

## Building Resilient Farming Systems in South Australia through improved knowledge and innovative management of soil constraints.



### Monitoring and evaluation

Following emergence comparative seeding depth, plant counts and inspection of plant root health and development were undertaken by crop agronomists from Murray Bridge at Jaeschke's and Ramsay's site on 22<sup>nd</sup> July.

Initial observations at all the sites indicate:

- The importance of seeding depth control on spaded sites
- The possible dangers of spading soils with sodic clay in the subsurface profile because of surface sealing and water ponding.
- Early Nitrogen deficiency where A1 horizon has been buried

### Soil and Plant Analysis

On 26<sup>th</sup> and 27<sup>th</sup> August a **field day was held at each of the 5 sites** to coincide with the soil and plant analysis monitoring. **50 farmers** in total attended the field days. They were brought up to date with the progress of the trial areas which were all in the mid to late tillering phase of crop development.

They were also encouraged to be involved in the soil and plant tissue sampling of the treatments in the crops having discussed the timeliness of monitoring for crop nutrition.



At Ramsey's Western Flat site obvious manganese deficiency was diagnosed adjacent to the trial area. This was subsequently supported by the plant tissue analysis.



## APSIM and Yield For Profit Forum

On 22<sup>nd</sup> September an APSIM and Yield for Profit Forum was held at the Keith Golf Club.

**26 attendees** heard CSIRO scientist Anthony Whitbread and Birchip Cropping Group Yield for Profit Consultant Tim McClelland speak about the science behind APSIM and issue the challenge to use the decision making tools generated to make reasoned decisions. Trent Potter also presented data for crop yields in trial work related to the relevant historical rainfall data for those trials.

Following the forum 2 sites have had moisture probes inserted and are being monitored by a water use consultant at 3 different levels in crops that are participating in the APSIM and Yield for Profit program.

## October Farm Walks/Bureau Field Days

Wirrega/Lowan Vale Bureau and the Upper South East MacKillop Group hosted their field day on 26<sup>th</sup> October and was attended by **20 farmers**. Jaeschke's site at Sherwood and Grocock's site at Lowan Vale were included in the visits



Western Flat Agricultural Bureau held their field day on 4<sup>th</sup> November with **18 farmers** attending. Highlights of the day were seeing a 10 t/ha vetch crop spaded into the ground as a green manure crop in preparation for a potato crop in 2010 and the site at Ramsey's



Mundulla Agricultural Bureau held their field day on 6<sup>th</sup> November. **12 farmers** visited the sites at the High School where plots had been mown for vegetative yield determination because of the crop failure.

## Harvest

3 of the 6 sites had crop failure or were reaped by farmer machinery. These sites have been mown and drymatter yields determined for analysis.

The other 3 sites are being harvested and grain yield will be analysed along with 1000 grain weights and % of screenings.

## Irrigation Area Sampling

The soil sampling program has continued at Fry's. This was particularly valuable as it was the first sampling undertaken in the program where near normal winter rain helped flush accumulated salt down the profile under the pivot irrigation system.

## Publications and Extension

2 publications have been produced with funding from the program:

Bailey, G. (2009) Soil Water compendium – an identikit for determining your soils water properties.

The Soil Book – Representative soils of the Upper SE

In addition 4 press releases highlighting the project and activities have been picked up by local newspapers and gone to air on local radio.

The project and its progress was discussed at a SE NRM meeting where project officers from a number of soils related projects being undertaken in the South East met to see what alliances and cooperation could result from being aware of the other work undertaken in the Region.

## 2010 Program

The work program next year will continue to monitor the sites already established, with similar activities planned.

More emphasis will be placed on the water use efficiencies associated with the individual treatments.

1 year after site establishment with some equilibrium reached in the treatments after initial working, soil carbon will be measured.

One new site will be established on the black clay soil type in the district, where the emphasis will be on controlled traffic, trace elements and soil carbon.

**Report compiled by Brian Hughes**

Principal Consultant: Soil and Land Management

**Rural Solutions SA,**

Nuriootpa Research Centre, Box 245, NURIOOTPA, SA 5351

**T:** +61+8+85686411 **F:** +61+8+85686449 **M:** 0429 691 468

**E:** [brian.hughes@sa.gov.au](mailto:brian.hughes@sa.gov.au)