

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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**The Institute of Field and Vegetable Crops, National
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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

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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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COLONIZATION OF SUNFLOWER SEED WITH *ALTERNARIA ALTERNATA*

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Abstract

Sunflower (*Helianthus annuus* L.) is one of the most important oilseed crops throughout the world, and in Serbia it is grown on about 160,000 to 210,000 ha. *Alternaria alternata* (Fr.) Keissler has been detected as the most frequent seed-borne pathogen, able to infect a wide variety of plant species in different countries. During a routine seed quality control and seed health testing analysis of sunflower seed in 2018-2019, according to ISTA Rules, *Alternaria* spp. infection was observed on an average of 18%. The aim of this study was the isolation and identification of *Alternaria* spp. based on their morphological characteristics and molecular analyses. Isolation of the pathogen was carried out by transferring infected seeds onto a potato dextrose agar (PDA), and subsequent incubation at 25°C. Seven days later, 21 isolates formed circular, smooth, grey to brownish-black colonies, with concentric zones of very intensive sporulation. Conidiophores were branched, solitary or in small groups, brown to olivaceous brown, ranging from 128 to 232 µm. All isolates were subcultured onto a PDA using a single spore technique. Based on morphological characteristics all isolates belong to *A. alternata* species. Pathogenicity was confirmed using the *in vitro* modified agar slant method in the test tube with amended PDA. Identification was done by using specific primers designated as ITS1/ITS4. The amplified DNA fragment of the representative isolate 82Sun was sequenced in both directions and deposited in the GenBank under Accession No. MH496037. The ITS sequences of our isolate showed 100% homology with the *A. alternata* isolates MF497381 and MF497380 from Russia, the isolate MG598794 from Italy, as well as the isolate MH665846 from Pakistan. *A. alternata* is known as the causal agent of a leaf blight as well as a seed-borne pathogen able to infect seeds and seedlings, but according to our results, the presence of *A. alternata* has no significant influence on the quality of sunflower seed or seed germination.

Keywords: *A. alternata*, sunflower seed, molecular identification, ITS, sequencing

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