PhenItaly

THE ITALIAN PLANT PHENOTYPING NETWORK

NATIONAL CONFERENCE ON PLANT PHENOTYPING



26-27 November 2026

Sala Cinese, Università degli Studi di Napoli Federico II
Via Università, 100, Portici (NA)

The Conference is hosted by

Università degli Studi di Napoli Federico II

Consiglio Nazionale delle Ricerche

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13:45 – 14:00

Registrations

14:00 – 14:30

Welcome addresses

Danilo Ercolini
University of Naples Federico II
AGRITECH Scientific Director

Anna Di Venere
EMPHASIS Ministerial representative, Italian Ministry of University and Research (MUR)

Silvano Fares
National Research Council, Director of the Dept. of Biology, Agriculture and Food Science (CNR-DiSBA)

Francesco Di Serio
National Research Council, Director of the Institute for the Sustainable Protection of Plants (CNR-IPSP)

Francesco Loreto
University of Naples Federico II
PHEN-ITALY President

14:30 – 14:50

EMPHASIS and the Future of Plant Phenotyping in Europe: Integration, Capacity Building and Innovation

Susie Robinson
EMPHASIS Interim Director General

SESSION 1 -The Italian Plant Phenotyping Landscape: Research, Innovation and Applications

14:50 – 17:00

PHEN-ITALY: infrastructures, expertise, vision

AGRIPHEN: Agrigeos Plant Phenotyping Platform and Research Activities
Marco Acciai, Infrastructure Scientific Coordinator

PHENOLAB 4.0 Research Infrastructure:Platforms and main activities
Francesco Cellini, Director, Centro Ricerche Metapontum Agrobios – ALSIA

FIELDPHEN Platform for Field Phenotyping and other CREA Facilities
Pasquale De Vita, CREA. Infrastructure Scientific Coordinator

Root analysis at ROOT-DISTAL Platform: Recent Upgrades
Silvio Salvi, UNIBO, Infrastructure Scientific Coordinator

PHENORAMA Research Infrastructure: Novel Image-based Phenotyping Platforms for Indoor to Field Plant Monitoring
Marco Bindi, UNIFI, Infrastructure Scientific Coordinator

PhenoPlant: Plant Phenotyping Platform and Ecophysiological Testing
Claudio Lovisolo, DISAFA/UNITO, Infrastructure Scientific Coordinator

coffee break

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PhenBiotech plant phenotyping platform: infrastructure and activities
Elisa Fasani, Biotech Dept./UniVR, Infrastructure Scientific Coordinator

The contribution of CIHEAM Bari to Phen-Italy
Khaled Dhelouah, Senior Researcher, CHIEAM

UNIVPM SEED-IT: Sustainable Exploration and Evaluation of crop Diversity through Digital Phenotyping and multi-omics
Roberto Papa, UNIVPM, Infrastructure Scientific Coordinator

Combining traditional growth analysis approaches with innovative photogrammaetric techniques to measure grapevine above ground biomass growth dynamics in the field
Franco Meggio, DAFNE-UNIPD, Plant Phenotyping Scientific Coordinator

Phenotyping primary and secondary metabolism of plants: INFRAGRI and more
Francesco Loreto, UNINA, Infrastructure Scientific Coordinator and Phen-Italy President

CNR-IPSP Plant Phenotyping Infrastructure: Three Sites, Complementary Technologies, One Integrated Vision
Michelina Ruocco, Giulia Atzori e Vincenzo Montesano, CNR-IPSP, Infrastructure Scientific Coordinators

17:00 – 18.00
Phenotyping for agriculture, environment and industry

From Microclimate to Crop Growth: Data-Driven Modelling for Horticultural Production
Antonio Dell'Isola, Evja

Cropdash, remote sensing and artificial intelligence for agriculture environments
Massimiliano Agata, Justonearth srl

Advancing In Vivo Plant Phenotyping through BIORISTOR Technology
Michela Janni, Plantbit

From screening to mode-of-action characterization: integrating high-throughput phenotyping and ecophysiology in biostimulant development
Davide Lucien Patono, Plant Flow Solutions srl

Beyond the Naked Eye: Mitigating Risk and Capturing Hidden Efficacy in Biostimulant Development through Automated 3D Phenotyping
Kevin Fernandes, Phenospex

Scalable Multistage Phenomics Workflow for Biostimulant Discovery and Crop Validation
Nunzio Briglia, Syngenta

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9:00 – 9:30 Keynote Speech

From Carbon Isotope Signatures to Multi-Omics. Decoding Drought Adaptation in Crops and Trees - From Field Surveys to Molecular Mechanism

Jörg-Peter Schnitzler

Helmholtz Munich

SESSION 2

9:30– 13:00

Emerging Voices in Plant Phenotyping Research

Monitoring Morpho-Physiological Response to Salt Stress in Pepper (Capsicum annuum L.) through Multispectral and 3D Phenotyping

Annalisa Cocozza, CREA-OF

Phenotypic responses to VOC-induced priming in plants: stomatal conductance and calcium signalling

Giulia Fiorini, CNR-IPSP/UNINA

Hyperspectral phenotyping for the early detection of cereal diseases: a bibliometric and case-study review of maize and rice

Rita Balingit, UNIFI

Integrated High-Throughput Phenotyping of Early Root Development and Field Root Architecture in Lentil (Lens culinaris Medik.)

