



**Italian Society for Agronomy**

**51<sup>st</sup> National conference**



## **Agriculture and food availability in 2050**

**Botanical garden – via Orto Botanico, 15 - Padova**

**19 - 21 September 2022**

# **PROGRAM**

### **Monday 19 September 2022**

08:30 - 09:30 **Participants registration**

09:30 - 10:00 **Opening of the 51<sup>st</sup> Conference of the Italian Society for Agronomy**

*Prof. Maurizio Borin* – President of the Organizing Committee - University of Padova

*Prof. Paolo Sambo* – Vice Rector of the University of Padova

*Prof. Gianni Barcaccia* – Head of Department of Agronomy, Food, Natural resources, Animals and Environment (DAFNAE)

*Dr. Sergio Giordani* – Mayor of Padova

*Prof. Michele Perniola* – President of the Italian Society for Agronomy (SIA)

10:00-12:00 **1<sup>st</sup> Plenary session - Agriculture and food availability in 2050: vision from Italian scientific societies**

Chair: *Prof. Luca Bechini* – University of Milan

10:00-10:20 Economic impact of EU policies on farms and the agri-food sector in Italy (Prof. Davide Viaggi – AIEAA)

10:20-10:40 Microbiota role in soil fertility maintenance (Prof. Sergio Casella – SIMTREA)

10:40-11:00 Food quality and integral enhancement of resources (Prof. Anna Lante – SISTAL)

11:00-11:20 Crops for feed vs food: which role for animal productions in 2050 (prof. Giovanni Bittante – ASPA)

11:20-11:40 Plant breeding for sustainable agriculture: The impact of genetic innovations on the future of agriculture (prof. Gianni Barcaccia e prof.ssa Margherita Lucchin – SIGA)

11:40 – 12:30 Discussion

12:30-15:00 **Lunch and optional guided tour of the Botanical Garden**

15:00 - 17:00 **Session 1 - 2050 perspective: how to increase the yield?**

Chair: *Dr. Antonio Pulina* – University of Sassari

**Oral presentations**

Hour	Authors	Title
15:00-15:20	<i>Cammarano D., Jamshidi S., Hoogenboom G., Ruane A.C., Niyogi D., Ronga D.</i>	Climate change impacts on processing tomato production
15:20-15:40	<i>Ferrero F., Tabacco E., Rolando G., Pasinato S., Borreani G.</i>	How production intensity could affect sustainability and milk quality in dairy farm
15:40-16:00	<i>Panozzo A., Reubens B., Pardon P., De Swaef T., Coudron W., Vamerali T., Verheyen K.</i>	The effect of tree rows on yield of grain crops: a meta-analysis on agroforestry systems in temperate climates
16:00-16:20	<i>Capo L., Reyneri A., Blandino M.</i>	The role of seed applied biostimulant, hybrid and starter fertilization on maize early vigor and grain yield
16:20-16:40	<i>De Santis M.A., Capo L., Giuzio L., Tozzi D., Meloni R., De Vita P., Troccoli A., Pecchioni N., Reyneri A., Flagella Z., Blandino M.</i>	Spectral phenotyping of bread and durum wheat grown in North and South Italy in response to N and S fertilization strategies for yield, quality and sustainability

16:40-17:00 Discussion

17:00-18:00 **SIA PhD thesis award** (*Prof. Michele Perniola*)

Dr. Federica Carucci (University of Foggia) - Agronomic strategies for sustainable management of durum wheat cultivation in Mediterranean area.

Dr. Sebastiano Andrea Corinzia (University of Catania) - Modelling of bioenergy crops on marginal lands.

Dr. Marco Mancini (University of Florence) - Agronomic techniques for precision management of field crops.

