

PROGRAM

25 th June	Thursday
9:00 – 14:00	Data management working group meeting prior official IPAP program (organized at PSI, Photon Systems Instruments, spol. s r.o.).
15:00 – 18:00	Registration. Poster and Exhibition setup.
18:00 – 18:20	Martin Trtílek (Photon Systems Instruments, Czech Republic) Pushing the Boundaries of Plant Phenotyping: Next-Generation Sensors, Automation, and Imaging Technologies from PSI.
18:00 – 18:40	Antony Bačič (La Trobe Institute for Sustainable Agriculture & Food, Australia) Beyond Phenotyping: Delivering Impact Across the Agri-Food Value Chain.
18:40 – 22:00	Welcome Reception with pre-conference networking and poster session. Beer, Wine and Snacks.
26 th June	Friday
9:00 – 12:50	SESSION 1 Integrated Functional Phenotyping for Plant Performance and Stress Resilience Chair: Sónia Negrão (School of Biology and Environmental Science, University College Dublin, Ireland)
9:00 – 9:35	Thomas Altmann (Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), Germany) Plants – Dynamic Genetic Systems in Dynamic Environments: Assessment of (growth) performance through automated non-invasive Phenotyping.
9:35 – 10:00	Carl-Otto Ottosen (Department of Food Science, Aarhus University, Denmark) Plant responses to co-occurring heat and water deficit stress – are the modern wheat genotypes more resilient?
10:00 – 10:25	Marek Živčák (Slovak University of Agriculture, Institute of Plant and Environmental Sciences, Slovakia) A High-Throughput Phenotyping Approach to Screen for Genotypic Variation in Wheat Tolerance to Nocturnal Warming.
10:25 – 10:40	Muhammad Ahmad (Federal Research Centre for Forests, Austria) From pixels to pathways in trees: multi-scale phenotyping of drought response in seedlings of a widespread Oak.
10:40 – 10:55	Éva Darko (Agricultural Institute, Centre for Agricultural Research, Hungarian Academy of Sciences, Hungary) Utilisation of high-throughput phenotyping platform in Martonvásár.
10:55 – 11:20	Coffee Break
11:20 – 11:55	Jim Whelan (ARC Centre of Excellence in Plant Energy Biology, La Trobe University, Australia) Plant Phenomics for Discovery.

Please note that the program is subject to last-minute changes.

26th June Friday

11:55 – 12:20	Jana Kholová (Czech Advanced Technology and Research Institute (CATRIN), Palacký University Olomouc) Genetic determination of physiological responses to drought stress in barley (<i>Hordeum vulgare</i> L.) landraces.
12:20 – 12:35	Mikuláš Kňazovický (Aarhus University, Denmark) Water-carbon trade-offs in contrasting <i>Lupinus angustifolius</i> cultivars under combined deficit irrigation, heat stress, and elevated CO ₂ .
12:35 – 12:50	Huma Majeed (Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), Germany) STRESS-STOPP: Increasing drought stress adaptation in oilseed rape - yield stability and stress tolerance as selection targets for optimization via physiological phenotyping.
12:50 – 14:00	Lunch

14:00 – 15:50 SESSION 2

Innovative Phenotyping Technologies for Climate-Resilient Agriculture

Chair: Lukáš Spíchal (Czech Advanced Technology and Research Institute (CATRIN), Palacký University Olomouc)

