

# How to Optimise the Conditions of Your Greenhouse



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Our Product Supervisor, Emma Edwards, has been using a temperature & humidity data logger to help her provide the crops in her greenhouse with the ideal conditions to grow.

Our Product Supervisor, Emma Edwards, is a gardening enthusiast who loves to grow a variety of different fruits and vegetables. This summer, she has been busy in the greenhouse, attempting to grow three different types of chillies, as well as tomatoes, cucumbers, and the seedlings for her outdoor vegetable patch.

A problem that Emma, like many other hobbyist gardeners, has experienced is uncertainty as to whether or not her greenhouse maintains appropriate temperature and humidity levels for her crops.

“Greenhouses are vulnerable to overheating from spring until autumn. Without protection from heat, few plants are likely to survive unharmed when subjected to prolonged high levels of heat and dry atmosphere within a greenhouse or conservatory.

However, with sufficient air circulation, humidity and shading, many plants will tolerate high summer greenhouse or conservatory temperatures in the same way that they survive in the tropics and subtropics where many greenhouse and conservatory plants originate.” – Royal Horticultural Society



Emma was prepared to provide all of the care required to control ventilation, shading and humidity levels ([see Royal Horticultural Society advice for this here](#)). However, with no way of telling what the temperature of her greenhouse was over time, Emma didn't know how much change in ventilation, shading and humidity was necessary (if any). Neither did she know when this was needed throughout the day.



As a solution, Emma decided to test one of our industry-leading data loggers.

The EL-MOTE range of data loggers can be powered by replaceable batteries and are protected from dust intrusion and moisture to IP67 rating, making them perfect for outdoor applications.

Wanting high-accuracy data for both temperature and humidity, Emma opted for the [EL-MOTE-TH+](#); a high-accuracy, Wi-Fi connected temperature and humidity data logger. There are also [standard-accuracy](#) and [temperature-only](#) options available ([see the full EL-MOTE range here](#)).

The EL-MOTE-TH+ takes regular temperature and humidity readings and automatically uploads these to the [EasyLog Cloud](#) via Wi-Fi. The user can then see their data readings from anywhere in the world, 24/7, via mobile app or internet browser. On top of this, the user can configure custom alarm settings that trigger a notification email to an address of their choosing.



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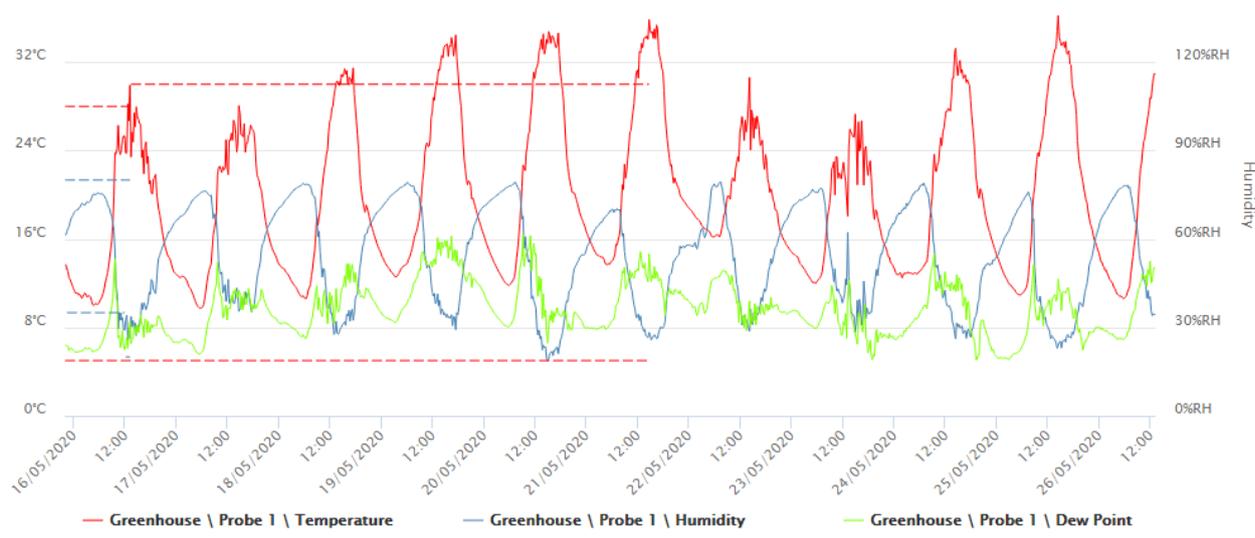
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Emma followed the simple, app-based setup process using the free EasyLog mobile app, and positioned her data logger on one of her greenhouse shelves. She set the sample rate to 15 minutes and the sync schedule to 1 hour. This meant that her device would record the temperature and humidity every 15 minutes, and the data collected would be uploaded to her EasyLog Cloud account every 1 hour. As well as this, she set up a high alert threshold of 30°C so that, whenever temperature rose above this, the device would sound a beeper alarm, flash an LED, and send an email notification to her email address.



