodoulakis** – Department of Biology, National & Kapodistrian University of Athens, Greece

**Theophanis Constantinidis** – Department of Biology, National & Kapodistrian University of Athens, Greece

**Panayotis Dimopoulos** – Biology Department, University of Patras, Greece

**Anelia Dobrikova** – Institute of Biophysics and Biomedical Engineering, Bulgarian Academy of Sciences, Sofia, Bulgaria

**Andreas D. Drouzas** – School of Biology, Aristotle University of Thessaloniki, Greece

**Marius Mirodon Făgăraș** – Ovidius University of Constanta, Romania

**Vassilis Fotopoulos** – Department of Agricultural Sciences, Biotechnology and Food Science, Cyprus University of Technology, Limassol, Cyprus

**Božo Frajman** – Department of Botany, University of Innsbruck, Austria

**Spyros Gkelis** – School of Biology, Aristotle University of Thessaloniki, Greece

**Zacharoula Gonou - Zagou** – Department of Biology, National & Kapodistrian University of Athens, Greece

**George Grammatikopoulos** – Biology Department, University of Patras, Greece

**Maria Halabalaki** – Department of Pharmacy, National & Kapodistrian University of Athens, Greece

**Effie Hanlidou** – School of Biology, Aristotle University of Thessaloniki, Greece

**Kosmas Haralambidis** – Department of Biology, National & Kapodistrian University of Athens, Greece

**Nenad Jasprica** – Institute for Marine and Coastal Research, University of Dubrovnik, Croatia

**Jernej Jogan** – Department of Biology, University of Ljubljana, Slovenia

**Regina Karousou** – School of Biology, Aristotle University of Thessaloniki, Greece

**Katerina Kouli** – Department of Geology and Geoenvironment, National and Kapodistrian University of Athens, Greece



- Eleni Maloupa** – Hellenic Agricultural Organization - DEMETER, Thessaloniki, Greece
- Vlado Matevski** – Macedonian Academy of Sciences and Arts, Skopje, North Macedonia
- Sofia Mitakou** – Department of Pharmacy, National & Kapodistrian University of Athens, Greece
- Sinisa Ozimec** – Faculty of Agriculture, University of Osijek, Croatia
- Sampson Panajiotidis** – Faculty of Forestry and Natural Environment, Aristotle University of Thessaloniki, Greece
- Maria Panitsa** – Biology Department, University of Patras, Greece
- Emmanuel Panteris** – School of Biology, Aristotle University of Thessaloniki, Greece
- Aristotelis C. Papageorgiou** – Department of Molecular Biology and Genetics, Democritus University of Thrace, Greece
- Ivana Rešetnik** – Department of Biology, University of Zagreb, Croatia
- Marko S. Sabovljević** – Faculty of Biology, Institute of Botany and Botanical Garden, University of Belgrade, Serbia
- Ivanka Semerdjieva** – Department of Botany and Agrometeorology, Agricultural University of Plovdiv, Bulgaria
- Krzysztof Sitko** – Institute of Biology, Biotechnology and Environmental Protection, University of Silesia in Katowice, Poland
- Eleni Skaltsa** – Department of Pharmacy, National & Kapodistrian University of Athens, Greece
- Panayiotis Trigas** – Faculty of Crop Science, Agricultural University of Athens, Greece
- Spyros Tsiftsis** – Department of Forest and Natural Environment Sciences, International Hellenic University, Greece
- Ioannis Tsiripidis** – School of Biology, Aristotle University of Thessaloniki, Greece
- Olga Tzakou** – Department of Pharmacy, National & Kapodistrian University of Athens, Greece
- Vladimir Vladimirov** – Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences, Sofia, Bulgaria
- Georgios Zalidis** – Interbalkan Environment Center, Thessaloniki, Greece
- Lana Zorić** – Department of Biology and Ecology, University of Novi Sad, Serbia

## Invited Speakers



### **Evgenios Agathokleous**

PhD, Environmental Resources  
Full Professor  
Department of Ecology  
School of Applied Meteorology  
Nanjing University of Information Science & Technology  
Nanjing, Jiangsu, China



### **Panayotis Dion. Dimopoulos**

PhD on Flora and Vegetation Ecology  
Professor in Botany and Ecology,  
University of Patras, Greece  
Chair of the Hellenic Botanical Society



### **Dr Krzysztof Sitko**

Professor (Assistant)  
Institute of Biology, Biotechnology and Environmental Protection  
University of Silesia in Katowice, Poland

## Opening Speech

### **Michalis Moustakas**

Professor Emeritus

Will give a short historical review since the conference returns after 25 years to the country that started it. Mr Moustakas was part of the organizing committee of the 1st Balkan Botanical Conference in 1997 in Thessaloniki, Greece

## Awards

### Best Oral and Poster Presentation Awards

The BBC2022 awards will honour one Oral and one Poster presentation, which will be selected among the submissions of the Congress participants, by the members of the Organising and Scientific Committee. Each award will consist of a certificate and a prize of 250€ donated by the **Journal of Biological Research-Thessaloniki (JBRT)**.