18:00-21:00 **Welcome drink**

**Tuesday 20 September 2022**

9:00-11:00 **2<sup>nd</sup> Plenary session - Agriculture and food availability in 2050: vision from outside**

Chair: *Dr. Ilaria Piccoli* – University of Padova

9:00-9:30 A perspective of future U.S. agronomic production and practices (Prof. Scott Tubbs – University of Georgia)

9:30-10:00 Yara's roadmap for putting Europe's Farm to Fork Strategy into action (Dr. Marco Politeo – Yara)

10:00-10:30 Challenges and solutions for a global food security (Prof. Bruno Basso – Michigan State University)

10:30 – 11:00 Food security in the context of climate change: the road to 2050 (Dr. Marina Baldi – CNR-IBE)

11:00-11:30 **Coffee break**

11:30-13:00 **Session 2 - 2050 perspective: what to produce?**  
Chair: *Prof. Teofilo Vamerali* – University of Padova

**Oral presentations**

Hour	Authors	Title
11:30-11:50	<i>Bosi S., Oliveti G., Fakaros A., Negri L., Demontis A., Dinelli G.</i>	Strategies to reduce acrylamide content in wheat products: possible effects of genotype and fertilization
11:50-12:10	<i>Falcinelli B., Bravi E., Marconi O., Royo-Esnal A., Benincasa P.</i>	Elicitation effect of salinity on phenolic compounds, glucosinolates and antioxidant activity of <i>Camelina sativa</i> (L.) Crantz sprouts
12:10-12:30	<i>Soofizada Q., Pescatore A., Guerrini L., Vivoli R., Mancini M., Orlandini S., Napoli M.</i>	Nitrogen and sulfur fertilization effect on yield and asparagine content in 'Old' common wheat varieties
12:30-12:50	<i>Leoni F., Carlesi S., Moonen A.C.</i>	The legume choice determines crop production, nitrogen dynamics, weed control and economic viability of relay intercropping in a Mediterranean cereal based low-input cropping system

12:50-13:00 Discussion

13:00-14:00 **Lunch**

14:00-15:00 **Poster session**

15:00-17:30 Assemblée ordinaria dei soci – Per i non soci possibile visita guidata dell'Orto Botanico

19:00 Ritrovo per partenza verso Villa Contarini – Prato della Valle

20:30 **Social dinner & Best poster award** (Villa Contarini)

**Wednesday 21 September 2022**

8:30-10:00 **Session 3 - 2050 perspective: how to produce better?**  
Chair: *Prof. Antonio Berti* – University of Padova

**Oral presentations**

Hour	Authors	Title
08:30-08:50	<i>Carucci F., Bregaglio S., Gagliardi A., Gatta G., Giuliani M.M.</i>	Farming practices for organic durum wheat grown in Mediterranean environment
08:50-09:10	<i>Fogliatto S., Milan M., Papandrea G., Vidotto F.</i>	A survey of weed distribution in Italian rice fields related to agronomic techniques
09:10-09:30	<i>Dal Ferro N., Mencaroni M., Fabbri G., Gottardo F., Morari F.</i>	What is the most promising BAT that reduces NH <sub>3</sub> emissions from the agricultural sector? Results from embedding the spheres of sustainability into a Bayesian network

09:30-09:50	<i>Pulina A., Cammarano D., Piseddu F., Deiana L., Cuboni M., Sassu A., Deidda A., Gambella F., Seddaiu G., Roggero P.P.</i>	Predicting the canopy nitrogen content of Mediterranean forage crops: a remote sensing approach
09:50-10:10	<i>Battisti M., Moretti B., Blandino M., Grignani C., Vindrola D., Martin M., Zavattaro L.</i>	Soil Olsen P and maize crop responses to phosphorus starter fertilisation

10:10-10:20 Discussion

10:20-10:50 **Coffee break**

10:50-12:20 **Session 4 - 2050 perspective: where to produce?**

Chair: Dr. *Michela Farneselli* – University of Perugia

### **Oral presentations**

<b>Hour</b>	<b>Authors</b>	<b>Title</b>
10:50-11:10	<i>Corinzia S.A., Fragalà F., Famba S., Magaia E., Baglieri A., Cosentino S.L.</i>	Low-input crop management for small scale family farming of maize in semi-arid sub-Saharan Africa
11:10-11:30	<i>Fiorentini M., Schillaci C., Denora M., Zenobi S., Deligios P., Orsini R., Santilocchi R., Perniola M., Montanarella L., Ledda L.</i>	A machine learning modelling framework for durum wheat yield forecasting in Central-Southern Italy
11:30-11:50	<i>Pagani E., Zanetti F., Peroni P., Monti A.</i>	<i>Camelina sativa</i> an interesting oilseed crop for marginal lands
11:50-12:10	<i>Amaducci S., Ledda L., Fagnano M., Monteleone M., Morari F., Roggero P.P.</i>	<i>Agrivoltaic: challenges and opportunities for the farm and for the energy transition.</i>

