

XLIII Convegno Nazionale della Società Italiana di Chimica Agraria

23-25 June 2025

Palazzo Bo and Centro Culturale S. Gaetano, Padova

The Contribution of the Agricultural Chemistry to Healthy and Resilient Agroecosystems and to the One Health Vision



We are pleased to announce that the **43rd National Conference of the Italian Society of Agricultural Chemistry (SICA) will take place in Padua on June 23, 24 and 25, 2025.** The conference will focus on the theme of One Health, and on the contribution that Agricultural Chemistry can offer to this holistic vision, which considers human health inextricably linked to the quality and safety of food, soil and plant health, availability of natural resources and safe reuse and recycling of manufactured natural and artificial materials.



The One Health vision is globally recognized as a model to pursue in order to ensure sustainable global development for both the planet and humanity, especially in the current context of unprecedented environmental change. SICA, with its broad range of expertise and skills, is committed to expanding knowledge and contributing to the achievement of several key objectives of the One Health approach.

These include promoting soil and plant health, reducing the environmental impact of agricultural production, developing strategies to maximize the recycling of materials and energy, and assessing the quality and safety of primary plant-based foods.

The conference will be organized in four sessions, each introduced by a keynote lecture by international scientists, followed by oral presentations on the topics of soil chemistry and biochemistry, plant biochemistry and physiology, biomass and materials recycling in agriculture and food quality and safety.

The XLIII SICA Conference will continue the experience of the Focus Groups for discussing hot topics relevant to the conference main theme.

The Conference will be held in the magnificent heart of Padua at walking distance from buildings and monuments belonging to the UNESCO World Heritage Patrimony.

The official language of the conference is English.



PROGRAMME

Monday June, 23 Palazzo Bo – Sala I. Nievo

13:00 – 14:00 Meeting of the SICA Executive Board

13:00 - 14:30 Registration

14:30 – 15:00 Welcome greetings



SESSION 1 – SOIL HEALTH AS BASIS OF HEALTHY ENVIRONMENT AND RESILIENT AGRICULTURAL SYSTEMS

Chairs: Silvia Rita Stazi, Luciano Cavani

15:00 - 15:40 **Keynote lecture: Interconnections between soil and human health**

Aki Sinkkonen, Natural Resources Institute of Finland (LUKE), Turku, Finland

15:40-16:00 **Giacomo Bianchini**, R. Cardelli, L. Guidi, C. Ceccanti

Use of micronized biochar in *Vitis vinifera* var. *Ciliegiolo*

16:00-16:20 **Ahmed S.A. Hassan**, R. Picone, P. Arfaioli, G. Marchetti, G. Pietramellara, S.I. Pathan

Short-term impact of clover–based intercropping system on wheat performance and soil physicochemical properties and enzyme activities

16:20-16:40 **Andrea Ciurli**, G. Di Biase, C. Ciavatta, L. Cavani

Evaluation of nitrogen release and the effects on the soil microbiome of organic fertilizers obtained from metal-free and chromium tanned leather

16:40-17:00 C. Chiodi, **Giulia Zardinoni**, P. Stevanato, L. Giagnoni, P. Carletti, N. Oustrière, A. Sæbø, T. Persson, W. Szulc, B. Rutkowska, M. Mench, G. Renella

Organic amendments influence on soil properties, soil microbial diversity, and wood preservation site

17:00-17:20 **Jessica Di Mario**, N. Montegiove, M. Paolucci, A.M. Gambelli, D. Pezzolla, G. Gigliotti

Use of brewers' spent grain digestate as a soil fertilizer: a microcosm study under simulated climate change conditions

17:20-17:40 L.G. Duri, I. Romano, P. Adamo, Y. Rouphael, A. Pannico, V. Ventorino, O. Pepe, S. De Pascale, **Antonio Giandonato Caporale**

Improving nutrient bioavailability, microbial activity, and lettuce productivity in Lunar and Martian regolith simulants using Plant Growth-Promoting Bacteria and green compost

17:40 – 18:10 **Special keynote lecture: Circular Health - expanding One Health to be more inclusive and contemporary (remote connection)**

Ilaria Capua, Senior Fellow of Global Health at Johns Hopkins University – School of Advanced International Studies Europe, Courtesy Professor and Director Emeritus of the One Health Centre of Excellence at the University of Florida (USA).

