



BOOK of **ABSTRACTS**

4th INTERNATIONAL CONFERENCE ON PLANT BIOLOGY (23rd SPSS 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
4th International Conference
on Plant Biology
(23rd SPPS Meeting)



Belgrade, 2022

.....
CIP - Каталогизacija у публикацији - Народна библиотека Србије, Београд

581(048)

INTERNATIONAL Conference on Plant Biology (4 ; 2022 ; Belgrade)

Book of Abstracts / 4th International Conference on Plant Biology [and] 23rd SPPS Meeting, 6-8 October 2022, Belgrade ; [organized by] Serbian Plant Physiology Society [and] Institute for Biological Research "Siniša Stanković", University of Belgrade [and] Faculty of Biology, University of Belgrade ; [editor Milica Milutinović]. - Belgrade : Serbian Plant Physiology Society : University, Institute for Biological Research "Siniša Stanković" : University, Faculty of Biology, 2022 (Zemun : Alta Nova). - 169 str. : ilustr. ; 24 cm

Tiraž 30. - Registar.

ISBN 978-86-912591-6-7 (SPPS)

1. Društvo za fiziologiju biljaka Srbije. Sastanak (23 ; 2022 ; Beograd)

a) Ботаника - Апстракти

COBISS.SR-ID 74996233

4th International Conference on Plant Biology
(23rd SPPS Meeting)
6-8 October, Belgrade

Organizing Committee

Jelena Savić (President), Neda Aničić, Jelena Božunović, Milica Milutinović, Luka Petrović, Nina Devrnja, Tatjana Čosić, Dragana Rajković, Živko Čurčić, Marina Putnik-Delić, Dragica Milosavljević, Milorad Vujičić, Marija Čosić, Miloš Ilić

Scientific Committee

Aleksej Tarasjev (Belgrade, SERBIA)	Julien Pirello, (Castanet-Tolosan Cedex, FRANCE)
Ana Ćirić, (Belgrade, SERBIA)	Ljiljana Prokić, (Belgrade, SERBIA)
Ana Simonović †, (Belgrade, SERBIA)	Marijana Skorić, (Belgrade, SERBIA)
Anamarija Koren, (Novi Sad, SERBIA)	Marko Sabovljević, (Belgrade, SERBIA)
Aneta Sabovljević, (Belgrade, SERBIA)	Michel Chalot, (Montbéliard, FRANCE)
Angelina Subotić, (Belgrade, SERBIA)	Milan Borišev, (Novi Sad, SERBIA)
Angelos Kanellis, (Theassaloniki, GREECE)	Milan Dragičević, (Belgrade, SERBIA)
Biljana Kukavica, (Banja Luka, BOSNIA AND HERCEGOVINA)	Milan Miroslavljević, (Novi Sad, SERBIA)
Branka Vintehalter, (Belgrade, SERBIA)	Milka Brdar Jokanović, (Novi Sad, SERBIA)
Costas A. Thanos, (Athens, GREECE)	Miroslav Lisjak, (Osijek, CROATIA)
Danijela Arsenov, (Novi Sad, SERBIA)	Miroslava Zhiponova, (Sofia, BULGARIA)
Danijela Mišić, (Belgrade, SERBIA)	Mondher Bouzayen, (Castanet-Tolosan Cedex, FRANCE)
Georgy A. Romanov, (Moskva, RUSSIA)	Nataša Barišić Klisarić, (Belgrade, SERBIA)
Hermann Heilmeyer, (Freiberg, GERMANY)	Snežana Zdravković-Korać, (Belgrade, SERBIA)
Hrvoje Fulgosi, (Zagreb, CROATIA)	Stéphane Pfendler, (Montbéliard, FRANCE)
Ingeborg Lang, (Vienna, AUSTRIA)	Tijana Cvetić Antić, (Belgrade, SERBIA)
Ivana Dragičević (Belgrade, SERBIA)	Vaclav Motyka, (Prague, CZECH REPUBLIC)
Ivana Maksimović (Novi Sad, SERBIA)	Vuk Maksimović, (Belgrade, SERBIA)
Jelena Dragišić Maksimović, (Belgrade, SERBIA)	Zsófia Bánfalvi, (Gödöllő, HUNGARY)
Jelena Samardžić, (Belgrade, SERBIA)	

Publishers

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

Editor

Milica Milutinović

Graphic design

Dejan Matekalo

Prepress

Marija G. Gray

Printed by

Alta Nova, Zemun

Print run

30 pcs

Belgrade, 2022



PROGRAMME

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 'Desirée'*
- 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**

Inhibitory effect of an emulsion of *Nepeta rtanjensis* essential oil on *Amaranthus retroflexus* seed germination

PP3-27

Vladan Jovanović¹, Mladen Prijović², Bogdan Nikolić³, Ivana Dragičević⁵, Jasmina Nestorović Živković⁴, Slavica Dmitrović⁴, Zlatko Giba⁵

(vladan.jovanovic@pestring.org.rs)

¹ Institute of Pesticides and Environmental Protection, Banatska 31b, 11080 Belgrade, Serbia

² Institute for forage crops, Kruševac, 37251 Globoder, Serbia

³ Institute for Plant Protection and Environment, Teodora Drajzera 9, 11000 Belgrade, Serbia

⁴ Institute for Biological Research "Siniša Stanković" - National Institute of Republic of Serbia, University of Belgrade, Bulevar despota Stefana 142, 11060 Belgrade, Serbia

⁵ University of Belgrade-Faculty of Biology, Studentski trg 16, 11000 Belgrade, Serbia

The widespread use of pesticides and their adverse effects (through soil pollution, pest resistance, etc.) have created a need for turning to natural resources in search for new/old methods of pest control. Essential oils belong to a group of volatile secondary metabolites of plants which affect the growth and development of surrounding plants by spreading around in gaseous state. The effect of an essential oil emulsion of *Nepeta rtanjensis* Diklić et Milojević on seed germination of redroot pigweed (*Amaranthus retroflexus* L.) was tested in this experiment. Dynamic and total germination of seeds were evaluated after five concentrations of the essential oil emulsion (ranging 0.006-0.1 %) were applied. Before treatment, seeds were stratified for two and a half weeks at 3 ± 2 °C. The experiment was carried out in Petri dishes under constant temperature of 30 ± 1 °C. Seeds were germinated in the dark over the initial 24 h and then illuminated during 10 min counting sessions at intervals of 1-3 days. Germination of *A. retroflexus* seeds was inhibited after all tested treatments. The final percentage of germinated seeds treated with the lowest concentration (0.006%) of *N. rtanjensis* essential oil did not deviate significantly from data in the control groups but inhibition through germination dynamic was noted. Seeds did not germinate at all after receiving the highest concentration (0.1%) of the essential oil.

Keywords: Allelopathy, *Nepeta rtanjensis*, seed germination, *Amaranthus retroflexus*

Acknowledgement: The present study was funded by the Ministry of Education, Science and Technological Development of the Republic of Serbia, grant No. 451-03-68/2022-14/ 200214.