

Taking a precise approach to nutrient applications

Precision Agriculture (PA) combines the latest technology with innovative and often self-engineered equipment, providing a long-awaited method to target crop root zones and reduce inputs. Precision Agriculture offers multiple benefits for the farmer, which extend toward the health of the Great Barrier Reef as part of the Mackay Whitsunday Water Quality Program (MWWQP). The project focuses on educating a broad population of growers in the PA approach to reduce nutrient applications on sugarcane farms.

Agronomist Zoe Egger is delighted to see a strong take-up response from growers.

"All my interactions with growers have shown that they recognise the benefits of integrating precision agriculture practices and want to adopt these practices on their farm, in particular variable rate fertiliser."

Understanding soil condition, constraints and variability is central to managing crop yields, nutrient, and chemical applications. Nutrient application can be targeted to the crop requirements through collecting spatial data, including harvest yields, Electro Magnetic (EM) mapping, elevation data and correct paddock boundaries, along with satellite yield mapping provided by the University of New England.

Working with experienced agronomists, eligible growers develop a fertilising program specific to their property, whilst learning how to use their GPS screens and rate controllers. By reducing inputs and increasing uptake efficiency they can achieve less runoff and improved water quality. Over the long term, adopting and understanding PA becomes an integral part of their business.

Generational Mackay grower Sam Deguara explains the benefits.

"We like to use precision agriculture on the farm to save money but more so in our business we are at the stage where we want to refine inputs. We farm a lot of heavy black soils,



Zoe Egger
Spatial Agronomist - Farmacist



Sam Deguara
Generational Mackay Grower

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and we have sections where no amount of drainage work or mill mud/ash can fix the soil. Which means we may only ever grow 95 t/ha in those sections. It would be a poor use of our resources to treat these parts of the farm the same as our high yielding creek soils. We trust the maps produced and the advice from Farmacist as the data we are shown that goes into the maps reflects what we see in the paddock.”

This project is setting the standard for not only collecting and interpreting spatial data into usable maps, but training growers in the practical application of uploading the software to their GPS screens. Extending this service to many local contractors has enabled broader adoption of variable rate fertilising outside the Farmacist network.

“The up-skilling of growers and contractors in the technology space is something I’m considerably passionate about and my favourite feedback I get from growers is ‘why didn’t I do this sooner?’” – Zoe Egger

According to the Paddock to Reef Projector modeling to date, the total amount of Dissolved Inorganic Nitrogen (DIN) being prevented from entering the Great Barrier Reef across all of Farmacist POD projects is over 11 tonnes.

If you would like to see what programs and assistance could be available to you, please contact Reef Catchments or visit their website www.reefcatchments.com.au

