

Symposium:

Plant control by LED light

Thursday 19 October, 2017

Venue: Forum building (nr. 102), Wageningen Campus, The Netherlands

LEDs provide exciting possibilities to modulate spectrum and direction of light, to control instantaneously light intensity, and to decouple lighting from heating. This allows not only to control growth, development and yield of plants, but also to control quality, disease resistance and last but not least to save energy.

Several growers have already installed LEDs in their greenhouses and it is assumed that the coming years the use of LEDs will increase exponentially. Different forms of city farming such as plant factories or vertical farming attract a lot of attention. Many city farm initiatives pop up around the world. All these systems have in common that they want a full control of the production of horticultural crops by the use of LED lighting.

The symposium will include 8 oral presentations and 10 posters from several researchers from universities and research organisations. They will present the latest insights from scientific research on control of plant production by LED light. There will also be an extensive discussion with companies active in city farming. For this symposium 230 participants have registered (fully booked).

The symposium is organised by Wageningen University (Chair Group Horticulture and Product Physiology).

Leo Marcelis

Contact information

Leo Marcelis (Leo.Marcelis@wur.nl);

convenor of the symposium and head of the chair group Horticulture and Product Physiology at Wageningen university

Programme

- 9:00 Registration with coffee or tea (2nd Floor)
- 10:00 Opening by Leo Marcelis (Wageningen University and Research, The Netherlands)
- 10:10 Carl-Otto Ottosen (Aarhus University, Denmark)
The LEDs in colour – can we use specific colour combinations in the greenhouse industry to control ornamentals and herbs
- 10:55 Sarah Courbier (Utrecht University, The Netherlands)
Modulation of plant defence against pathogens through the use of LED lighting
- 11:20 Coffee/Tea (Floor 2 and 3; Sponsors on Floor 2; Posters on Floor 3)
- 11:50 Habtamu Giday (Wageningen University and Research, The Netherlands)
Interaction between light spectrum and temperature in control of compact plants
- 12:15 Marie-Christine van Labeke (Ghent University, Belgium)
Long-term effects of red- and blue-light emitting diodes on leaf anatomy and photosynthetic efficiency of ornamental pot plants
- 12:40 Lunch (ground floor; Sponsors on Floor 2; Posters on Floor 3)
- 13:40 Haris Ouzounis (Wageningen University and Research, The Netherlands)
Response to LED spectra in tomato depends on the genotype
- 14:05 Lieve Wittemans (Research station for vegetable production, Belgium)
Challenges and possibilities for artificial lighting in the cultivation of greenhouse vegetables
- 14.30 Anja Dieleman (Wageningen University and Research, The Netherlands)
Additional far-red light affects tomato crop yield: experiences and explanations
- 14.55 Coffee/tea (Floor 2 and 3; Sponsors on Floor 2; Posters on Floor 3)
- 15.25 Sander Hogewoning (Plant Lighting B.V., The Netherlands)
Controlling morphology of tulips with LED-light
- 15:50 Panel discussion about vertical farming with contributions from several companies: Philips, Urban Crop solutions, Here, There and Everywhere, GrowX, StaayFoodGroup
- 16.50 Drinks, snacks (Floor 2)

Poster presentations

During the breaks you can visit posters on the 3rd floor presenting a selection of the research on LED lighting performed at the Horticulture and Product Physiology group of Wageningen University.

The following posters will be presented:

Elias Kaiser, Jeremy Harbinson, Ep Heuvelink, Leo Marcelis

Natural fluctuations in light intensity decrease photosynthesis: how clever climate management can help

Faline Plantenga, Melpomemi Siakou, Sara Bergonzi, Ep Heuvelink, Christian Bachem, Richard Visser, Leo Marcelis

Regulating potato flowering and tuberisation with light spectrum and timing

Arian van Westreenen, Jochem Evers, Niels Anten, Saskia van Wees, Jantineke Hofland-Zijlstra, Leo Marcelis

More roses for less: Balancing between crop growth, fungal diseases and energy use in greenhouses

Dorthe Larsen, Julian Verdonk, Ernst Woltering, Céline Nicole, Jarno Mooren, Rob Schouten, Leo Marcelis

Quality and shelf life of arugula baby leaves as affected by spectral composition from LED light during cultivation

Qianxixi Min, Leo Marcelis, Ernst Woltering

The effects of short-term pre-harvest lighting on the postharvest performance of lettuce.

Rachel Schipper, Pieter de Visser, Ep Heuvelink, Leo Marcelis

Interlighting: Enlightening ad- and abaxial photosynthesis

Yongran Ji, Liyang Gao, Jarno Mooren, Leo Marcelis, Ep Heuvelink

Far-red induced change of assimilate partitioning in tomato

Evelien van Tongerlo, Wim van Ieperen, Anja Dieleman, Leo Marcelis

Growth, development and photosynthesis in Phalaenopsis

Sharathkumar Malleshaiah, Wim van Ieperen, Leo Marcelis, Ep Heuvelink

Flowering in chrysanthemum

Priscilla Malcolm Matamoros, Leo Marcelis, Wim van Ieperen

Effect of LED Light on plant-water relations

Sponsors

During the breaks you can visit the sponsors on the 2nd floor



Outreach Courses Wageningen UR

- Three-day courses on lighting. 7-9 or 12-14 February 2018
- Greenhouse horticulture: 27 Aug – 7 Sept 2018
- Postharvest technology: October 2018

More info: visit <http://www.wur.eu/hpp> and go to 'Outreach courses'