

MEDIA RELEASE

Smarter way to collect soil data leads to fertiliser savings

Using more precise soil data to tailor their fertiliser program has led one Queensland farm to cut their nitrogen fertiliser use by more than 40% – saving money and reducing fertiliser wastage.

The result was an outcome of a large-scale project conducted across the Darling Downs by leading independent ag-tech company Precision Agriculture. Chair of Precision Agriculture, Mike Chaseling, said the project highlighted the opportunities for technology to deliver savings to farmers and optimise productivity.

Working with the Condamine Alliance NRM and funded by the Queensland Government, Precision Agriculture conducted a grid-based soil sampling program over more than 2,500 hectares across eight properties including the Warakirri Cropping property 'Myola', where winter and summer crops are grown.

The sampling technique was unique because it was conducted to a depth of 90cm on a four-hectare grid, using a pre-determined soil sampling plan to spatially map nutrient levels.

Based on the program's results, last season the team at Myola applied nitrogen fertiliser at a rate of 85 kg per hectare across a total of 436 hectares, well below the traditional rate of 180 – 220kg per hectare for a dryland sorghum crop.

"The grid sampling approach to generate a variable rate application saved us 40 tonnes of urea compared with a traditional single rate fertiliser program. We estimate this saved us in excess of 40% of our fertiliser costs on this particular block," Myola farm manager, Johan Smith said.

Variable rate fertiliser spreading allows farmers to target specific fertiliser rates to different parts of a paddock based on soil requirements – the more precise the data, the better the result.

"By taking more soil samples in a systematic way, Precision Agriculture has helped landholders better understand the variability in their soil nitrogen levels and challenged their existing management practice whereby an entire paddock or even farm were managed as one," said Mike.



“The project has proven the current method of infrequent and random soil sampling is not representative of the spatial variability in soil nitrogen levels.”

Better targeting of nitrogen fertiliser can also reduce nutrient leaching and the conversion of nitrogen to nitrous oxide – a potent greenhouse gas with much higher global warming potential than carbon dioxide or methane.

Precision Agriculture has also received funding from the Victorian Government’s Virtual Centre for Climate Change Innovation to establish a pilot study site on a Gippsland dairy farm to measure how the practice affects nitrous oxide emissions.

“Our work helps farmers capture data on soil nutrients through soil sampling and converting this into soil maps to guide machinery to spread fertiliser at a variable rate,” said Mike.

“This new research to better understand the environmental implications of variable rate fertiliser is a logical extension of our service work.”

To find out more, visit Precision Agriculture at the Australian Farm Institute’s [Digital Farmers Conference 2018](#), 13-14 June, Sydney. Mike Chaseling will convene the session on digital agriculture for farmers.

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