

Probes help save water and improve yields

SENTEK'S probes have been proven to offer cotton growers a significant increase in yields as well as valuable water and labour savings within the first year of use.

Good irrigation management underpins profitable cotton enterprises. Insufficient irrigation causes crop water stress which



Sentek Drill & Drop probe.

can reduce yield by up to 18.8 kg per hectare per day. Excess irrigation can waterlog soils and crop stress due to waterlogging can reduce yield by up to 50 kg per hectare per day.

Managing irrigation to maintain soil moisture in the optimal zone can increase farm profitability.

EnviroSCAN and Drill & Drop probes

Sentek's flagship product, the EnviroSCAN probe has become the most widely used continuously logging, irrigation management tool in Australia. It is now joined by the Sentek Drill & Drop probe. In both probes, the soil moisture content is read by sensors positioned at multiple depths along the probe. In addition, the sensors in Drill & Drop probes also read soil temperature.

Moisture and temperature are recorded on a near-continuous basis and a variety of telemetry methods are used to regularly update grower records of these measurements. Sentek's agronomists and software engineers have worked together to design the IrriMAX program, which displays the measures in graphs that clearly show when soil moisture and growth conditions are in the optimal range.

Fine tuning irrigation probes

As a key component of many growers' total farming systems, Sentek's soil moisture probes have helped growers to fine tune their irrigation and farming practices, allowing them to save water, reduce labour and increase yields.

The continuous monitoring of multiple depths at multiple sites provides instant irrigation management information. This has enabled cotton growers to significantly reduce irrigation related expenses and improve crop yields.

Using the Sentek probes to know exactly when the crop needs water has led many cotton growers to reduce the number of irrigations they make per season. Cotton growers have used the hourly measures of crop water usage from Sentek probes to start irrigations just as the crop reaches moisture stress.

Typically this has reduced the number of irrigations per season from eight to six, which in turn has reduced the number of waterlogging events each season.

Sentek probes monitors soil moisture levels on a continuous basis. The data is then downloaded to a grower's computer as frequently as required, or can be accessed via the internet.

The easy-to-read graphs tell growers exactly when the crop is nearing water stress and requires irrigation. Soil moisture measures are displayed as a volumetric soil water content, rather than as a percentage of the saturated value.

Changes in volumetric water content can be readily related to depth of irrigation required to keep the crop in the zone of 'optimal' soil moisture. Cotton's sensitivity to stress from waterlogging is three times that to stress from insufficient water. A key benefit for many cotton growers has been the ability to reduce the depth of irrigation and thereby reduce the number of days the crop spends in waterlogged conditions.

Increased profits achieved by cotton growers

Many cotton growers throughout Australia have significantly increased profits as a result of using Sentek probes and IrriMAX software as part of their farm management system. When utilising the Sentek moisture probes in carefully selected locations in cotton crops, growers are able to accurately time watering intervals to minimise waterlogging events, maintain good crop growth and ultimately maximise overall crop yield.