12:10-12:30 Discussion and **Closing of the 51<sup>st</sup> conference of the Italian Society for Agronomy**

12:45 Ritrovo in Prato della Valle e partenza per Legnaro

13:00-18:00 **Optional:** light lunch and field trip at the Experimental Farm “L.Toniolo”, Legnaro

During the field trip the following instruments will be showed by Ecosearch:

LI-6800 Portable Photosynthesis System; LI-600 Porometer/Fluorometer; LI870/7810 with Smart Chamber per SoilFlux (CO<sub>2</sub>/CH<sub>4</sub>); MC-100 Chlorophyll Concentration Meter Apogee MC-100; NDVI - Holland Scientific RapidSCAN; portable sensors Apogee for measurement of solar radiation/PAR, etc.; Multilevel sensors for soil moisture monitoring Drill&Drop Bluetooth – Sentek; Psychrometer and SapFlow in autonomous unit PSY1 e SFM1 - ICT International.

## **Scientific Committee**

Michele Perniola  
Luca Bechini  
Anna Dalla Marta  
Michela Farneselli  
Salvatore La Bella  
Giorgio Testa  
Domenico Ventrella  
Antonio Pulina  
Carmelo Maucieri

## **Organizing Committee**

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Ilaria Piccoli  
Vittoria Giannini  
Cristina Pornaro  
Giorgia Raimondi

# SPONSOR



# POSTERS

## Session 1 - 2050 perspective: how to increase the yield?

1. *Allam M, Mancinelli R, Petroselli V, Atait M, Quintarelli V, Radicetti E.* Fertilizer source affects crop yield under different tillage practices: a meta-analysis.
2. *Caruso P, Scandurra A, Anastasi U, Cafaro V, Cosentino SL, Testa G.* Sicilian landraces of durum wheat in conventional and organic regime.
3. *Cozzolino E., Di Mola I., Ottaiano L., Nocerino S., Bottiglieri R., Maiello R., Marra R., Mori M.* Effects of Mulching Biofilms and Biostimulants Based on Trichoderma and Ascophyllum nodosum on Yield of Industrial Tomato
4. *De Santis MA, Cammarano D.* Optimizing sowing date, soil tillage and N nutrition to improve yield and quality stability of barley grown in Mediterranean environment.
5. *De Santis MA, Satriani A, De Santis F, Flagella Z.* Relationship between hyperspectral phenotyping and agronomic performance of two chickpea genotypes grown under different water and nitrogen supply.
6. *Di Mola I, Fiorentino N., Ottaiano L., Cozzolino E., Nocerino S., Todisco D., Mori M.* Productive response of three varieties of fiber hemp to nitrogen rate and sowing density
7. *Donham J, Migliorini P.* Agroecologia per la sicurezza alimentare, la nutrizione e l'agricoltura sostenibile
8. *Farneselli M, Bonciarelli U, Onofri A, Pannacci E, Tei F.* Productivity and stability of two-year rotations with winter wheat in long-term experiments.
9. *Gabbrielli M, Corti M, Bechini L.* Development of a cover crop frost damage simulation model.
10. *Ottaiano L., Di Mola I., Cozzolino E., Nocerino S., Pelosi M.E., Minoliti A., Pecorella I., De Vita P., Mori M.* Effect of Innovative Sowing on Wheat Yield and Weeds Control in Two Internal Area of Campania Region
11. *Petito M, Cantalamessa S, Pagnani G, Berti A, Pisante M.* Preliminary suitability analysis of cv. "Senatore Cappelli": effect of soil and topographic properties on yield variability.
12. *Padovan G, Masoni A, Bindi M, Mancini M, Ghiselli L, Benedettelli S, Staglianò N, Ferrise R.* Effects of different nitrogen and phosphorous fertilization on the grain filling dynamics of two bread wheat varieties, Verna and Bolero.
13. *Pornaro C., Macolino S.* Seeding time and rate effects on dhurrin content and yield of *Sorghum bicolor* (L.) Moench.
14. *Rinaldi M, Ciavarella F, De Santis AP, Morcone L, Manganiello C.* Broad bean productivity under conservation agriculture.
15. *Rossi A, Tavarini S, Angelini LG.* Linseed as opportunity for increasing cropping system diversification and resilience: the Sic-Oleat project experience.
16. *Rossi R, Costafreda-Aumedes S, Summerer S, Moriondo M, Leolini L, Cellini F, Bindi M, Petrozza A.* High-throughput plant phenotyping: a comparison of 2D- and 3D-imaging strategies for extracting architectural traits.
17. *Soofizada Q, Pescatore A, Atefi R, Orlandini S, Napoli M.* Evaluation of nitrogen and phosphorus response on yield traits of common wheat (*Triticum aestivum* L.) under different agro-climatic zone of Afghanistan.
18. *Tedone L, Manolio G, Schiavone D, De Mastro G.* Long term experiment durum wheat: effect of residue management and nitrogen nutrition in different rotation systems.
19. *Ventrella D, Parlavecchia M, Garofalo P, Perego A, Tucci V, Botta M, Campobasso I, Vonella AV, Giglio L, Fornaro F, Tadiello T, Marco Acutis M.* Modelling parametrization of a long term experiment based on wheat cultivation in Southern Italy.