Initially, Emma could see that temperature was higher than she had anticipated. She explained, "My greenhouse is in a bit of a sun trap so I knew it was probably getting really hot. As a result, I was already leaving the doors open throughout the daytime to increase ventilation. It wasn't until I got the EL-MOTE that I realised it was still getting too hot. I was getting an email notification most days as the temperature escalated above my 30°C alarm threshold, and when I checked the readings in my EasyLog Cloud account I could see that some days it was reaching as high as 34°C."

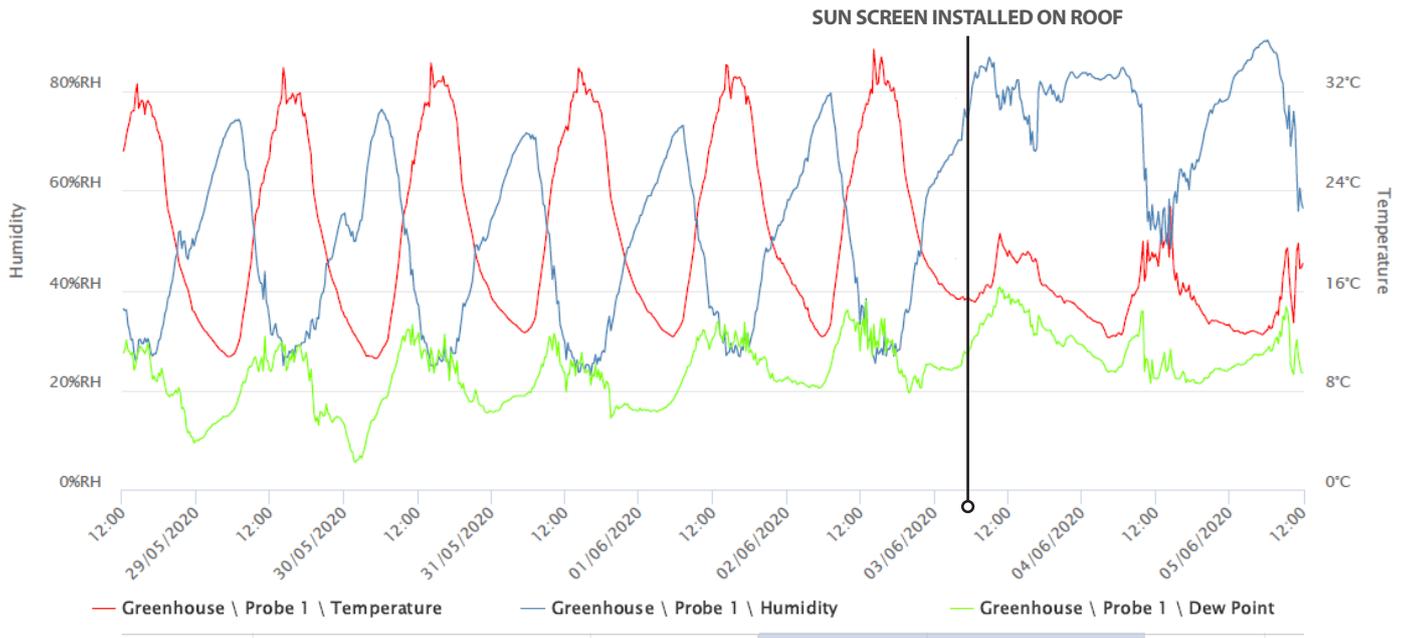


Using the EasyLog Cloud graphing functionality, Emma could easily see the trends in her data over time. She was able to try different ventilation and shading techniques then quickly and easily see how this affected the temperature and humidity of her greenhouse.



"As a novice gardener, the EL-MOTE has been great at helping me understand a bit more about controlling my greenhouse temperature. I had fun experimenting with ways to increase ventilation and provide shading before I eventually found a great solution in the form of a sun screen that sits on the greenhouse roof. This has helped me to maintain the temperature at a much better level for my crops. I'm already seeing my chillies grow amazingly well and I've had fewer tomato plant casualties!"

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Emma was able to use the EL-MOTE-TH+ because she had a good Wi-Fi signal in her greenhouse. Lots of other gardeners might not necessarily have this liberty. However, offline options are available. Emma could have used the [EL-USB-2+](#); a high-accuracy data logger that allows the user to download their data to PC or Laptop via USB at their convenience. Using the free EasyLog USB software, the user can still easily view and graph their data, enabling them to make changes to the ventilation, shading and humidity of their greenhouse as necessary. The product is also available in [standard-accuracy](#) and [temperature-only](#) forms, as well as having product options that include an [LCD screen](#) displaying live readings ([See the full EL-USB range here](#)).

“For any novice gardener, I would definitely recommend using a temperature and humidity data logger. It’s been really interesting to see how different ventilation and shading techniques have affected the temperature of my greenhouse and the growth of my crops. Next for me is to learn a bit more about controlling the humidity as I think if I can get that right I will see even more improvement.”

