

The Scientific and Organizing Committees are pleased to invite all interested researchers to the

XLII Convegno Nazionale della Società Italiana di Chimica Agraria

09-11 September 2024

Alghero (SS), Hotel Catalunya

The contribution of agricultural chemistry to the global challenge for a sustainable crop production and preservation of ecosystem services





The XLII SICA Conference will take place in Alghero at the Hotel Catalunya from 9 to 11 September 2024.

The scientific programme of the conference is structured in four sessions that will address different topics related to the soil/plant/environment/food system with a multidisciplinary approach.

Each session will be introduced by a keynote lecture given by internationally renowned scientists and then followed by oral presentations held by national and international lecturers and researchers, addressing the chemical, biochemical, physiological and ecological aspects of the soil-water-plant-atmosphere system, as well as the processes of accumulation, mobilization and uptake of chemical species, endogenous and exogenous, useful or harmful, under optimal and/or stress conditions.

Ample space will be devoted to the presentation of innovative solutions for the improvement of crop yield and quality, and for the restoration and preservation of soil functionality and health. Of particular interest will be a session organized in focus groups especially dedicated to young researchers attending the conference.

The intense scientific programme will not preclude conference participants from enjoying the unique cultural heritage and landscape offered by the city of Alghero.



The conference will be held in English

Programme

Monday, September 9th

08:30 Registration and meeting of the SICA Directive Board

09:30 Institutional greetings (*Luisella Celi*, Presidente SICA; *Gavino Mariotti*, Magnifico Rettore dell'Università di Sassari; *Ignazio Floris*, Direttore del Dipartimento di Agraria dell'Università di Sassari; *Niccolò P.P. Maciotta*, Presidente AISSA).

Session 1: The role of soil for a sustainable crop production and the preservation of ecosystem services

Moderatori: *Silvia Rita Stazi, Matteo Spagnuolo*

- 10:00-10:40 **Keynote lecture: Enzo Lombi**, Barbara Hardy Chair in Environmental Science and Engineering, Future Industries Institute, University of South Australia
Exploring phosphorus chemistry in the fertosphere to increase nutrient use efficiency
- 10:40-11:00 **S. Paliaga, L. Badalucco, D.F. Chillura Martino, V.C. Ciaramitaro, E. Kandler, S. Marhan, V.A. Laudicina**
Innovative bio-based mulching films affect soil microbial biomass, activity and nutrient dynamics
- 11:00-11:20 **S. Martinengo, A. Ehlinger, M.S. Lasagna, M. Martin, L. Celi, D. Said-Pullicino**
The role of root traits and iron plaque formation in organic carbon turnover and priming in the rice detritusphere
- 11:20-11:40 *Coffee break and poster viewing*
- 11:40-12:00 **A. Paesano, M. Mazzon, J. Cupi, P. Gioacchini, E. Biagi, E. Musmeci, C. Ciavatta, F. Fava, C. Marzadori.**
Organic soil amendments for sustainable vineyard management: effects on soil biochemistry and microbiome
- 12:00-12:20 **L. Bacci, N. Montegiove, D. Pezzolla**
Effects of microplastics on two different types of soil treated with digestate
- 12:20-12:40 **D. Moro, E. Pellegrini, M. Contin, M. De Nobili**
Mitigation ability of humified organic matter towards soil salinity and sodicity
- 12:40-13:00 **V. Cozzolino, M. Verrillo, V. Di Meo, S. Cangemi, R.S. Del Gaudio, V. Valentino, R. Spaccini, F. De Filippis**
Responses of organic phosphorus forms in soil aggregates and microbial community composition to crop rotation in a long-term field experiment
- 13:00-13:20 **R. Adesso, F. Araniti, A. Bloise, S.H. Elshafie, H.R. Ellerbrock, S.L. Schnee, A. Sofo**
Soil organic matter quality in an olive orchard differentially managed for 21 years

13:20 *Lunch and poster viewing*

Session 2: Plant responses and resilience to counteract global change

Moderatori: *Michela Schiavon, Maria Rosaria Panuccio*

- 15:00-15:40 Keynote lecture: Diana Santelia**, Department of Environmental Systems Science, ETH Zurich
Guard cell starch metabolism at the intersection of environmental stimuli and stomatal movements
- 15:40-16:00 **A. Sabia**, A. Alboresi, T. Morosinotto, A.R. Trentin, F. Masiero, I. Battistti, A. Masi
Impact of GenX on the physiology and morphology of *Zea mays* and *Solanum lycopersicum*
- 16:00-16:20 **E. Clagnan**, T. Petrov, M. Rizzetto, S. Nocella, G. D'Imporzano, M. Dell'Orto, P. De Nisi, M. Cucina, L. Llenas--Argelaguet, R. Kron Morelli, M. Ovani, F. Adani
Microbiologically activated bio-based fertilizers: application effects on yield and quality of tomato plants
- 16:20-16:40 **E. Coppa**, G. Quagliata, M.D. Garcia Molina, M. Maghrebi, G. Vigani, F. Sestili, S. Astolfi
How soil sulfur availability affects iron accumulation in four tetraploid wheats (*Triticum turgidum* L.)
- 16:40-17:00 *Coffee break and poster viewing*
- 17:00-17:20 **M. Peli**, S. Ambrosini, D. Sorio, F. Pasquarelli, A. Zamboni, Z. Varanini
The soil application of a plant-derived protein hydrolysate speeds up selectively the ripening-specific processes in table grape
- 17:20-17:40 **G. Galli**, F. Araniti, B. Prinsi, L. Espen
Salt stress and nitrogen metabolism in tomato plants (*Solanum lycopersicum* L.) grown under different N forms
- 17:40-18:00 **M. Lucchetta**, M.Y. Alzate Zuluaga, S. Monterisi, A. Romano, R. Fattorini, S. Cesco, F. Gaiotti, **Y. Pii**
The effects of pruning waste compost on growth and nutrient uptake in rooted pinot gris cuttings
- 18:00-18:20 **E. Secomandi**, M. De Gregorio, L. Lucini
The interaction between heat, cold, salinity and waterlogging at the photosynthetic and metabolomics levels: a combined stresses case study in *Arabidopsis thaliana* L.