## Session 2 - 2050 perspective: what to produce?

20. *Alberghini B, Peroni P, Zanetti F, Haslam RP, Silvestre S, Da Costa A, Faure JD, Vecchi A, Monti A.* Exploring agronomic traits in *Camelina sativa* (L.) Crantz lines included in the UNTWIST project core collection.
21. *Barion G, Zannoni S, Di Stefano A, Panozzo A, Piotto S, Boscaro R, Lante A, Vamerali T.* Effects of seed pre-germination on free nutraceutical compounds in old italian open-pollinated maize varieties.
22. *Bassignana CF, Spagnolo S, Roatta F, Migliorini P.* Valorisation of heritage wheat and other underutilised crops in Piedmont for sustainable food systems.
23. *Barbera AC, Cavallaro V, Naselli E, Pellegrino A, La Rosa S, Spina A.* Effects of *Bradyrhizobium inoculum* and plant density on the productive characteristics of a sweet cultivar of *Lupinus albus* L.
24. *Benincasa P, Falcinelli B, Tosti G, Stagnari F, Del Carlo M, Oliva E., Scroccarello A., Sergi M., Trasmundi F., Galieni A.* Effects of wheat crop nitrogen availability on the phenolic content, pigment content and antioxidant activity of wheatgrass obtained from offspring grains.
25. *Boscaro R, Piotto S, Panozzo A, Barion G, Vamerali T.* Effect of foliar application of fertilizers and biostimulants on the growth and seed production of a male-sterile inbred line of maize.
26. *Corinzia SA, Crapio E, Scordia D, Testa G, Cosentino SL.* Biomass yield and morphology of giant reed clones from mutagenesis.
27. *Cozzolino E, Ciancolini A, Frangella M, Stevanella A, Raimo F, Enotrio T, Sicignano MR, Sifola MI, del Piano L.* Mater-Bi® mulching and drip fertigation increase yield and quality of flue-cured tobacco in the Tiber valley.
28. *Cozzolino E, del Piano L, Salluzzo A, Cuciniello A, Tallarita A, Caruso G.* Influence of fertilization programs on the antioxidant content of processing tomato fruits.
29. *D'Andrea L, Di Gennaro D, Fornaro F, Moscelli S, Preite A, Mastrorilli M.* Seed Productivity of Different Hemp Cultivars as New Nutritional Resources under Mediterranean Climate.
30. *Dal Cortivo C, Ferrari M, Panozzo A, Piotto S, Barion G, Boscaro R, Sella L, Vamerali T.* Reducing plant height of old wheat varieties through agronomic means under organic management.
31. *Danuso F, Baldini M, Dorigo G, Nassivera F, Iseppi L.* Bio-economic hemp crop modelling for the assessment of adaptation and economic sustainability.
32. *Distefano M, Steingass CB, Leonardi C, Schweiggert R, Mauro RP.* Yield and quality traits of cherry tomato as affected by the application of a plant-derived biostimulant.
33. *Falcinelli B, Bravi E, Marconi O, Royo-Esnal A, Benincasa P.* The effect of sprouting on phenolic compounds, glucosinolates and antioxidant activity of *Camelina sativa* (L.) Crantz.
34. *Frassinetti E, Trebbi G, Alpi M, Dinelli G, Marotti I.* Health-Beneficial Properties of Organically Grown Stinging Nettle (*Urtica dioica* L.).
35. *Guiducci M, D'Amato R, Businelli D, Falcinelli B, Tosti G.* Gas exchange, leaf characteristics and enzymatic activity in maize seedlings as affected by light spectrum and endogenous selenium content.
36. *Iacuzzi N, Leto C, Tuttolomondo T, Farruggia D, Bellone Y, Licata M.* Preliminary investigation on agronomic response of sugarcane accessions in Sicily.
37. *Marusig D, Sharma N, Petruzzellis F, Cucchiario S, Maset E, Brinks H, Delle Vedove G.* Random forest classification of protein crops with UAS multispectral data.
38. *Negri L, Fakaros A, Bosi S, Oliveti G, Dinelli G.* Evaluation of resilient cereals cultivation for future innovative food-supply chains: a case-study on millet and sorghum from Emilia Romagna region.
39. *Rinaldi M, Rascio A, De Santis AP, Ciavarella F, Manganiello C, Morcone L, De Santis G.* Irrigation Regimes in Quinoa: First Results.