18.10 Closing of the conference day

18:30 **Welcome spritz** Isola di Caprera Restaurant

Tuesday June, 24 Centro Culturale S. Gaetano

08:00 - 9:00 Registration and poster mounting and viewing



SESSION 2 – MAINTENANCE AND ENHANCEMENT OF NUTRIENT USE EFFICIENCY IN AGRICULTURAL SYSTEMS: PROMOTING NATURAL NUTRIENT CYCLING AND REDUCING NUTRIENT LOSSES

Chairs: Antonio Giandonato Caporale, Elisa Clagnan

9:00 – 9:40 Keynote lecture: Agricultural solutions for addressing hidden hunger in human populations

Ismail Cakmak, Sabanci University in Istanbul, Turkey

9:40 - 10:00 **Lavinia Carlini**, D. Sangiorgio, M. Barnabà, H. Insam, Ch. Rinke, N. Tomasi, L. Zanin, I. Bertani, V. Venturi, Y. Pii

Root microbiota: tapping into microscopic helpers to address iron deficiency

10:00 – 10:20 **Sofia Maria Muscarella**, L. Badalucco, A. Delgado García, V.A. Laudicina

Holistic approach to circular wastewater management for sustainable agriculture: evidence from WIDER UPTAKE project

10:20 – 10:40 **Martino Rabbia**, G. Papandrea, S. Fogliatto, L. Celi, M. Martin

Availability and uptake of potentially toxic elements by rice as influenced by cover crops techniques

10:40 – 11:00 S. Kiaeianmoosavi, M. Arkoun, A. Maillard, L. Jing, F. Flagiello, A. Lodovici, M. Canciani, N. Tomasi, **Laura Zanin**





Does the Fe deficiency response of tomato plants differ upon the N-form applied?

11:00 - 11:30 Coffee break

11:30 - 13:00 Poster viewing

13:00 - 14:30 Lunch

14:30-16:00 SICA Focus group discussion

Soil health	
Plant health	
Environmental health	
One health	



16:00-16:30 Presentation of Focus Group outcome

16:30 - 17:00 Coffee break and poster viewing

16:30 - 18:30 **SICA General Assembly**

18:30 Closing of the conference day

20:00 *Conference dinner Ristorante Isola di Caprera*



Wednesday June, 25 Centro Culturale S. Gaetano

08:00-9:00 Poster viewing

SESSION 3 – PLANT HEALTH AND ITS CONTRIBUTION TO THE ONE HEALTH OBJECTIVES: FROM PLANT BIOCHEMISTRY TO THE FOOD

Chairs: Maria Rosa Abenavoli, Laura Zanin

9:00-9:40 Keynote lecture: Horticultural crop flavor: a trade-off between taste and defense?

Esther van der Knaap, Department of Horticulture, University of Georgia, Athens, USA

9:40-10:00 **Yakshini Boyjnath**, V. Bhoyroo, M.E. Dulloo, V.M. Ranghoo-Sanmukhiya, M. Monte, A. Marchese, A.S Balan, C. De Pasquale

Sweetpotato (*Ipomoea batatas* [L.] Lam) as a functional food: implications for human health

10:00 – 10:20 **Pietro Magnabosco**, S. Polash, R. Shukla, A. Masi, S. Lupinelli, V. Bansal, P. Carletti

Advancing AgTech: ZIF-8 nanocarriers for efficient delivery of natural plant enhancers

10:20 – 10:40 **Daniela Sangiorgio**, L. Carlini, H. Insam, C. Rinke, N. Tomasi, L. Zanin, I. Bertani, V. Venturi, Y. Pii

