



GP2 Data Logger and Controller

Research at the Kompetenzzentrum
Obstbau-Bodensee Institute in Germany:

Using the GP2 logger to Investigate the protective effect of covering systems on soft fruit cultivation

The **Kompetenzzentrum Obstbau-Bodensee in Bavendorf (KOB)** is a private science institute with a strong focus on developing progressive approaches to growing fruit in the Lake Constance region of Germany.

With improved sustainability and quality of produce central to KOB's goals, their research (often performed in partnership with other organisations) is specifically aimed to result in *practical* applications that impact positively on growers and the environment.

A recent KOB research project centred around the effect of using covering systems on soft fruit cultivation.

Working closely with German environmental measurement specialists **UP GMBH** (an official Delta-T Devices distributor) KOB implemented a measurement and monitoring system based around the GP2 Data Logger and Controller to support the research.

The study specifically looked at the effect that a patented adjustable covering system from German company **Vöhringer GmbH & Co** had on protecting stone fruit and berries against rain, hail, wind, insects, birds, and fungal infections (without use of chemical preventative treatments).

GP2 Data Logger & Controller

The GP2 is a powerful, weatherproof, research-grade SDI-12 compatible data logger with unique features for recording and controlling field experiments.

Its combination of sophistication, diverse control capabilities and ease of use makes it ideal for progressive commercial horticulture applications.

- Ideal for demanding research
- 12 differential channels
- Up to 6 relay outputs
- Powerful control capabilities
- SDI-12 enabled
- DeltaLINK-Cloud online data platform compatible



Test site with the covering active – offering substantial crop protection

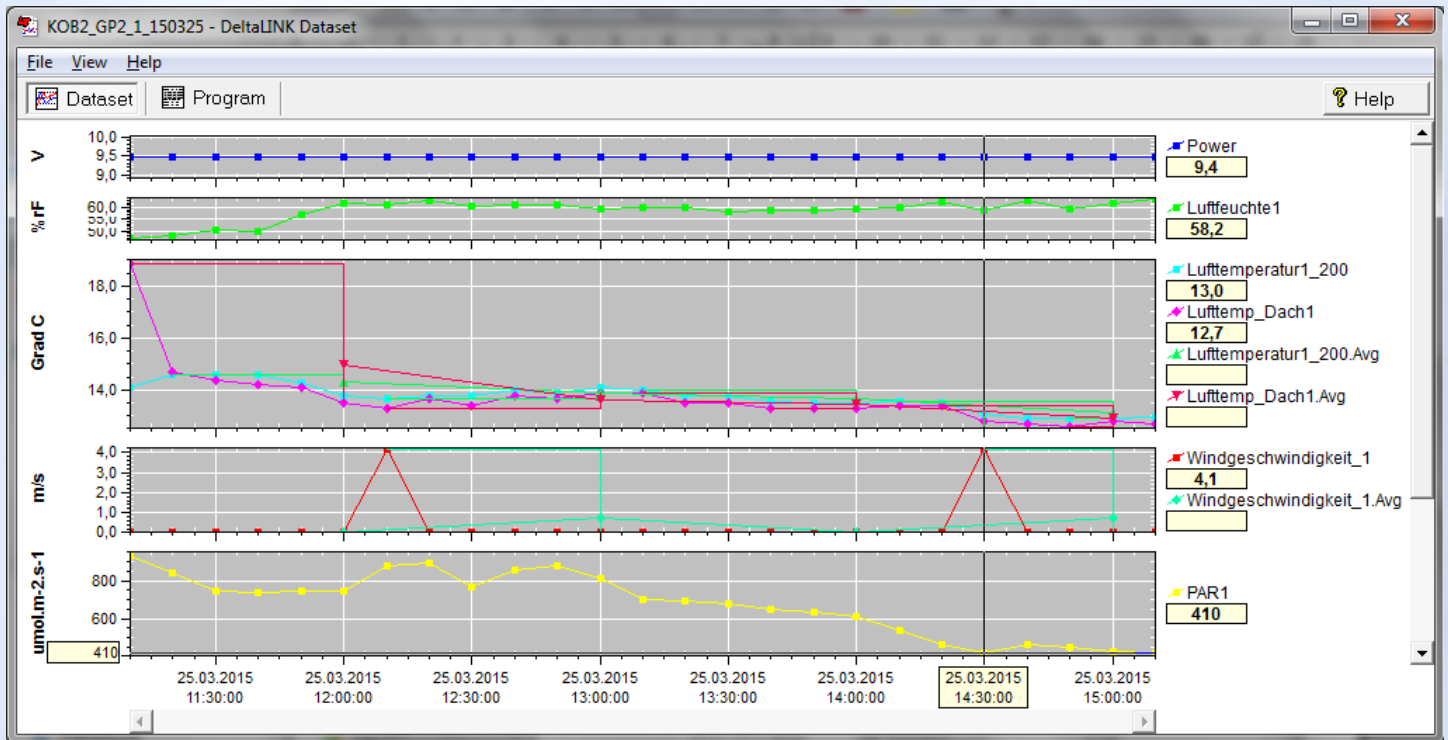
Set up and results

The Kompetenzzentrum Obstbau-Bodensee research team successfully used three GP2 Data Logger and Controllers to record humidity measurements at two heights, air temperature at three heights, windspeed, leaf wetness and Photosynthetically Active Radiation (PAR) at various locations throughout the protected environment.

A sample of this data can be seen in the image below - displayed on the GP2's built-in DeltaLINK software.



Test site with reduced protective cover.



Other similar protected environment research applications for the GP2



The NIAB EMR WET Centre is a prestigious UK-based facility featuring a portfolio of irrigation technologies designed to improve water use efficiency and productivity in commercial horticulture. Specialising in the cultivation of soft fruit, the WET Centre brings together leading researchers, sensor suppliers and irrigation equipment specialists to demonstrate irrigation best practice on a commercial scale. The WET Centre project is based on two earlier 3 year UK government research and development projects - in which Delta-T Devices was a key collaborator and technology provider.

Since its inception in 2017 The WET Centre has used the GP2 Data logger to conduct a wide variety of research projects. One such project focused on the issue of effective rainfall harvesting – which required the configuration of the polytunnel shutters to adapt to environmental changes within and outside the polytunnel.

GP2s were connected to temperature sensors, soil moisture sensors, relative humidity sensors, and rainfall gauges in order to monitor environmental conditions. The dataloggers were then programmed to automatically open and close polytunnel shutters when certain data thresholds were met.

Other GP2 related research at the WET Centre has involved exploration of the correlation between plant water use and vapour pressure deficit. The GP2's ability to make complicated calculations via a an accessible scripting engine was central to the project's success.

Mike Davies, a Principal Scientific Assistant at EMR, explains a key benefit of the GP2 which was central to their decision to use the logger, *"A major advantage of the GP2 Data Logger is that up to 12 moisture sensors can be monitored concurrently. This enables us to easily position multiple sensors in strategic locations across the cropping area - to help account for the inherent variability in soft growing systems."*



GP2 Data Logger installed at the NIAB EMR WET Centre research facility