40. *Scordia D, Gresta F, Oteri M, Santonoceto C, Chiofalo B.* Yield and quality traits of six white lupin genotypes grown in a Mediterranean area.
41. *Scordia D, Oteri M, Chiofalo B, Santonoceto C, Gresta F.* Comparing productivity and quality of different *Amaranthus* species in southern Italy.
42. *Sifola MI, del Piano L, Cozzolino E, Morra L.* Soil quality traits under a crop of dark fire-cured (Kentucky) tobacco as affected by organic fraction of municipal soil wastes compost and green manure.
43. *Tavarini S, Ragaglini G, Rossi A, Angelini LG.* Land suitability assessment for linseed introduction in Tuscany based on a cultivar-specific phenological model.
44. *Tedone L, Di Venere D, Linsalata V, Ruta C, Pulvento C, De Mastro G.* Sustainable production of inulin in Mediterranean condition: cultivation of Jerusalem artichoke in organic farming in Apulia Region.

### Session 3 - 2050 perspective: how to produce better?

45. *Atait M, Mancinelli R, Allam M, Petroselli V, Quintarelli V, Radicetti E.* Carbon flux as affected by different winter cover crops.
46. *Barbanti L, Calone R, Galeone G, Campagna G.* Enlarged row spacing to reduce manual weeding in organic sugar beet cultivation.
47. *Barbera AC, Naselli E, Iacono R, Milani M.* Productivity of maize (*Zea Mays* L.) irrigated with citrus wastewater treated by natural based solutions, first results.
48. *Bellini E, Argenti G, Dibari C, Stendardi L, Staglianò N, Confessore A, Nannucci L, Aquilani C, Moriondo M.* Use of Grasshopper® for pasture biomass maps at high spatial resolution.
49. *Berzuni S, Zanetti F, Facciolla E, Pagani E, Monti A.* Effect of the application of different beneficial microorganisms in the early growth stages of *Camelina sativa*.
50. *Bonamano A, Politeo M.* Atfarm: an online tool for the optimization of nitrogen fertilization strategies for crops.
51. *Bruno MR, Rana G, Ferrara RM, Cappelluti O, De Carolis G, Gaeta L, Modugno AF, Mastroianni M, Campi P.* Evaluation of continuous monitoring of peach (*Prunus persica* (L.) Batsch) growth in response to vapor pressure deficit in two specific time of the maturation.
52. *Carrera A, Pavoni M, Piccoli I, Boaga J, Cassiani G, Morari F.* Geophysical joint inversion approach for non-invasive soil compaction characterization.
53. *Ceccon P, Marraccini E.* Nine years of monitoring show that cover crops break down nitrates in leachates in a soybean-maize rotation.
54. *Chirilli C, Biafora A, Taran A, Benedettelli S, Migliorini P.* Effect of different mulching methods on agroecological weed management and crop development.
55. *Cirillo V, Esposito M, Lentini M, Russo C, Maggio A.* The effect of different weed communities on growth and yield of tender wheat (*T. aestivum*): an eco-physiological perspective.
56. *Clemente C, Rossi A, Foschi L, Ercolini L, Grossi N, Silvestri N, Tavarini S, Angelini LG.* Precision nitrogen management in camelina: preliminary results from a case study in Central Italy.
57. *Corti M, Mascherpa M, Pricca N, Fassa V, Cabassi G, Ragaglini G.* Combining vegetation indices, crop height, and cover fraction to estimate maize aboveground biomass.
58. *Damatirca C, Moretti B, Battisti M, Fornasier F, Zavattaro L.* Crop residue and organic fertilisation mobilise phosphorus pools in agricultural soils.
59. *De Peppo M, Ragaglini G, Carmagnola F, Corti M, Mayer A, Facchi A, Ortuani B, Bechini L, Nutini F, Crema A, Boschetti M.* Coherence assessment between satellite-based phenometrics and ARMOSA Crop model simulations for maize phenology estimation.
60. *Di Mola I, Cozzolino E., Ottaiano L., Pelosi M.E., Nocerino S., Ilan Y., Rippa M., Mormile P., Mori M.* Effect of heating panels on earliness and characteristics of the production of cherry-tomato.

