

The 13th Dahlia Greidinger International Symposium: Sustainable Primary Food Production Emphasizing Soil- Water and Environmental Conservation

Monday, March 4st

8:15-9:00 **Registration**

Opening session: Introduction and greetings

9:00-9:20 Alex Furman, Symposium Chair

Wayne Kaplan, Executive Vice President for Research, Technion

Eran Friedler, Civil and Environmental Engineering, Technion

Greidinger Family Representative

9:20-9:50 Soil Health: Linking Comprehensive Soil Assessment with Agronomic
Management Decisions

Harold Mathijs Van Es

9:50-10:20 Understanding and mitigating environmental footprints of food production systems
in tropical and subtropical regions

Klaus Butterbach-Bahl

10:20-10:40 **Coffee break**

Session I: Precision agriculture, advanced monitoring and modeling (part 1)

Chaired by Nurit Agam

10:40-11:10 Approaches for large scale application of variable rate water management

Victor Alchanatis

11:10-11:30 Integration of earth observation technologies into an advisory system for the
collective management of crops

María P. González-Dugo

11:30-11:50 Precision Irrigation – Research & Development directions

Ofer Beeri

11:50-12:10 Advanced Soil Sampling Strategy for Precision Agriculture

Iggy Litaor

12:10-12:30 The potential of the spectral ‘water balance index’ (WABI) for crop irrigation scheduling

Uri Hochberg

12:30-13:20 **Lunch break (GWRI building)**

Session II: Precision agriculture, advanced monitoring and modeling (part 2)

Chaired by Victor Alchanatis

13:20-13:50 Geophysical characterization and monitoring to support agriculture

Johan A. (Sander) Huisman

13:50-14:10 Below canopy radiation divergence in a vineyard – implications on inter-row surface energy balance

Nurit Agam

14:10-14:30 Biogeochemical modeling for sustainability performance standards: Adapt-N and N balance in US corn production

Shai Sela

14:30-14:50 Using simple RGB Camera to estimate Nitrogen Uptake, Nitrogen Nutrition Index (NNI) and critical Nitrogen: spring wheat case study

Jiftah Ben-Asher

14:50-15:10 Biological and Optical Challenges to Remote Sensing: Implications and Opportunities for Plant Stress Detection

Anatoly Gitelson

15:10-15:30 **Coffee break**

Session III: Soil health

Chaired by Guy Levy

15:30-15:50 Development of multi-factorial soil health index for the Mediterranean agricultural systems

Gil Eshel

15:50-16:10 Biochar on Extracellular enzymes, Microbes and Organic Matter Dynamics in Sediments

Ji-Dong Gu

16:10-16:30 Soil free-living nematodes community as Bioindicators of Soil Health

Yosef Steinberger

16:30-16:50 **Coffee break**

Panel discussion: Challenges in sensing, monitoring and precision agriculture

16:50-17:20 **Panel members:** *Victor Alchanatis (conveyor), Nurit Agam, María González-Dugo and Sander Huisman*

Tuesday, March 5st

Session IV: Environmental and economical sustainability

Chaired by Klaus Butterbach-Bahl

8:30-9:00 Can farming be precise and sustainable? And how can we be sure?

Veerle Van linden

9:00-9:20 Agriculture and Pollutants in the Hula Valley

Moshe Gophen

9:20-9:40 Best Management Strategies for Sustainable Rice Production with Minimum Water Requirement

Kalita Prasanta

9:40-10:00 Carbon debt of field-scale Conservation Reserve Program grasslands converted to annual and perennial bioenergy crops

Ilya Gelfand

10:00-10:20 Economy-Wide Long-Run Water Management under Salinity: Lessons from the Case of Israel

Iddo Kan

10:20-10:40 **Coffee break**

Session V: Advanced Technology and Climatic monitoring for Environmental sustainability

Chaired by Gil Eshel

- 10:40-11:00** Hydrothermal treatment of agricultural and food waste: a circular economy approach to improve energy recovery, nutrients and bioactive compounds
Roy Posmanik
- 11:00-11:20** A general framework for optimal crop selection and water allocation using dynamic crop models
Raphael Linker
- 11:20-11:40** Gallic Acid Interactions with Iron Coated Smectites
Adi Radian
- 11:40-12:00** Nature-sourced desalinization using halophyte-zeolite wetlands
Ezra Orlofsky
- 12:00-12:20** Microclimate, evapotranspiration and water use efficiency of pepper in high-tunnel greenhouses and screenhouses in semi-arid regions
Josef Tanny
- 12:20-12:40** Exploiting dynamic changes in internal screenhouse climate to inform irrigation in bananas
Shabtai Cohen
- 12:40-13:30** **Lunch break (GWRI building)**

