

ISA



ISA NEWSLETTER N°6, January 2020 International Sunflower Association

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Editorial

Dear colleagues,

Another New Year is ahead of us, with new challenges and opportunities. We all expect 2020 to be especially significant for our community, as this year the Institute of Field and Vegetable Crops, Novi Sad, and International Sunflower Association are organizing the 20th International Sunflower Conference on the 22-25th of June in Novi Sad, Serbia.

This will once again be an opportunity to gather and exchange information about new developments in the field of sunflower research and production. The large number of abstracts and papers already submitted from various fields of research, promise that the conference will be very interesting and inspiring. Also, at the Field Day, in addition to the traditional collection of sunflower hybrids from all around the world, our sponsors will present exclusive innovations in the field of seed treatment, new herbicides and new technologies for easier weed control in sunflower production, as well as a number of other news.

Therefore, we invite all colleagues who are engaged in sunflower research, production and processing, not to miss this opportunity and to participate in the conference in Novi Sad, since the next such opportunity will only appear in 4 years!

We present the 6th issue of our ISA Newsletter. In addition to more detailed information and announcements regarding the 20th ISC, here is a reminder to ISA members to submit proposals for the Pustovoit Award by February 1st. Launch of the International Consortium on Sunflower Genomics is announced, so as the registration of the Sunflower Association Council in Romania.

The Newsletter also provides an overview of the latest scientific papers in various fields of sunflower research, as well as an announcement of the events of the year ahead.

In behalf of the ISA Board and in my name, I wish all the ISA members and colleagues involved in sunflower research and production a lot of happiness and success in 2020!

I hope we all get together and enjoy this June in Novi Sad!

Sincerely,

Dr. Vladimir Miklič,
ISA President, 20th ISC Chairman
Head of Sunflower department,
Institute of Field and Vegetable Crops, Novi Sad, Serbia



Activity and News of the association

Launch of the International Consortium on Sunflower Genomics



The International Consortium on Sunflower Genomics (ICSG), coordinated by Inra Occitanie-Toulouse, joins 4 public labs from France, Canada, United States and Israël, and 8 private partners. During 4 years, the ICSG will characterize genetic diversity in sunflower by producing new high quality genome sequences of wild sunflowers. These data will improve our knowledge on the structure of the genomes and on their evolution and facilitate the use of wild relatives in breeding improved sunflower varieties.

Read more: <http://www.toulouse.inra.fr/en/All-the-news/ICSG/>

In French: <http://www.toulouse.inra.fr/Toutes-les-actualites/ICSG>

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20th International Sunflower Conference



With a high number of participants already registered and an increasing number of Sponsors and Exhibitors, the Conference promises to be a platform for intensive scientific exchanges between international stakeholders.

Thank you for the interest to present your work and all the submitted abstracts!

PAPER SUBMISSIONS ARE NOW OPEN!

Only registered participants of the Conference may submit oral and/or poster contributions. Two Submissions per one registered author will be accepted through the Online Paper Submission system.

If you require any further information regarding PAPER submission, or if you experienced any unforeseen issues with the electronic ABSTRACT submission, feel free to contact us at science@isc2020.com

The Booking portal for accommodation is open, while the information about Post Conference tours will soon be available.

The ISC2020 Team



Call for Nominations PUSTOVOIT AWARD

During the next International Sunflower Conference, next year in Novi Sad/Serbia, the Pustovoit Awards will be granted.

Therefore, it is now time to launch the Call for Nominations. The principle of this call is that all ISA members (and only registered ISA members) can propose names of eminent colleagues for this award, with a short notice indicating the main scientific or technical achievements of the person in sunflower research and development. The ISA Secretariat gathers all propositions which will be submitted to the vote of the ISA Executive Board.



The criteria used to select the winners are as follows: 1. Nominees for the Award shall have been active and productive in sunflower work for at least 10 years. Their contributions must have been scientific or technical, not administrative, and must have gained world-wide recognition. The Award may be conferred for: 2. Outstanding contributions in theoretical or applied research in any field dealing with sunflowers (for example, but not limited to : genetics, breeding, physiology, chemistry, phyto-pathology, crop science, entomology, weed science, oil technology, etc.) which have stimulated the development of the sunflower crop and enriched the literature. 3. Development of agronomically superior high-oil varieties or hybrids, with improved yielding capacity, high quality oil and/or meal, good resistance to diseases and/or insect pests, and grown on large areas. 4. Major improvement of cultural practices such as fertilizer use, plant protection, weed control, seeding, tillage and harvesting methods and equipment; and of processing methods and equipment. 5. Major contributions to the promotion of sunflower cultivation and processing in developing countries, thereby improving the agricultural productivity and ability to feed themselves of the people. 6. In special cases, the Award may be conferred for outstanding contributions to international cooperation in sunflower science and technology, and for making possible the interchange of ideas, information, documentation, germplasm and other materials.

The complete criteria and rules can also be found on our website <http://isasunflower.org/presentation/pustovoit-awards.html>, as well as the list of past nominees.

Nominees' submissions must be accompanied by a short presentation of the person demonstrating compliance with the above-mentioned criteria.

We strongly encourage all ISA members to participate to these nominations: we look forward to receiving your **nominees' submissions** by email to l.devedeux@terresinovia.fr by **February, 1st 2020**.

Value chains and regional news

Romania:

In Romania the Sunflower Association Council has been registered in October 15th, 2019.

Director: Dumitru Manole; President: Maria Joita Pacureanu; Vice president: Ion Viorel, Jinga Vasile and Neculai Parvu. It will aim at increasing the level of sunflower production and adapting sunflower technologies in context of climate change.



For the moment, the office of the Association is placed in Constanta. Soon, it will be in Bucharest. The purpose of the association is to promote and sustain the research and development, in order to assure the improvement of quantity and quality of sunflower production in Romania.

This objective will be released by:

- Creation and development of regional working teams;
- Initiation of programs for specialists and encouraging them to participate to the organized trainings;
- Collaboration with different organizations from Romania or from abroad, in order to optimize the activity of the Association;
- Collaboration with local and central authorities, also with the international ones, for the Association projects implementation, also for the sustainability of other projects;
- The organization of events in order to promote the Association projects;
- The publication of different materials, necessary for a good activity of the Association, these being broadcasting by printing or radio and TV.
- The organization of different events for collecting money, necessary for a good activity of the Association, doing some contracts with persons or companies, in order to release this purpose;
- The development of own economic activities, in order to produce money necessary for Association activity;
- Doing application for EU founding, for succeeding to achieve the Association objectives.