Tuesday, September 10th

Session 3: Strategies for the preservation and recovery of natural and contaminated environments

Moderatori: *Fulvia Tambone, Andrea Baglieri*

- 09:00-09:40 **Keynote lecture: Domenico Morabito**, Laboratoire Physiologie, Écologie et Environnement, Université d'Orléans
Assisted phytostabilization for sustainable remediation of polluted areas as part of a circular economy
- 9:40-10:00 **A. Boarino**, E. Padoan, L. Celi

Recovering nutrients and reducing pollution through struvite precipitation from biomass waste

10:00-10:20 **J. Di Mario, D. Del Buono, C. Emiliani, A.M. Gambelli, D. Puglia, A. Ranucci, G. Gigliotti**

Optimizing brewery's spent grain management for enhanced sustainability in beer production: from biorefinery approach to direct application in the biopolymer industry

10:20-10:40 **S. Diquattro, G. Garau, M.V. Pinna, M. Garau, S. Bagella, A. Porceddu, P.P. Roggero, P. Castaldi**

Long-term influence of a municipal solid waste compost on the fertility, functionality and biological diversity of a soil contaminated with potentially toxic elements: a field study

10:40-11:00 *Coffee break and poster viewing*

11:00-11:20 **M. Esposito, S. Viganò, A. Passera, S. Pagnoni, P. Casati, F. Tambone, C. Jucker, B. Scaglia**

Employment of the "green" residues of the tomato cannery industry as font of biopesticides against insect and fungi

11:20-11:40 **G. Renella, S. Baronti, F.P. Vaccari, S. Righi, N. Greggio, D. Marazza, E. Balugani, A.C. Cavallo, C. Andreotti, M. Ventura, F. Benyahia**

Effects of biochar on soil biochemical activity: evidence from the network of field trials of the Bio-C-Vite project

11:40-12:00 **C. Porfido, I. Allegretta, C. Coccozza, C.E. Gattullo, N. Othman, G.S. Senesi, M. Spagnuolo, R. Terzano, P. Vernile, D. Vona**

A novel bioleaching method to remove potentially toxic elements (PTE) from polluted soils using bacteria chemically immobilized in exhausted polyurethane foam

12:00-12:20 **A. Gelsomino, E. Loffredo, S. Mocali, S. Del Duca, G. Scarpino**

Microbially-enriched biosolids as sustainable tools for managing contaminants of emerging concern in agricultural soil

12:20-13:00 Poster Viewing

13:00 *Lunch*

14:30-16:00 **Focus groups of young researchers**

16:00 *Coffee break*

16:20-17:30 SICA Plenary session

20:00 Social dinner

Wednesday, September 11th

Session 4: Climate-smart approaches for a sustainable food production

Moderatori: *Costanza Ceccanti, Luigi Lucini*

09:00-09:40 **Keynote lecture: Simona Grasso**, Food Science & Nutrition, University College Dublin

Upcycled foods: challenges and opportunities

9:40-10:00 **M. Santin, A. Mannucci, A. Ranieri, M.C. Sciampagna, A. Souid, A. Vornoli, L. Pozzo, V. Longo, G. Conte, G. Foggi, M. Tognocchi, A. Castagna**
Salicornia europaea L.: a valid resource for food and feed applications

10:00-10:20 **M. Spada, E. Coppa, G. Quagliata, M. Marìn-Sanz, F. Barro, V. Bigini, D. Savatin, R. Ruggeri, F. Rossini, S. Astolfi**
Improving drought tolerance in durum wheat with biostimulants

10:20-10:40 **R. Ofano, C. Amalfitano, L. Ruggiero, D. Agrelli, P. Adamo**
Tracing the geographic origin of foods: the application of multielement analysis to tomato soils and fruits

10:40-11:00 *Coffee break and poster viewing*

11:00-11:20 **F. Narra, C. Ceccanti, M. Florio, L. Guidi**
What thermal process retains the phytochemicals in turnip greens (*Brassica rapa* subsp. *rapa*)?

11:20-11:40 **V. Zuffi, F. Puliga, D. Mercatante, O. Francioso, A. Zambonelli, M.T. Rodriguez Estrada, S. Sanchez-Cortes**
Utilization of grape pomace as alternative substrates for sustainable mushroom cultivation

11:40-12:00 **P. García-Pérez, M.A. De Gregorio, E. Capri, L. Lucini**
Vermicompost seed priming stimulates a coordinated phenotypical and metabolic reprogramming to induce a resilient response to microgreens of agricultural importance

12:00-12.30 *Poster viewing*

12:30-13:30 *Awards for the best presentations, best papers and closing ceremony*

13:30 *Lunch*