



Case Study

Planting of Legume Cover Crops Reducing Nitrogen Requirements to Subsequent Sugarcane Plant Crops



LANDHOLDER	PCCCF2021BAV31
LOCATION	Kelsey Creek
CATCHMENT	Proserpine
RAINFALL	1474 mm
PROPERTY SIZE	309.75ha
ON-GROUND PROVIDER	Nutrien Ag Solution

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.



Cowpea variety: Ebony to plant 2023



Loan Legume planter available to plant cover crops



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●●●● Goal

Plant and establish fallow blocks to legume cover crops to yield returns in reducing Nitrogen fertiliser application without attracting productivity penalties to the subsequent sugarcane plant crop. To capture associated benefits of improved soil health, suppression of weeds and pest populations, erosion and reduce off-farm environmental effects and the Great Barrier Reef.



Cowpea variety Ebony purchased to plant after harvest S/O Ratoon Blocks

●●●● Overview

This grower is a good cooperater while being enthusiastic and motivated in trialling new farming initiatives. The farm has limited irrigation therefore, the grower will monitor weather forecasts closely in securing the perfect window to plant a legume cover crop. The grower is aiming to plant legume cover crops of Cowpea to fallow blocks and to reduce Nitrogen requirements to subsequent sugarcane plant crops, while aiming to improve water leaving the paddock and reducing environmental effects on the Great Barrier Reef. The grower is assisting Project Catalyst for a second year & has installed their water samplers to collect rainfall event runoff samples. The soil type is Marian found in the area of the Proserpine district.



Soil Type: Marian

●●●● Action

The sugarcane ratoon blocks to be fallowed were stood over due to challenges associated with the 2022 harvest. These challenges prevented the grower from implementing his second practice change to plant a legume cover crop to fallow. The grower had purchased legume seed and sourced a loan legume planter unfortunately, was unable to plant it. As the legume seed was in high demand by growers, there was an offer put to the grower to return the legume seed for credit. The grower plans to incorporate this practice change in his future farm management plan. Going forward plans are already in place for the stand-over blocks to be harvested early in the 2023 harvest season. The grower plans to soil sample fallow blocks following 2023 harvest of ratoon standover providing analysis to assess the current status of soil requirements. The grower will receive recommendations based on six easy steps for the subsequent sugarcane plant crop. The grower has already implemented one practice change and the second one on target for the end of 2023 season.

●●●● Outcome

With the support of Project Catalyst and Nutrien Ag Solutions the grower has adopted beneficial and sustainable farming practice changes across the farm. The main focus on improving the quality of water leaving the paddock and reducing environmental effects and on the Great Barrier Reef. The Grower has been provided with a current Nutrient Management Plan which extends a revitalised Best Management Practice approach to farming and the environment. The grower now has the latest advice that allows to efficiently manage nutrients in response to their own on-farm conditions, crop requirements and farming practices. The grower has implemented Nitrogen reduction practice change and where appropriate a second one is planned for the end of 2023 season to meet the project practice change pathway goal of 2 new practices changes being adopted over two years.



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