Scientific news

Publications

GENETICS AND BREEDING

- Esfahlani, M. A., Fotovat, R., Najafabadi, M. S., & Tavakoli, A. R. (2018). **Combining ability** and gene action in parental lines of sunflower (*Helianthus annuus* L.) under drought stress conditions. Iranian Journal of Crop Sciences, 20(1). <http://agrobreedjournal.ir/article-1-856-en.html>
- Koehler, B. D., T. J. Gulya, and B. S. Hulke. 2019. Registration of Oilseed Sunflower Germplasms RHA 478, RHA 479, RHA 480, and HA 481 Providing Diversity in **Resistance to Necrotrophic Pathogens of Sunflower**. J. Plant. Reg. 13:444-449. <https://doi.org/10.3198/jpr2019.04.0017crg>
- Smart, B. C., Koehler, B. D., Misar, C. G., Gulya, T. J., & Hulke, B. S. (2019). Registration of Oilseed Sunflower Germplasms HA 482, RHA 483, and RHA 484 Selected for **Resistance to Sclerotinia and Phomopsis Diseases**. Journal of Plant Registrations, 13(3), 450-454. <https://doi.org/10.3198/jpr2019.07.0030crg>
- Reinert, S., Gao, Q., Ferguson, B., Portlas, Z. M., Prasifka, J. R., & Hulke, B. S. (2019). **Seed and floret size parameters** of sunflower are determined by partially overlapping sets of quantitative trait loci with epistatic interactions. Molecular Genetics and Genomics, 1-12. <https://doi.org/10.1007/s00438-019-01610-7>
- Todesco, M., Owens, G. L., Bercovich, N., Légaré, J. S., Soudi, S., Burge, D. O., ... & Lande, K. (2019). Massive haplotypes underlie **ecotypic differentiation** in sunflowers. bioRxiv, 790279. <https://www.biorxiv.org/content/10.1101/790279v1.full>
- Ma, G., Song, Q., Underwood, W.R. et al. Molecular dissection of resistance gene cluster and **candidate gene identification of PI17 and PI19** in sunflower by whole-genome resequencing. Sci Rep 9, 14974 (2019) <https://doi.org/10.1038/s41598-019-50394-8>
- Jayewar, N. E., Mutkule, D. S., & Kadam, D. R. (2018). Germplasm Evaluation for **Resistance against Major Lepidopteron Pest** in Sunflower. International Journal of Current Microbiology and Applied Sciences, 6, 63-70. [REFERENCE](#)
- Moschen, S., Marino, J., Nicosia, S. et al. Exploring **gene networks** in two sunflower lines with **contrasting leaf senescence** phenotype using a system biology approach. BMC Plant Biol 19, 446 (2019) <https://doi.org/10.1186/s12870-019-2021-6>
- SAUCĂ, F., & ANTON, F. G. NEW SOURCES FOR **GENETIC VARIABILITY WITH RESISTANCE AT DROUGHT** OBTAINED BY INTERSPECIFIC HIBRIDIZATION BETWEEN CULTIVATED SUNFLOWER AND THE ANNUAL WILD SPECIES *Helianthus argophyllus*. http://agronomyjournal.usamv.ro/pdf/2019/issue_1/Art60.pdf
- Kaur, K., Dhillon, S. K., Gill, B. S., & Kaur, G. (2019). Association of SSR based genetic distances with **heterosis** in sunflower. Journal of Environmental Biology, 40(5), 1102-1108. <https://doi.org/10.22438/jeb/40/5/MRN-953>



- Ekar, J. M., Betts, K. J., Herman, A. C., Stupar, R. M., Wyse, D. L., Brandvain, Y., & Kantar, M. B. (2019). **Domestication in Real Time**: The Curious Case of a Trigenomic Sunflower Population. *Agronomy*, 9(11), 704. <https://doi.org/10.3390/agronomy9110704>
- Huang, K., Andrew, R. L., Owens, G. L., Ostevik, K. L., & Rieseberg, L. H. (2019). Multiple chromosomal inversions contribute to **adaptive divergence of a dune sunflower ecotype**. bioRxiv, 829622. <https://doi.org/10.1101/829622>
- Bonchev, G. N., & Vassilevska-Ivanova, R. (2019). **Fingerprinting the genetic variation and intergeneric hybrid dynamics in the family Asteraceae** (genera *Helianthus*, *Echinaceae*, *Tagetes* and *Verbesina*) using iPBS markers. *Biologia*, 1-8. <https://doi.org/10.2478/s11756-019-00363-3>
- Karabitsina, Y.I., Gavrilova, V.A., Alpatieva, N.V. et al. Peculiarities of **Inheritance of Pollen Fertility Restoration Trait** in Sunflower with Cytoplasmic Male Sterility. *Russ J Genet* 55, 1375–1382 (2019) <https://doi.org/10.1134/S1022795419110073>
- Rauf S. (2019) **Breeding Strategies** for Sunflower (*Helianthus annuus* L.) Genetic Improvement. In: Al-Khayri J., Jain S., Johnson D. (eds) *Advances in Plant Breeding Strategies: Industrial and Food Crops*. Springer, Cham. https://doi.org/10.1007/978-3-030-23265-8_16
- Matta, L. B., Cruz, C. D., Santos, I. G., Carvalho, C. G. P., Borba Filho, A. B., & Alves, A. D. (2019). Optimum environment number for the **national sunflower trials network**. *Acta Scientiarum. Agronomy*, 42. http://www.scielo.br/scielo.php?pid=S1807-86212020000102003&script=sci_arttext
- JOCKOVIĆ, M., CVEJIĆ, S., JOCIĆ, S., MARJANOVIĆ-JEROMELA, A., MILADINOVIĆ, D., JOCKOVIĆ, B., Miklič, V. RADIĆ, V. **EVALUATION OF SUNFLOWER HYBRIDS IN MULTI-ENVIRONMENT TRIAL (MET)**. *Turkish Journal Of Field Crops*, 24(2), 202-210. <https://doi.org/10.17557/tjfc.645276>

