



Programme

Postharvest Technology Course 2018



Course leaders

Dr. Julian C. Verdonk, Wageningen University Horticulture & Product Physiology
Professor Ernst J. Woltering, Wageningen Food & Biobased Research

Guest course leader

Dr. Mary Lu Arpaia, Postharvest Technology Center, UC Davis

Date: 9 - 12 October 2018

Location: Wageningen Campus

Organisation: Wageningen Academy | Wageningen University & Research



Team of lecturers

Course leaders:

Julian Verdonk, Wageningen University Horticulture & Product Physiology
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Ernst Woltering, Wageningen Food & Biobased Research, ernst.woltering@wur.nl

Guest course leader:

Mary Lu Arpaia, Postharvest Technology Center, UC Davis, USA, mlarpaia@ucanr.edu

Experts Wageningen University & Research

Jan van Kan, Wageningen University Phytopathology, jan.vankan@wur.nl

Leo Lukasse, Wageningen Food & Biobased Research, leo.lukasse@wur.nl

Matthijs Montsma, Wageningen Food & Biobased Research, matthijs.montsma@wur.nl

Rob Schouten, Wageningen Food & Biobased Research, rob.schouten@wur.nl

Patrick Spoelstra, Wageningen Food & Biobased Research, patrick.spoelstra@wur.nl

Jan Verschoor, Wageningen Food & Biobased Research, jan.verschoor@wur.nl

Marcel Wenneker, Wageningen Plant Research, marcel.wenneker@wur.nl

Eelke Westra, Wageningen Food & Biobased Research, eelke.westra@wur.nl

Rick van de Zedde, Wageningen Plant Research, rick.vandezedde@wur.nl



Course locations on Wageningen Campus

Lectures:

FORUM (building nr. 102), Droevendaalsesteeg 2 & ORION (building nr. 103), Bronland 1



Demonstrations: Postharvest research facility PHENOMEA



Lunch location: Restaurant Impulse (building 115), Stippeneng 2





Tuesday 9 October 2018

Location: Wageningen Campus, FORUM (building nr 102)
Lecture room P0631

- 08.30 Registration
- 09.00 Welcome by Wageningen Academy
- 09.10 Brief introduction of course leaders & participants
Julian Verdonk & Ernst Woltering
- 09.45 Global losses, health and taste:
the importance of postharvest technology
Ernst Woltering
- Demo websites with postharvest info
Mary Lu Arpaia & Ernst Woltering
- 10.30 Coffee break

Chair - Ernst Woltering

- 11.00 Growing quality: the influence of preharvest and genotype on postharvest quality
Julian Verdonk
- 12.00 Lunch break – walk to Restaurant Impulse
- 13.00 Factors determining quality and causes of quality loss in Fruit & Vegetables
Ernst Woltering
- 13.45 Quality measurements and modelling of Fruit & Vegetables
Rob Schouten
- 14.30 Coffee break
- 15.00 Factors determining quality loss in flowers, cuttings & pot plants
Julian Verdonk
- 15:45 Long-term transport and storage of flowers, cuttings & pot plants
Ernst Woltering
- 16.30 Wrap-up Day 1
Julian Verdonk
- 17.00 Walk to Restaurant Impulse
- 17.30 **Social Dinner** led by *MasterChef Arne Regeer*
- 20.30 Closure day 1



Wednesday 10 October 2018

Location: Wageningen Campus, FORUM (building nr 102)
Lecture room P0658

Chair - Mary Lu Arpaia

- 09.00 Ethylene in postharvest biology
Ernst Woltering
- 09.45 Chilling injury
Rob Schouten
- 10.30 Coffee break
- 11.00 Importance of temperature management in chains
Eelke Westra
- 11.45 Reefer transport of perishable products
Leo Lukasse
- 12.30 Lunch break – walk to PHENOMEA, room Plaza (lunch in room Plaza)
- 13.15 Ripening of tropical fruits
Mary Lu Arpaia
- 14.00 Demonstrations in 'brand new' postharvest research facility PHENOMEA (incl. coffee). Split-up in groups:
1) packaging;
2) cooling methods;
3) storage disorders;
4) product quality measurements.
Matthijs Montsma & Julian Verdonk & Jan Verschoor
- 16.30 Wrap up Day 2 in PHENOMEA, room plaza
Julian Verdonk
- 17.00 Group photo by *Guy Ackermans* and closure day 2



Thursday 11 October 2018

Location: Wageningen Campus, ORION (building nr 103)
Lecture room P6008

Chair - morning: Ernst Woltering

- 09.00 Botrytis in the postharvest phase
Jan van Kan
- 09.45 Other postharvest pathogens
Marcel Wenneker
- 10.30 Coffee break
- 11.00 Rot problems in tropical fruits including citrus
Mary Lu Arpaia
- 11.45 Postharvest insect control
Jan Verschoor
- 12.30 Lunch break – walk to The Restaurant Impulse

Chair - afternoon: Julian Verdonk

- 13.30 Modified Atmosphere Packaging (MAP) and fresh-cut leafy vegetable produce
Ernst Woltering
- 14:15 Interactive storage systems & ethylene control pome fruit
Jan Verschoor
- 15:00 Wrap-up
Julian Verdonk
- 15.15 Coffee break
- 15.30 Pitches and Q&A on various new technologies within the postharvest domain that will likely to enter commercial practice within 5 years:
- advanced vision and near infrared technology for non-destructive quality measurements of fruit, vegetables, flowers and plants by *Patrick Spoelstra*;
 - use of Big Data and "Bayesian networks" for product quality prediction by *Eelke Westra*;
 - use of LED-light treatments before and after harvest to improve product quality by *Ernst Woltering*;
 - improved automation, robotisation and "deep learning" technologies for sorting and objective quality control by *Rick van de Zedde*.
- 17.30 Evaluation, certificate ceremony and drinks in *The Spot*, ORION
- 18.30 Closure day 3



Friday 12 October 2018 (excursion day trip)

Coordination company visits: Matthijs Montsma

Excursion day trip to selected companies by joint touring car.

- Early start from Wageningen Campus between 7 hrs – 8 hrs.
- Expected return at Wageningen Campus between 17 hrs – 18 hrs.

Time schedule will be provided during the course.