



# Precision Ag Trials

**Application of Variable Rate MAP**  
*Rankin Springs, NSW*

Although PA tools have been available to Australian grain growers for many years, and the benefits have been well documented, it is estimated that less than 1-% of grain growers utilise PA 'beyond guidance' in any form.

The objective of this GRDC / SPAA funded project is to increase the level of adoption of PA 'beyond guidance' by broadacre farmers. The project specifically aims to increase the level of adoption of variable rate (VR) by growers in the project to 30% by 2013. This goal will be achieved by demonstrating how to use PA tools to growers at a regional level and by increasing the skills of growers and industry in PA to a level where they can then use PA tools in their farming systems to achieve economic, environmental and social benefits.

Trials and demonstrations are conducted on growers' properties and are visited throughout the season using farm walks and workshops to discuss the advantages and disadvantages of PA techniques with the involvement of other regional growers.

This information sheet presents the outcomes of the SPAA trial **Using variable rate MAP** from season 2010.

## **Aims:**

- To assess the impact of variable rate application of MAP fertilizer.

## **Background:**

Between Griffith and Hillston (NSW) there are large bands of cropping country which have sandy rises, of which, most times yields very poor of less than 1 tonne per Ha, where the more productive areas of the paddock could be yield between 3 to 5 tonnes / Ha. These poor yielding sandy rises can make up to 20 to 30 percent of a paddock.

## **About the trial:**

The trial is located in "Middle bottom" paddock which is typical Mallee paddock with light textured soils and sandy rises.

With the Aid of Barry Haskins (NSW I & I), the Ryan family did extensive soil sampling and a result found there was significant variations in soil nutrition Colwell P. From this a prescription map was created.

In addition, two strips with blanket rates of 0 and 100 kg/ha were applied, to test the comparison of MAP in the paddock.

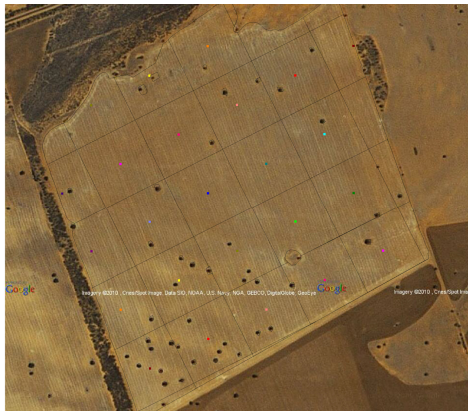


Figure 1a (above) shows a birdseye view of the trial paddock.

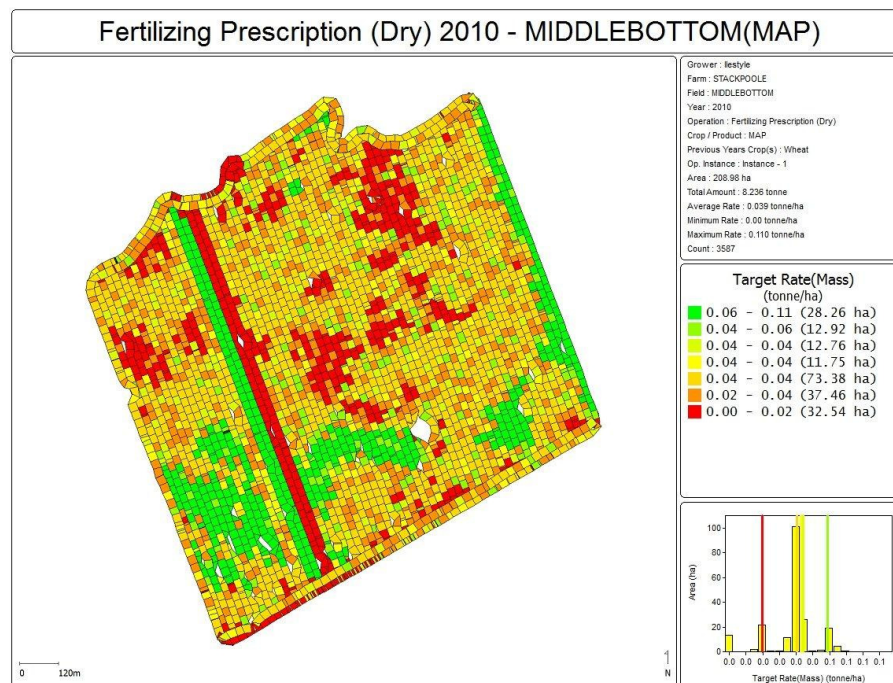
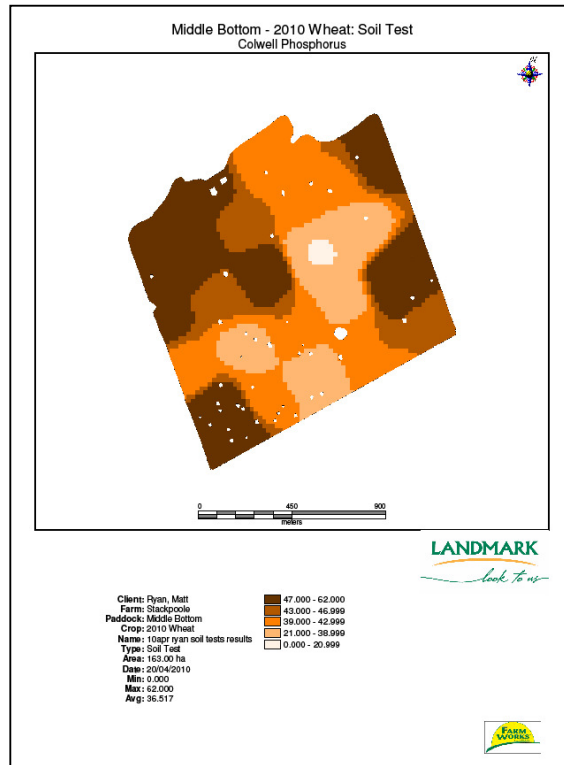


