

# V CONVEGNO AISSA #UNDER40

LE SCIENZE AGRARIE NELL'ANTROPOCENE:  
DALLA PRODUTTIVITÀ ALLA TUTELA  
DEL PATRIMONIO MATERIALE E CULTURALE

## BOOK OF ABSTRACTS

**26-27 GIUGNO 2024**  
UNIVERSITÀ DI FIRENZE,  
CAMPUS DI NOVOLI, EDIFICIO D6

110 anni di  
Agraria

Il futuro è  
nell'agrAria



Con il patrocinio di:



Organizzato da:



# MERCOLEDÌ 26 GIUGNO 2024

08:30 Registrazione partecipanti – Edificio D6, Campus di Novoli

09:30 Saluti e apertura dei lavori – Aula 018

10:00 Ramona Magno (CNR-IBE FIRENZE) *“Come la crisi climatica mette a rischio acqua e suolo. Preservarli è possibile?”* - chair: Antonella Gori UNIFI

10:30 Coffee break

11:00 PRIMA SESSIONE S4 - aula 007

L'importanza di biostimolanti, bioinoculanti e probiotici nel miglioramento della crescita e della salute in piante e animali

Chairs: Valentina Caprarulo UNIBS, Alice Checcucci UNIFI, Giulia Secci UNFI

Laura Pilotto (UNIUD) S4 - 01

*Sustainable Fertilization: First Evidence into the Combined Use of Natural Nano-Hydroxyapatite and P-Solubilizing Bacteria in Hordeum vulgare*

Noemi Di Vita (CNR) S4 - 02

*Virus-Induced Gene-Silencing as tool for triggering RNAi for weed control*

Carmen Cimminella (UNINA) S4 - 03

*Bacillus and microbial consortia as alternatives for improving plant health*

Gaia Santini (UNIFI) S4 - 04

*Evaluation of biostimulant and bioicidal activity of four nostoc strains for potential agricultural exploitation*

Marzia Vergine (UNISAL) S4 - 05

*Resistance against invasion: the role of the endophytic community against Xylella fastidiosa in olive tree*

Giacomo Rodighiero (UNIVR) S4 - 06

*The synergistic action of FA and CDPH to correct Fe deficiency in plants*

Rihab Djeballi (UNIAO) S4 - 07

*Halotolerant plant growth promoting Bacillus strains Bm1, E1, and F1 mitigate salt stress in Phaseolus vulgaris*

Francesca Vaccaro (UNIFI) S4 - 08

*Genotype-by-genotype interkingdom cross-talk between symbiotic nitrogen fixing sinorhizobium melliloti strains and trichoderma species*

Short communications

Giovanna Marta Fusco (NICAMPANIA) S4 - SC01

*Biostimulants as effectors of Metabolic Profiling and Phenotypic Plasticity under changing environment*

Laura Alberico (NICAMPANIA) S4 - SC02

*Cerato and Curnicello dry beans: molecular characterization of two different ecotypes from Caserta's rural areas*

Annamaria Massafra (UNIMORE) S4 - SC03

*Sustainable strategies to improve plant growth and protection: biostimulant action of Brassicaceae hydrolysates and new solarization system for pest control*

Cosimo Beltrami (UNIFI) S4 - SC04

*Biological activity of plant defence inducers: deeds not words*

Giulia Scimone (UNIFI) S4 - SC05

*Antifungal activity of five biological extracts against the causal agent of grey mold*

Laura Mandrelli (UNIBAS) S4 - SC06

*Biofertilizers in almond crop*

12:40 Poster session - Edificio D6

13:00 Lunch break

PRIMA SESSIONE S7 - aula 016

Pratiche sostenibili per la gestione del sistema acqua-suolo-pianta-atmosfera

Chairs: Giovanni Francesco Ricci UNIBA, Stevo Lavrnica UNIBO, Antonella Gori UNIFI, Luisa Leollini UNFI

Sofia Del Gaudio (UNIBAS) S7 - 01

*Agronomic and qualitative evaluation of old wheat varieties for innovative use in forage farming*

Michele Denora (UNIBAS) S7 - 02

*Nitrogen Symbiotic Exchange Dynamics in the Wheat-Vetch Intercropping System: A Study within the AgrEcolMed Project*

Annamaria Di Serio (UNISA) S7 - 03

*Effect of direct sowing of processing tomato on biodegradable mulching film*

Andrea Milani (CNR) S7 - 04

*A multiplex AS-LAMP (allele specific loop-mediated isothermal amplification) assay to detect two allelic variants endowing acetolactate synthase (ALS)*

Rosalinda Nicastro (NICAMPANIA) S7 - 05

*Human urine as a useful alternative to synthetic fertilizers resistance in four weedy amaranth species*

Antonio Pescatore (UNIFI) S7 - 06

*Short-Term effects of Conservation Agriculture: A Two-Year Trial in Tuscany, Italy*

Miriam Chiarulli (UNIBA) S7 - 07

*Mediterranean coastal dune restoration: monitoring the effects of soil bioengineering techniques*

Annunziata Fiore (UNIBA) S7 - 08

*Soil bioengineering techniques for post-fire erosion control*

Short communications

Andrea Alpigiano (UNITO) S7 - SC01

*A novel indicator-based approach to assess the impact of agricultural practices on soil health*

Beatrice Falcinelli (UNIPG) S7 - SC02

*Sensor-based monitoring of nitrogen status in processing tomato*

Sara Del Duca (CREA) S7 - SC03

*Impacts of soil management and sustainable plant protection strategies on soil biodiversity in a Sangiovese vineyard*

Davide Farruggia (UNIPA) S7 - SC04

*Evaluation of tomato (solanum lycopersicum L.) yield and quality using different biodegradable mulching films*

Maria Eleonora Pelosi (UNINA) S7 - SC05

*Effect of the sustainable fertilization strategies on tomato yield and quality*

Elena Tondini (CREA) S7 - SC06

*Different approaches to soil fauna ecological indices to assess soil health*

PRIMA SESSIONE S5 - aula 015

La microbiologia nei settori agrario, alimentare e zootecnico

Chairs: Matteo Doghio UNIFI, Lapo Pierguidi UNIFI

Andrea Brandano (UNISS) S5 - 01

*Role of Phytophthora species in the lack of seedling recruitment in Quercus subperforests*

