



Vegetable Grower Taking the Guesswork out of Irrigation Scheduling

Abstract

One of South Australia's leading leek producer's embraces soil moisture monitoring. Sentek's latest continuous soil moisture monitoring solution, EasyAG® 50 together with the Sentek software, has allowed Bald Hills Produce to monitor their day-to-day irrigation and develop a greater understanding of what is happening beneath the topsoil.

Bald Hills Produce

Tim Cobbledick and his son David are highly successful broccoli, cauliflower, onion and leek farmers near Murray Bridge in South Australia. At any stage of the year, 28ha of their 40ha are actively growing vegetables, with the balance sown to Triticale as a wind erosion prevention cover-crop. Year round harvesting of leeks has allowed them to establish specific market niches in Sydney, Adelaide and Japan.

Over a year ago, Tim and David were approached by the River Murray Catchment Water Management Board to be a part of the "Improving Irrigation Efficiency Project." As part of the initiative, Tim Cobbledick had installed on his property, two Sentek EasyAG® 50 probes that continuously measure soil moisture to a depth of 50cm and monitor schedule his irrigation strategies in the predominantly sandy loam soils.

EasyAG® 50 – Soil Moisture Monitoring Made Easy

The EasyAG® 50 is a new slim line multi-sensor capacitance probe that is easy to install and offers easy servicing, has high resolution sensors and software, is ideal for shallow rooted crops and is quick, accurate and precise.

"The installation technique was straight-forward and the average farmer would cope with it easily."

- Tim Cobbledick

The EasyAG[®] 50 is specifically designed for monitoring root zones to a depth of 50cm and easily installed using a soil-sampling auger.

The EasyAG[®] 50 probe has sensors located at 10cm, 20cm, 30cm and 50cm depths. The sensors utilise electrical capacitance to measure soil moisture and each sensor returns a soil moisture value to allow the user to easily understand the entire soil profile.

"EasyAG[®] is definitely the best I've seen. For leeks I don't think that one moisture level can tell you anything, four levels is the way to go".

- Tim Cobbledick

The EasyAG[®] 50 data can be downloaded by the grower via a range of methods while the Sentek software gives growers a graphical, continuous and up to the minute understanding of moisture levels in the soil profile.

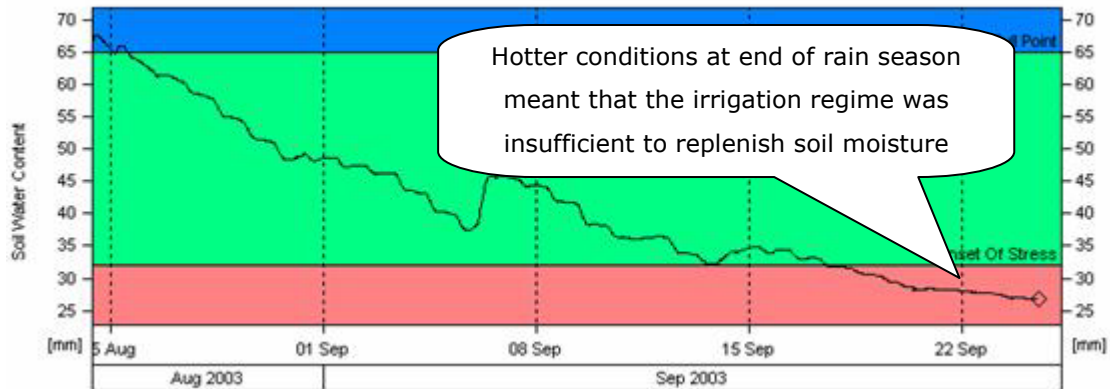
"The ability to download by telephone (modem) is magnificent. Generally I download while eating lunch, which is perfect for my situation with the probes installed in the remotest paddock at the back".

- Tim Cobbledick

The Site

Two EasyAG[®] 50 probes with capacitance sensors at 10cm, 20cm, 30cm and 50cm depths were installed 3.5m apart in a single bed of leeks irrigated by overhead sprinklers. The information provided by EasyAG[®] 50 probes and the Sentek Software indicated that the leek root's are at a depth of approximately 30cm. Tim found it extremely interesting that the moisture level at 30cm has been reasonably constant, however at 50cm the moisture level has gradually declined right from the beginning of monitoring.

Just this last month Tim and David had cause to increase some irrigation shifts to 1 hour as the EasyAG[®] data had indicated that they were approaching a dry point. This information was verified by Tim and David through a simple auger sample.



Water Use Efficiency

The Cobbledick's had already established that smaller and more frequent irrigations led to better quality leeks and had subsequently reduced their applications accordingly, to a ½ hour per day. However the EasyAG[®] has now shown the father and son team that during hotter periods, while the top 30cm were being replenished, this wasn't the case at the 50cm depth.

Therefore weekend watering during last summer and this spring was increased to 1 hour to maintain a non leaching soil moisture reservoir. Furthermore during the 2003/2004 season, Tim and David plan to phase in the extra irrigation amounts in response to the measured dryness with a vision to use the EasyAG[®] for more pro-active management to attain large size.

Summary

The continuous soil moisture monitoring of EasyAG[®] 50 provides instant water management information and provides an accurate and precise means for growers to significantly reduce irrigation related expenses and improve crop yields.

"The Sentek device has been very easy to use. The data is recorded at four different soil depths, which for vegetable crops is very handy due to differing root depths and different crops."

- Tim Cobbledick