Figure 2: Prescription fertiliser (MAP) map

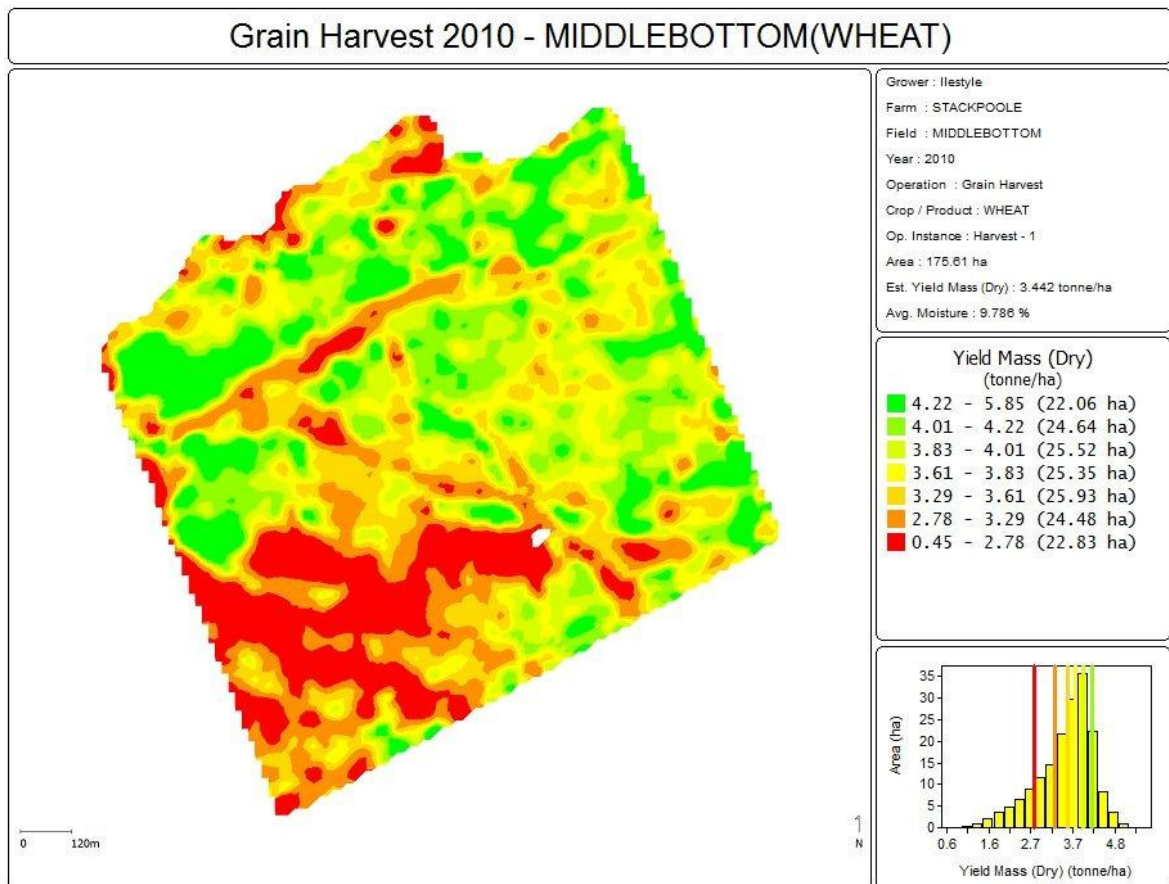
The trial was sown with a 18 meter Morris Contour Drill to Axe Wheat on the 4<sup>th</sup> June and was a re-sown after the first seeding prior to Anzac Day was wiped out by locusts.