Marco Carli (UNIFI) S5 - 02

*Flavescenza dorée phytoplasma ecology in Tuscany vineyards (Italy)*

Claudia Pisuttu (UNIFI) S5 - 03

*Oxanated water stimulates plant defence mechanisms and contains the spread of pathogens in (edible) flower species*

SIVIA Rotunno (CNR) S5 - 04

*Insights into the role of the C4 protein of the geminivirus TYLCSV in transgenic tomato plants*

Angela Maffia (UNIRC) S5 - 05

*Effect of synthetic and organic fertilizers on microbiome biodiversity of rhizospheric soils in Corylus avellana plants through a metagenomics approach*

Davide Alongi (UNIPA) S5 - 06

*Co-inoculation approach combining lactic acid bacteria and yeasts to enhance the production of Noccellara del Belice green split table olives*

Luca Bernabè (UNIFI) S5 - 07

*Towards Sustainable Energy: Biohydrogen Production from Dairy Waste with Rhodospseudomonas palustris 420L*

Giuliana Garofalo (UNIPA) S5 - 08

*Description of Swiss cheese manufacturing techniques: microbiological, physicochemical and sensory aspects*

Short communications

Dario Gaudio (UNIFI) S5 - SC01

*From endophytic to plant-pathogenic bacteria and return: unraveling evolution of pathogenicity and virulence*

Athos Pedrelli (UNIFI) S5 - SC02

*Occurrence of tomato mosaic virus (ToMV) in three tomato cultivars under salt conditions: molecular characterization of ToMV isolates and elucidation of their physicochemical effects*

Federica Barbieri (UNIBO) S5 - SC03

*Plant-derived antimicrobial compounds: chemical characterisation and in vitro activity against food-borne pathogens*

Agnese Bellabarba (UNIFI) S5 - SC04

*Influence of mulch films containing phthalates on the soil microbial community: evidence from a small-scale strawberry cultivation experiment*

Martine Ciani (UNIFI) S5 - SC05

*Harvesting photosynthetic microorganisms in the photobioreactors: resource recovery and value-added byproducts for sustainable solutions*

Ida Romano (UNINA) S5 - SC06

*Innovative Approaches to Bacterial Identification: Oxford Nanopore Sequencing in Complex Matrices*

#FAISSAUNDER40

Sviluppo sostenibile e cambiamento climatico: l'impatto sulle produzioni e sui sistemi urbani e rurali

*Chairs: Michela Ablondi UNIPR, Antonella Gori UNIFI, Ermes Lo Piccolo UNIFI*

#### Sebastian Comin (UNIMI) S6 - 01

How to reduce failure in urban tree planting programs

#### Giulia Daniele (UNITO) S6 - 02

The problem of invasive alien plants in European urban settings: testing non-invasive cultivars and species as alternatives to *Ligustrum sinense* Lour

#### Lucrezia Muti (UNIFI) S6 - 03

Exploring the impact of moderate water stress on anthocyanin, flavonol glycosides, and terpene dynamics across fruit development and ripening in *Pistacia lentiscus* L.

#### Andrea Salucci (UNIVPM) S6 - 04

Impact of geopedological events on the soil fertility of drylands from United Arab Emirates

#### Stefania Truschi (UNIFI) S6 - 05

Hydrophobicity and Epicuticular Waxes are Crucial Leaf Traits for *Salmonella enterica* Attachment on 30 Baby Leaf Salads

#### Daniilo Travasica (UNIBAS) S6 - 06

Old-growth forest dynamics in the Pollino National Park: A multivariate analysis approach

#### Lina F. Pulido Rodriguez (UNIFI) S6 - 07

Know what you eat: nutritional value of the alien species *Callinectes sapidus*

#### Francesco Tiezzi (UNIFI) S6 - 08

The host, the guest, the holo-biont

#### Short communications

##### Claudio Brandoli (UNIMORE) S6 - SC01

Sucrose content in the European hazel pollen: a defence strategy against changing climatic conditions

##### Francesco Mirone (UNIPD) S6 - SC02

Understanding future climate change impacts on grapevine productivity through an in-depth characterisation of the past

##### Dallia Crucitti (CNR) S6 - SC03

Host and environmental factors shape the endophytic diversity and composition of sicilian phyllosphere olive trees

##### Luorenzo Villani (UNIFI) S6 - SC04

The Val d'Orcia Living Lab of the AG-WalMED project: insights from modelling and participatory activities

##### Niccolò Renzi (UNIFI) S6 - SC05

A framework for organizational life cycle assessment (O-LCA): the experience of Agritech project within the sustainability assessment of the agricultural system

##### Matteo Garau (UNISS) S6 - SC06

Long-term compost restoration of potentially toxic elements (PTEs) contaminated soils: evaluation of organic matter physical fractions for the environmental risk assessment

16:10 Poster session - Edificio D6

16:30 Coffee break

17:00

Francesca De Filippis (Dipartimento di Agraria, Università degli Studi di Napoli Federico II)

"L'asse microbionta-uomo-ambiente: interazioni complesse che influenzano la salute" - Aula 018 - chair: Matteo Daghigh UNIFI

17:30

Michele Nuccioti ed Elisa Broccoli (Dipartimento SAGAS, Università di Firenze)

"Le risorse culturali marine come driver di sviluppo per le blue communities" - Aula 018 - chair: Giulia Secci UNIFI

18:00 Conclusione lavori

19:30

Cena Sociale (solo per chi si è registrato) presso l'Orto botanico "Giardino dei Semplici", Via Pier Antonio Micheli 3, 50121

Pratiche sostenibili per la gestione del sistema acqua-suolo-pianta-atmosfera

*Chairs: Elena Costi UNIMORE, Sannino UNINA, Luigi Piemontese UNIF*

#### Anna Verde (UNINA) S7 - 09

Securing hydrocarbon contaminated soils by turfgrass-based assisted phytostabilization technique

#### Angeloluigi Aprile (UNINA) S7 - 10

Use of proximal, remote sensing and reanalysis data to assess the water needs for an industrial tomato crop

#### Giuseppe Maistrello (UNIBO) S7 - 11

Water quality trend in an irrigation canal affected by wastewater discharge

#### Valentina Niccolucci (UNISI) S7 - 12

Water Footprint Assessment of agrifood products: the experience of wine making at Banfi within the Agritech PNRR Project