PATHOLOGY / CROP PROTECTION

- Gomzhina M.M., Gannibal F.B., Bukreev V.V. **Diaporthe species** causing Phomopsis blight of sunflower in Russia (Russian). Гомжина, М. М., Ганнибал, Ф. Б., & Букреев, В. В. (2019). Виды *Diaporthe*, вызывающие фомопсис подсолнечника в России. *Защита и карантин растений*, (8), 36-38. <https://elibrary.ru/item.asp?id=39193601>
- Elverson, T., Kontz, B., Markell, S. G., Harveson, R. M., & Mathew, F. M. (2019). Quantitative Polymerase Chain Reaction Assays developed for **Diaporthe helianthi** and **D. gulyae** for Phomopsis Stem Canker Diagnosis and Germplasm Screening in Sunflower (*Helianthus annuus*). *Plant Disease*, (ja). <https://doi.org/10.1094/PDIS-09-19-1827-RE>
- Gomzhina, M. M., Gannibal, F. B., & Bukreev, V. V. (2019). **Diaporthe species** causing Phomopsis blight of sunflower in Russia. *Zashchita i Karantin Rastenii*, (8), 36-38. (Russian, English summary) <https://www.cabdirect.org/cabdirect/abstract/20193453015>
- Brand, S. I., Heldwein, A. B., Radons, S. Z., da Silva, J. R., & Puhl, A. J. (2018). Severity of **Septoria Leaf Spot** and Sunflower Yield Due to Leaf Wetness Duration. *Journal of Agricultural Science*, 10(10). <https://doi.org/10.5539/jas.v10n10p178>
- Qamar, M. I., Ghazanfar, M. U., & Hamid, M. I. (2019). Identification of **charcoal rot** infecting pathogen of sunflower from Pakistan and detection of resistance source. *MYCOPATH*, 16(1). <http://111.68.103.26/journals/index.php/mycopath/article/view/1832>
- Bheemaraya, A., M.M. Jamadar and Shalini Huilgol. 2018. Relationship between Weather Parameters and Sunflower **Powdery Mildew** (*Erysiphe cichoracearum* DC) in Various Sunflower Sowing Dates. *Int.J.Curr.Microbiol.App.Sci.* 7(09): 3495-3502. doi: <https://doi.org/10.20546/ijcmas.2018.709.433>
- Martin-Sanz, A., García-Carneros, A. B., Rueda, S., & Molinero Ruiz, L. (2019). First Report of a New Highly Virulent Pathotype of Sunflower **Downy Mildew** (*Plasmopara halstedii*) Overcoming the PI8 Resistance Gene in Europe. *Plant Disease*, (ja). <https://doi.org/10.1094/PDIS-07-19-1425-PDN>
- Ивебор, М. В., Антонова, Т. С., Саукова, С. Л., & Арасланова, Н. М. (2019). Sunflower **downy mildew** in the South of Russia.. Ложная мучнистая роса подсолнечника на юге России. *Защита и карантин растений*, (10), 29-33. (Russian, English summary) <https://elibrary.ru/item.asp?id=40380649>
- Cohen, Y., Rubin, A. E., & Galperin, M. (2019). Novel synergistic fungicidal mixtures of oxathiapiprolin protect sunflower seeds from downy mildew caused by **Plasmopara halstedii**. *PloS one*, 14(9). <https://doi.org/10.1371/journal.pone.0222827>
- Mahadevaswamy, G., Vijayalakshmi, G., & Gangadharanaik, G. (2019). In vitro Evaluation of Fungicides Plant Extracts and Bio-agents against **Alternaria helianthi** causing Leaf Blight of



