

Research program expands

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SPAA is currently involved with four research projects; two finish in 2007 and two finish in 2009. The following information gives a brief summary of the trial objectives and activities during 2006. It hardly needs to be said, that as with farming, 2006 has been a challenging year for research.



PA 1/04 - finishes 30/6/07

Project Aims

- To increase the effective use of precision agriculture systems by grain growers in South Australia.
- To test the economic value of using variable rate inputs to grain crops to manage both stable and unstable variables.
- To broaden the application of precision agriculture to include lower rainfall areas.



SPAA00003 finishes 30/6/07

Project Aims & Outputs

To increase returns to growers by improved understanding and management of within-paddock variability, and validation of PA systems under southern Australian conditions using large-scale trials.

- Workshops, field days and printed newsletters for farmers and advisors to improve skills in PA and to identify key PA technologies for their businesses.
- Results of large scale field experiments to assess the economic value of variable rate inputs.
- Assess the practical application of the N-Sensor for variable rate N application in cereal and canola crops.

Outcomes in 2006

Results for the first two years of both of these trials have been reported in previous issues of Precision Ag News (www.spaa.com.au/publications)

Treatment assessments completed under the first two projects during 2006 include:

Research crops were scanned with five different sensing systems: N-Sensor, GreenSeeker Crop Circle, a hyperspectral camera and a simple ground cover imaging system. The value of each system to assess crop biomass and N status between zones and treatments was compared.

Crops were located at Hart, SA and Rupanyup, Vic. Zones were monitored using the Yield Prophet program. This data is being compared to establish whether one data source is more robust than another.

Leaf tissue was sampled from treated areas. Leaf tissue nutrient analysis was done to compare a range of nutrient concentrations between zones and treatment blocks, to assess crop nutrient status across the range of fertiliser treatments.

At St Arnaud Vic, the value of different ryegrass control options to target the areas of high ryegrass density, were tested again in 2006. The crops were scanned in October and results should be available for the next magazine in March.

In addition the N-sensor was used to map ryegrass in canola crops.

Grain samples are being collected from each treatment area and at fixed points across the nutrition trial paddocks. These samples will be analysed for nutrient content, including protein and for harvest index. This data will be used to assess if increased nutrient inputs, such as phosphorus (P), flow through to grain nutrient levels. Results will also be used in calculating P fertiliser rates for next year based on P removal in the grain.



Conservations Agriculture project with SANTFA, finishes 30/6/09.

Project Aims

- Release a proven, commercially viable, variable rate, direct chemical injection system and application protocol in

partnership with KEE Technologies, Nufarm and Croplands.

- SPAA's role is to establish five variable rate pesticide application experiments/year for three years, using precision agriculture and crop sensor technologies.

Outcomes in 2006

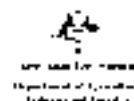
In 2006 two mapping and variable rate trials looking at pasture desiccation and barley leaf disease control were established on Mark Branson's, property at Tarlee, SA.

The N-sensor and GreenSeeker were used to map ryegrass in peas. This information will be used in establishing variable rate herbicide treatments at sowing (wheat) next year.

Actions for 2007

We will continue to use different scanners to assess variations in crop biomass and weeds, and to test variable rate herbicide and fungicide treatments.

A further aspect of this research is to map and manage higher weed levels that may arise from paddock heaps dumped by chaff carts at harvest.



PA project in Mallee & Southeast with Advisory Board of Agriculture finishes 28/2/09

Project Aims

Seven objectives on increasing the uptake of PA technologies to improve land and resource management.

Outcomes in 2006

Two paddocks were scanned with the N-Sensor to map the variation in crop biomass and nitrogen status.

In October Allan Mayfield presented outcomes from SPAA research at a yield mapping field day at Coomandook, SA.

Actions for 2007

SPAA will assist with trial design and assessment as well as assist with field days.