



UNDERSTANDING PLANT WATER RELATIONS: FROM CELLULAR MECHANISMS TO MODELLING CROP WATER RESPONSE BEHAVIOR

24 FEBRUARY 2021

COLLABORATIVE WORKSHOP

ORGANIZED BY:

PROF. DR. M. MOSHELION, THE HEBREW UNIVERSITY OF JERUSALEM

PROF. DR. R. RÖTTER, UNIVERSITY OF GÖTTINGEN



The Robert H Smith
Faculty of Agriculture,
Food and Environment



האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM



GEORG-AUGUST-UNIVERSITÄT
GÖTTINGEN

MAIN GOAL : TO PRESENT STATE-OF KNOWLEDGE AND IDENTIFY CHALLENGES IN THE UNDERSTANDING OF CELLULAR MECHANISMS CONTROLLING WHOLE-PLANT WATER-BALANCE REGULATION AND MODELLING OF CROP WATER RESPONSE BEHAVIOR.

- **Discuss ongoing research on cellular mechanisms controlling whole-plant water-balance regulation**
- **Provide platform for networking and collaboration between UGOE and the Hebrew University scientists as well as other institutions**
- **Discuss improvement in modelling crop water response behavior under the ongoing EU BARISTA, EU BRACE and related projects**
- **Discuss further research and experiment collaborations**

EXPECTED RESULTS: IDEAS FOR FUTURE COLLABORATION ON THE TOPIC OF WATER RESPONSE BEHAVIOR MODELLING AND UNDERSTANDING CELLULAR MECHANISMS OF CEREALS.



Scientific workshop

Understanding plant water relations: from cellular mechanisms to modelling crop water response behavior

24 February 2021 | Online event

ZOOM Link: <https://uni-goettingen.zoom.us/j/97730861583?pwd=c3RjSU3QlBKYzQ0bEVJT3FrNkQ4dz09>

PROGRAMME

Time	Topic
09:00	Welcome address: Objectives and brief introduction to the topic (<i>Prof. Reimund Rötter</i>)
09:15	Whole plant performance analysis: Phenotyping for target traits: (e.g. WUE and drought tolerant traits) Plantarray system (<i>Prof. Menachem Moshelion</i>)
09:35	Reverse phenomics to identify dynamic physiological trait under water stress (<i>Sanbon Gosa</i>)
09:55	Untangling the effect of abscisic acid (ABA) on leaf water balance (<i>Adi Yaaran</i>)
10:15	Optimum barley field measurements for crop modelling and lysimeter drought experiments from Denmark and Göttingen respectively (<i>Mercy Appiah and Dr Issaka Abdulai</i>)
10:35	Discussion
11:00	Break
11:20	Understanding genetic mechanisms controlling water response behavior through plant functional genomics (<i>Dr Agata Daszkowska-Golec</i>)
11:40	Barley phenotyping with varying degrees of environmental control (<i>Prof. Alan Schulmann</i>)
12:00	Single plant precision phenotyping for drought tolerance in cereals – opportunities and challenges (<i>Dr Kerstin Neuman</i>)
12:20	Drought stress experiments with NAM population HEB-25 (<i>Prof. Klaus Pillen / Dr Andreas Maurer</i>)
12:40	Discussion
13:00	Lunch break
14:30	Understanding water response behaviour through key rhizosphere traits analysis (<i>Dr Mutez Ahmed/ Prof. Michaela Dippold</i>)
14:50	Overview of approaches to model isohydric and anisohydric behaviour at crop canopy level (<i>Prof. Reimund Rötter /Dr Nicole C.R. Ferreira / Dr Gennady Bracho Mujica</i>)
15:10	Upscaling crop water response from canopy to higher aggregation levels (<i>Prof. Stefan Siebert</i>)
15:30	Discussion
15:50	Break
16:10	Are there QTL, genes and traits improve barley drought and heat tolerance? Intersection with phenology (<i>Dr Ernesto Igartua Arregui</i>)
16:30	Optimal transpiration under stochastic rainfall (<i>Prof. Iddo Kan</i>)
16:50	WUE - water dynamics - photosynthesis: linking plant nutrition with plant physiology (<i>Prof. Merle Tränkner / Prof. Klaus Dittert</i>)
17:00	Discussion
17:20	Plenary on Future collaboration
17:45	Wrap-up