#### Sara Pini (UNIFI) S7 - 13

Water storage capacity temporal evolution in agricultural land: A study of flood-prone areas in the Bisenzo basin (Tuscany)

#### Lucia Crosetto (UNITO) S7 - 14

Evaluation of the effect of winter cover crops in paddy fields on SOM and N input and methane emissions

#### Subshoshmita Mondal (UNIMI) S7 - 15

Underlying reactions to reduce hexavalent chromium using rhodococcus qingshengii bacterial strain

#### Elena Scaglia (UNIBS) S7 - 16

Preliminary results on greenhouse gases and ammonia emissions from dairy cow slurry storage

#### Short communications

##### Alessandro Bizzarri (UNIFI) S7 - SC07

The importance of nursery techniques to support the recovery of degraded areas: the case of Quercus suber in Tuscany

##### Diletta Chirici (UNIFI) S7 - SC08

Do forest streams deliver suspended sediment? A Evidence from a forested nested catchment in the Apennine Mountains

##### Emanuele Giachi (UNIFI) S7 - SC09

Promoting SWBE as NBS: Biodiversity monitoring on a restored landslide, in Tuscany (Italy)

##### Giovanni Francesco Ricci (UNIBA) S7 - SC10

Impact of nature-based solutions on soil erosion and water resources management: perspectives from farmers

##### Stefania Sole (UNISS) S7 - SC11

Spatial assessment of heavy metal contamination areas: a GIS-based analysis for planning and implementing phytoremediation strategies

##### Chiara Capelli (UNIFI) S7 - SC12

Production of volatile fatty acids from brewing by-products

S1: Economia circolare, sviluppo sostenibile e tecnologico, consumatori

S2: Strumenti e nuove tecnologie smart applicate ai cicli produttivi

S3: Dal miglioramento genetico al recupero del patrimonio autoctono

S4: L'importanza di biostimolanti, bioinoculanti e probiotici nel miglioramento della crescita e della salute in piante e animali

S5: La microbiologia nei settori agrario, alimentare e zootecnico

S6: Sviluppo sostenibile e cambiamento climatico: l'impatto sulle produzioni e sui sistemi urbani e rurali

S7: Pratiche sostenibili per la gestione del sistema acqua suolo-pianta-atmosfera

S8: Pratiche innovative di mitigazione e adattamento ai cambiamenti climatici

Strumenti e nuove tecnologie smart applicate ai cicli produttivi

*Chairs: Roberta Bulgari UNITO, Giovanna Sala UNIPA, Leonardo Verdi UNIF*

#### Andrea Martelli (CREA) S2 - 01

Smart irrigation for management of processing tomato: a machine learning-based DSS application

#### Michele Moretta (UNIFI) S2 - 02

Analyzing the Influence of Shading on Alfalfa Phenotypic Traits in Agrivoltaic Systems: A GROI-MP Modeling Approach

#### Nebojsa Nikolic (UNIPD) S2 - 03

Advancing Weed Detection in Precision Agriculture: A Drone-Based Approach for Species-Level Identification

#### Camilla Cinielli (SANT'ANNA) S2 - 04

Effect of 1-MCP of the evolution of aromatic profile during ripening of a new kiwifruit variety (*Actinidia chinensis*, cv Dulcis)

#### Pietro Emilio Nepi (SANT'ANNA) S2 - 05

Variations of volatile organic compounds profile in dehydrating wine grape berries infected by *Botrytis cinerea*

#### Francesco Barbarese (UNITUS) S2 - 06

The impact of digitalization in the forestry sector: An analysis of the effects on socio-economic indicators in the Italian context

#### Alessandro Biglia (UNITO) S2 - 07

An innovative plant for foods quick-freezing

#### Valeria Maritano (UNITO) S2 - 08

Evaluation of spot-spray UASs performance using a lab-method for perennial crops

#### Short communications

##### Riccardo Rossi (UNIFI) S2 - SC01

Automatic grapevine analysis for estimating pruning weight through UAV-derived 3D-models

##### Cosimo Matteo Profico (UNITO) S2 - SC02

Enhancing nutritional content of maize and wheat microgreens: varietal screening and sodium selenate nutrification

##### Luca de Guttry (UNIFI) S2 - SC03

A multi-sensor remote sensing approach to monitor charcoal production sites in Somalia's forests

##### Anna Lilian Gardossi (UNIUD) S2 - SC04

Agroecosystems Characterization for Identification of High Nature Value Farmlands



# GIOVEDÌ 27 GIUGNO 2024

09:00

**Vittoria Brambilla** (Dipartimento di Scienze Agrarie e Ambientali - Produzione, Territorio, Agroenergia, Università degli Studi di Milano)  
 "Le TEA: dalla ricerca di base alla prima sperimentazione in campo" - Aula 018 - chair: **Alice Checcucci UNIFI**

09:30

**SECONDA SESSIONE S4 - aula 015**

L'importanza di biostimolanti, bioinoculanti e probiotici nel miglioramento della crescita e della salute in piante e animali

Chairs: **Giancarlo Pagnani UNITE, Giancarlo Pagnani UNITE, Lopo Pierguidi UNIFI**

**Federica Scicutella (UNIFI) S4 - 09**

Rumen ecology detailed study using quebracho tannin as fermentation stressing factor

**Sonia Marcone (UNINA) S4 - 010**

Solubilization of phosphorite by phosphate-solubilizing bacteria

**Annabella Pappalardo (UNINA) S4 - 11**

Novel potential biopesticide combining lignin and beneficial fungi

**Deyvid William Silva Oliveira (UPREFE) S4 - 12**

Evaluating the influence of light-dark cycles on the growth of the dinoflagellate *Durusidium glymii*

**Gergely Ujvári (UNIFI) S4 - 13**

The impact of plant genotype, starter fertilization and a seed-applied biostimulant on native root-associated mycorrhizal and bacterial communities in maize

**Short communications**

**Matteo Spada (UNITUS) S4 - SC07**

Two novel biostimulants alleviate drought stress and shape root architecture in durum wheat

**Beatrice Farda (UNIVAQ) S4 - SC08**

Investigate the use of cellulose fibers as a carrier for the development of a Gram-negative bacterial inoculant

