

## CASE

### EL-SIE-2: Resolves Greenhouse Tomato Problems

#### TOMATOES FROM THE GREENHOUSE

Using Lascar's EL-SIE-2 for temperature and humidity data logging to halt problems occurring whilst growing tomatoes.

*A Victoria Herbert spoke with us recently of her appreciation for Lascar products and expressed the following: She has enjoyed growing vegetables for many years and after using raised beds for crops, decided to further her interest by investing in a small greenhouse. This would extend the growing season by starting seedlings earlier and produce better crops of a wider range of nightshade varieties, for the whole family to appreciate. She started with tomatoes and chose a suitable and popular greenhouse variety called 'Moneymaker'. They are a cherry-sized tomato so ideal for so many cooking uses. This variety generates a heavy crop of luscious, shiny, red tomatoes that keeps producing an ample harvest over a long period.*

#### The Challenge

However, after a few weeks, she found open flowers on the ground and after doing some research, discovered that the problem was 'Blossom Drop'. What happens is that otherwise healthy-looking tomato plants set flower blossoms, then they just dry up and fall off before a fruit is formed. There are several reasons for Blossom Drop: insect damage, lack of water, too much or too little nitrogen and lack of pollination but temperature fluctuations can be the most usual cause. Tomatoes need night temperatures higher than 12° to 13°C (53.6° to 55.4°F) in order to retain their flowers.

If the temperatures fall outside this range, Blossom Drop occurs. While you can't change the weather, you can make sure the rest of the plant is strong by: using a nitrogen-rich fertilizer to bring the nutrients back into balance; using neem oil insecticides and shading plants from the sun. With the air being hotter in the greenhouse, plants dry out far more quickly so she started watering more often but humidity also needed to be addressed. Humidity is an issue because when the leaves get excessively wet it can prevent nutrient uptake, stopping gas exchange and transpiration stream problems. So, she dealt with many of the other problems but temperature and humidity requirements are quite a difficult thing to master and need to be kept between the preferred 21° to 27°C (70° to 80°F).

Doors and vents can be opened which can be left at night if the temperature remains high. Panes can be removed and she could fit an automatic vent opener but this was going to prove expensive. She could also monitor greenhouse



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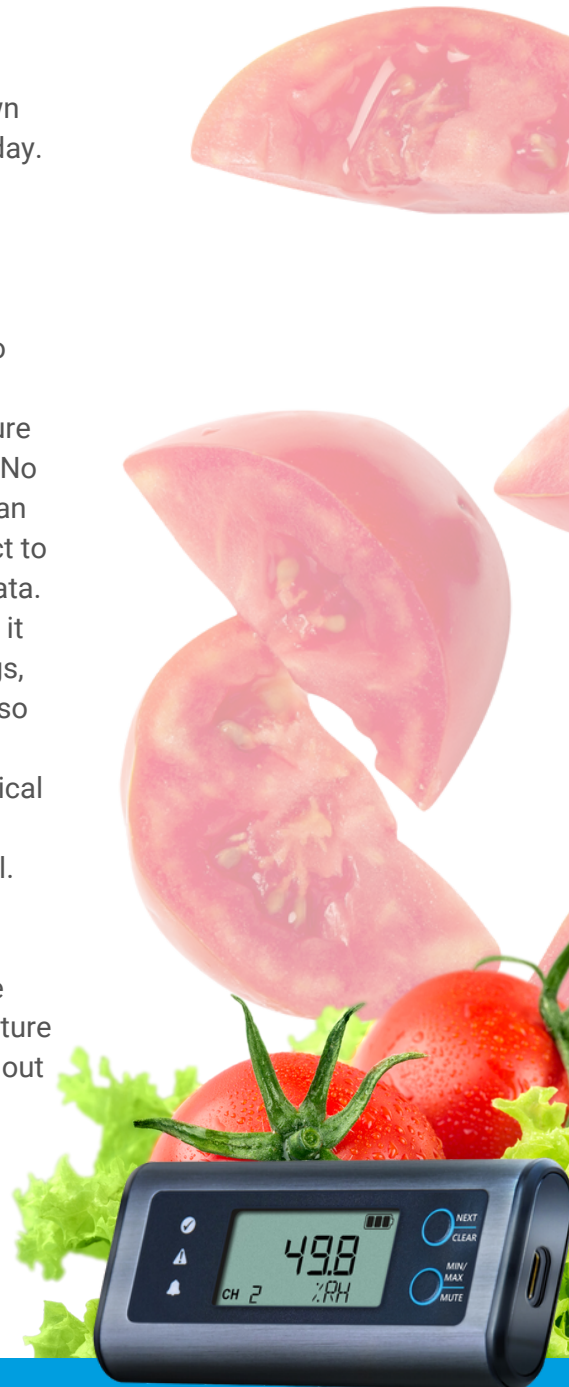
temperatures with a maximum minimum thermometer, and was noting down the readings but this was difficult as she was not there every minute of the day. Nor was she easily able to collate the masses of information these notes provided over long periods of time; something more was needed.

### The Solution

Hunting growers' guide sites on the Internet she found a recommendation to install a data logger, which would tell her when temperature and humidity changed. Enter the EL-SIE-2. This is designed to monitor ambient temperature and humidity in a large range of applications and suitable for greenhouses. No software is required other than an internet browser (which does not require an internet connection). She used the supplied USB-A to USB-C cable to connect to her computer to configure the device and view, analyse and download the data. It really couldn't be easier – she set the logging interval at every 2 hours and it started logging. The display shows current, maximum and minimum readings, and three coloured LEDs indicate the device status at a glance. She could also choose to upload her data to the EasyLog Cloud account, making the data accessible online for powerful graphing, analysis and report generation. Typical battery life is over 1 year using standard AAA alkaline batteries, and a wall mounting bracket was supplied with the device, which made it easy to install.

### The Benefits

Once logging was complete, she re-connected to her computer and used the browser to view, analyse and effortlessly save the data. So now the temperature and humidity are being monitored, she would no longer have to manually fill out diaries, just download and analyse the graphs provided. She is incredibly pleased with the ease at which the installation went.



### *Victoria Herbert*

"I'm now reassured that there will be no more Blossom Drop and every flower should mature into the tomatoes we all enjoy."

For more information:  
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