- Sunflower. *Int. J. Curr. Microbiol. App. Sci.*, 8(2), 1632-1639. <https://pdfs.semanticscholar.org/8a0f/f6ee272ae2e7715747bc74846fcf5d468b08.pdf> Kgatele, M. G.,
- Flett, B., Truter, M., Ramusi, M., & Aveling, T. A. (2019). Distribution of *Alternaria* leaf blight of sunflowers caused by ***Alternaria alternata*** in South Africa. *Journal of Agriculture and Rural Development in the Tropics and Subtropics (JARTS)*, 120(1), 71-77. <https://doi.org/10.17170/kobra-20190613558>
- Billah, K. M. M., Islam, M. S., Islam, S. M. A., Hossain, M. B., & Rahman, M. M. (2019). Integrated Management of Damping off and Wilt (Caused by ***Sclerotium Rolfsii***) of Sunflower. *Crops*, 4(2), 84-92. [http://onlinesciencepublishing.com/assets/journal/JOU0016/ART00360/1569042048_CJAC-2019-4\(2\)-84-92.pdf](http://onlinesciencepublishing.com/assets/journal/JOU0016/ART00360/1569042048_CJAC-2019-4(2)-84-92.pdf)
- Maji, A., Nath, R., Singh, D., & Garain, P. K. (2019). Effect of variability and edaphological characteristics on growth of ***Sclerotium rolfsii*** (Sacc) causing collar rot disease of sunflower in coastal region of West Bengal, India. *Legume Research-An International Journal*, 42(5), 705-709. <https://doi.org/10.18805/LR-3922>
- Singh, V. (2019). **Sunflower leaf diseases detection using image** segmentation based on particle swarm optimization. *Artificial Intelligence in Agriculture*. <https://doi.org/10.1016/j.aiia.2019.09.002>
- Bhamare, V. K., Dhembare, R. D., Nalwandikar, P. K., Deshmukh, K. V., & Ingale, A. S. (2019). Influence of ambient weather on the incidence of **hairy caterpillars** infesting sole sunflower and sunflower intercropped with pigeonpea.. [Reference](#)
- Master thesis: Ingale, A. S. Management of **sucking insect-pests** infesting sunflower (Doctoral dissertation, Vasant Rao Naik Marathwada Krishi Vidyapeeth, Parbhani). <https://krishikosh.egranth.ac.in/handle/1/5810128847>
- Bhamare, V. K., Dhembare, R. D., Deshmukh, K. V., Ingale, A. S., & Desai, R. U. (2019). Population dynamics of ***Chrysodeixis acuta*** (Walker) and ***Gesonnia gemma*** (Swinhoe) infesting sunflower intercropped with pigeonpea and its correlation with weather parameters. [REFERENCE](#)
- Mederos, D. C., Torres, C., Bejerman, N., Trucco, V., Lenardon, S., Mora, M. L., & Giolitti, F. (2019). Phylodynamics of sunflower **chlorotic mottle virus**, a re-emerging pathosystem. *bioRxiv*, 829119. <https://doi.org/10.1101/829119>
- Abdel-Rahman, A. A., Kesba, H. H., & Al-Sayed, A. A. (2019). Activity and reproductive capability of ***Meloidogyne incognita*** and sunflower growth response as influenced by root exudates of some medicinal plants. *Biocatalysis and Agricultural Biotechnology*, 22, 101418. <https://doi.org/10.1016/j.bcab.2019.101418>
- Kross, S., Martinico, B., Bourbour, R. P., Townsend, J. M., McColl, C., & Kelsey, R. (2019). Net effects of field and **landscape scale habitat on insect and bird damage** to sunflowers. *bioRxiv*, 804328. <https://doi.org/10.1101/804328>
- Dolya, N., Mamchur, R., & Moroz, S. (2019). The features of **precision monitoring of sunflower insect pests**. *Науковий журнал «Біологічні системи: теорія та інновації»*, 10(3), 102-112. (Russian, English summary). <http://journals.nubip.edu.ua/index.php/Biologiya/article/view/13085>
- Lahuf, A. A., Kareem, A. A., Al-Sweedi, T. M., & Alfarttoosi, H. A. (2019, October). Evaluation the potential of indigenous **biocontrol agent *Trichoderma harzianum*** and its interactive effect with nanosized ZnO particles against the sunflower damping-off pathogen, ***Rhizoctonia solani***. In *IOP Conference Series: Earth and Environmental Science* (Vol. 365, No. 1, p. 012033). IOP Publishing. [REFERENCE](#)
- Lakshman, S. S., Chander, R. S., & Godke, M. K. (2018). An Approach to Integrated Management of **Sunflower Wilt** through **Bio-Inoculants**. *Eur Exp Biol*, 8(5), 31. <http://doi.org/10.21767/2248-9215.100072>
- Hayat, S., Wang, K., Liu, B., Chen, F., Li, P., & Ma, Y. (2019). A two-years simulated crop rotation and a hydroponic experiment confirmed that differential infestation of **broomrape** species in China is associated with crop-based biostimulants. *中国第九届植物化感作用学术研讨会论文摘要集*. <http://cpfd.cnki.com.cn/Article/CPFDTOTAL-ZWHG201909001046.htm>
- CHEN, F., LIU, B., WANG, K., WANG, Y., LI, P., & MA, Y. (2019). **Induction of Oribanche Spp.** seeds germination by *Foeniculum vulgare* Mill. *中国第九届植物化感作用学术研讨会论文摘要集*. <http://cpfd.cnki.com.cn/Article/CPFDTOTAL-ZWHG201909001044.htm>
- Brightenti, A. (2019). ***Bidens pilosa* L. (Asteraceae) control in sunflower** with residual herbicides. *Comunicata Scientiae*, 10(2), 293-300. <https://doi.org/10.14295/cs.v10i2.2942>



Sonja Gvozdenac, Jelena Ovuka, Vladimir Miklič, Sandra Cvejić, Snežana Tanasković, Vojislava Bursić and Aleksandar Sedlar (2019): The effects of **seed treatments on wireworm** performance, damages and yield traits of sunflower. Journal of Central European Agriculture, 20 (4): Journal of Central European Agriculture, 20(4):1188-1200 .ISSN 1332-9049 DOI: /10.5513/JCEA01/20.4.2133