**Elia Pagliarini (UNIBO) S4 - SC09**

Yield and Nutritional Value of Lettuce and Basil Improved by a Microbial Inoculum in Greenhouse Experiments

10:30 Coffee break + Poster session

11:00

**Fabio D'Elia e Francesco De Carolis (FOOD HUB)**

"Innovare la comunicazione scientifica: l'approccio di Food Hub" - Aula 018 - chair: **Giulita Angeloni UNIFI**

**SECONDA SESSIONE S2 - aula 018**

Strumenti e nuove tecnologie smart applicate ai cicli produttivi

Chairs: **Massimiliano Varani UNIBO, Luisa Leolini UNIFI, Luigi Piemontese UNIFI**

**Eric Mozzanini (UNITO) S2 - 09**

Hydraulic-based fixed spray delivery system for pesticide application in vineyards; first spray performance results

**Enrico Buscaroli (UNIBO) S2 - 10**

Kinetic modelling of acetamiprid, metalaxyl, S-metolachlor and terbuthylazine dissipation in a full-scale free water surface constructed wetland in Emilia Romagna region

**Alfonso Valerio Ragazzo (CNR) S2 - 11**

Application of a precision agriculture workflow in viticulture for canopy analysis using UAV multispectral and RGB imagery

**Irene Crescioli (CNR) S2 - 12**

Development of a qPCR method for pathogenic *microalga P. bovis* identification and quantification in bovine milk

**Valentina Lazazzara (CNR) S2 - 13**

Low-dosage UVB radiation stimulates synthesis of antioxidant polyphenols in *Lactuca sativa* without side effects

**Short communications**

**Ferdinando Corti (UNIFI) S2 - SC05**

Extra Virgin Olive Oil Production: Innovations and Solutions for Quality Enhancement Throughout Processing

**Sabina Laveglia (UNIBAS) S2 - SC06**

A novel technique to register multispectral camera images at short distance from the target crop

**Niccolò Rimbotti (UNIFI) S2 - SC07**

Development of open-source platform for monitoring soil carbon dioxide: proof of concept and prototyping

**PRIMA SESSIONE S8 - aula 016**

Pratiche innovative di mitigazione e adattamento ai cambiamenti climatici

Chairs: **Antonio Pulina UNISS, Ermes LoPiccolo UNIFI, Giulia Secci UNIFI**

**Marina Allegranza (UNIMI) S8 - 01**

Development of an integrated system that combines a cropping system model and a tool for the optimisation of manure redistribution

**Francesco Ferrero (UNITO) S8 - 02**

How a multidisciplinary Living Lab approach can address different stakeholder queries about environmental impacts, production efficiency and milk quality in dairy farm

**Marco Perfetto (UNIMI) S8 - 03**

Assessing management practices effect on greenhouse gasses emissions from agricultural soils: a regional scale modelling study

**Francesca Alderotti (UNIFI) S8 - 04**

Regulated deficit irrigation tolerance in three Olea europaea L. cultivars and study of its impact on olives phenolic profile

**Harsh Tiwari (UNICATT) S8 - 05**

Effects of proline-rich specific yeast derivatives foliar applications on the physiology of grapevines subjected to water deficit

**Short communications**

**Nicolò Iacuzzi (UNIPA) S8 - SC01**

Agronomic response of processed tomato to water deficit in hot-arid environment

**Margherita Santoni (UNIFI) S8 - SC02**

Mediterranean Climate Change: Is Organic Agriculture an Option to Face a Perfect Storm?

**Alexandro Ferreira (UNIBO) S8 - SC03**

Evaluation of Innovative Cropping System for marginal land: the MIDAS project

Dal miglioramento genetico al recupero del patrimonio autoctono

Chairs: **Stefania Marzario UNIBAS, Alice Checcucci UNIFI, Maria Chiara Fabbri UNIFI**

**Chiara Delvento (UNIBA) S3 - 01**  
High-density linkage mapping and genetic dissection of resistance to broomrape (*Orobanchaceae* Forsk.) in pea (*Pisum sativum* L.)

**Martina Ferrero (UNITO) S3 - 02**  
Downy mildew resistance 6 (DMR6): how to enhance biotic stress tolerance in eggplant through genome editing

**Lia Obinu (UNISA) S3 - 03**

The reference-free pan-genome of *Arabidopsis thaliana*

**Dario Paolo (CNR-IBBA) S3 - 04**

Development of a biotech toolbox for bean research

**Gabriele Usai (UNIFI) S3 - 05**

Exploring the genetic diversity in Mediterranean fig (*Ficus carica* L.) varieties

**Andrea Delleonore (UNIMI) S3 - 06**

Cow's resilience of two intensive farms in Lombardy

#### Short communications

**Leandra Leto (UNIPR) S3 - SC01**

Vitro fuelbreak hop plantlets, var. Megnum, are a rich source of bioactive compounds

**Lorenzo Antonio Marino (UNITO) S3 - SC02**

From Orchard to Table: enhancing *Castanea sativa* traceability using DNA molecular markers along the supply chain

**Vera Pavese (UNITO) S3 - SC03**

Development of new biotechnological strategies for improving breeding in woody species

**Susanna Cialli (SANT'ANNA) S3 - SC04**

Unveiling hidden potential: wild tomatoes for enhancing agrobiodiversity and face salinity stress in the Anthropicocene

**Fabiana Marino (UNITO) S3 - SC05**

Morphological and qualitative characterization of four tomatoes (*Solanum lycopersicum* L.) landraces from Piedmont

13:00 Lunch break + Poster session

14:30 Workshop, Sessione partecipativa - Aula 018

16:30 Coffee break

17:00 Saluti finali, premiazioni e presentazione Convegno Aissa#Under40 2025 - Aula 018

Economia circolare, sviluppo sostenibile e tecnologico, consumatori

Chairs: **Matteo Garau UNISS, Andrea Dominici UNIFI, Luisa Leolini UNFI**

**Nuria Goldaraz-Salamero (UNITO) S1 - 17**  
Exploring Environmental and Economic Implications of Introducing Hazelnut Skins in Livestock Diets

**Marco Martinoli (CREA) S1 - 18**  
Improved shelf-life of giththead seabream fillets fed an organic diet including crayfish meal