61. *Ercolini L, Berton A, Grossi N, Di Gennaro SF, Silvestri N.* A simple method to estimate weed density by using high-resolution RGB images.
62. *Farruggia D, Iacuzzi N, Di Miceli G, Tuttolomondo T, Vultaggio L, La Bella S.* Foliar treatment with calcium and nitrogen improves production parameters in Sicilian oregano.
63. *Gagliardi A, Carucci F, Giuliani MM, Perniola M, Denora M, Brunetti G, De Mastro F, Salerno C, Berardi G, Gatta G.* Emerging Contaminants (CECs) content in soil irrigated with treated wastewater.
64. *Maglione G, Bellino A, Vitale E, Polimeno F, Baldantoni D, Arena C, Vitale L.* Is the liquid fraction of livestock wastes a suitable nutrient source for hydroponicsystems?
65. *Maglione G, Vitale E, Polimeno F, Arena C, Vitale L.* Iodine does not enhance the stress tolerance but affects the chemical composition of lettuce plants grown under salt stress.
66. *Marraccini E, Fellet G, Contin M, Dalla Costa L, Delle Vedove G, De Nobili M, Marchiol L, Zuliani F, Ceccon P.* Ecosystem services provided by 20-years-old biomass stands before termination in Northern Italy.
67. *Marraccini E, Rizzo D, Combaud A, Ritz S, Paulus C, Vidric V, Böttinger S, Gallmann E, Crook M, Misiewicz P, Alberti G, Cipriani G, Vizzotto G, Ceccon P.* LATEST: an Erasmus+ Project on local-focused agtech education for successful agricultural transitions.
68. *Martelli A, Di Tullio M, Rivoli M, Monaco S, Orlandini S, Verdi L, Dalla Marta A, Altobelli F.* Sentinel-2 data processing tool for AquaCrop: water requirements assessment on rice under drip irrigation.
69. *Martinengo S, Schiavon M, Santoro V, Said-Pullicino D, Romani M, Celi L, Martin M.* The need to redefine phosphorus availability to paddy rice.
70. *Meloni R, Farbo A, Reyneri A, Borgogno-Mondino E, Colombatto P, Blandino M.* Maize water stress monitoring by Sentinel 2 spectral indices.
71. *Nikolic N, Romani M, Miniotti E, Sgariboldi S, Vidotto F, Fogliatto S, Papandrea G, Masin R.* Employing the correct duration of stale seedbed in rice.
72. *Pagani E, Zanetti F, Facciolla E, Monti A.* Camelina and pea intercropping for weed control in organic farming.
73. *Pandino G, Scavo A, D'Anna T, Scarso G, Mantineo M, Salvagno E, Salicola SA, Pesce GR, Formenti C, Ierna A, Lombardo S, Mauromicale G.* Effect of cardoon mulching on weed pressure and productive performance in an 'early' potato crop.
74. *Panozzo A, dos Santos Neto A, Piotto S, Boscaro R, Barion G, Mezzalira G, Furlan L, Vamerali T.* Screening of wheat varieties for shade tolerance within a specialized poplar orchard for future implementation in agroforestry farming systems.
75. *Pescatore A, Beshah YB, Orlandini S, Vivoli R, Napoli M.* Selenium biofortification of winter wheat (*Triticum aestivum* L.).
76. *Petroselli V, Radicetti E, Palomba I, Allam M, Atait M, Quintarelli V, Mancinelli R.* Processing tomato has affected by Barrier and Curzate in different soil fertilization.
77. *Piccoli I, Grillo F, Furlanetto I, Ragazzi F, Obber S, Bonato T, Meneghetti F, Ferlito J, Saccardo L, Morari F.* Liquid digestate fraction application might sustain winter wheat production improving the Nitrogen use efficiency.
