



BOOK of **ABSTRACTS**

4th INTERNATIONAL CONFERENCE ON PLANT BIOLOGY (23rd SPPS Meeting)



**6-8 OCTOBER 2022
BELGRADE**

Serbian Plant Physiology Society

**Institute for Biological Research “Siniša Stanković”
National Institute of Republic of Serbia, University of Belgrade**

Faculty of Biology, University of Belgrade

BOOK OF ABSTRACTS
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on Plant Biology
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(23rd SPPS Meeting)
6-8 October, Belgrade

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THURSDAY 6TH OCTOBER

- 12:00-18:00 **Registration**
- 12:00-14:00 *NEPETOME project workshop (Science Fund of the Republic of Serbia, #Grant No 7749433): "Methodologies for the iridoid diversity investigation within the genus Nepeta" (Botanical Garden "Jevremovac")*
- 18:00-22:00 *Welcoming cocktail and Celebration of SPPS jubilee (Botanical Garden "Jevremovac")*

FRIDAY 7TH OCTOBER

- 09:00-09:15 **Opening Ceremony**

SECTION 2 · PLANT STRESS PHYSIOLOGY

Chairs: Jelena Dragišić Maksimović & Tamara Rakić

- 09:15-10:00 **Keynote: Mondher Bouzayen**
Uncoupling fruit softening from fruit ripening: a paradigm shift of thinking
- 10:00-10:30 **Plenary lecture: Miroslav Lisjak**
*Growth conditions may affect the nutritional quality of wheatgrass (*Triticum aestivum* L.)*
- 10:30-11:00 **Plenary lecture: Hermann Heilmeier**
The functional role of non-essential elements in the root zone: how interactions between essential and non-essential elements shape the chemical rhizosphere environment
- 11:00-11:30 **Coffee break**
- 11:30-11:50 **Invited talk: Zsófia Bánfalvi**
*Regulation and function of GIGANTEA genes in *Solanum tuberosum* cultivar 'Désirée'*
- 11:50-12:10 **Invited talk: Ingeborg Lang**
Drought or heavy metals – investigating the abiotic stress tolerance in bryophytes
- 12:10-12:30 **Invited talk: Biljana Kukavica**
Flooding and antioxidative response in plants
- 12:30-12:50 **Invited talk: Sonja Milić Komić**
Distinctive regulation of different phenolics biosynthesis by high light and UV-B in three basil varieties
- 12:50-13:05 **Selected talk: Mariana Stanišić**
*What happens with phloretin in plants? – Phloretin real-time effects and post-treatment metabolism in treated *Arabidopsis* seedlings*
- 13:05-13:20 **Selected talk: Danijela Arsenov**
*Fullerenol (C₆₀(OH)₂₄) as a potent stress alleviator against drought and trace-element toxicity in *Alliaria petiolata* (M.Bieb.) Cavara et Grande*
- 13:20-14:00 **Poster session**
- 14:00-15:30 **Lunch break**

SECTION 1 · PLANT GROWTH, DEVELOPMENT, METABOLISM AND NUTRITION

Chairs: Ivana Maksimović & Slavica Ninković

- 15:30-16:00 **Plenary lecture:** Panagiotis Kalaitzis
A prolyl-4-hydroxylase and Arabinogalactan proteins are involved in relocation of tomato abscission zone
- 16:00-16:30 **Plenary lecture:** Marjorie Guichard
State-dependent protein interaction networks of a central regulator of plant growth and metabolism
- 16:30-16:50 **Invited talk:** Václav Motyka
Hormone and role of desiccation in somatic embryogenesis of conifers
- 16:50-17:20 **Coffee break**
- 17:20-17:40 **Invited talk:** Julien Pirrello
Transition to ripening in tomato fruit needs genetic reprogramming initiated in gel tissue
- 17:40-18:00 **Invited talk:** Guido Grossmann
Robust yet adaptive - morphogenesis and growth regulation in roots
- 18:00-18:20 **Invited talk:** Jan Fíla
The beta-subunit of nascent polypeptide associated complex plays a role in flowers and siliques development of Arabidopsis thaliana
- 18:20-18:35 **Selected talk:** Kiril Mishev
The interaction network of the plant NudC family protein NMig1
- 18:35-19:15 **Poster session**

SATURDAY 8TH OCTOBER

- 09:00-10:00 **SPPS Assembly**

SECTION 4 · ECOLOGY, GENETICS AND EVOLUTION OF PLANTS

Chairs: Branislav Šiler & Sanja Manitašević Jovanović

- 10:00-10:30 **Plenary lecture:** Velemir Ninković
Plant signaling and behavior mediated via volatiles
- 10:30-11:00 **Plenary lecture:** Janez Kermavnar
Impacts of forest management on plant functional traits and ecological conditions in the Dinaric fir-beech forests (Slovenia)
- 11:00-11:30 **Coffee break**
- 11:30-11:50 **Invited talk:** Ksenija Jakovljević
Ecophysiology of metal-hyperaccumulation in plants: what do we know so far?
- 11:50-12:10 **Invited talk:** Jelena Milojević
Elucidation of the mechanism underlying somatic embryo induction in spinach