Microbiota transplantation: a novel approach to enhance barley resilience and productivity

10:40 – 11:00 **Davide Savy**, G. Volpe, S. Nastasi, B.M. Orlando Marchesano, I. Di Lelio, A. Becchimanzi, V. Cozzolino, M.C. Bonza, F. Pennacchio

Novel humic-based nanomaterials as antioxidants and carrier of genetic material for RNAi-mediated pest control strategies

11:00-11:40 Coffee break and poster viewing

11:40 – 12:00 **Chiara Muratore**, V. Grassi, B. Prinsi, L. Espen

Proteomic analysis of radish seedlings to unveil biochemical events induced by sericin treatment

12:00-12:20 **Sara Triachini**, M. Furiosi, G. Arbi, S. Gaaied, M. Grella, E. Mozzanini, G. Beone, T. Caffi, N.A. Suciù

Pesticides UAV spraying for downy mildew control: efficacy and residue evaluation

12:20 – 12:40 M. Spada, M. Maghrebi, G. Quagliata, R. Ruggeri, F. Rossini, G. Vigani, **Stefania Astolfi**

The potential of biostimulants for drought prevention and mitigation in durum wheat (*Triticum durum* Desf.)

12:40 – 13:00 **Carmela Di Spiridione**, C. Mussio, L. Zhang, L. Lucini, C. Crecchio, R. Terzano, A.N. Mininni, B. Dichio, C.E. Gattullo

Exploring the metabolic response of kiwifruit to waterlogging stress

13:00-14:30 Lunch and poster viewing

SESSION 4 – POLLUTION IN THE AGRICULTURAL SYSTEMS: WHAT RISKS AND WHAT SOLUTIONS

Chairs: Stefania Astolfi, Carlo Porfido

14:30 - 14:50 Keynote lecture: Contamination of the environment by persistent organic pollutants (POPs) and risk to plants/feed and food of animal origin

Roland Weber, POPs Environmental Consulting, Schwaebisch Gmuend, Germany

14:50 - 15:10 Enrico Buscaroli, L. Bacci, I. Braschi, P. Castaldi, A. Ciurli, S. Diquattro, G. Gigliotti, D. Luise, M. V. Pinna, D. Pezzolla

Impact of co-occurrence of microplastics with pesticides and antibiotics in soils amended with digestate – The results of 3IMPACT project

15:10 – 15:30 Anna Davini, L. D'Asaro, M. Landi, L. Guidi, M. Puccinelli, M. Florio, M. Santin, C. Ceccanti

Phytodesalination potential of *Atriplex hortensis* L. grown in saline environment through sodium accumulation and translocation

15:50 – 16:10 S. Girolmoni, R. Bondi, F. Costantino, L. Latterini, Daniele Del Buono

Biogenic synthesis and characterization of nickel oxide nanoparticles using a plant extract from *Lemna minor* and their application for the catalytic degradation of rhodamine B dye in water

16:10-16:40 Coffee break and poster viewing

16:40 – 17:00 Elisabetta Loffredo, N. Denora

Sorption and release of pesticides by bioenergy digestate and its aerobic derivative compost

17:00 – 17:20 Elio Padoan, A. Giordano, Y. Li, G. Dino, F. Ajmone Marsan, M. Malandrino
Assessment of Rare Earth Elements (REEs) contamination in soils affected by urban and industrial activities

17:20 – 17:40 **Matteo Garau**, G.L. Petretto, M.V. Pinna, S. Melito, G.K. Piga, M. Cossu, N.P. Mangia, M. Chessa, T. Sizmur, P. Castaldi, G. Garau

***Artemisia arborescens* as a candidate for the sustainable remediation and economic growth of sites polluted by potentially toxic elements (PTE)**

17:40-18.00 Conference closing, awards ceremony

Local Organizing Committee

Paolo Carletti, Claudia Chiodi, Antonio Masi, Diego Pizzeghello, Silvia Quaggiotti, Laura Ravazzolo, Giancarlo Renella, Piergiorgio Stevanato, Anna Rita Trentin

Scientific Committee

Luisella Celi, Luca Espen, Giovanni Gigliotti, Elio Padoan, Mariarosa Abenavoli, Anita Zamboni, Lucia Guidi, Claudio Marzadori, Antonella Castagna, Paola Castaldi, Giancarlo Renella, Antonio Giandonato Caporale, Elisa Clagnan, Silvia Rita Stazi, Stefania Astolfi, Luciano Cavani, Carlo Porfido, Laura Zanin.

