



Case Study

Nutrient Management Following a Legume Fallow



LANDHOLDER	PCCCF2023BAV51
LOCATION	Mourilyan
CATCHMENT	Johnstone
RAINFALL	3294 mm/year
PROPERTY SIZE	56.84 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.



Alan Aquilina



Alan's Cover Crop



Great Barrier
Reef Foundation



Goal

To reduce applied fertiliser rates through planting of a legume fallow.

Overview

Grower Alan Aquilina wanted to make best use of his fallow by planting nitrogen-rich legumes and refining fertiliser requirements for the plant cane.

Support from Project Catalyst gave him the confidence to trial a reduction in Nitrogen inputs in a sugarcane block where legumes had been planted prior.

Further to this, Alan was keen to focus on a balanced approach to crop nutrition, rather than simply altering Nitrogen inputs.



Legume Roots with Nodulation



Biomass Sampling the Cover Crop

Action

In December 2022, a mixture of cow pea and lab lab was planted. The legume seeds were broadcast at a combined rate of 25 kg/hectare. Cow pea @ 12.5 kg/ha and Lab lab @ 12.5 kg/ha. The seeds were then incorporated into the soil with a light cultivation.

Seven months later, on 22-5-23, biomass from the legume crop was sampled and the crop was then terminated.

The biomass samples were dried and sent away for nutrient analysis. From this analysis the potential nitrogen contribution from the cover crop was calculated and the results led to an adjustment of nutrient requirements for the following cane plant crop.

The cane was planted with nitrogen and potassium, no phosphorous was required for this block. Then at top dress only potassium was applied to meet the crop nutrient requirements.

Outcome

Alan is happy with the plant crop growth so far and is planning to continue using legume cover crops and making nitrogen reductions in the subsequent plant cane crop.

Alan has since planted legume cover crops in his 2024 fallow blocks and intends to consider all sources of Nitrogen for these blocks as part of his nutrient management planning.