**Agnese Spadi (UNIFI) S1 - 19**

Comparison of different olive pomace maturation system for vermicompost production

**Diana Vanacore (CNR) S1 - 20**

Use of distillation of pruning waste from Pistacia Lentiscus L. to produce essential oils and tannins extracts as natural-based agrochemicals: towards green solutions for circular economy in nursery practices

**Giulia Dallavalle (F. MACH) S1 - 21**

Influence of Mint and Rose extraction method on *in vitro* rumen fermentations

**Riccardo Paoloni (UNIFI) S1 - 22**

Natural or artificial Christmas tree? An environmental dilemma solved by Life Cycle Assessment methodology

#### Short communications

**Martino Rogai (CNR) S1 - SC11**

Agile fuelbreak maintenance with multipurpose excavators equipped with mini-winch

**Raffaella Ofano (UNINA) S1 - SC12**

Soil Geochemical Fingerprinting for agri-food authenticity and traceability

**Carlotta Breschi (UNIFI) S1 - SC13**

Extraction and use of fruit by-products bioactive compounds for gluten free and vegan cookies fortification

**Tommaso Ugolini (UNIFI) S1 - SC14**

Olive tree (*Olea europaea* L.) leaves: intra- and interannual variability of the phenolic profile of 4 typical Tuscan cultivars

**Emma Copelotti (UNIFI) S1 - SC15**

Effects of saturated fatty acid enriched diets on *Tenebrio molitor* larvae

**Adja Lira De Medeiros (UNIFI) S1 - SC16**

Diets containing sesamin and alpha-lipoic acid and lipid quality of pacu's fillets

Strumenti e nuove tecnologie smart applicate ai cicli produttivi

Chairs: **Domenico Ronga UNISA, Leonardo Verdi UNIFI, Giulia Angeloni UNFI**

**Cassandra Detti (UNIFI) S2 - 14**  
Investigating the physiological responses of *Cinnamomum camphora* to different irrigation regimes coupled with online monitoring of leaf water content in nursery settings

**Ester Curci (UNITS) S2 - 15**  
Assessing Carbon Stock in Small Landscape Features: study area of Northeast Italy

**Silvia Parrini (UNIFI) S2 - 16**

Discriminant analysis as a tool to classify grasslands based on near-infrared spectra

**Andrea Pagliari (UNIFI) S2 - 17**

The DRONE4AGRI project: first field results on spray quality using UAV technology in high slope terraced vineyards

**Alessandro Zanchin (UNIPD) S2 - 18**

Three oenological applications of Digital Twins for assessing Grapevine bunch compactness

**Andrea Confessore (UNIFI) S2 - 19**

Does age affect the adaptation of dairy cows managed with a virtual fence system?

#### Short communications

**Leonardo Pace (UNITUS) S2 - SC08**

Soil mapping with a limited number of samples by coupling emi and nir spectroscopy in hazelnut tree orchard

**Gianmarco Alfieri (UNITUS) S2 - SC09**

Feasibility assessment of a low-cost visible spectroscopy-based prototype for monitoring polyphenol extraction in fermenting musts

**Simone Marcolini (SANT'ANNA) S2 - SC10**

Uncovering arbuscular mycorrhizal fungi diversity with proteomics

**Luorenzo Pippi (UNIFI) S2 - SC11**

Quality and safety of baby leaf lettuce grown in floating system with different nitrogen and salt conditions can be assessed by hyperspectral data

**Giuseppe Quaratiello (UNIFI) S2 - SC12**

Using hyperspectral data to predict leaf physiological traits and discriminate ozone effects grapevine (*Vitis vinifera* L.)

Pratiche innovative di mitigazione e adattamento ai cambiamenti climatici

Chairs: **Paola Cetera UNISS, Mauro De Feudis UNIBO, Giulio Castelli UNIFI**

**Tommaso Frieri (UNICATT) S8 - 06**  
Superabsorbent Hydrogels: a new tool for vineyard water management?

**Livia Passarino (UNIFI) S8 - 07**  
Automatic mapping and characterization of forest disturbances in Italy using remote sensing Sentinel-2 data

**Raffaele Cavaliere (UNISA) S8 - 08**  
Chitosan nanoparticles loaded with orange essential oil against *ophis gossypii*: characterization, insecticidal activity and selectivity

**Gregorio Fantoni (UNIFI) S8 - 09**

Evaluating climate change mitigation potential of coppice conversion to high stand in two broadleaves forest in central Italy

**Giacomo Marengo (UNITO) S8 - 10**

Land use legacy drives post-abandonment forest structure and understory composition: a multidisciplinary approach to manage novel forest landscapes

**Riccardo Napolitano (CREA-ZA) S8 - 11**

Caviar and sturgeon meat: from luxury to sustainable food production

#### Short communications

**Silvia Calvani (UNIFI) S8 - SC04**

Communication as a social parameter to investigate wildfires

**Giulia Quagliata (UNITUSCIA) S8 - SC05**

Drought response in wheat involves a changed plant ionomic network

**Luorenzo D'Asaro (UNIFI) S8 - SC06**

Hydrochar from *Myriophyllum aquaticum*: win-win circular strategy to contain an invasive species and produce a new soil amendment

**Enrico Lucca (UNIFI) S8 - SC07**

The Water-Energy-Food-Ecosystems Nexus approach to managing water resources: a qualitative assessment in Northern Italy

**Giambattista Carluccio (UNISALENTO) S8 - SC08**

Emerging bacterial diseases: a threat to the sustainability of salento's forests

S1: Economia circolare, sviluppo sostenibile e tecnologico, consumatori

S2: Strumenti e nuove tecnologie smart applicate ai cicli produttivi

S3: Dal miglioramento genetico al recupero del patrimonio autoctono

S4: L'importanza di biostimolanti, bioinoculanti e probiotici nel miglioramento della crescita e della salute in piante e animali

S5: La microbiologia nei settori agrario, alimentare e zootecnico

S6: Sviluppo sostenibile e cambiamento climatico: l'impatto sulle produzioni e sui sistemi urbani e rurali

