Soil Moisture Monitoring Demonstration Project

NVIRP, in partnership with DPI, are currently implementing a project to demonstrate the use of Soil Moisture Monitoring (SMM) equipment for scheduling irrigations.

Demonstration sites have been established at 12 locations throughout the Goulburn Murray Irrigation District. This document provides an update on progress.

Achievements for December and January:

- Field day held at Kerang on 3rd December (15 attendees).
- A range of material was developed for the field day including print media advertising, invites and flyers detailing specific particulars for the site.
- The field day consisted of presentations from DPI, NVIRP and supply company representatives followed by a paddock walk to look at equipment and discuss particulars with the landholder.
- Editing completed for a short video to help promote and evaluate the project.
- "Irrimate", a device used for measuring irrigation application efficiency in the field, was set up and run on the permanent pasture demonstration site. Irrimate has been developed by the CRC for Irrigation Futures.
- Mid term evaluation commenced.
- Evaluation of the first and second round of field days commenced.
- Project risk assessment reviewed.
- Radio interview with Warwick Long (ABC rural reporter) with an update of project progress and farmer's perspective (Chris Hunter) of the practice change associated with the collection of data from his property.

Activities planned for the coming month:

- Presentation to the Farm Environment Program working group.
- Companies involved in the project asked to report on the project and results to date.
- Collecting information required to conduct an economic analysis of some of the sites.
- Organising the last round of field days to be held in February and March.

STOP PRESS — Tuesday 9 February - breakfast meeting/field day 7:30am -10:30am, Nanneella Hall. Results from soil moisture monitoring on sub-surface drip irrigation growing tomatoes.

Points of interest:

The benefits of the 2nd and 3rd visits from the company's irrigation agronomist are clearly evident. Farmers are becoming highly competent in accessing and understanding the data and how to use it as one of the tools for making informed irrigation decisions. The irrigation agronomist "gives me confidence" in the decision making process.

Two summer crops are being grown on the annual pasture sites (double cropping). These crops are forage sorghum and maize (grain). These crops are displaying a deep root system that is seeking to utilise the deep soil moisture deposited by the pre-irrigation.

One farmer is "staggered to see how far the irrigation intervals can be stretched out without yield impacts" based on the SMM data. The permanent pasture had a spacing of 30 days (fully utilising the November rain) which is vastly different from the usual period of 7 days in peak season, "I cannot believe it!"

It has been "great for irrigation management" claims another participant. I would have been "caught out" after a quicker irrigation didn't deposit moisture as deep into the profile as pervious irrigations. This required the next irrigation to be conducted earlier than usual. The farmer generally accesses the data daily and this is proving valuable as the crop is at the furthest end of the farm, "one look at the graph and I know the crop is fine". This site is moving into precision surface irrigation with the maize not experiencing any moisture stress and moisture being accurately applied to the root zone.

Evaluation from site demonstration farm owners

The information from this technology should provide me with water savings through the irrigation season but I don't expect to increase dry matter/ha.

The demonstration hosts have all indicated that the soil moisture monitoring equipment has exceeded expectations. "I had no idea so much information could be seen and so easily accessed" and "probably exceeded expectations, surprised at the level of precision and information provided".

Soil Moisture Monitoring Demonstration Project — Site Details

Irrigator	Location	Industry/crop	Company	Comment
Craig Reynolds	Congupna	Cropping/double crop - shaftal for hay. Maize crop for grain.	MAIT Australia	Maize. Data generated has been highly benefical to display active root depth and moisture levels.
Ross Nicoll	Katunga	Dairy/two SMM sites - one double cropped and one permanent pasture.	AWMA	Irrigating both sites. Data interpretation continuing for summer crop (sorghum).
Paul Gill	Appin	Mixed/dairy/grazed and then hay cut annual crop - oat, rye, clover.	Rubicon	No more irrigations for annual pasture. Planning autumn pastures.
Malcolm Pendlebury	Katamatite	Mixed/lucerne	IK Caldwell	Irrigating. Data showing highly efficient surface irrigation system.
Brendan Martin	Rochester	Dairy/lucerne	WISA	Irrigating. Production focus. Irrimate site.
Jade Clymo	Calivil	Dairy/lucerne	MEA	Irrigating. Production focus. Automatic Weather Station recording evaporation transpiration (ET).
Brett Radcliffe	Kerang	Lucerne/lucerne	Sentek	Production focus. Irrigating. Field day held 3rd December.
Chris Hunter	Kyabram	Dairy/permanent pasture	Cropsol	Revising irrigation scheduling. Irrigation at least 2-4 days longer than usual practice.
Ray Sellwood	Undera	Mixed - lucerne (1st season and 3rd season stand)	Netafim	Irrigating. Lucerne.
Brett Dixon	Tatura	Dairy/lucerne		Irrigating. Full production as per normal.
Steve Hore	Horefield	Dairy/annual crop/pasture	H-R Products	Final cut of annual ryegrass completed. Irrimate site.
Mark Hill	Timmering	Mixed/tomatoes in 2009/10 - wheat or barley (2010)	John Deere Water	Tomatoes. SMM probe data showing the results of the different irrigation scheduling and timing. **Field day - 9th February.**

For more information on the project please contact:
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