



11TH CONFERENCE ON MEDICINAL AND AROMATIC PLANTS OF SOUTHEAST EUROPEAN COUNTRIES (CMAPSEEC)

The 11th Conference on Medicinal and Aromatic Plants of Southeast European Countries (CMAPSEEC) was held between October 6th and 10th, 2022 in Ohrid, Republic of North Macedonia. The event was jointly organized by the Macedonian Pharmaceutical Association and Faculty of Pharmacy, Ss. Cyril and Methodius University - Skopje in collaboration with the Association for Medicinal and Aromatic plants of Southeast European Countries (AMAPSEEC).

The conference enabled hybrid in-person/virtual solution which supported:

- Online, pre-recorded or on-site oral scientific presentations;
- participation with e-poster (all posters were displayed in a gallery banner comprising QR-code links to posters).

Additionally, list of posters with link to the corresponding e-poster is available on the web page of the conference (<http://cmapseec.mfd.org.mk/list-of-posters/>)

The aim of this biannual conference was to foster discussion and disseminate the results of the research on plants and natural products. The participants were able to network and engage in discussion for potential collaboration to advance our knowledge on utility of natural products.

The scientific program comprised of 1 plenary, 12 invited lectures, 14 oral presentations, and 70 posters, providing an opportunity for more than 100 natural product scientists to present their research. The short communications from the plenary lecture, oral presentations, and posters will be published in a special issue of the Macedonian Pharmaceutical Bulletin 68, 2022, by early November 2022 (<https://bulletin.mfd.org.mk/>).

A total of 174 participants were attending the Conference from 21 countries (Albania, Austria, Bulgaria, China, Croatia, Czech Republic, Greece, Hungary, Kosovo, Morocco, Montenegro, N. Macedonia, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Turkey, United Kingdom, and USA).

The 11th CMAPSEEC was officially opened with welcome address from the President of Organizing Committee of the 11th CMAPSEEC, Prof. Dr. Gjoshe Stefkov. The President of Organizing Committee of the 7th Congress of Pharmacy in North Macedonia with international participation, Prof. Dr. Rumenka Petkovska then delivered her speech, followed by the Dean of Faculty of Pharmacy, Ss. Cyril and Methodius University in Skopje, Prof. Dr. Zoran Sterjev, the President of Scientific Committee of the 11th CMAPSEEC, Prof. Dr. Biljana Bauer and the President of AMAPSEEC, Prof. Dr. Zora Dajic Stevanovic.

The plenary speaker Univ.Prof.Mag.Dr. Christian W. HUCK (Austria) than delivered his opening lecture titled **“Portable NIR sensors in medicinal plant quality control”**. The lecture was followed by presentation on the **Medicinal and Aromatic plants in National Park Galicica** by Mr. Andon Bojadzi (N. Macedonia).



The conference comprised 4 sessions in two days, with invited lecturers and oral presentations per each session. Each session had a 4 joint vice-chairs, who were experts in the domain. Each invited speaker was given 30 minutes and each author 15 minutes to present, with discussion time within that time.

Session 1: Phytochemistry, ecology and diversity

Chairpersons: Prof. Dr. Zora Dajic Stevanovic (Serbia)

Prof. Dr. Antoaneta Trendafilova (Bulgaria)

Prof. Dr. Milen Georgiev (Bulgaria)

Prof. Dr. Katarina Savikin (Serbia)

Invited lecturers:

- Bioactive constituents of some plant species from the mountain Galicica – Prof. Dr. Iris Djordjevic (Serbia)
- EthnoHERBS: Conservation of European Biodiversity through Exploitation of Traditional Herbal Knowledge for the Development of Innovative Products – Prof. Dr. Nektarios Aligiannis (Greece)
- Anti-obesity molecules of natural origin – Prof. Dr. Milen Georgiev (Bulgaria)

Oral presentations:

- Pyrrolizidine alkaloid plant species in the area of large-scale chamomile cultivation in Croatia – Dr. Filip Varga (Croatia)
- Anti-melanoma effects of ingenanes isolated from Euphorbia species – Dr. Gordana Krstic (Serbia)
- Rapid annotation of acylquinic acids in *Tanacetum balsamita* L. with a practical strategy of diagnostic ions based on Orbitrap mass spectrometry – Assoc. Prof. Dr. Reneta Gevrenova (Bulgaria)
- The reliability and limitation of UHPLC-HRMS in the sesquiterpene lactones dereplication: a case study of two Asteraceae species – Assoc. Prof. Dr. Dimitrina Zheleva-Dimitrova (Bulgaria)



