

PROCEEDINGS OF THE

20th INTERNATIONAL SUNFLOWER CONFERENCE



Novi Sad, Serbia
June 20-23, 2022

Proceedings of the

20th International Sunflower Conference



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

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Proceedings of the 20th International Sunflower Conference
Novi sad, Serbia, June 20-23, 2022

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The proceedings of the 20th 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	Invited talk Section 1: Dr. Felicity Vear (France)	
10.15-11.00	Coffee break	
11.00-12.00	Section 1: Breeding – New/old breeding goals and challenges	Section 2: Oils and proteins – Innovations for increased quality and feedstock supply
	Oral and short oral presentations	Oral and short oral presentations
12.00-13.30	Lunch	
13.30-14.30	Invited talks Section 3: Dr. C.C. Jan (China) Section 4: Dr. Sreten Terzić (IFVCNS, Serbia)	
14.30-15.00	Coffee break	
15.00-16.00	Section 3: Confectionery sunflower – Emerging crop	Section 4: Genetic resources – Investment for the future
	Oral and short oral presentations	Oral and short oral presentations
16.00-17.00	Poster session – Sections 1, 2, 3, 4	
18.00-21.00	Novi Sad and Petrovaradin fortress tour	

Tuesday, 21 June

8.30-17.00	Registration	
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10.30-11.00	Coffee break	
11.00-12.00	Section 5: Biotic stress resistance – New and emerging pests and diseases	Section 6: Crop production and modeling – Yield stability in changing environment
	Oral and short oral presentations	Oral and short oral presentations
12.00-13.30	Lunch	
13.30-14.30	Invited talks Section 7: Dr. Nicolas Langlade (INRAE, France) Section 8: Etienne Pilorgé (Terres Inovia, France)	
14.30-15.00	Coffee break	
15.00-16.00	Section 7: Abiotic stress resistance – Challenges of changing environment	Section 8: Economy and market – Trends and prospects
	Oral and short oral presentations	Oral and short oral presentations
16.00-17.00	Poster session – Sections 5, 6, 7, 8	

Wednesday, 22 June

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10.30-11.00	Coffee break	
11.00-12.00	Section 9: Broomrape – Constant challenge	Section 10: Bees and seeds – Exploring new venues for increased yield and seed production
	Oral and short oral presentations	Oral and short oral presentations
12.00-13.30	Lunch	
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14.30-15.00	Coffee break	
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15.00-16.30	ISA Assembly	
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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SENSITIVITY OF DIFFERENT HERBICIDE-TOLERANT SUNFLOWER HYBRIDS TO SELECTED ALS-INHIBITING HERBICIDES

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Abstract

Sunflower hybrids tolerant to some ALS-inhibiting herbicides have a dominant place in production. Specific genes are responsible for the trait of sunflower tolerance to ALS-inhibiting herbicides from imidazolinone group (CLHA-plus, Imisun) and tribenuron-methyl (Sures 1 and 2). Knowing the of hybrids resistant to these herbicides can help to make the right decisions regarding control of volunteer plants and avoiding possible damage that can be caused by drift of ALS-inhibiting herbicides to adjacent plants of susceptible hybrids or damage due to the use of a contaminated sprayer by ALS inhibitors. . In connection with this, field trials were conducted in vicinity of Novi Sad (Serbia) with the aim to examine the sensitivity of five sunflower hybrids to the application of recommended field rates of 14 ALS-inhibiting herbicides. The selected hybrids were created in the Institute of Field and Vegetable Crops, of which three hybrids are tolerant to imidazolinones 1) CLHA-Plus, homozygous, 2) CLHA-Plus/Imisun, heterozygous, 3) Imisun, homozygous, 3) tribenuron-tolerant hybrid Sures1/Sures2 and 5) a sensitive hybrid to ALS inhibiting herbicides. Selected herbicides (imazamox, nicosulfuron, tribenuron, metsulfuron, triflurosulfuron, foramsulfuron, amidosulfuron + iodosulfuron, foramsulfuron + thiencazuron, oxasulfuron, prosulfuron, tifensulfuron and tritosulfuron + florasulam) were applied in the 14-16 BBCH of sunflower growth stage. Aboveground fresh biomass were determined and crop injury (0-100%) was rated at 2 weeks after herbicides application. Of the investigated hybrids, only sensitive hybrid exhibited sensitivity to all tested ALS inhibitors. In contrast, the CLHA-Plus/Imisun (for the Clearfield Plus system) was tolerant only to imazamox, while the Imisun, homozygous hybrid (for the Clearfield system) showed tolerance to imazamox and a higher level of tolerance to individual herbicides from the group of sulfonylurea than the sensitive hybrid. Of all hybrids, Sures1/Sures2 exhibited the highest cross-tolerance for all sulfonylurea herbicides except prosulfuron and tritosulfuron + florasulam. The obtained results are of great practical importance because of the selection of hybrids in crop rotation and herbicides in the following crops for possible control of volunteer sunflower plants with different tolerance to ALS inhibitors.

Keywords: sunflower, ALS inhibitors, herbicides, sensitivity

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