Giulia Frascarelli, UNIV-PM

Multi-scale phenotyping for precision agriculture: early water deficit detection and sustainable mitigation.

Maddalena Grieco, CNR-IPSP/METAPONTO

Temporal and spectral phenomena reveal and predict complex traits in bread wheat.

Fabio Fania, CREA-FG

coffee break

High-Throughput Phenotyping of Maize Brace-Root Architecture from Field Videos.

Shengjie Guo, UNIBO

Root and shoot phenotyping elucidate plant growth-promoting microorganisms (PGPM) effects on wheat underwater deficit.

Christian Lorenz, ENEA

Multi-decadal analysis of sweet chestnut (Castanea sativa Mill.) resilience to climate change in the Campania region using multispectral remote sensing

Antonio Marino, CNR-IPSP/UNINA

High-throughput phenotyping through imaging for early detection of Botrytis cinerea infection in tomato plants.

Maria Teresa Marino, CNR-IPSP/UNINA

Germination potential prediction from hemp seed structure: X-ray imaging and multivariate data analysis approaches.

Sabrina Maria Marsala, CNR-ISAFOM/UNINA

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Y-OLIVE: Improving Image-Based Olive Fruit Detection, Counting, and Segmentation for In-Field Phenotyping.

Andrea Natile Martino, CNR-STIIMA

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Evaluating a Parameter-free Attention Mechanism and a Scale-sensitive Loss Function in YOLO11 for Lettuce Localization.

Michele Paradiso, CNR-STIIMA

Multimodal imaging for early detection of Botrytis cinerea infection in tomato during the presymptomatic phase.

Roberto Pasca, CNR-IPSP/UNINA

Citizen Science and Artificial Intelligence for Decentralized Plant Phenotyping and Genetic Mapping in Common Bean (Phaseolus vulgaris).

Alice Pieri, UNIV-PM

Discriminating biotic and abiotic stresses in tomato using high-throughput RGB imaging.

Maria Isabella Prigigallo, CNR-IPSP

From Spike Segmentation to Multimodal Fusion: Dissecting the Drivers of Wheat Trait Prediction.

Firozeh Solimani, CREA-FG

Integrating UAV Multispectral Phenotyping, Leaf Ionomics, and Yield to Assess Biostimulant Responses in Sugar Beet.

Navaprakaash Velusamy, UNIPD

13:00 – 14:30 LUNCH BREAK

SESSION 3

14:30 – 16:00

Strategic Vision and Future Perspectives- PHEN-ITALY funded projects

In vivo monitoring of dynamic drought responses in tomato using Bioristor to support varietal selection, FIRST

Michela Janni, CNR-IMEM

How do plants perceive volatiles?, HOTSPOT

Maurilia Maria Monti, CNR-IPSP

Can different allelic variants confer different fitness costs in Amaranthus hybrids resistant plants?, PhenAMAre

Silvia Panozzo, CNR-IPSP

Genome-wide association analysis of the tomato fruit ionome reveals direct and indirect genetic mechanisms of mineral homeostasis, TOMATON

Alessandra Francini, SS Sant'Anna Pisa

Disclosing the effects of natural peptides on plant-to-plant communication via induction of Volatile Organic Compounds, viaVOCs

Simona Maria Monti, CNR-IBB

Quantifying the Impact of Shading Intensity on the Agronomic Performance of Leafy Vegetables, PHENO-SHADE

Marco Moriondo, CNR-IBE

Rhizotron-Based In Vivo Phenotyping of Volatile-Mediated Interactions: How Trichoderma atroviride VOCs Modulate the Tomato Root System, MICROROOTS

Liberata Gualtieri, CNR-IPSP

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CLOSING REMARKS

16:00 – 16:30

Institutional Roundtable

Susie Robinson
EMPHASIS Interim Director General

Francesco Loreto
PHEN-ITALY President

Anna Di Venere
EMPHASIS, Ministerial representative, Italian Ministry of University and Research

Representatives of PHEN-ITALY members

Industry stakeholders

Phen Italy
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16:30 **Best Oral Presentation Award Early Career Researchers**



Scientific Committee: Francesco Cellini (ALSIA), Francesco Loreto (UNINA), Franco Meggio (UNIPD), Silvana Moscatelli (CNR), Michelina Ruocco (CNR), Silvio Salvi (UNIBO).

Organising Committee: Michelina Ruocco (CNR), Francesca Palomba (CNR), Silvana Moscatelli (CNR)