The [Journal of Biological Research – Thessaloniki \(auth.gr\)](http://auth.gr) is an international scientific journal which has been published since 2004. The Editorial Board members of JBRT originated from more than 10 countries around the world and cover all the major fields of Biology. JBRT has published more than 350 articles (research papers, reviews, commentaries, etc) after peer review. JBRT is indexed in major bibliographic databases such as WoS (Web of Science, ISI Thomson), SCOPUS (Elsevier), CAS (Chemical Abstracts Service), DOAJ (Directory of Open Access journals) and PubMed (NCBI). It has been included in Journal Citation Reports since 2007 and its impact factor has been increased ever since (IF = 2.364 for 2018). From September 1st, 2021, JBRT is published through the OJS platform provided by the Aristotle University of Thessaloniki (AUTH).

For more details, please, visit JBRT homepage at <http://ejournals.lib.auth.gr/jbiolres>



## P42. Overview of carotenoids distribution among wild plant species of the Balkan Peninsula

**Kilibarda S.<sup>1\*</sup>, Mačukanović- Jocić M.<sup>2</sup>, Dajić Stevanović Z.<sup>2</sup>, Rančić D.<sup>2</sup>, Pećinar I.<sup>2</sup>, Šoštarić I.<sup>2</sup>, Aćić S.<sup>2</sup>, Kolašinac S.<sup>2</sup>, Veljović M.<sup>3</sup>, Pajić-Lijaković I.<sup>4</sup>**

<sup>1</sup>Department of Field and Vegetable Crops, Faculty of Agriculture, University of Belgrade, Nemanjina 6, 11080 Zemun, Republic of Serbia.  
– e-mail: sofija.kilibarda@agrif.bg.ac.rs

<sup>2</sup>Department of Agrobotany, Faculty of Agriculture, University of Belgrade, Nemanjina 6, 11080 Zemun, Republic of Serbia.

<sup>3</sup>Department of Technology of Preservation and Fermentation, Faculty of Agriculture, University of Belgrade, Nemanjina 6, 11080 Zemun, Republic of Serbia.

<sup>4</sup>University of Belgrade, Faculty of Technology and Metallurgy, Karnegijeva 4, 11000 Belgrade, Republic of Serbia.

\*corresponding author

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The Balkan Peninsula is characterized by a great diversity of flora and vegetation. Moreover, it is native to a large number of wild plant species containing carotenoids, biologically active compounds, beneficial for human health. Carotenoid pigments exhibit a great antioxidant and anti-inflammatory effect, in addition to beneficial impact on eye health, heart, blood vessels, cognitive function and antiaging. Nevertheless, their role has been scientifically proven in prevention and treatment of cancer.

The aim of the research was to form a database on carotenoid plants of Serbia and the Balkans that is set up electronically for easy access, management and updating. The research included the analysis and organization of information on collected plants, as well as literature data related to the traditional use and storage of plants and plant parts and products rich in carotenoids in fresh, dried or canned state.

Sixty wild plants from more than ten plant families were registered to contain these antioxidant pigments. Among them three endemic species namely *Lilium bosniacum* (Beck) Fritsch (lily native to Bosnia and Herzegovina), *Ramonda nathaliae* Pančić & Petrović and *R. serbica* Pančić were inscribed, of which the last two are Tertiary relicts. The type and level of carotenoids varied depending on the plant species and organs including leaves, petals, immature and ripe fruits, pulp, seeds, etc. According to database, fruits were the richest source of these pigments. Reported carotenoid content, included both xanthophylls and carotenes, whereas lutein and  $\beta$ -carotene were predominantly major compounds in berries and flowers respectively. Total carotenoid content, determined by HPLC method, was the highest in fresh berries of *Rubus fruticosus* L. (440  $\mu\text{g}/100\text{g}$ ).