AGRONOMY

- FAZEKAS, Csaba, Attila PÉNTEK, and Viktor József VOJNICH. "EFFECT OF **FOLIAR FERTILIZERS APPLICATIONS ON THE NECTAR PRODUCTION OF SUNFLOWER (Helianthus Annuus L.) AND ON THE FORAGING BEHAVIOUR OF HONEYBEES (Apis Mellifera L.).**" <http://annals.fih.upt.ro/pdf-full/2019/ANNALS-2019-2-21.pdf>
- Ljubotina, M. K., & Cahill Jr, J. F. (2019). Effects of neighbour location and nutrient **distributions on root foraging behaviour** of the common sunflower. Proceedings of the Royal Society B, 286(1911), 20190955. <https://doi.org/10.1098/rspb.2019.0955>
- Christèle, E. N. C., Mireille, K. T. B., Tope, F., Sidonie, D., & Fernand-Nestor, T. F. **Pollination efficiency of Apis mellifera** (Hymenoptera: Apidae) on Helianthus annuus (Asteraceae) flowers at Dang (Ngaoundéré, Cameroon). <http://www.innspub.net/wp-content/uploads/2018/10/IJB-Vol-13-No-3-p-314-328.pdf>
- Siahbidi, A. Z., & Rrezaizad, A. (2018). Effect of **deficit irrigation and super absorbent application** on physiological characteristics and seed yield of new Iranian sunflower (Helianthus annuus L.) hybrids. Iranian Journal of Crop Sciences, 20(3). <http://agrobreedjournal.ir/article-1-942-en.html>
- Pabuayon, I. L. B., Singh, S., & Ritchie, G. L. (2019). Effects of **Deficit Irrigation** on Yield and Oil Content of Sesame, Safflower, and Sunflower. Agronomy Journal. <https://doi.org/10.2134/agronj2019.04.0316>
- Yavuz, N., Çiftçi, N., & Yavuz, D. (2019). Effects of different **irrigation** interval and plant-pan coefficient applications on yield and quality parameters of oil sunflower grown in semi-arid climatic conditions. Arabian Journal of Geosciences, 12(22), 672. <https://doi.org/10.1007/s12517-019-4867-1>
- Swain, O.S., P. Mohapatra, B. Digal and Sahu, A.P. 2019. **Water Use Efficiency** of Sunflower under Deficit Drip Irrigation in East and South-East Coastal Plain Agro-climatic Zone of Odisha, India. Int.J.Curr.Microbiol.App.Sci. 8(6): 2210-2216. doi: <https://doi.org/10.20546/ijcm.2019.806.263>
- Demir, I. (2019). THE EFFECTS OF SOWING DATE ON GROWTH, SEED YIELD AND OIL CONTENT OF SUNFLOWER (HELIANTHUS ANNUUS L.) CULTIVARS UNDER RAINFED CONDITIONS. FEB-FRESENIUS ENVIRONMENTAL BULLETIN, 6849. https://www.researchgate.net/profile/Ismail_Demir3/publication/
- Shevchenko, I., Polyakov, O., & Kaminski, J. R. INFLUENCE OF BASIC **SOIL CULTIVATION METHODS AND GROWTH STIMULANTS ON MOISTURE AVAILABILITY OF OILSEED CROPS.** <http://www.ndipvt.com.ua/Zbyrnyk/Edition24%2838%29/Collection%20of%20scientific%20works%20Edition%201%20%2838%29/article25.pdf>
- Paul, P. L. C., Bell, R. W., Barrett-Lennard, E. G., & Kabir, E. (2020). Variation in the yield of sunflower (Helianthus annuus L.) due to **differing tillage systems** is associated with variation in solute potential of the soil solution in a salt-affected coastal region of the Ganges Delta. Soil and Tillage Research, 197, 104489. <https://doi.org/10.1016/j.still.2019.104489>
- Kalaiyaran, C., Sriramachandrasekharan, M. V., Jawahar, S., Suseendran, K., Ramesh, R., Ramesh, S., & Kanagarajan, R. (2019). Growth and yield of sunflower as influenced by **VAM and phosphorus application**. Journal of Pharmacognosy and Phytochemistry, 8(2), 836-839. <http://www.phytojournal.com/archives/2019/vol8issue2/PartO/8-2-25-876.pdf>
- Routh, P. K., Sarkar, N. C., Das, P. K., Debnath, D., Bandyopadhyay, S., & Raj, U. (2019). RETRIVAL OF BIO-PHYSICAL PARAMETERS IN SUNFLOWER CROP (HELIANTHUS ANNUUS) USING FIELD BASED **HYPERSPECTRAL REMOTE SENSING**. International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences. <https://doi.org/10.5194/isprs-archives-XLII-3-W6-623-2019>
- Yalcin, H. (2019, July). An Approximation for A Relative **Crop Yield Estimate from Field Images** Using Deep Learning. In 2019 8th International Conference on Agro-Geoinformatics (Agro-Geoinformatics) (pp. 1-6). IEEE. <https://doi.org/10.1109/Agro-Geoinformatics.2019.8820693>



- Dominschek, R., Deiss, L., Lang, C. R., Moraes, A., & Pelissari, A. (2019). **High Sunflower Densities as a Weed Control Strategy** in an Integrated Crop-Livestock System. *Planta Daninha*, 37. <http://dx.doi.org/10.1590/s0100-83582019370100072>
- Szemruch, C. L., García, F., Zuil, S., Teyseire, C., Renzi, J. P., Cantamutto, M. A., Renteria, S., Rondanini, D. P. 2019. Dynamics of dry-down in seed, head and stalk from sunflower genotypes sprayed with **chemical desiccants** after physiological maturity. *Turkish Journal of Agriculture - Food Science and Technology (TURJAF)*. 7(2): 192-201. DOI: <https://doi.org/10.24925/turjaf.v7i2.192-201.2093>
- Szemruch, C., García, F., Aranguren, M. B. 2019. **Field vigor of sunflower seeds after chemical treatment**. *Advances in Agricultural Science*. 7(01): 40-50. <http://aaasjournal.org/submission/index.php/aaas/article/view/120/66>
- Kostyuchenko N.I.1, Lyakh V.A. THE EFFECT OF HERBICIDE OF IMIDAZOLINONE GROUP ON THE STATE OF MICROBIOTES WHEN SUNFLOWER IS GROWING AT DRY LAND (Russian, English abstract)/ Костюченко, Н. И., & Лях, В. О. (2018). Науково-технічний бюлетень Інституту олійних культур НААН, 25(25), 116-124. <https://elibrary.ru/item.asp?id=37318529>
- Vidyashree, B. S., Arthanari, P. M., & Somasundaram, E. (2019). Effect of **biomulches on weed flora** on irrigated sunflower. *Journal of Pharmacognosy and Phytochemistry*, 8(3), 441-443. <http://www.phytojournal.com/archives/2019/vol8issue3/Part/8-3-15-125.pdf>
- Babec, B., Šeremešić, S., Hladni, N., Vasiljević, S., Čuk, N., & Vojnov, B. **Intercropping** of sunflower with legumes in relation to biological and productive properties of sunflower. European conference on Crop Diversification, Sept 2019 [REFERENCE](#)
- Tkalich, Y., Tkalich, I., Tsyliuryk, O., & Masliov, S. (2019). RESERVES FOR INCREASING THE YIELD OF **SUNFLOWER SEEDS IN THE UKRAINIAN STEPPE**. *Poljoprivreda i Sumarstvo*, 65(3), 105-114. <http://www.agricultforest.ac.me/data/20190930-09%20Tkalich%20et%20al.pdf>
- Grunwald LC., Meinel T., Kozhanov N.A., Rudev N.V., Belyaev V.I. (2020) Perspectives for a Sustainable Production of Row Crops in Systems of Minimised Tillage—A Special Focus on Sunflower Cropping in **Western Siberia**. In: Frühauf M., Guggenberger G., Meinel T., Theesfeld I., Lentz S. (eds) KULUNDA: Climate Smart Agriculture. Innovations in Landscape Research. Springer, Cham. https://doi.org/10.1007/978-3-030-15927-6_27
- Masola, M. J., Alesso, C. A., Carrizo, M. E., Berhongaray, G., Botta, G. F., Horn, R., & Imhoff, S. (2020). Advantages of the **one-wheeled tramline** for multiple **machinery** widths method on sunflower (*Helianthus annuus* L.) and maize (*Zea mays* L.) responses in the Argentinean Flat Pampas. *Soil and Tillage Research*, 196, 104462. <https://doi.org/10.1016/j.still.2019.104462>
- NR, Veselovska. A new technical solution of a **header for sunflower harvesting**. *INMATEH-Agricultural Engineering*, 2019, vol. 58, no 2. http://www.inmateh.eu/INMATEH_2_2019/INMATEH-Agricultural_Engineering_58_2019.pdf
- MANOLE, D., JINGA, V., GRĂDILĂ, M., RADU, I., IORDACHE, Ș., & SOARE, S. NEW EDITION ON SUNFLOWER CROP-**ROMANIAN** TECHNOLOGY UNDER CLIMATE CHANGE CONDITIONS IN DOBROGEA. http://agronomyjournal.usamv.ro/pdf/2019/issue_1/Art49.pdf
- Rossetto, R., Filippis, G. D., Triana, F., Ghetta, M., Borsi, I., & Schmid, W. (2019). Integration of the Farm Process and the Crop Growth Module in the **FREEWAT platform** for conjunctive use of surface-and ground-water management in the rural environment. *Agricultural water management*. <https://doi.org/10.1016/j.agwat.2019.105717>
- KHALEGHI, M. (2019). Evaluation of the sunflower yield, water productivity and soil salinity simulation under water and salinity stresses using the **AquaCrop model**. <https://www.sid.ir/en/Journal/ViewPaper.aspx?ID=693271>