S7: Pratiche sostenibili per la gestione del sistema acqua uolo-pianta-atmosfera

S8: Pratiche innovative di mitigazione e adattamento ai cambiamenti climatici

## POSTER PRESENTATIONS

### S1: Economia circolare, sviluppo sostenibile e tecnologico, consumatori

**Marta Bonioli (UNIVR) S1 - P01**

Consumer perception and preferences for 'smart' labels

**Isabella Tucciarone (UNIFI) S1 - P02**

Sustainable aquaculture over the last 30 years: a review by text mining approach

**Martina Friuli (UNITO) S1 - P03**

Olive mill biowastes upcycling: energetic valorization and environmental implications

**Arianna Tiratti (UNIPG) S1 - P04**

Biodiversity conservation and Value-Belief-Norm Theory: a systematic review of the literature

**Claudia Camplone (UNIPG) S1 - P05**

Evaluation of the impact of pesticides in agricultural ecosystem through life cycle assessment studies: a systematic literature review

**Tiziana Pagnani (UNITO) S1 - P06**

Mapping Consumer Food Cooperatives: Unveiling the Italian Experience

**Mario Guida (UNIBO) S1 - P07**

Unveiling Extra Virgin Olive Oil Quality: Consumers' Preferences in a Real Tasting Environment

**Francesca Pietrangeli (UNITUS) S1 - P08**

The role of environmental sustainability for developing marginal areas: the case of vitigno province

**Jonathan Squillante (UNINA) S1 - P09**

Bio-transformation of agri-food by-products to produce health-promoting bioactive compounds

**Chiara Gelici (UNIFI) S1 - P10**

Use of implicit tools in restaurants to promote the consumption of fish with low market value

**SIVIA Baralla (CREA) S1 - P11**

The Travel Cost Method for the assessment of Touristic Activities of Wetlands: the Case Study of Sardinia

**Silvia Baralla (CREA) S1 - P12**

The National Water Heritage: Opportunities for tourism in rural areas

**Andrea Dominici (UNIPD) S1 - P13**

Exploring consumer perceptions of wine packaging sustainability: a cross-country study

**Maria Paculli (UNIPR) S1 - P14**

Enhancing oxidative stability of bakery snacks with natural antioxidants: a comparative study of free and encapsulated olive leaf extract versus traditional synthetic additives

**Anna Perbellini (UNIPD) S1 - P15**

Valorisation of conifers (Pinus mugo, and Picea abies) through steam distillation and hydroalcoholic maceration for flavouring Italian spirit grappa

### S2: Strumenti e nuove tecnologie smart applicate ai cicli produttivi

**Aref Sepehr (UNIPD) S2 - P01**

Camera position effect in three-dimensional reconstruction of berry fruits based on photogrammetry

**Aref Sepehr (UNIPD) S2 - P02**

Optimizing the workflow for shape evaluation of walnuts with photogrammetry

**Roberto Bulgari (UNITO) S2 - P03**

A multidisciplinary approach for stress detection in vegetable crops

**Carolina Perna (UNIFI) S2 - P04**

Precision agriculture and Archaeology, can there be possible synergies? A case study

**Roberto Natale (UNIFI) S2 - P05**

The aeroponic cultivation system as a viable alternative for potato seed production

**Ludovica Milzi (UNINA) S2 - P06**

Light tuning for food improving: selective responde of novel dye-doped polymeric films for agrifood in greenhouse

**Matteo Pecchi (CREA) S2 - P07**

Open data and Forests: the creation of a National Forestry Information System

**Giulia Daly (UNIFI) S2 - P08**

Diatom-bacterium co-culture: analysis of the exopolysaccharide matrix

**Alessio Manzo (UNIMOL) S2 - P09**

Determination of physical properties and porosity of mountain soil porosity through SEM image analysis and NMR analysis

**Eugenio Carlon (UNIMI) S2 - P10**

Using remote sensing and productivity modelling in evaluating

landscape-level potential of alpine local foraging resources

**Felicia Menicucci (CNR) S2 - P11**

Effects of blue and red light-emitting diodes on two *Cichorium intybus* L. cultivars

**Mattia Chiarini (UNIBO) S2 - P12**

A solar powered autonomous ground vehicle in sugar beet sowing and weeding with respect to conventional practices

**Enzo Antonio Lecciolle Paganini (UNIS) S2 - P13**

Estimation of soil erosion by water using RUSLE model in the State of Sao Paulo (Brazil)

**Chiara Pastacaldi (UNIFI) S2 - P14**

Orzone: unveiling its unexplored potential in its plant disease control

**Deyvid Willame Silva Oliveira (UFRPE) S2 - P15**

Aquaculture 4.0 in northeast Brazil: prospects and difficulties

**Nicola Furnitto (UNICT) S2 - P16**

Biomass Estimation in Pastures by Satellite Imagery: A Pre- and Post-Grazing Analysis

**Irene Giordano (UNINA) S2 - P17**

Probiotic behaviour: a study of ultrasound attenuation-induced gene expression changes through RNA sequencing analysis

### S3: Dal miglioramento genetico al recupero del patrimonio autoctono

**Stefania Stelluti (UNITO) S3 - P01**

Wild leafy vegetables of the north-western Italian Alps: traditional food system to innovate horticulture

**Giulia Alfreducci (UNIFI) S3 - P02**

Phenotype Microarray-based Assessment of metabolic variability in plant protoplasts

**Anna Lillan Gardossi (UNIDU) S3 - P03**

Crowdsensing for linear landscape elements survey: a study case in Nord East Italy

**Carmen Verastro (UNIBAS) S3 - P04**

Exploring lentil genetic diversity through phenotypically and genetically detailed germplasm collection

**Valeria Morante (UNIBAS) S3 - P05**

Intelligent characterization of lentil genetic resources to promote agrobiodiversity

**Francesca Bernini (UNIMI) S3 - P06**

Heterozygosity rich regions in autochthonous and cosmopolitan cattle breeds

**Rocco Sabato (UNIBAS) S3 - P07**

Field phenotyping of common bean germplasm collection

**Clarissa Clemente (UNIFI) S3 - P08**

Maize landraces as sources of important bioactive compounds

**Walter Vieri (UNIFI) S3 - P09**

Integrating phenotypic, genotypic, and environmental data for predictive modeling in durum wheat (*Triticum durum* Desf.) cultivation using Artificial Intelligence

**Giuseppe Perri (UNIBA) S3 - P10**

Development of a new rapid method based on FT-NIR analysis to safeguard and enhance the traceability of sourdough bread