14:00 – 14:35	Astrid Junker (AJ Consulting, Halle, Germany) From Sensors to Decisions: Translating Plant Phenotyping Innovation into Breeding and Agronomic Value.
14:35 – 15:00	Kerstin Neumann (Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), Germany) High-Throughput Phenotyping Reveals Genetic Diversity for Climate Adaptation in Chickpea.
15:00 – 15:20	Tim van Daalen (Wageningen University & Research, Netherlands) Describing High-Throughput Plant Phenotyping experiments.
15:20 – 15:35	Marie Bloome (Ghent University, Belgium) Hyperspectral imaging as a non-destructive phenomics tool to guide the discovery of novel metabolites during tomato-Serendipita interactions.
15:35 – 15:50	Iñigo Saiz-Fernández (Czech Advanced Technology and Research Institute (CATRIN), Palacký University Olomouc) LOCOPOTS: a LOW-Cost high-throughput screening platform for in vitro POTatoes under abiotic Stress.
15:50 – 16:15	Coffee Break
16:15 – 16:50	Matthew Lewsey (La Trobe Institute of Sustainable Agriculture and Food, La Trobe University, Australia) Phenotyping on Earth and in Space.
16:50 – 17:10	Peter Pietrzyk (Fraunhofer Institute for Integrated Circuits IIS, Germany) Opportunities and Challenges of 3D Root and Shoot Phenotyping in Controlled Environments.
17:10 – 17:30	Alexey Shapiguzov (Department of Organismal and Evolutionary Biology, University of Helsinki, Finland) Exploring flash-induced chlorophyll fluorometry: from mitochondrial mutants to tomato production.
17:30 – 17:50	Phanchita Vejchasarn (Ministry of Agriculture, Thailand) Toward Climate-Resilient Rice: Integrative Genomic Approaches for Candidate Gene Discovery Under Drought-prone Environments.
17:50 – 19:30	Poster session
19:30 – ON	Dinner

27th June **Saturday**

8:45 – 10:50 **SESSION 3**

Algae biotechnology and phenotyping

Chair: Zuzana Benedikty (Photon Systems Instruments, Czech Republic)

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| 8:45 – 9:20 | Yagut Allahverdiyeva-Rinne (Department of Life Technologies, University of Turku, Finland)
Connecting photosynthetic mechanisms to phenotypes across systems: from algae to plants. |
| 9:20 – 9:45 | Ondřej Prášil (Centre ALGATECH, Institute of Microbiology, The Czech Academy of Science, Czech Republic)
AlgaScreen – phenotyping platform for microalgal biotechnology. |
| 9:45 – 10:00 | Jan Červený (CzechGlobe, Global Change Research Institute, The Czech Academy of Science, Czech Republic)
AI-enabled digital platform for distributed microalgal phenotyping and real-time cultivation optimization. |
| 10:00 – 10:20 | Bernard Lepetit (Molecular Stress Physiology, University of Rostock, Germany)
The contribution of various Lhc proteins to Non-Photochemical Quenching. |
| 10:20 – 10:35 | Tomáš Zavřel (CzechGlobe, Global Change Research Institute, The Czech Academy of Science, Czech Republic)
Phenotyping Ethylene-Producing Cyanobacteria: Deciphering the Interplay Between Culture Density, Light Availability, Size of Metabolic Sinks and Ethylene Productivity. |
| 10:35 – 10:50 | Tomáš Zlámal (CzechGlobe, Global Change Research Institute, The Czech Academy of Science, Czech Republic)
Enzyme-Functionalized MIMS Probes for Expanded Analyte Detection. |
| 10:50 – 11:15 | Coffee Break |

11:15 – 15:30 **SESSION 4**

AI-Driven Imaging and Sensor Technologies in Plant Phenotyping

Chair: Robert D. Hancock (The Advanced Plant Growth Centre, James Hutton Institute, Dundee, Scotland)

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| 11:15 – 11:50 | Sónia Negrão (School of Biology and Environmental Science, University College Dublin, Ireland)
The Road to Precision: Spectral Imaging for Abiotic Stress Responses—Are We There Yet? |
| 11:50 – 12:10 | Anshu Rastogi (Department of Bioclimatology, Poznan University of Life Sciences, Poznan, Poland)
Integration of Hyperspectral Reflectance and Sun-Induced Fluorescence for Stable Estimates of Gross Primary Productivity in Peatlands. |
| 12:10 – 12:30 | Krystyna Rybka (Plant Breeding and Acclimatization Institute - National Research Institute, Poland)
Monitoring yield-related spectral responses of spring cereals under contrasting hydrothermal. |
| 12:30 – 12:45 | Lamis Abdelhakim (Photon Systems Instruments, Czech Republic)
Root-to-Shoot Stress Response Dynamics: A Case Study of Barley Drought Resilience. |
| 12:45 – 14:00 | Lunch |
| 14:00 – 14:30 | Nuria de Diego Sanchez (Czech Advanced Technology and Research Institute (CATRIN), Palacký University Olomouc)
AI-Powered Digital Biomarkers for Stress Resilience and Genotype Classification. |

