

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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ASSESSMENT OF STABILITY OF SEED OIL AND PROTEIN CONTENT IN CONFECTIONERY HYBRIDS USING THE APPLE AMMI ANALYSIS

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Abstract

High seed protein content and low oil content are the most important criteria when introducing high protein confectionary hybrids into the production. Testing new hybrids and detection of hybrids that maintain stability of the tested traits under different agro-ecological conditions is an important part of breeding programs. In order to evaluate the stability of seed oil and protein content in NS confectionery sunflower hybrids under different environmental conditions, fifteen confectionery sunflower hybrids developed at IFVCNS were examined during 2015, 2016 and 2017, in a trial set up as a randomized block design with three repetitions at the location of Rimski Šančevi. The REML random model was used for evaluation of the effects of hybrids, years and their interaction, while the AMMI multivariational analysis was applied to determine genotype (hybrid) x environment (year) interaction. The effect of genotypes (G), environments (E), and their interaction (GE) was compared considering their contribution to the total variance. In terms of seed oil content, the effect of G (70.63 %) played a more important role than the effects of E (19.36%) and GE (10%). Similarly, the genotypic effect had the highest influence on variation in seed protein content, contributing to the total variation by 52.2%. Comparison of environments in all examined years revealed the lowest average seed oil content in 2017. The highest average seed oil content was observed in 2015, the lowest seed protein content in 2016, whereas the highest average seed protein content was obtained in 2017. According to the AMMI analysis, hybrid NS H 7 had the highest stability of seed oil content and seed protein content in the analyzed period, and higher seed oil content compared with other confectionery hybrids in the study. Hybrid NS H 15 is a promising hybrid, having shown low seed oil content and high protein content, as well as high stability under the given conditions. The evaluation of NS confectionary hybrids using the AMMI analysis will be continued in order to assess the impact of genotype, environment and their interaction on seed oil and protein content.

Key words: confectionery hybrids, stability, seed oil and protein content, REML, AMMI

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