THE OHIO STATE UNIVERSITY
COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES

Plant Empowerment Workshop Online

Thursday, July 9th (10AM-2PM EDT) – Introduction to Plant Empowerment, The Theories

10AM-10:10AM — *Welcome & announcements (Chieri Kubota, Ohio State)*

10:10AM – 11:15AM — *Basic knowledge about physics and physiology that play an important role in a greenhouse and for plants (Peter van Weel, The Netherlands)*

- *The interaction between the main resources: CO_2, light, water, RH and temperature*
- *The energy balance and stomata opening*
- *The role of air movement and ventilation*
- *The role of heat emission in the dark*

11:15AM – 11:30AM — *Q&A*

11:30AM – 11:45AM — *Break*

11:45AM – 1:00PM — *Plant empowerment, from experience-based control to sensor-based control (Peter van Weel, The Netherlands)*

- *Controlling 6 balances instead of climate. Why are they important?*
- *Why and how reduction of transpiration under intense light can increase photosynthesis*
- *Why is transpiration control in the dark better than RH or VD control?*
- *Prevention of fungal diseases with a better screen management*

1:00PM – 1:40PM — *Q&A, Discussion (Panel: Peter van Weel; Peter Ling; Chieri Kubota)*

1:40PM – 2:00PM — *Sponsor mini presentations*

Friday, July 10th (10AM-2PM EDT) – The Practical Applications of Plant Empowerment

10:00AM – 11:00AM — *Introduction to the sensors, the software tools and the value of data analysis (P Peter van Weel, The Netherlands)*

- *Measure energy balance to control transpiration, stomata opening and water balance*
- *The RTR (ratio temperature to radiation) tool to control plant balance*
- *Demonstration of the radiation monitor tool: the effect of energy screens on the greenhouse climate, transpiration, energy consumption and plant conditions*

11:00AM – 11:15AM — *Q&A*

11:15AM – 11:30AM — *Break*

11:30AM – 12:30PM — *Cont.*

- *Demonstration of the GPE (growing by plant empowerment) simulation tool: how can I use the hardware components such as screens, light, air tubes, air circulation or ventilation fans and windows in an integrated way?*

12:30PM – 1:10PM — *Q&A, Discussion (Panel: Peter van Weel; Peter Ling; Chieri Kubota)*

1:10PM – 1:30PM — *Sponsor mini presentations*

1:30PM — *Closing (Chieri Kubota, Ohio State)*

PLANT EMPOWERMENT WORKSHOP