### S4: L'importanza di biostimolanti, bioinoculanti e probiotici nel miglioramento della crescita e della salute in piante e animali

**Damiano Barbato (UNIFI) S4 - P02**

Selection of indigenous *Metschnikowia pulcherrima* strains for grape bioprotection

**Anna Agosti (UNIPR) S4 - P03**

Wood distillate as corroborant to improve hemp (*Cannabis sativa* L.) microgreen growth and antioxidant activity

**Giuseppina Magarac (UNINA) S4 - P04**

Novel microbial-based biostimulants for sustainable agriculture

**Davide Farruggia (UNIPA) S4 - P05**

Foliar biostimulants affect productive and chemicals characteristic of organically grown sage

**Giulia Franzoni (UNIMI) S4 - P06**

Effect of biostimulant treatments on seed germination

**Letizia Pagliaro (UNICAMPANIA) S4 - P07**

*Ascochythium nodosum* based extract mitigates salt stress effects in Microtom roots even under sub-optimal nutrient conditions

**Domenico Ronga (UNISA) S4 - P08**

Effects of nitrogen-fixing bacteria used as seed coating on *Sulla* (*hectysarum coronarium* L.) growth and soil quality

**Martina Grattacaso (CNR) S4 - P09**

Enhancing bioactive compound production in *Tanacetum balsamita* L. through sustainable soil cropping management strategies

**Martika De Angelis (UNIMOL) S4 - P10**

Effect of hydrolysates made of carboxymethyl cellulose on lettuce seeds

**Ivan Ciliberti (UNINA) S4 - P11**

BALOS as biocontrol agents in bivalve shellfish depuration

**Pasquale Napoletano (UNIMOL) S4 - P12**

Suitability of hydrolysates made of carboxymethyl cellulose on lettuce germination and soil microflora assessed by scanning electron microscopy (SEM)

**Gian Piero Ricci (UNIFI) S4 - P13**

Pros and cons of *Alantthus altissima* management with *Verticillium* species

**Giancarlo Pagnani (UNITE) S4 - P14**

Unlocking the growth potential of green beans: PGPB intervention in Rhizoctonia-infested soils, a preliminary study

**Sara Beltrami (UNIFI) S4 - P15**

Enhancing plant photosynthetic performances by boosting plant carbonic anhydrase activity

### S5: La microbiologia nei settori agrario, alimentare e zootecnico

**Mohammed Salman (UNINA) S5 - P01**

Control of Food Spoilage by Anti-Quorum Sensing Activity of Probiotics

**Enrico Buscaroli (UNIBO) S5 - P02**

The swine waste Resistome: spreading and transfer of antibiotic resistance genes in *Escherichia coli* strains and the associated microbial communities in three different pig farms

**Anna Di Blasio (UNINA) S5 - P03**

Antimicrobial activity of prunus spinosa extracts

**Matteo Voltarelli (UNIFI) S5 - P04**

A fast detection tool for flavescens dorée management

**Gemma Bianchi (UNIFI) S5 - P05**

The potential role of a new natural formulation in vineyard defence: a first grapevine trunk diseases *in-vitro* screening

**Vincenzo Naselli (UNIPA) S5 - P06**

Technological affinity index for interaction between lactic acid bacteria and *Saccharomyces cerevisiae* strains to modulate the fruity and floral aroma of Catoarratto wines

### S6: Sviluppo sostenibile e cambiamento climatico: l'impatto sulle produzioni e sui sistemi urbani e rurali

**Matteo Voltarelli (UNIFI) S6 - P01**

Adaptive strategies in grape agriculture: harnessing muscadine innovative processing strategies for climate resilience in the southeastern United States

**Alessandra Lepore (UNIBAS) S6 - P02**

Assessing Changes in Climate Parameters in Campania: Analysis from 2008 to 2023

**Rafael Barroca Silva (UNESP) S6 - P03**

FT trees as hemi-epiphytes predicted by logistic regression within urban parks

### S7: Pratiche sostenibili per la gestione del sistema acqua suolo-pianta-atmosfera

**Alessandra Virili (UNIUD) S7 - P01**

Introducing buckwheat (*Fagopyrum esculentum* Moench) in soybean-based cropping systems to contain pests and weeds while supporting pollinators

**Luisa Leolini (UNIFI) S7 - P02**

UNIFI GrapeMI model implementation for estimating grapevine and inter-row grass cover carbon cycle

**Giulia Galeone (UNIBO) S7 - P03**

Impact of egg parasitoids on *Halyomorpha halyi* (Stål) in eastern Emilia-Romagna after three years of *Rissoicus japonicus* (Ashmead) releases

**Daniilo Caruso (UNITO) S7 - P04**

Physiological adaptations and metabolic responses to prolonged water stress in *Vitis vinifera* L.: Preliminary assessments of berry membrane lipid profiles

**Eugenio Strafrellini (UNIPD) S7 - P05**

Remote sensing-based workflow for monitoring hydrological processes in agricultural terraced cultural landscapes: a case study in Italy

**Martina Amato (UNINA) S7 - P06**

Investigation of rhizosphere microbiota for the establishment of novel microbial consortia for sustainable agriculture systems

**Simone Nesi (UNIFI) S7 - P07**

Preliminary assessments of spatial variability in a super-high-density olive orchard

**Matteo Carloni (UNIMORE) S7 - P08**

Pollinator Diversity and Flower Glucosinolate dynamics in *Erica sativa* and *Reseda lutea*

**Alessandro Rossi (UNIFI) S7 - P09**

Sulphur supplementation: a promising fertilization strategy in camellina

**Francesco Giovanni Salvo Angeliotti (CREA) S7 - P10**

Agroecological, processing and socio-economic aspects of *Opuntia ficus-indica* cultivation in Mediterranean areas: Systematic map study and MOOC

**Monica Canton (UNIPD) S7 - P11**

Grapevine photosynthetic dynamics under water stress conditions - a case study in cv. Glera

**Gregorio Fantoni (UNIFI) S7 - P12**

Mitigating dismantling costs by repurposing recovered asphalt in desalted soil

**Angela Maffia (UNIRC) S7 - P13**

Comparative study of fertilizers in Tomato-Grown Soils: Soil quality, sustainability and Carbon/Water Footprints

