



Masterclass

## Soilless Culture

**The global market for production of high quality fresh vegetables and ornamentals is growing rapidly and is asking for sustainable production processes. The use of soilless cultivation systems increases control over the conditions in the plant rootzone, thereby increasing the efficiency for use of water and fertilisers. Cultivation in soilless systems is a complex subject, for which the concept of integrated rootzone management (IRM) applies. The Masterclass Soilless Culture brings you the latest knowledge on fertigation and water management, growing media, rootzone microbiology and root physiology. By attending this Masterclass you will learn the fundamentals of IRM, with practical examples on how to execute and evaluate the factors involved.**

### Target group

This Masterclass is designed for professionals working in horticultural companies, consultants and technical suppliers with an interest in technical-, process- or crop related topics. For instance managers, supervisors, business operators and owners involved in making decisions and managing cultivation systems.

### Results

After successful completion of this program, you will be able to understand the basics of integrated rootzone management:

- Nutrient adjustments in open and closed irrigation systems and the calculation of a fertiliser recipe;
- Substrates and microbiology in soilless culture;
- Water quality and drain water disinfection.

**Date** 24 – 28 March 2025  
**Location** WUR Greenhouse Horticulture Bleiswijk, the Netherlands

Course leader Jim van Ruijven, MSc,  
WUR Greenhouse Horticulture

### Outline and topics

The course gives participants an in-depth understanding of:

- Growing systems incl. technical lay-out in relation to required crop demands
- Growing media and its applications in practice
- Water quality and plant nutrition; learn to analyse reports and act accordingly
- Calculation of nutrient solutions and translate into fertiliser recipes
- Manage (execute, report and evaluate) water and fertilisation strategies

The course offers an attractive mix of lectures, greenhouse and laboratory visits and practical experiments/assignments. There is ample time to interact with the experts from WUR and other participants.



## Programme

World renowned scientists from Wageningen University & Research, Greenhouse Horticulture such as Tommaso Barbagli, Van Nguyen, Marta Streminska, Jim van Ruijven and others will share their knowledge. Participants will learn to identify cultivation systems and to make choices about the required technical lay-out. They will also learn about chemical, physical and biological properties of growing media and how to characterise growing media. Cultivation aspects will be discussed in addition.

The basics of plant nutrition and related plant physiology will be discussed thoroughly. Attention will be paid to the principles of nutrient solutions, how to make calculations, how to make adjustments for water quality, growing media, crop stages, and the conversion of nutrient solutions into fertiliser quantities. Various aspects of salinity problems will be discussed as well as practical methods to deal with salinity in soilless culture.

During the 5 days course excursions will be made to commercial companies and to the greenhouses of the research facility. In parallel to the sessions, participants will be challenged to make their own soilless cultivation system design.

There will be an online preparation module before the start of the course. Each course day starts at 9.00h and finishes at 17.00h (local time). Besides the lectures and excursions there is time to work on your casus, the design of a soilless cultivation system for a specific crop.

This Masterclass is an in-depth programme which focusses on water and fertiliser. If you're looking for a broader programme on above-ground cultivation aspects we recommend exploring our 2-week [Summer School Greenhouse Horticulture](#).

## Practical information



€ 3,095.- per person and covers tuition, excursion day-trip, course materials, lunch and refreshments during the day and one network dinner. Hotel accommodation is not included in the course fee. We offer pick-up services from a selected hotel nearby.



Max. 30 participants.



Based on your attendance you will receive a certificate after

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## Registration

Enrollment is possible until 24 February 2025, or if the maximum number of participants is reached. Register via [wur.eu/academy](http://wur.eu/academy)

[Register](#)

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## Wageningen Academy

We develop and organise courses for professionals, based on Wageningen University & Research expertise.

## Contact

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