

PROCEEDINGS OF THE

# 20<sup>th</sup> INTERNATIONAL SUNFLOWER CONFERENCE



Novi Sad, Serbia  
June 20-23, 2022

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Proceedings of the

# 20<sup>th</sup> International Sunflower Conference



**Novi Sad, Vojvodina, Serbia**  
**June 20-23, 2022**

**Sponsored by**



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*Proceedings of the 20<sup>th</sup> International Sunflower Conference*  
Novi sad, Serbia, June 20-23, 2022

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The proceedings of the 20<sup>th</sup> International Sunflower Conference contain 153 contributions from scientists of 30 countries. They include plenary lectures, oral talks and regular communications presented with posters, among which, selected contributions were emphasized with short oral talks. The manuscripts are classified by research areas in ten separate sections. They offer a thorough review of the current state of the art of sunflower research and production around the world. The Organizing Committee is grateful to Tanja Vunjak and Aleksandar Vojisavljević for their excellent editorial assistance in the preparation of these Proceedings.

ISC2022 Organizing committee



## Conference program

Sunday, 19 June

16.00-21.00	Registration
19.00-21.00	Welcome Reception

Monday, 20 June

8.00-17.00	Registration	
9.00-9.30	Opening Ceremony	
9.30- 10.15	<b>Invited talk</b> Section 1: Dr. Felicity Vear (France)	
10.15-11.00	Coffee break	
11.00-12.00	<b>Section 1: Breeding – New/old breeding goals and challenges</b>	<b>Section 2: Oils and proteins – Innovations for increased quality and feedstock supply</b>
	<b>Oral and short oral presentations</b>	<b>Oral and short oral presentations</b>
12.00-13.30	Lunch	
13.30-14.30	<b>Invited talks</b> Section 3: Dr. C.C. Jan (China) Section 4: Dr. Sreten Terzić (IFVCNS, Serbia)	
14.30-15.00	Coffee break	
15.00-16.00	<b>Section 3: Confectionery sunflower – Emerging crop</b>	<b>Section 4: Genetic resources – Investment for the future</b>
	<b>Oral and short oral presentations</b>	<b>Oral and short oral presentations</b>
16.00-17.00	<b>Poster session</b> – Sections 1, 2, 3, 4	
18.00-21.00	Novi Sad and Petrovaradin fortress tour	

## Tuesday, 21 June

8.30-17.00	Registration	
<b>9.30-10.30</b>	<b>Invited talks</b> Section 5: Dr. Leire Molinero Ruiz (CISC, Spain) Section 6: Dr. Philippe Debaeke (INRAE, France)	
10.30-11.00	Coffee break	
<b>11.00-12.00</b>	<b>Section 5: Biotic stress resistance – New and emerging pests and diseases</b>	<b>Section 6: Crop production and modeling – Yield stability in changing environment</b>
	<b>Oral and short oral presentations</b>	<b>Oral and short oral presentations</b>
12.00-13.30	Lunch	
<b>13.30-14.30</b>	<b>Invited talks</b> Section 7: Dr. Nicolas Langlade (INRAE, France) Section 8: Etienne Pilorgé (Terres Inovia, France)	
14.30-15.00	Coffee break	
<b>15.00-16.00</b>	<b>Section 7: Abiotic stress resistance – Challenges of changing environment</b>	<b>Section 8: Economy and market – Trends and prospects</b>
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## Wednesday, 22 June

8.30-17.00	Registration	
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<b>11.00-12.00</b>	<b>Section 9: Broomrape – Constant challenge</b>	<b>Section 10: Bees and seeds – Exploring new venues for increased yield and seed production</b>
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14.30-15.00	Coffee break	
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16.30-17.00	Closing ceremony	
20.00-24.00	Gala Dinner Pustavoit Award Presentation Ceremony IFVCNS Best Poster Award Presentation	

## Thursday, 23 June

9.00-15.00	Field day
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## CLIMATE CROPS CENTRE OF EXCELLENCE – BRINGING INNOVATION IN SUNFLOWER BREEDING FOR CLIMATE RESILIENCE

Dragana Miladinović\*, Ankica Kondić-Špika, Ana Marjanović Jeromela, Goran Bekavac, Sonja Tančić Živanov, Miroslav Zorić, Sandra Cvejić, Sanja Mikić, Bojan Mitrović, Aleksandra Radanović, Boško Dedić, Sonja Gvozdenac, Milan Mirosavljević, Jelena Ovuka, Milan Jocković, Dragana Rajković, Verica Takač, Nemanja Ćuk, Miloš Krstić, Nada Hladni, Sreten Terzić, Vladimir Miklič, Siniša Jocić, Jegor Miladinović\*

*Institute of Field and Vegetable Crops, Novi Sad, Serbia*

Corresponding author: \*dragana.miladinovic@ifvcns.ns.ac.rs

### **Abstract**

Sunflower breeding and selection are continual processes designed to increase its yield and improve the resilience to biotic and abiotic stresses. Breeders have been successful in producing a large number of varieties using conventional breeding. However, classical breeding methods cannot always provide solutions for tackling frequent and often unpredictable variations in climatic and market conditions. As response to shortcomings of classical breeding, Institute of Field and Vegetable Crops (IFVCNS) established Center of Excellence for Innovations in Breeding of Climate-Resilient Crops – Climate Crops aimed at introduction and application of new techniques such as (epi)genomic selection and genome editing, along with efficient phenotyping platforms, for more efficient trait introduction. Climate Crops aims to step up and stimulate excellence and innovation capacity of IFVCNS in sunflower improvement and enhance its ability to respond and create innovative solutions for the challenges that sunflower production, and agriculture as a whole face - climate changes and need to feed the increasing population. The importance of introduction of modern breeding tools in sunflower improvement has been recognized in Serbia and the region and supported by recently approved projects SmartSun (7732457) and CROPINNO (101059784), funded by National Science Foundation of Serbia and EU Commission, respectively. These projects aim to build institutional capacity in the application of multi-omics in crop improvement, with sunflower used as a model crop. By being part of both projects, Climate Crops will further contribute to integration of modern tools in breeding and research activities at IFVCNS for creation of innovative solutions for sunflower for 21<sup>st</sup> century sunflower.

**Keywords:** sunflower; climate change; resilience; breeding, multi-omics, phenotyping

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