Conference general information

The final conference programme with sessions and timetable of oral and poster presentations, conference venues, city map, and travel information are provided below and will be available on the conference website <https://sica2025.azuleon.org/>.

The abstract submission is closed

Conference fees of registered participants can be paid following the instructions on the conference website <https://sica2025.azuleon.org/>. Current registration fees and deadlines are: € 440,00 for senior scientists, € 280,00 for Students/Fellows, € 490,00 for companies. Conference fees must be paid by bank transfer or credit card on the bank account indicated in the reserved area of ‘*mySICA2025*’ of the conference website. Registration fees include full access to all conference sessions, participant kit, meals, and coffee breaks at the congress venue, details for the access to the certificate of attendance and electronic abstract book.

The access to the conference will be enabled only after the payment of the conference fees.

The electronic abstract book can be downloaded by the conference website: <https://sica2025.azuleon.org/>.

Instructions for conference presentations

Oral presentations indicated in the programme will be done using power point files to be uploaded by each presenter before the beginning of each session. Duration of oral presentations will be 15 min talk plus 5 min questions and answers.

Poster sessions will be held as indicated in the programme, the printed posters must be in A0 portrait format (84 cm width, 119 cm height) or A1 portrait format (59 cm width x 84 cm height). At least one author must stand by the presented poster. Posters must be removed on wednesday at the end of the conference.

How to reach the conference venue

Arrival by car: Padua can be reached mainly by motorways A13 and A4. The conference venues are located in a traffic restricted area of the city center, therefore, please check the possibilities of access with private cars by timely consulting the website <https://www.comune.padova.it/zona-traffico-limitato-ztl-centro-storico>.

Arrival by airplane: Padua does not have a city airport but is well connected by bus and trains with Venice airports (<https://www.veneziaairport.it/>; <https://www.trevisoairport.it/>), Milan airports (<https://milanairports.com/it>; <https://www.milanbergamoairport.it/it/>), Verona airport (<https://www.aeroporto.verona.it/>), Bologna airport (<https://www.bologna-airport.it/benvenuto-all-aeroporto-di-bologna/?idC=62175>).

Arrival by train: Padua has a central station connected to the main regional and national railway companies (<https://www.trenitalia.com/it.html>; <https://www.italotreno.com/it>).

Arrival by bus: Padua is connected by nationwide bus transportation companies. Timetables and tickets are available on the following websites: **Flixbus** <https://global.flixbus.com/bus/padua>; **Itabus** <https://www.itabus.it/it/autobus/padova>.

Urban public transport in Padua: Palazzo Bo and Centro Culturale Altinate - San Gaetano are served by the SIR 1 tram line. Attendees starting from the central station, take the tram in the direction of Capolinea Guizza, while attendees leaving from Padua south take the tram in the direction of Pontevigodarzere. In both directions, the nearest stop to the conference is Ponti Romani, as shown in the map below.

The Isola di Caprera restaurant where we will have the welcome spritz and social dinner is located in via Marsilio da Padova 11, at walking distance from Palazzo Bo, as shown in the map below.

Accommodation: The local organizing committee has not concluded agreements with hotels because in the center of Padua you can find accommodation of various types and prices. For example, and not limited to, a list of hotels, B&B and other types of accommodations is available on the conference website (<https://sica2025.azuleon.org/welcome>).

All conference venues are free of architectural barriers, however for specific access or transport needs, please contact the Secretariat of the Conference or the organizing committee.

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