PHYSIOLOGY

- Silva, P. C. C., Azevedo Neto, A. D. D., & Gheyi, H. R. (2019). Mobilization of seed reserves **pretreated with H2O2 during germination** and establishment of sunflower seedlings under salinity. *Journal of Plant Nutrition*, 42(18), 2388-2394. <https://doi.org/10.1080/01904167.2019.1659349>
- Sharma, B. (2019). An analyses of **flavonoids** present in the inflorescence of sunflower. *Brazilian Journal of Botany*, 42(3), 421-429 <https://doi.org/10.1007/s40415-019-00552-z>
- Szemruch, C., Gallo, C., Murcia, M., Esquivel, M., García, F., Medina, J., Magnano L. 2019. Electrical Conductivity **Test For Predict Sunflower Seeds Vigor**. *SSRG International Journal of Agriculture & Environmental Science* 6(4), 118-127. DOI: <https://doi.org/10.14445/23942568/IJAES-V6I4P117>



- Agar, G., Taspinar, M. S., Yildirim, E., Aydin, M., & Yuce, M. (2019). Effects of Ascorbic Acid and Copper Treatments on Metallothionein Gene Expression and Antioxidant Enzyme Activities in *Helianthus annuus* L. Exposed to Chromium Stress. *Journal of Plant Growth Regulation*, 1-8. <https://doi.org/10.1007/s00344-019-10031-0>
- Blamey, F. P. C., Li, C., Howard, D. L., Cheng, M., Tang, C., Scheckel, K. G., ... & Kopittke, P. M. (2019). Evaluating **effects of iron on manganese toxicity** in soybean and sunflower using synchrotron-based X-ray fluorescence microscopy and X-ray absorption spectroscopy. *Metallomics*. <https://doi.org/10.1039/C9MT00219G>
- Yurekli, F., Kirecci, O. A., & Celik, I. THE EFFECTS OF NITRIC OXIDE ON SOME **ANTIOXIDANT ENZYME ACTIVITIES UNDER SALT STRESS** IN SUNFLOWER PLANTS. <https://doi.org/10.24326/asphc.2019.5.17>
- Zehra, A., Sahito, Z. A., Tong, W., Tang, L., Hamid, Y., Wang, Q., ... & He, Z. (2020). Identification of **high cadmium-accumulating oilseed sunflower** (*Helianthus annuus*) cultivars for phytoremediation of an Oxisol and an Inceptisol. *Ecotoxicology and environmental safety*, 187, 109857. <https://doi.org/10.1016/j.ecoenv.2019.109857> or [REFERENCE](#)
- Vigliocco, A., Del Bel, Z., Pérez-Chaca, M. V., Molina, A., Zirulnik, F., Andrade, A. M., & Alemano, S. (2019). Spatio-temporal variations in salicylic acid and hydrogen peroxide in sunflower seeds during **transition from dormancy to germination**. *Physiologia plantarum*. <https://doi.org/10.1111/pp1.13043>
- Ljubotina, M. K. (2019). Behaviour of *Helianthus annuus* L.: an **ethogram for sunflower**, and the effect of potential competitors on soil nutrient patch use. Master thesis: <https://doi.org/10.7939/r3-1dx4-1c74>
- Gholamhoseini, M., Dolatabadian, A., & Habibzadeh, F. (2019). **Ridge-Furrow Planting System** and Wheat Straw Mulching Effects on Dryland Sunflower Yield, Soil Temperature, and Moisture. *Agronomy Journal*. <https://doi.org/10.2134/agronj2019.02.0097>

