



ADVICE GIVES CONFIDENCE TO ADOPT NEW PRACTICE

Father and son team Peter and Shane Petersen are always keen for advice and feedback, whether it be with other farmers over a beer at the bowls club, or in the paddock with professional advisors such as Mackay Area Productivity Services (MAPS) or Farmacist.

Two years ago Peter and Shane started on their own from a broader family partnership and are now growing between 13-14,000 tonnes each year near Bakers Creek. This has seen Shane, the younger generation, with more time to be involved in running the farm and has encouraged him to keep getting the best advice possible.

"We are always learning from our neighbours, but we also seek professional and unbiased advice," Shane said. "Dad has more than 50 years of experience growing cane, but we also need outside information if we are changing practices."

This led them to get involved in the *Complete Nutrient Management for Cane Farming* project (also known as "RP161"), developed through the Queensland Reef Water Quality Program, and run in the Central Region by Farmacist and MAPS. The project is centred around providing nutrient management advice for cane growers, and also encompasses other factors relating to productivity and the

farming system, spanning across soil testing, electrical conductivity data, and geographic information system information among other things.

By working with Farmacist Extension Agronomist, John Turner, the Petersen's are making changes to their farming practices in a way that suits them and brings together profitability and sustainability.

"It ranges from small things like calibrating our machine for different fertiliser types to also tailoring our nutrient rates," Shane said. "It's giving us the confidence to try new things."

Before Peter and Shane started on their own, Shane would spend most of the harvest contract carting cane.

"That was generally six days, 12 or 14 hours, and two days off for farming. So I now have a window to try new things."

Since being involved in the project, Shane said they'd reduced their nutrient input and maintained production.

"The season is going well this year. We don't have a few thousand tonne of standover, so it is the first time in a while that our sugar has beaten the mill," Shane said. "It's our biggest crop in about six years, and there hasn't been any effect of reducing out nutrient rates in line with our soil tests. It has saved us thousands of dollars."

As well as detailed information on nutrient management, he said the project had taught him that everything had to be working together on the farm.

"All those other things like irrigation and your management practices have just as much impact on your production as your nitrogen rates," he said.

They are also looking at other changes and plan to shift to 1.8 metre rows and plan to plant legumes in the fallow for the first time this year. Shane admits that it was the "boys at the bowls" club that probably convinced Peter to go down this road, as much as it was the project, but he doesn't mind either way, so long as it keeps farming interesting and is delivering the best outcome for running a sustainable farm. ■

(Above) Farmacist Extension Agronomist John Turner and Mackay farmer Shane Petersen discussing nutrient management.

The RP161 Nutrient Management project is delivered by Farmacist, MAPS, and HCPSL and funded through the Queensland Government Reef Water Quality Program and Australian Government Reef Trust.

WORKING WITH GROWERS TO DELIVER POSITIVE OUTCOMES

The Central Region RP161 project is focused on working with growers to improve fertiliser management decisions and ensuring grower participants are following best management practices.

From working with growers and industry groups throughout the Central Region, the project has found a common misunderstanding that by applying 150kg/ha nitrogen in plant cane and 170kg/ha nitrogen in ratoons, that growers are following the SIX EASY STEPS rates.

These are in fact the highest rates of nitrogen recommended through industry guidelines and most Central Region soil types do not require this amount to grow a productive sugarcane crop.

Che Trendell from Farmacist explained: "The RP161 project has been operating in the Mackay-Whitsunday region since April 2018, and by working together with Mackay Area Productivity Services (MAPS) we have 57 farms involved in the first year of the project, covering an area over 5700 hectares."

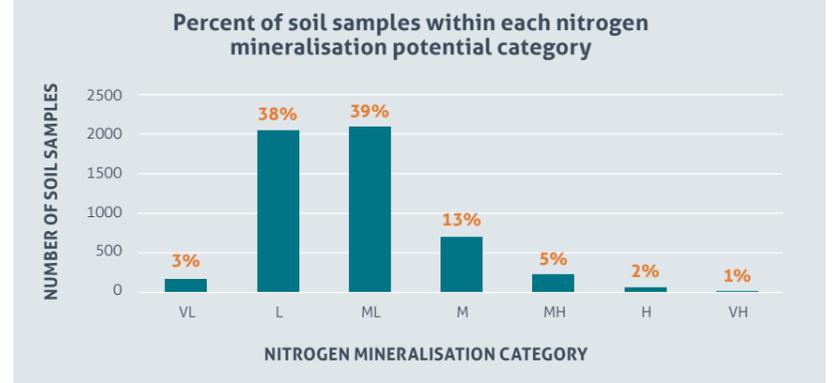
Through benchmarking the previous fertiliser management plans being undertaken on these farms it was discovered that on average the farms applied 151kg/ha nitrogen on plant cane and 168 kg/ha nitrogen on ratoons, which is in line with the common misconception that these application rates meet industry regulations.

Accurately determining the amount of nitrogen to apply is based on soil test results and the soil Walkley Black Organic Carbon levels. The following table lists the Organic Carbon ranges and the maximum rate of nitrogen application.

Farmacist Mackay has a detailed database of over 5300 soil test results collected in the Mackay-Whitsunday region. The following graph details the percentage of Central Region soil test results collected by Farmacist which fall into each Nitrogen Mineralisation Potential category.

"As can be seen, the results indicate that only 3 percent of blocks fall into the VL category and require 150kg/ha nitrogen

NITROGEN MINERALISATION POTENTIAL	RANGE OF ORGANIC CARBON RESULTS (FROM SOIL TEST)	MAXIMUM ALLOWABLE N (KG/HA) MACKAY & PROSERPINE		MAXIMUM ALLOWABLE N (KG/HA) PLANE CREEK	
		Plant cane after bare fallow	Ratoon & replant	Plant after bare fallow	Ratoon & replant
VL (Very Low)	<0.40	150	170	140	160
L (Low)	0.41 – 0.80	140	160	130	150
ML (Medium Low)	0.81 – 1.20	130	150	120	140
M (Medium)	1.21 – 1.60	120	140	110	130
MH (Medium High)	1.61 – 2.00	110	130	100	120
H (High)	2.01 – 2.40	100	120	90	110
VH (Very High)	>2.40	90	110	80	100



applied on plant cane or 170kg/ha of nitrogen applied on ratoons if they are in the Mackay or Proserpine region (and 140kgN/ha in plant cane and 160kgN/ha ratoons if in Plane Creek). The remaining 97 percent required less nitrogen according to SIX EASY STEPS guidelines."

While there is a concern among growers that reducing nitrogen rates will lead to a reduction in tonnes of cane produced, SRA have conducted replicated trials throughout the region demonstrating there was no cane or sugar yield loss, and there was in fact an increase in net gain by applying fertiliser rates in line with industry regulations.

It is essential when determining your rate of nitrogen to apply to base this figure on

soil test results, predicted block yield and industry regulated guidelines.

The RP161 project now operates in the Central, Burdekin and Herbert regions. To receive on-farm assistance to develop a comprehensive, full farm nutrient management plan, please contact Farmacist Mackay, Farmacist Burdekin, MAPS or Herbert Cane Productivity Services Limited.

The RP161 project is funded through the Queensland Government Reef Water Quality Program and the Australian Government's Reef Trust, in partnership with Farmacist, SRA, MAPS and HCPSL. ■

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