

Featuring Root Phenotyping Technologies & Hands-on Workshop on Hyperspectral Root Phenotyping

PROGRAM

17. April 2018 – Festsaal BOKU, Gregor-Mendel-Str. 33, 1180 Vienna

- 9.00 – 9.15 **welcome & opening session**
- 9.15 -10.15 **Keynote:** Michelle Watt (IBG-2 FZJ): Root and rhizosphere traits for agricultural productivity: Progress and possibilities with phenotyping
- 10.15-10.45 **COFFEE BREAK**
- Session 1: Phenotyping prospects and solutions**
- 10.45-11.05 Roland Pieruschka (EPPN2020): Integrating the plant phenotyping community in Europe
- 11.05-11.35 Dagmar van Dusschoten (FZJ, EPPN2020): Quantification of local root water uptake by means of the soil water profiler
- 11.35-12.05 Imre Vass (HAS Hungary, EPPN2020): Parallel monitoring of root and shoot development of mid-size plants
- 12.05-13.15 **LUNCH BREAK**
- Session 2: Root phenotyping**
- 13.15-13.45 Jonathan Atkinson (UNOTT UK, EPPN2020): Addressing bottlenecks in wheat research: getting to the root of the problem
- 13.45-14.05 Gernot Bodner (BOKU Vienna): Crossing scales and systems in root phenotyping
- 14.05-14.25 Rita Lourenco Costa (INIAV): Root phenotyping strategies for screening the susceptibility of chestnut progenies to *Phytophthora cinnamomi*
- 14.25-14.45 Marco Giovannetti (GMI): A genome wide association study to disentangle legume-specific root responses to phosphate
- 14.45-15.15 **COFFEE BREAK**
- Session 3: Phenotyping tools and processes**
- 15.15-15.35 Angelika Czedik-Eysenberg (GMI): "PhenoBox" and "PhenoPipe": affordable solutions for plant phenotyping
- 15.35-15.55 Konstantinos Blazakis (Mediterranean Agronomic Institute of Chania): Oliveld: an open access software for describing olive morphological parameters
- 15.55-16.15 Davide Gerna (Universität Innsbruck): Selective modification of the wheat seed microbiota affects hydrogen peroxide production in wheat seedlings
- 16.15-16.35 Kris Vissenberg (University of Antwerp): The auxin-regulated CrRLK1L kinase ERULUS controls cell wall composition during root hair tip growth
- 17.00 **DINNER at „Heurigen“**

**18. April 2018 – Seminarraum 15, BOKU UFT, Konrad Lorenz-Str. 24,
3430 Tulln an der Donau**

- 9.00 – 10.30 **Round table discussion (Input statements by root phenotyping platform holders and users)**
Experimental setups, imaging wavelengths and image analysis software: overview on available root phenotyping platforms and discussion on current bottlenecks and future challenges.
The objective of the discussion is to identify strategies how to handle the genotype x platform interaction in order to (i) optimize the overall phenotyping goal to distinguish between root systems of different cultivars, (ii) identify the cultivar with the “best” root system, and (iii) ensure extrapolation of phenotyping information towards field growing conditions. The overall aim would be to define a cross-platform experiment from “gel to field” in order to elaborate strategies towards a unique view on the root system unifying the single platform-specific perspectives.
- 10.30 – 10.45 **COFFEE BREAK**
- 10.45 – 12.30 **On site visit**
- short introduction to BOKU hyperspectral root imaging platform (HSRI)
 - visit and demonstration of HSRI (rhizobox filling, experimental setup, imaging facility)
 - field visit of winter wheat genetic resources trial with field root excavation and minirhizotron demonstration
- 12:30 **OPEN END**
lunch and possibilities for further exchange among participants

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