PROCESS AND PRODUCTS

- Sara, A. S., Mathé, C., Basselin, M., Fournier, F., Aymes, A., Bianeis, M., ... & Kapel, R. (2020). Optimization of sunflower **albumin extraction** from oleaginous meal and characterization of their structure and properties. *Food Hydrocolloids*, 99, 105335. <https://doi.org/10.1016/j.foodhyd.2019.105335>
- Lozano, O. L., García, L. F., Ibarra, D. G., Pajuelo, N. T., Garcés, R., Force, E. M., & Salas, J. J. (2019). Characterization of different **ozonized sunflower oils** I. Chemical changes during ozonization. *Grasas y aceites*, 70(4), 7. <https://doi.org/10.3989/gya.1166182>
- Lozano, O. L., García, L. F., Ibarra, D. G., Bootello, M. A., Garcés, R., Force, E. M., & Salas, J. J. (2019). Characterization of different **ozonized sunflower oils** II. Triacylglycerol condensation and physical properties. *Grasas y aceites*, 70(4), 8. <https://doi.org/10.3989/gya.1167182>
- Grajales, S. B., Zuluaga, J. E., López-Herrera, A., Rodríguez-Osorio, N., & Bolivar-Vergara, D. RNA-seq differential gene expression analysis in mammary tissue from **lactating dairy cows supplemented with sunflower oil**. <https://www.publish.csiro.au/AN/justaccepted/AN19107>
- Slabi, S. A., Mathé, C., Framboisier, X., Defaix, C., Mesieres, O., Galet, O., & Kapel, R. A new SE-HPLC method for **simultaneous quantification of proteins and main phenolic compounds** from sunflower meal extract. Young Scientist Presentations. http://euroanalysis2019.com/Young_Scientist.html
- Barros, S. L., Santos, N. C., da Silva Nascimento, A. P., Melo, M. O. P., de Alcantara Ribeiro, V. H., & de Alcantara Silva, V. M. (2019). Influence of **Dehydration** in the Physical-Chemical Quality of Commercial Sunflower **Almonds**. *Journal of Agricultural Studies*, 7(3), 82-90. <https://ideas.repec.org/a/mth/jas888/v7y2019i3p82-90.html>
- Redondas, C. E., Bäumlner, E. R., & Carelli, A. A. **Sunflower wax** recovered from oil tank settlings: reevaluation of a waste from the oilseed industry. *Journal of the Science of Food and Agriculture*. <https://doi.org/10.1002/jsfa.10017>
- Meng, Z., Guo, Y., Wang, Y., & Liu, Y. (2019). **Organogels** based on the polyglyceryl fatty acid ester and sunflower oil: Macroscopic property, microstructure, interaction force, and application. *LWT*, 116, 108590. <https://doi.org/10.1016/j.lwt.2019.108590>
- Jannathulla, R., Vasanthakumar, D., Claret, E. A., Yuvaphuspa, R., Ambasankar, K., Muralidhar, M., & Dayal, J. S. (2019). Effect of **fungal fermented sunflower oil cake** on digestive enzymes activity and immune responses of Whiteleg shrimp, *Penaeus vannamei* (Boone, 1931) reared at indoor laboratory conditions. <http://www.fisheriesjournal.com/archives/2019/vol7issue3/PartA/7-2-42-765.pdf>



- Spyridonidis, A., Zhurka, M., Vasiliadou, I. A., Lytra, V., & Stamatelatou, K. **Biogas production** from sunflower residues: effect of pretreatment. https://cest2019.gnest.org/sites/default/files/presentation_file_list/cest2019_00145_oral_paper.pdf
- Grigore, D. M., Ciurescu, G., Idriceanu, L., Mironeasa, S., Iuga, M., & Băbeanu, N. (2019). Effect of **low-fiber sunflower meal and phytase addition** on broiler carcass traits, and meat quality. *Archiva Zootechnica*, 22(1), 32-47. [https://www.ibna.ro/arhiva/AZ-22_1/AZ%2022-1%20\(32-47\)%20Daniela%20G..pdf](https://www.ibna.ro/arhiva/AZ-22_1/AZ%2022-1%20(32-47)%20Daniela%20G..pdf)
- Laguna, O. (2019). **Valorization of rapeseed and sunflower phenolics**: from the dry fractionation of raw materials to the synthesis of multifunctional molecules (French+ English abstract) Valorisation des composés phénoliques de colza et de tournesol: du fractionnement des matières premières à la synthèse de molécules multifonctionnelles (Doctoral dissertation, Université de Montpellier). <https://agritrop.cirad.fr/593466/>
- Behery, H. R., El-Emam, G. I., Khalifa, E. I., Aboul-Omran, M. A., & Desoky, A. L. I. (2018). The Role of **Oils Addition to Diets** and its Effect on Ration Consumption and Production Profomance Recovery of Dairy Goats. *Journal of Animal and Poultry Production*, 9(12), 497-505. <https://doi.org/10.21608/jappmu.2018.41166>
- Campos, R. C., Correa, P. C., Zaidan, I. R., Zaidan, Ú. R., & Leite, R. A. (2019). **Moisture sorption isotherms** of sunflower seeds: Thermodynamic analysis. *Ciência e Agrotecnologia*, 43. http://www.scielo.br/scielo.php?pid=S1413-70542019000100227&script=sci_arttext
- Zubiria, I., Garcia-Rodriguez, A., Atxaerandio, R., Ruiz, R., Benhissi, H., Mandaluniz, N., ... & Goiri, I. (2019). Effect of feeding **cold-pressed sunflower cake** on ruminal fermentation, lipid metabolism and bacterial community in dairy cows. *Animals*, 9(10), 755. <https://doi.org/10.3390/ani9100755>
- Manmai, N., Unpaprom, Y., Mariano, A. P. B., & Ramaraj, R. **Bioethanol Production** from Sunflower Stalk: Comparison between the Impact of Optimal Chemical and Biological Pretreatments. *methods*, 3(8), 9. [REFERENCE](#)
- Muñoz-Almagro, N., Wilde, P. J., Rico-Rodríguez, F., Villamiel, M., & Montilla, A. (2018). Technological **characterization of pectin** extracted with sodium citrate and nitric acid from sunflower heads. <https://digital.csic.es/handle/10261/194583>
- Shorstkii, I. A., Zherlicin, A. G., & Li, P. (2019). Impact of **pulsed electric field and pulsed microwave** treatment on morphological and structural characteristics of sunflower seed. *OCL*, 26, 47. <https://doi.org/10.1051/ocl/2019048>

