

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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**In cooperation with**



**The Institute of Field and Vegetable Crops, National  
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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



20<sup>th</sup> International Sunflower Conference, Novi Sad

## 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>
	<b>Oral and short oral presentations</b>	<b>Oral and short oral presentations</b>
<b>16.00-17.00</b>	<b>Poster session – Sections 5, 6, 7, 8</b>	

## Wednesday, 22 June

8.30-17.00	Registration	
<b>9.30-10.30</b>	<b>Invited talks</b> Section 9: Dr. Stéphane Muños (INRAE, France) Section 10: Dr. Nicole Creux (FABI, South Africa)	
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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>
	<b>Oral and short oral presentations</b>	<b>Oral and short oral presentations</b>
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14.30-15.00	Coffee break	
<b>14.30-15.30</b>	<b>Poster session – Sections 9, 10</b>	
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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## FEASIBILITY OF DOUBLE CROPPING SYSTEM WITH CAMELINA AND SUNFLOWER IN SERBIA

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### Abstract

The sustainable production of agricultural commodities, such as vegetable proteins and oils, is currently facing the challenge of developing new cropping strategies more efficient in terms of water, nutrients, and land, while being able to increase the supply of domestic feedstocks. Double cropping of camelina (*Camelina sativa* L.), sown in the autumn, with sunflower (*Helianthus annuus* L.) can be proposed as a sustainable way to produce in the same growing season and land, multiple feedstocks for both energy, feed and food uses. A preliminary trial was conducted in Novi Sad (Serbia) during the 2018/19 growing season to test: yield performance, oil content and 1000 seed mass of two early sunflower hybrids (NS Dukat and NS H 7749) sown just after the harvest of two camelina varieties (NS Slatka and NS Zlatka which average yield was 920 kg/ha). Sunflower hybrids were also grown in the monocropping system as control. Both sunflower hybrids had higher seed yields in the monocropping system (+24%), but when considering the total yield of the two crops in the double cropping seed yield resulted slightly higher (+1-3%) than that of sunflower in the monocropping system. Although the average oil content and oil yield of sunflower was 6% and 27% higher in the monocropping system, respectively, the high nutritional value of camelina's oil, which is rich in omega-3, should be also carefully evaluated. The cultivation system of both the oilseed crops is low input since nitrogen demand is moderate to low, and chemical plant protection is not needed. Differences between the two sunflower hybrids were evident with NS H 7749 reporting better results in all surveyed parameters, except for oil content. These preliminary results indicate that double cropping of camelina with sunflower might represent an attractive system for producers seeking for high yield and new oil products with increased nutritional value, with low risk of complete failure due to adverse meteorological conditions having two crops grown in one season. Furthermore, winter soil cover, produced by camelina plants, promotes water infiltration and reduces nutrient leaching making the double cropping system with sunflower characterized by low environmental footprint.

**Keywords:** Land use intensification, oil yield, autumn sowing, low-input systems

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