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27th June Saturday

- 14:30 – 14:50 **Katarzyna Retzer** (Institute of Forest Ecology, BOKU University, Austria)
Affordable Infrared DIY Microscopy for Non-Invasive Root Phenotyping.
- 14:50 – 15:05 **Zhibo Cai** (Horticulture and Product Physiology Group, Wageningen University & Research, Netherlands)
SP3D: A benchmark for systematic comparison of image-based 3D reconstruction methods of cucumber plants.
- 15:05 – 15:20 **Rijad Sarić** (ARC Research Hub for Protected Cropping, La Trobe University, Australia)
Linking Rosettes to Leaves: An AI-Driven RGB Imaging Pipeline for Arabidopsis thaliana Phenotyping.
- 15:20 – 15:35 **Sebastian Seitner** (Plant Sciences Facility, Vienna BioCenter Core Facilities GmbH (VBCF), Austria)
Enabling Reproducible Phenotyping: An Open-Source Python PlantScreen and Fytotron APIs.
- 15:35 – 16:00 **Coffee Break**

16:00 – 18:00 PARALLEL WORKSHOP SESSION

WORKSHOP 1

Data Management Working Group round table discussion

- 16:00 – 16:45 **Jana Kholová** (Czech Advanced Technology and Research Institute (CATRIN), Palacký University Olomouc, Czech Republic)
Tim van Daalen (Wageningen University & Research, Netherlands)
Sebastian Seitner (Plant Sciences Facility, Vienna BioCenter Core Facilities GmbH (VBCF), Austria)
Welcome note, introduction and overview of WG activities.

- 16:45 – 17:15 Round table discussions

TOPIC 1: PLANTSCREEN TOOLS – Data management integration +APIs; Current approaches to data management within the PlantScreen™ user community will be discussed, including the tools and workflows used to manage datasets, connect metadata to imaging data, and support automated or manual data annotation. Participants will discuss experiences with making datasets openly available, compare PSI-provided and locally developed tooling, and identified key strengths, limitations, and opportunities for improved integration through data management platforms and APIs.

TOPIC 2: HTP-DATA PIPELINES – Discussion will focus on the current state of high-throughput phenotyping (HTP) data pipelines, with particular attention to technical integration challenges and the maturity of existing data management solutions. Focus tasks is on what is working well, identify persistent gaps and bottlenecks, and discuss opportunities for collaboration in the development, implementation, and adoption of interoperable data management pipelines.

TOPIC 3: DATA MANAGEMENT SURVEY FOR HIGH - Throughput Phenotyping Data. This round table will review the outcomes of the community survey on data management and data analytics tools in high-throughput plant phenotyping, using the survey results as a starting point for a broader discussion of current practices, challenges, and priorities. We will discuss common needs identified by the survey and will explore opportunities for improving interoperability, FAIR data practices, analytics workflows, and community-driven tool development.

- 17:15 – 18:00 **Sebastian Seitner, Tim van Daalen, Jana Kholová** Summary of table discussions

WORKSHOP 2 Controlled Environment Plant Phenotyping (CePPG) workshop (Hybrid mode)

16:00 – 16:10	Thomas Altmann (Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), Germany) Welcome, Introduction to CEPPG and WG meeting.
16:10 – 16:35	Robert D. Hancock (The Advanced Plant Growth Centre, James Hutton Institute, Dundee, Scotland) The Advanced Plant Growth Centre: Climate Simulation and HighThroughput Phenotyping for Gene Discovery and Resilience Breeding.
16:35 – 17:00	Marco Maccaferri (Department of Agricultural and Food Sciences, University of Bologna, Italy) Dissection of developmental and adaptive diversity in a Tetraploid Wheat Core Collection (online).
17:00 – 17:25	Lamis Abdelhakim (Photon Systems Instruments, Czech Republic) Integrative phenotyping combined with modelling as a tool for predicting harvest-related traits.
17:25 – 17:40	Thomas Altmann (Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), Germany) Round table discussion on WG activities.
17:40 – 17:55	Philipp von Gillhausen (International Plant Phenotyping Network e.V. (IPPN), Juelich, Germany) WG chair and vice chair person election – candidates and procedure; steering committee volunteers.
17:55 – 18:00	Thomas Altmann (Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), Germany) Closing remarks.
19:00 – ON	Conference dinner: garden barbecue

28th June Sunday

9:00 – 12:00	Excursion PSI & Research Center (for signed attendies)
13:00 – 14:00	Lunch

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