

# With GroSens and e-Gro, 24-7 insight into the root zone

## GroSens Sensors at Dutch grower Sweet Lions

Cherry tomato nursery Sweet Lions has been using wireless GroSens slab sensors since 2015. This year it started to use the associated e-Gro app for smartphones too. The constant availability of information on water content and EC enables cultivation manager Jack Janssen to control and improve his crop development even more effectively while saving on water and fertilisers.

The brothers Thomas and Jordan van Leeuwen grow red and yellow cherry tomatoes in an area of 8 ha at their Sweet Lions nursery in the Dutch horticultural region known as Californië (around the town of Grubbenvorst). In 2015 they were looking for a system that would enable them to monitor the water content of their stone wool slabs more accurately than their existing system with water level indicators. Their search brought them to the wireless GroSens Multisensor system.



Cultivation manager Jack Janssen (right) shares his experiences with GroSens and e-Gro with Grodan's account manager Frank Janssen.

### Obsolete system

“We had always used the water level indicator system, but it was overtaken by technological advances,” says Thomas. “That system had become obsolete. In comparison with the equipment that’s now available it had quite a few disadvantages.

The greatest was that you weren't really able to determine how much your slabs dry out during the night. And that's a very important aspect because it tells you when it is the best time to switch off your drip irrigation in the afternoon or early evening, and when to switch it on again the next morning."

Cultivation manager Jack Janssen adds: "We used to walk around our greenhouse once a week to measure the water content and EC by hand at 24 points in each irrigation section. That wasn't ideal, but at least we got the information we needed to fine-tune our irrigation strategy. Each of our irrigation sections also has a drain hole with a fixed EC and pH meter, which also provide useful information on our crops' root environment. We're still using those meters, though they're now of less importance to us than in the past."



Besides the six fixed wireless sensors Janssen also uses the flexible GroSens handheld for additional measurements.

### **Better understanding of water content**

In 2014 Frank Janssen, Grodan's account manager for vegetable crops, informed the brothers about the then recently introduced GroSens system. "A lot of time and energy had been invested in its development and by 2014 it had already proven its value at various nurseries," explains the advisor. "I thought it would be a perfect solution for Sweet Lions."

Cultivation manager Jack Janssen agreed, and in the spring of 2015 the nursery started using one GroSens Multisensor starter set in an area comprising three irrigation sections for the cultivation of red cherry tomatoes. The set consisted of three fixed sensors, a convertor for transferring the data to the climate computer and a flexible handheld sensor for random measurements anywhere in the crop.

“We were very satisfied with the system from the start,” says the cultivation manager. “It enables us to monitor precisely how the slabs’ water content and EC change throughout the night. So if we see that there’s a risk of our slabs drying out too much we’ll switch on our irrigation system half an hour earlier, say, and optionally give our crops an extra dose of water in the late afternoon. The system has really helped us to optimise the times and duration of our irrigation.”

### **Different cultivation method**

Around the end of 2015 another three fixed sensors were installed in a second area of yellow tomatoes, bringing the total to six irrigation sections and 5 ha of cherry tomatoes. “We soon began to infer differences between the two varieties from our measurements,” says Thomas. “The yellow variety clearly absorbs less water than the red one in spring and autumn. That calls for a different irrigation strategy.”

Jack Janssen: “You realise just how important reliable measurements are when you have to make changes. At first I was still a bit hesitant about making adjustments, but now I confidently make them earlier and more rigorously. We’ve now been using GroSens for three seasons and our present cultivation method is a lot different from that of three years ago. We’re able to control crop development more effectively and the plants show good generative growth. The tomatoes actually look better too.”

The yellow tomatoes in particular are now watered a lot less. Added advantages are less drainage and a small saving on fertilisers.

### **e-Gro: very convenient**

Early this year the introduction of our e-Gro app for smartphones made for extra user convenience. Thomas and Jack both use it, though Jack on a more frequent basis. “It means I always have information on the root zone at hand, wherever I am,” says the cultivation manager. “e-Gro provides real-time information, without any need to contact your computer system. It also has a few functions that the GroSens doesn’t have, such as the Alert functionality. I do think that system’s settings could be improved, but on the whole it’s definitely a very convenient app.”