- 12:10-12:30 **Invited talk: Miroslava Zhiponova**
Catmint (Nepeta nuda L.) Phylogenetics and Metabolic Responses in Variable Growth Conditions
- 12:30-12:50 **Invited talk: Neda Aničić**
Progress in disentangling the diversity of iridoids within the genus Nepeta: surprising biosynthetic and evolutionary insights
- 12:50-13:05 **Selected talk: Denitsa Teofanova**
Distribution, host range, and genetic variability of the holoparasitic genus Cuscuta in Bulgaria
- 13:05-13:20 **Selected talk: Katarina Hočevar**
Variation in Hsp70 and Hsp101 levels in response to experimental warming in Iris pumila L.: an open-topped chamber experiment
- 13:20-14:00 **Poster session**
- 14:00-15:30 **Lunch break**

SECTION 3 · APPLICATION IN AGRICULTURE, PHARMACY AND FOOD INDUSTRY

Chairs: Ana Ćirić & Ana Marjanović Jeromela

- 15:30-16:00 **Plenary lecture: Angelos K. Kanellis**
Aroma formation in Vitis vinifera grape berries
- 16:00-16:30 **Plenary lecture: Ekaterina-Michaela Tomou**
Metabolomic strategy for detecting herbal products' differentiations and potential adulteration
- 16:30-16:50 **Invited talk: Mila Grahovac**
Essential oils and hydrolates in control of plant pathogens
- 16:50-17:20 **Coffee break**
- 17:20-17:40 **Invited talk: Carla Vogt**
Determination of elements, isotopes and organics in plants with high local resolution by mass spectrometric methods
- 17:40-18:00 **Invited talk: Milan Mirosavljević**
Integrating physiological traits in local small grains breeding program
- 18:00-18:20 **Invited talk: Nada Ćujić Nikolić**
Chokeberry, from natural polyphenol resource to promising functional foods and pharmaceuticals
- 18:20-18:35 **Selected talk: Ana Pantelić**
Late embryogenesis abundant (LEA) proteins in Ramonda serbica Panc identification, classification and structural characterization
- 18:35-18:50 **Selected talk: Dejan Stojković**
Supercritical fluid extraction of Chicory reveals its antimicrobial, antibiofilm and wound healing potentials
- 18:50-19:15 **Poster session**
- 19:15-19:30 **Closing Ceremony**
- 20:00-00:00 **Gala Dinner**

The effect of 2-chloroethylphosphonic acid foliar application on stem yield components and sex expression in fiber hemp 'Marina'

PP2-34

Anamarija Koren¹, Biljana Kiprovska¹, Milka Brdar-Jokanović¹, Branka Ljenvaić-Mašić², Danica Glavaš-Trbić², Vladimir Sikora¹, Ana Marjanović Jeromela¹

(ana.jeromela@ifvcns.ns.ac.rs)

¹ Institute of Field and Vegetable Crops, National Institute of Republic of Serbia, Maksima Gorkog 30, 21000 Novi Sad, Serbia

² Faculty of Agriculture, University of Novi Sad, Trg Dositeja Obradovića 8, 21000 Novi Sad, Serbia

Quantitative variations in the sex ratio significantly affect the industrial hemp (fiber hemp) cultivation, since the production is closely related to the reproductive biology of the species. Both dioecious and monoecious varieties are cultivated, but only monoecious ones enable simultaneously mechanized harvesting of stalks and grains. 2-chloroethylphosphonic acid (Ethrel®) is a synthetic plant growth regulator that affects sex expression and suppresses stem elongation and plant growth. Thus, four various dosages of Ethrel® were applied as foliar sprays to fiber hemp plants cv. Marina, twice- in stage of flower primordia and, two weeks later in stage of flower formation. The trial was set up in Bački Petrovac at experimental field of the IFVCNS, as completely randomized block design in three replicates. Sex ratio in the control plots was 37.11 to 62.89% in favor of female plants. Although the ratio significantly changed with increase of applied Ethrel dosages (47.84 to 52.15 at maximal applied Ethrel concentration, 2.5 ml l⁻¹), the total grain yield significantly decreased only if plants were treated with the highest dosage, 748.04 kg ha⁻¹ compared to 836.81 kg ha⁻¹ in control plots. Treated plants had shorter stems (276.78 cm and 233.84 cm in control and plants treated with 2.5 ml l⁻¹ of Ethrel, respectively) with lower fiber content. The fiber content in these stems was by 8% lower (20.10%) compared to the stem fiber content of the control plants (28.25%). The applied Ethrel treatments had no statistically significant effect on the hemp stem diameter.

Keywords: *Cannabis sativa* L., Ethrel®, plant sex ratio, yield, oxidative stress

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