78. *Piccoli I, Sartori F, Polese R, Berti A.* Evidence of declining carbon dynamics after 5 decades of different crop residue management.
79. *Piotto S, Panozzo A, Pasqualotto G, Carraro V, Barion G, Mezzalira G, Furlan L, Anfodillo T, Vamerali T.* The impact of alley-cropping on growth of poplars and yield of annual intercrops vs. conventional farming.
80. *Popolizio S, Stellacci AM, Barca E, Giglio L, Castellini M.* Investigating the effects of soil management in a long-term experiment in southern Italy: preliminary results for the assessment of the soil hydraulic properties using the Beerkan estimation of soil transfer parameter (BEST) methodology.
81. *Pulina A, Giannini V, Bertora C, Mula L, Patteri G, Carta M, Roggero PP.* The role of compost in mitigating soil greenhouse gases emissions from cardoon cropping systems.

82. *Radicetti E, Quintarelli V, Petroselli V, Allam M, Mancinelli R.* Weed community evolution in durum wheat - potato rotation after 4-year of organic and mineral fertilization.
83. *Raimondi G, Maucieri C, Borin M.* Are compost and digestate able to increase the soil organic carbon in a short time?
84. *Riefolo C, D'Andrea L.* A preliminary study of industrial hemp response to nitrogen fertilization using hyperspectral analysis
85. *Riefolo C, D'Andrea L.* An example of proximal plant sensing with hyperspectral analysis for precision irrigation of apricot.
86. *Rinaldi M, Ciavarella F, Giuliani MM, Gagliardi A, Carucci F, Nardella L, Soldo A, Gammino M, Buono V, Riezzo E, De Mastro G, Gatta G.* Processing tomatoes irrigated with treated wastewater: the RIUSIAMO Project.
87. *Ruggieri S, Rinaldi M, De Santis AP, Ciavarella F, Balenzano A, Palmisano D, Mattia F, Grassi R, Satalino G.* Soil tillage ground data for validating tillage change maps identified by remote sensed data.
88. *Scavo A, Abbate C, La Cara C, Fontanazza S, Formenti C, Salicola SA, Salvagno E, Pesce GR, Pandino G, Lombardo S, Anastasi U, Mauromicale G.* Intercropping of wheat and subterranean clover to enhance soil quality and reduce weed pressure.
89. *Sitzmann T, Zavattaro L, Moretti B, Grignani C, Oberson A.* Close contact between vermicompost and mineral fertilizers in soil improves an early uptake of mineral phosphorus by ryegrass.
90. *Tibaldi C, Alpi M, Frassinetti E, Dinelli G, Marotti I.* Legume based rotation in low input agricultural systems: sustainability aspects, agronomic traits and nutritional features.
91. *Tosti G, Falcinelli B, Farneselli M.* Sustainable intensification in organic agriculture through the use of intercropping, cover crops and biostimulants: the GO.BIO project.
92. *Tramacere LG, Sbrana M, Ricci A, Mazzoncini M, Antichi D.* Can shading affect Nitrogen fixation of forage legume swards? An assessment of B-value through the  $^{15}\text{N}$  natural abundance method
93. *Volpi I, Mantino A, Guidotti D, Tozzini C, Sabbatini T, Meriggi P, Ragaglini G.* In field continuous measurements of  $\text{N}_2\text{O}$  and  $\text{CO}_2$  soil fluxes: preliminary results from the LIFE AGRESTIC Project.