Session VI: Soil and plant biology

Chaired by Asher Bar-Tal

- 13:30-14:00** The rhizosphere microbiome - Key for plant Health and Growth
Kornelia Smalla
- 14:00-14:20** Agricultural practices from the microbiome's point of view
Dror Minz
- 14:20-14:50** Screening for biostimulants effect on yield and drought tolerance using an innovative high-throughput physiological functional-phenotyping system
Menachem Moshelion
- 14:50-15:10** Spatial dynamics of carbohydrate content in trees in tree across diurnal and seasonal time scales
Aude Tixier

15:10-15:30 Modeling spring phenology of deciduous trees by temperature mediated kinetics of carbohydrate metabolism
Or Sperling

15:30-15:40 **Coffee break**

Panel discussion: Agricultural sustainability and soil health

15:40-16:20 **Panel members:** *Klaus Butterbach-Bahl (conveyor), Gil Eshel, Veerle Van linden and Harold Van Es*

16:20-17:50 **Poster session** (including finger food, soft and alcoholic beverages)

17:50-18:00 **Poster awards**

Wednesday, March 6nd

Session VII: Plant nutrition and related soil processes

Chaired by Patricia Imas

8:30-9:00 Maximizing the Nitrogen Use Efficiency in Long Term High Yielding Soilless Grown Tomato
Wim Voogt

9:00-9:20 Fluorescence spectroscopy: a sensitive tool for detecting changes in composition of water-extractable soil organic matter and predicting nitrogen mineralization rates
Oshri Rinot

9:20-9:40 Nutritional and chemical implications of long-term irrigation with recycled wastewater in olive (*Olea europaea* L.) orchard
Ran Erel

9:40-10:00 Studying the Effect of Plant Nutrition and Variety on the Nutritional Value of teff grown in Israel
Zipora Tietel

10:00-10:20 High fertilization decreases blueberry yields and fruit quality in China
Qilong Zeng

10:20-10:40 **Coffee break**

Session IIX: Plant nutrition and related soil processes (part 2)

Chaired by Avi Shaviv

- 10:40-11:10** The influence of chloride on plants response to nitrogen level
Asher Bar-Tal
- 11:10-11:30** Are micronutrient deficiencies the sole obstacle to blueberry growth in neutral-alkaline pH soils?
Guy Tamir
- 11:30-11:50** Polyhalite - a new multi nutrient fertilizer with sulphur, potassium, magnesium
Patricia Imas
- 11:50-12:10** Concentration dependence – a new understanding regarding the validity of redox measurements in the soil environment
David Yalin
- 12:10-12:30** Modeling nitrogen transport, uptake and transformation in the root zone with HYDRUS (2D/3D)
Thomas Groenvelde
- 12:30-13:30** **Lunch break (GWRI building)**

Session IX: Irrigation and Irrigation Technology

Chaired by Ami Gips

- 13:30-14:00** Drip fertigation for staple food crops: can we do it?
Naftali Lazarovitch
- 14:00-14:20** Controlling variability in vineyard with variable rate drip irrigation
Itamar Nadav
- 14:20-14:40** The effects of treated wastewater irrigation on the spatial distribution of water and solutes in the root zone and their availability to the plants
Rony Wallach
- 14:40-15:00** DIDAS - a user-friendly software package for assisting drip irrigation design and scheduling
Shmulik Friedman
- 15:00-15:20** **Coffee break**

Session X: Irrigation and Irrigation Technology (part 2)

Chaired by Anat Lowengart-Aycicegi

15:20-15:40 Aerating the subsurface by micro-nano-bubble infused irrigation water

Shahar Baram

15:40-16:00 Management practice can mitigate ill effect of treated wastewater on soil and tree sap flow

Diriba Nemera

16:00-16:20 Salt Crusting Over Evaporating Soils - Three-Dimensional Insights

Uri Nachshon

16:20-16:30 Coffee break

Panel discussion: Knowledge transfer and sustainable agricultural intensification

16:30-16:40 Introduction:

Center for International Agricultural Development Cooperation (CINADCO)

Yakov Poleg

16:40-17:00 Panel members: *Harold Van Es (conveyor), Naftali Lazarovitch, Anat Lowengart-Aycicegi, Yakov Poleg and Avi Shaviv*

17:00-17:10 Closing remarks