

Course

Hands-on Novel Sensing Technologies and Chemometrics

Are you looking for insights in the latest non-destructive sensing technologies to analyse fresh horticultural products and gain insights in their properties? Do you want to use chemometrics modelling for quality measurements and assessment? Then this course is something for you. Novel sensing technologies and chemometric modelling provide tools to increase yield, improve postharvest quality and make better decisions in fresh supply chains and thus reduce food waste.

Target group

This course is designed for technical professionals responsible for quality assurance, marketability, safety, logistics, research and associated activities in fresh produce supply chains. The target audience consists of persons active in breeding, production, trade, retail, tech developers and equipment builders with a focus on smart sensors and data analytics for (postharvest) quality. No prior knowledge on the course topics is required.

Results

After successful completion of this course, you have learned the working principles of various sensing technologies and chemometric modelling approaches for analyzing physicochemical properties of fresh produce. Furthermore, you have gained hands-on experience with modern devices and tools and understand the capabilities and challenges and can start applying new sensing and chemometric approaches in your own business.

Dates	29 & 30 September, 1 October 2025
Location	Wageningen Campus
Duration	3 days

Course leader Dr. P (Puneet) Mishra,
Wageningen Food & Biobased
Research

Outline and topics

This course design ensures a balance between theory, hands-on skills, and data-driven insights, preparing you to tackle and explore real-world challenges:

- Capabilities and applications of current and future sensing approaches for assessment of fresh horticultural products (fruit, vegetables, flowers and potted plants)
- Where and how the different sensing approaches can be used
- The novel chemometric modelling approaches to make meaning to sensor data
- Handling different sensors for routine use



Programme

Within 3 days you will be guided through the many interesting facets of non-destructive quality measurements by a team of experts from Wageningen University & Research. *All topics are focused on applications and solutions for fresh horticultural products.*

Monday 29 September 2025

- Welcome and introduction to the course
- Sensing and modelling of fresh horticultural products
- Color measuring along the fresh produce chain
- Sensors for computer vision (*monochrome, RGB, multi-spectral, 3D*)
- Artificial intelligence for computer vision
- Robotics and Automation
- Hands-on Lab: Computer vision and robotics
- Social diner

Tuesday 30 September 2025

- Temperature and humidity sensing along fresh produce chain
- Gas sensing
- Optical spectroscopic techniques: Basics and Applications (*UV-Vis, NIR, MIR, Raman, Fluorescence, Spectral Imaging*)
- Tour with demonstrations on postharvest research
- Hands-on Lab: Measurements with sensors (*spectral analysis, gas analysis and reference analysis approaches*)

Wednesday 1 October 2025

- Hands-on Lab: Chemometrics signal modelling (with Google CoLab)
- Pitches on new technologies (*X-ray, Microwave sensing, Portable Hyperspectral imaging, Ultrasonic sensing*)
- Panel discussion
- Certificates and drinks

Practical information



€ 1,695.- per person and covers tuition, course materials, demonstrations, lunches and one diner.

Participants are required to bring their own laptop.

For PhD students we offer a reduced course fee of € 1,125.-



Between 20 and 30 participants.

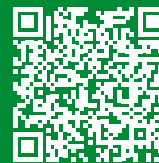


Based on your attendance you will receive a certificate after the programme is finished.

Registration

Enrollment is possible until the maximum number of participants is reached. Register via wur.eu/academy.

Register



Wageningen Academy

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

Contact

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