#### **Session 4 - 2050 perspective: where to produce?**

94. *Argenti G, Alberti D, Burrascano S, Campedelli T, Casamenti L, Dibari C, Miozzo M, Molducci P, Napoleone F, Pedrazzoli C, Ruocco M, Staglianò N.* Enhancing pastures management for biodiversity conservation: the LIFE ShepForBio project.
95. *Ben Hassine M, Caradonia F, Milc JA, Pulvirenti A, Cocchiara S, Masino F, Antonelli A, Francia E.* Effects of fish protein hydrolysate on lettuce growth/development under controlled conditions.
96. *Calia C, Pulvento C, Ruta C, Tedone L, Stea D, De Mastro G.* Influence of biostimulants on legume crops in Mediterranean environments.
97. *Carillo P.* Durum wheat tolerance mechanisms to salinity in the Mediterranean climate change hotspot.
98. *Carucci F, Gagliardi A, Nardella E, Gatta G, Giuliani MM.* Effect of preceding crops on organic processing tomato grown in Mediterranean environment.
99. *Ciaramella BR, Piccitto A, Calcagno S, Patanè C, Cosentino SL, Testa G.* Tolerance of safflower to different concentrations of heavy metals polluted soil.
100. *Cirillo V, Lentini M, Ruggiero A, Esposito M, Maggio A.* Fucoïdants application induces positive morpho-physiological traits for increased drought tolerance in tobacco.
101. *Delfine S, Velikova VB.* Water availability and yield of spearmint cultivated in inland areas of Southern Italy.
102. *Fiorentino N, Di Mola I, Cozzolino E, Formisano C, Iaccarino N, Chianese G.* Water salinity and biostimulant application affect hemp growth and phytochemical composition.

103. Ghirardelli A, Masin R. Effects of salinity and intra-specific competition on the growth of soybean (*Glycine max*), *Chenopodium album* and *Amaranthus retroflexus*.
104. Longo M, Dal Ferro N, Polese R, Morari F. Increasing agronomic performance under shallow water table: is there an optimal depth?
105. Mordos LS, Zanetti F, Sans A, Bennett R, Vecchi A, Monti A. *Brassica carinata* as a new cover crop for Northern Italy: variety choice effects.
106. Pacifico D, Lo Scalzo R, Parisi B, Nicoletti F, Bianchi G, Mandolino G, Bindi M. Upland environment influences the potato nutritional profile.
107. Pannacci E, Onofri A, Monni V, Farneselli M, Tei F. Effects of LED light spectrums on *Erigeron canadensis* L. germination and growth.
108. Peroni P, Zegada-Lizarazu W, Mastroberardino R, Monti A. Potential of biostimulants to increase *Sorghum bicolor* biomass production and phytoremediation efficiency.
109. Ragolini G, Tavarini S, Mantino A, Angelini LG. Assessing land suitability to sunflower (*Helianthus annuus* L.) cultivation in Tuscany using APSIM to predict yield potential and stability.