



Case Study

Mixed Legumes and Lower N Fertiliser Rates in Plant Cane After Well-established Legume Cover Crops



LANDHOLDER	CSLH010008
LOCATION	Abergowrie
CATCHMENT	Lower Herbert
RAINFALL	2022 - 1959mm 2023 - 1134mm
PROPERTY SIZE	90.45ha
ON-GROUND PROVIDER	HCPSL

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.



Cow-pea seeds for inoculations and being added to the mix



Young mixed legumes fallow crop.



Goal

The grower would like to trial growing mixed legume fallow crops and then trial different nitrogen rates of fertiliser in their plant cane after a well-established legume crop to better understand and manage nitrogen inputs without effecting farming profitability.



nodules of legumes.

Overview

Mixed species fallow cropping is a growing practice within the Herbert region.

Growers are attracted by the benefits of mixed species legumes that include: improved soil organic matter, pathogenic nematode suppression, reduced weed presence, enhanced nitrogen capture, and reduced runoff resulting from improved soil structure which ultimately improves nitrogen use efficiency.

Mixed legume fallows are a rapid way to improve soil health and the productivity of cane over the following crop cycle.

Another advantage of growing legume cover crops is the opportunity to save money in fertiliser



Action

Identify fallow blocks for planting mixed legumes.

- Select complementary legume species for mix and plant.
- Reduce nitrogen applications after growing a well-established crop of legumes
- As part of the continuous improvement of their nutrient management plan the grower was interested in comparing liquid plant starter versus their typical plant blend. With the guidance of their on-ground service provider the grower set up a demonstration site for the different products to allow for comparison. The site will be compared through shoot counts to see the development of the sett in the early growth period.

Outcome

- Mixed species legumes have been planted for the summer fallow season 2021/2022 and in 2023/4
- Termination and incorporation of legumes and plant cane planted in July 2022.
- A reduced rate of N was trialled where mixed legumes had established well. The grower is happy with the outcomes throughout the season.
- Shoot counts were undertaken for the plant fertiliser comparison site. Monitoring of the block is ongoing.