**Mortadha Ben Hassine (UNIFE) S7 - P14**

Effects of wood distillate concentrations on wheat (*Triticum durum* Desf.) seed germination and development under salinity stress: a preliminary petri dish test

**Flora Giulia Simonelli (UNIPD) S7 - P15**

Effects of Cu-contaminated soil on *Robinia pseudoacacia* L.: a controlled environment experiment

**Giulio Castellì (UNIFI) S7 - P16**

A critical analysis of the use of the concept of Food Security in the UN Security Council sessions on the Grand Ethiopian Renaissance Dam (GERD)

**Edoardo Visentin (UNIVP) S7 - P17**

Improvement of agroecological cropping systems for the enhancement of fertility and production of organic rice

**Antonio Pulina (UNISS) S7 - P18**

Assessing the effects of rotational grazing adoption in silvopastoral systems under Mediterranean conditions

**Bianca Rompato (UNIFI) S7 - P19**

Contrasting urban soil degradation: the benefits of compost in soil compaction restoration

**Beatrice Fiore (UNIFI) S7 - P20**

Decline and restoration of a typical silvo-pastoral mountain landscape in the Italian Apennines. The case of Moscheta in Tuscany

### S8: Pratiche innovative di mitigazione e adattamento ai cambiamenti climatici

**Federica Alaimo (UNIPA) S8 - P01**

Agronomic response of 13 varieties of cotton grown under organic conditions in a hot and environment

**Stefania Savori (UNITO) S8 - P02**

Strigolactones as possible elicitors in sunburn defense mechanisms in grapes: preliminary results

**Silvia Calvani (UNIFI) S8 - P03**

A geomorphological approach to evaluate post-fire emergency rehabilitation works through a special index

**Sara Anichini (UNIFE) S8 - P04**

The effect of heat stress on three ancient Tuscan potato (*Solanum tuberosum* L.) varieties

**Serena Sofia (UNIPA) S8 - P05**

Enhancing Urban Forestry Management: Precision Analysis of Monumental Trees through Mobile Laser Scanning

**Stefania Marzario (UNIBAS) S8 - P06**

Drought stress response in lentil genetic resources under speed breeding conditions

**Hafsa El Horri (UNIFI) S8 - P07**

Light conversion films application on blackberry plants promotes plant photosynthetic performance, fruit production and quality

**Anna Rita Balinigi (UNIFI) S8 - P08**

Assessing the impact of extreme weather events on wheat yield: a case study in Tuscany

**Marco Bianchini (UNIVPM) S8 - P09**

Climate Change Impact on Mountain Grasslands: Insights from Monti Sibillini National Park

**Tommaso Frioni (UNICATT) S8 - P10**

PRIN UNDER-VINE: new approaches to vineyard soil management

**Laura Mandrelli<sup>1\*</sup>, Adriano Sofo<sup>1\*</sup>, Antonio Monteforte<sup>2\*</sup>, Silvia Pascazio<sup>2\*</sup>, Rosa Rubino<sup>2\*</sup>, Carlo Pazzani<sup>3\*</sup>, Maria Scrascia<sup>3\*</sup>, Angelo Marzella<sup>3\*</sup>, Angelantonio Calabrese<sup>4\*</sup>**

<sup>1</sup>Università degli Studi della Basilicata (Dipartimento delle Culture Europee e del Mediterraneo, Via Lanera, 20, 75100Matera MT)

<sup>2</sup>Tersan Puglia (S.P. 231 Km. 1,600, 70026 Modugno BA)

<sup>3</sup>Università degli Studi di Bari Aldo Moro (Dipartimento di Bioscienze, Biotecnologie e Ambiente -DBBA, Campus Universitario Ernesto Quagliariello Via E. Orabona, 4 70125 - BARI)

<sup>4</sup>CNR-IRSA sez. Bari (V.le Francesco de Blasio, 5, 70132 Bari BA)

\*E-mail: laura.mandrelli@unibas.it

\*E-mail: adriano.sofa@unibas.it

\*E-mail: a.monteforte@biovegetal.it

\*E-mail: s.pascazio@tersan.it

\*E-mail: r.rubino@tersan.it

\*E-mail: carlo.pazzani@uniba.it

\*E-mail: maria.scrascia@uniba.it

\*E-mail: angelo.marzella@uniba.it

\*E-mail: angelantonio.calabrese@ba.irsas.cnr.it

### Abstract

A high level of dependence on chemical fertilizers as a means of increasing food production has damaged the ecological balance of agricultural soils. Long-term application of mineral nitrogen fertilizers reduces soil microbial activity resulting in a loss of biodiversity and fertility.

From this perspective, biofertilizers represent an important resource which, combined with sustainable agronomic practices, could help to face the current agricultural problems and improve soil fertility over the long term.

The exploitation of beneficial soil microorganisms in the formulation of biofertilizers, such as plant growth-promoting bacteria and fungi, is one potential solution to this problem, providing plants with nutrients required to enhance their growth, increase yield, and prevent abiotic and biotic stress and phytopathogens attack.

In this scenario, the objective of the current work was to evaluate the agronomic efficiency and the effect of different biofertilizers on the biological soil fertility in an experimental almond field located in Modugno (Bari), in southern Italy.

The experimental field was randomised by splitting up the area into four sub-sections for a total of twenty-four plants per treatment over the whole experimental site. Six treatments were performed, among which the organic biofertilizer Biovegetal® , two products enriched with microbial consortia, another organic biofertilizer, a stable manure and an organo-mineral fertilizer.

The activity was focused on monitoring the effects of the application of the different biofertilisers on plant physiological parameters (biometric parameters, foliar diagnostics, water use efficiency, NDVI index detection), chemico-physical properties, soil enzymatic activities (FDA, phosphatase) and soil microbiological properties (DNA extraction and quantification, PCR, bacterial and fungal counts, DNA sequencing).

The effect of biofertilisers on the release and spread of antibiotic resistance genes in agricultural soils is also being studied.

The results of the first year of monitoring showed the first positive responses on the plants treated with the biofertilizers. Particularly, the products enriched with fungal consortium seem to improve the agronomic performance of the plants.

### Keywords

*Biofertilizers; Sustainable agriculture; Beneficial microorganisms; Almond production ; Antibiotic resistance*