#### Assessments:

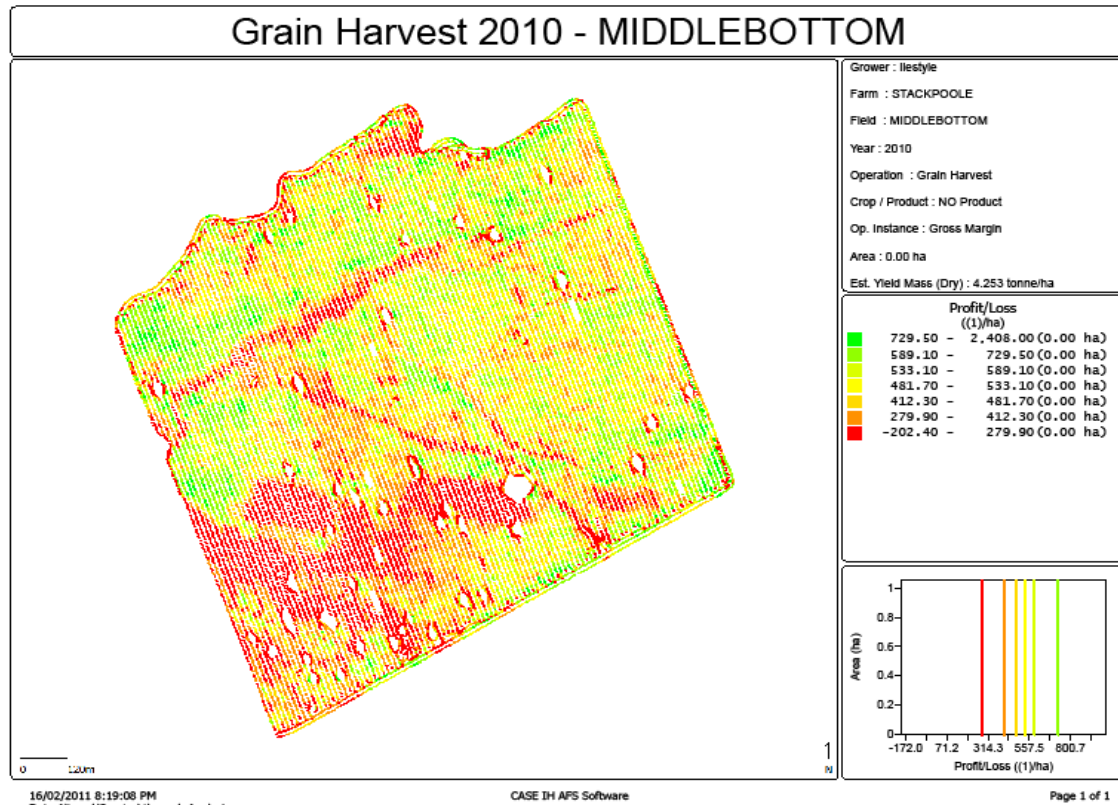
- ☐ Soil profile analysis – Colwell P and texture/ structure profiles
- ☐ Yield mapping
- ☐ Gross margin analysis

#### Results:

Our trial showed a response to the MAP fertilizer. This was particularly evident in the Zero strip where the yield map showed a loss of yield.



**Figure 3: Yield map**



**Figure 4: Profit: Loss map**

The maps show that there is a response to an application of MAP fertilizer in the areas that have in the past have yielded well. But in the areas that have always yielded poorly the application did not have a large impact. These areas are the sandy rises similar to Michael Pfitzner's "Heaths SPAA focus paddock" (see trial report on SPAA website) which is about 10kms away.

Soil pits were dug and with the aid of Ian Packer (Lachlan CMA) and Barry Haskins (NSW I&I), also identified an acid band 15 to 20 cm down in the A horizon in the areas of the sandy rises which were a few centimetres thick. This impeded root growth passing through this band.

As result we did see a response to MAP in these areas, but have not come up with a practical solution addressing the problem of the low yielding areas of "Middle bottom" paddock.

### Who was involved?

Matt and Andy Ryan  
 Neil McMillan CWFS  
 Leighton Wilksch – SPAA Grower groups manager  
 Barry Haskins – NSW Industry & Investment  
 James Austin  
 Ian Packer – Lachlan CMA  
 Tim Neale & Andrew Whitlock – PrecisionAgriculture.com.au

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## For more information

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