



Case Study

Fertiliser Reductions Following a Legume Crop



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|---------------------------|-----------------------|
| LANDHOLDER | PCCCF2023BAV50 |
| LOCATION | Cowley Beach |
| CATCHMENT | Johnstone |
| RAINFALL | 3294 mm/year |
| PROPERTY SIZE | 77.3 ha |
| ON-GROUND PROVIDER | CANEGROWERS Innisfail |

Project Catalyst is a grower led, sugar cane innovation and adoption project that explores, develops and validates farm management practice change to improve the enduring water quality of the Great Barrier Reef.

BROADER ADOPTION VALIDATION & GROWER SUPPORT

Founded in 2009, the project operates in the Mackay Whitsunday, Burdekin and Wet Tropic regions to deliver valued practice change outcomes and develop methods for industry adoption. Under the Broader Adoption and Grower Support program, professional on-ground service providers assist selected growers to adopt and validate appropriate change practices. Service providers continue to monitor implementation benefits and derived environmental performance improvements. Through targeted extension activities, the program seeks to accelerate the uptake and broader adoption of improved farming practices at local, regional and industry levels.



Ray Rinaudo



Calibrating for top dress fertiliser



Great Barrier Reef Foundation



●●●● Goal

To reduce Nitrogen rates following a legume fallow crop without impacting yield.

●●●● Overview

Following a successful legume crop, Ray was interested in maximising the benefits from the legumes by reducing his Nitrogen rates for the following cane crop.

Ray has previously applied fertiliser on cane blocks following legumes according to the SIX EASY STEPS guidelines, without discounting in accordance with potential Nitrogen contributions from the legumes.



Ray's farm



Applying top dress fertiliser

●●●● Action

Building on previous Project Catalyst work to establishing direct drill legume cover crops and continued support from Project Catalyst, the potential nitrogen contributions from Ray's existing legume cover crop was calculated.

To calculate the potential nitrogen contribution, biomass samples were collected and sent away for analysis. The results of this analysis were used to adjust the nitrogen requirements for the following plant cane crop and taken into consideration when updating Ray's nutrient management plan. Ray decided to build confidence in the adjusted nitrogen rates by using the new recommendation on half of the block.

The cane was planted with the same plant mix supplying nitrogen, phosphorous and potassium. Then at top dress only potassium was applied to meet the crop nutrient requirements.

The plant cane was taken through to harvest.

●●●● Outcome

The block was harvested on separate consignments to draw comparisons between the two nitrogen treatments. There was no difference in tonnes harvested or CCS, with both treatments returning similar \$/ha. The reduced fertiliser rate led to a saving of \$117/ha in fertiliser costs.

Ray has since continued to plant legume cover crops into his fallow blocks and intends to consider all sources of Nitrogen for these blocks as part of his nutrient management planning.