ECONOMY AND MARKETS

- HRISTOV, K., BELUHOVA-UZUNOVA, R., & SHISHKOVA, M. (2019). COMPETITIVE ADVANTAGES OF **BULGARIAN SUNFLOWER INDUSTRY** AFTER THE ACCESSION INTO THE EUROPEAN UNION. *Scientific Papers: Management, Economic Engineering in Agriculture & Rural Development*, 19(2). http://managementjournal.usamv.ro/pdf/vol.19_2/Art24.pdf
- Nosal, O. O., Vedmedieva, K. V., Maclyak, K. M., & Leonova, N. M. Economic evaluation of **large-seeded hybrids** of sunflower. (Russian, long abstract in English) <http://www.imk.zp.ua/bulletin/index.php?year=&number=&lang=en&menu=4&id=314>
- ULINICI, A. ANALYSIS OF THE SUNFLOWER PRODUCTION DYNAMICS IN THE **REPUBLIC OF MOLDOVA** BASED ON ECONOMETRIC MODELS. https://ibn.idsi.md/sites/default/files/imag_file/57-69_0.pdf
- Master thesis: Sanga, H. A. (2018). Analysing the Market and Constraints of Small & Medium Enterprises (SMEs) and Large Enterprises: A Case of Sunflower Oil Enterprises in Dodoma Urban District, **Tanzania..** <https://pdfs.semanticscholar.org/18b8/b4e0df7fcf7688b32c6ef452e7f35ec1906c.pdf>
- Chiriac, A. R., Cristea, S., Popescu, M., & Rîșnoveanu, L. (2018). The evolution of sunflower crops in **Romania** in the context of the pre-and post-accession to the European Union. In *Agrarian Economy and Rural Development-Realities and Perspectives for Romania*. 9th Edition of the International Symposium (pp. 156-162). Bucharest: The Research Institute for Agricultural Economy and Rural Development (ICEADR). <https://www.econstor.eu/bitstream/10419/205101/1/ICEADR-2018-p156.pdf>
- Petre, I. L. (2018). Comparative labor force analysis in conventional and ecological agriculture: Oleaginous plants. In *Agrarian Economy and Rural Development-Realities and Perspectives for Romania*. 9th Edition of the International Symposium (pp. 265-269). Bucharest: The Research Institute for Agricultural Economy and Rural Development (ICEADR). <https://www.econstor.eu/bitstream/10419/205118/1/ICEADR-2018-p265.pdf>



Kapsambelis, D., Moncoulon, D., & Cordier, J. (2019). An Innovative **Damage Model for Crop Insurance**, Combining Two Hazards into a Single Climatic Index. *Climate*, 7(11), 125. <https://doi.org/10.3390/cli7110125>

Vidosavljević, S. Ž., Bojanić, N. Đ., Stojkov, V. Đ., Čolović, R. R., Đuragić, O. M., Fišteš, A. Z., & Banjac, V. V. COMPARISON OF **TWO DRY FRACTIONATION PROCESSES FOR PROTEIN ENRICHMENT OF SUNFLOWER MEAL**. *Food and Feed research*,. [REFERENCE](#)

Grasso, S., Liu, S., & Methven, L. (2019). Quality of muffins enriched with upcycled **defatted sunflower seed flour**. *LWT*, 108893. <https://doi.org/10.1016/j.lwt.2019.108893>

IN HELIA: Ahead of prints: see <https://www.degruyter.com/view/j/helia> (free access for ISA members through <http://isasunflower.org/> and login to Members Space.

Martínez, A. L., Anderson, F., Quiroz, F., Garayalde, A., Erreguerena, I., Armando, L., ... & Carrera, A. Methodologies for **Plasmopara halstedii** Research. *Helia*. <https://doi.org/10.1515/helia-2019-0013>

Nouraein, M., Bakhtiarzadeh, R., Janmohammadi, M., Mohammadzadeh, M., & Sabaghnia, N. (2019). The Effects of **Micronutrient and Organic Fertilizers** on Yield and Growth Characteristics of Sunflower (*Helianthus annuus* L.). *Helia*, 42(71), 249-264. <https://doi.org/10.1515/helia-2019-0015>

Nikolayenko, S. A., & Tsokur, D. S. (2019, September). Development of System of Automatic Control of Sunflower **Seed Calibration and Cleaning Line**. In 2019 International Russian Automation Conference (RusAutoCon) (pp. 1-5). IEEE <https://doi.org/10.1109/RUSAUTOCON.2019.8867770>

Gutierrez, A., Baffigi, D. S., & Poverene, M. Assessment of **Mating System in Helianthus annuus** and *H. petiolaris* (Asteraceae) Populations. *Helia*. <https://doi.org/10.1515/helia-2019-0016>

Book: Orobanche Cumana Atlas. By Maria Duca, Steliana Clapco, Rodica Martea, Olesea Tabara. In Romanian with many illustrations and references.

The atlas of Sunflower broomrape (*Orobanche cumana* Wallr.) was written as an overview of the main results obtained by the team of the Centre of Functional Genetics, State University "Dimitrie Cantemir" during the last ten years. For better understanding on all key aspects of the parasitic angiosperm *O. cumana* the book also provides short description of the parasite structure, distribution, race evolution, control measures etc.

The Atlas includes short presentation of the results (accompanied by bibliographic references) related to the current state of broomrape in the Republic of Moldova, its economic impact, the progress of research in the field of parasite biology and genetics, some aspects of sunflower defense mechanisms, sunflower germplasm screening and some achievements of sunflower breeding for resistance to Orobanche. The final part of this book synthesizes the major findings and implications of young researchers in realization of the projects.

The Atlas is intended for plant scientists, university lecturers and students, agronomists, breeders and farmers. We fully expect that this approach and the methods will continue to be a rich source of information on a wide range of applications for biological, as well as socioeconomics research themes and questions.

Contact: Maria Duca (ISA member)



Coming International and national events

29-30 January 2020: Lipids & Cosmetics top innovations and researches. Bordeaux, France.

<https://lipidscosmetics.sciencesconf.org>



3-5 February 2020. iCROP2020. Crop modelling for Agriculture and Food Security under Global Change. Montpellier, France.

<https://www.icropm2020.org/>

9-12 February 2020. World congress on oils and fats. Sidney, Australia.

www.wcofsydney2020.com



April 26-29, AOCS Annual Meeting. Montreal, Canada.

<https://annualmeeting.aocs.org/>



22-25 June 2020, 20th International Sunflower Conference, Novi Sad, Serbia.

<https://isc2020.com/>



Registration:

| | |
|----------------------|------------------|
| Early fee deadline | 20 October 2019 |
| Regular fee deadline | 20 May 2020 |
| On site fee | from 21 May 2020 |

6-10 September 2020: 32nd Annual Meeting AAIC Association for the Advancement of Industrial Crops. Bologna, Italy.

www.aaic.org



Abstract Submission Deadline: April 20, 2020

We invite all the persons who read this newsletter to share information with the Sunflower community: let us know the scientific projects, events organized in your country, crops performances or any information of interest for sunflower R&D.

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