

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

**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

Organizers and Contact

Gernot Bodner
Univ. of Natural Resources and Life Sciences
Division of Agronomy
gernot.bodner@boku.ac.at
+43 1 476549 5115

Stefanie Koemeda
Vienna Biocenter Core Facilities
Plant Sciences
stefanie.koemeda@vbcf.ac.at
+43 1 7962324 7258



VBCF VIENNA
BIOCENTER
CORE
FACILITIES