Session 2: 360° Cannabis

Chairpersons: Prof. Dr. Gjoshe Stefkov (N. Macedonia)

Assoc. Prof. Dr. Maria Halabalaki (Greece)

Assis. Prof. Dr. Ivana Cvetkovikj Karanfilova (N. Macedonia)

Dr. Luis Soares Meirinhos (Portugal)

Invited lecturers:

- Synthesis, biological activities of CBD and its derivatives – Prof. Dr. Shen Jingshan (PR China)
- Medicinal Cannabis Regulatory landscape: GACP & GMP – Dr. Luis Meirinhos Soares (Portugal)

Oral presentations:

- Determination of Terpene Profiles in Medical Cannabis – John Upton (UK)
- Terpene profiles of different Cannabis plant varieties, cultivated in NYSK Holdings, Skopje – Tatjana Rusevska
- Development of powerful chromatographic methods for better separation of tetrahydrocannabinol isomers during HPLC analysis of cannabis flowers and extracts – Irena Slavevska Spirevska
- Comparative analysis of the advantages and disadvantages of olive oil and supercritical CO₂ extraction in producing Cannabis extracts for medicinal purposes in the production area with GMP standards – Sofija Lazarevska
- THCA → THC conversion and its importance for the stability and quality of the herbal material – Olga Gigopulu
- Terpene profile in fresh flowers of outdoor cultivated commercial strains and wildtype of Cannabis – Veronika Stoilkovska Gjorgievska
- Regulation on pesticide residues use and testing in cannabis and cannabis-based products in Europe and human exposure risk – Milka Ljoncheva



Session 3: Pharmacology and phytotherapy (bioactivity, toxicity, ethnopharmacology and ethnobotany)

Chairpersons: Prof. Dr. Biljana Bauer (N. Macedonia)

Prof. Dr. Ivan Salamon (Slovakia)

Invited lecturers:

- Bioactivity of carotenoids and their role in skin disorders: from tradition to application – Prof. Dr. Zora Dajic Stevanovic (Serbia)
- From experience to evidence, a long and risky road of *Salvia miltiorrhiza* Depsides Salts – Prof. Dr. Lijiang Xuan (PR China)
- Bioavailability and metabolism of olive bioactives – Assoc. Prof. Dr. Maria Halabalaki (Greece)
- GPCRs in Oligodendrocyte Differentiation and Myelin Regeneration – Dr. Xin Xie (PR China)

Oral presentation:

- Garlic essential oil shows no antiviral effects on the replication of HSV-1 in the virus-infected VERO cells – Assis. Prof. Dr. Elwira Sieniawska (Poland)

Session 4: Production of herbal substances and preparations (cultivation, breeding, biotechnology and processing)

Chairpersons: Assoc. Prof. Dr. Iris Djordjevic (Serbia)

Prof. Dr. Ivan Sostaric (Serbia)

Prof. Dr. Marija Karapandzova (N. Macedonia)

Dr. Dejan Pljevljakusic (Serbia)

Invited lecturers:

- Chromatographic fingerprinting for the detection of herbal adulteration and herbal fraud in plant food supplements – Dr. Eric Deconinck (Belgium)
- The Importance of Medicinal and Aromatic Plant Cultivation in Sustainable Development of the Agricultural Landscape – Prof. Dr. Ivan Salamon (Slovakia)



- Market and evidence-based income challenges of growing medicinal plants in Serbia – Dr. Dejan Pljevljakusic (Serbia)

Oral presentations:

- Active substances and colour characteristics of Peppermint (*Mentha x piperita* L.) leaves influenced by different preservation methods – Urbashi Hazarika (Hungary)
- Insight into C, O – glycosyl flavones of two Bulgarian *Gypsophila* species – Dr. Vessela Balabanova (Bulgaria)
- Biomass production and cannabinoid accumulation in Cannabis (*Cannabis sativa* L.) callus cultures – Ana Trajkovska

Conference participants were also invited to attend a field excursion with a visit of National Park Galicica and the monastery of St. Naum, UNESCO World Heritage Site.

The closing ceremony of the 7th Congress of Pharmacy in North Macedonia with international participation and of the 11th Conference of Medicinal and Aromatic Plants of Southeast European Countries (CMAPSEEC) took place on Saturday October 8th, 2022. During the ceremony Best student's oral/poster presentation were awarded. At the end the President of Organizing Committee of the 11th CMAPSEEC, Prof. Dr. Gjoshe Stefkov announced the host of the 12th CMAPSEEC conference to be Turkey in 2024.

Photo gallery of the event will be available on the web page of the conference.