



# Case Study

## Establish Productive Legume Cover Crops and Reduce Nitrogen Application to Subsequent Sugarcane Plant Crops



|                           |                      |
|---------------------------|----------------------|
| <b>LANDHOLDER</b>         | CSMW010033           |
| <b>LOCATION</b>           | North Eton           |
| <b>CATCHMENT</b>          | Plane Creek          |
| <b>RAINFALL</b>           | 1500 mm              |
| <b>PROPERTY SIZE</b>      | 73.80 ha             |
| <b>ON-GROUND PROVIDER</b> | Nutrien Ag Solutions |

**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.



Fallow Block Cultivation prior Planting Legume Cover Crop - Soybeans



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Great Barrier Reef Foundation



2024

Establish Productive Legume Cover Crops and Reduce Nitrogen Application to Subsequent Sugarcane Plant Crops

## ●●●● Goal

To plant and establish productive legume crops to fallow blocks. To improve returns, reduce Nitrogen fertiliser application to subsequent plant sugarcane crops, gain associated benefits of soil health, suppression of pest populations and weed establishment. To improve erosion control and the water quality leaving the paddock reducing potential environmental effects.



Fallow Block Cultivation prior Planting Legume Cover Crop - Soybeans

## ●●●● Overview

The farm is located at Eton west of Mackay and is situated in the Plane Creek Catchment Area. The majority of the farm is planted with Q183 due to its rapid germination, ratooning ability and resistance to Pachymetra Root Rot. The farm has irrigation utilising a high pressure overhead system and relies on supplementary annual rainfall.

Soybean is the grower's choice of legume cover crop to plant to fallow blocks due to its key features of ability to fix nitrogen, easy to establish and resistance to root lesion nematodes.

There are four soil types across the farm: Non-calcic brown, Podzolic, Soloth and Solodic.



Soil Types: Non-calcic brown, Podzolic, Soloth and Solodic

## ●●●● Action

The Grower engaged a neighboring contractor to provide the legume planter and conduct the planting of Soybeans to fallow blocks. Prior to planting the Soybeans, the old sugarcane ratoons were cultivated out by discing and rotary hoeing. Following the preparation of fallow blocks persistent rainfall prevented access to the blocks not allowing the grower to implement his practice change. Fortunately, this practice change has only been delayed and where appropriate plans are in place for the implementation at the end of 2024 harvest season.

The action plan is to soil sample the fallow blocks prior planting the legume cover crops providing analysis to assess the status of the soil and its requirements. The grower will receive nutrient recommendations based on six easy steps for the subsequent sugarcane plant crop.

This practice change is now planned for the end of 2024 season to meet the projects practice change pathway goal.

## ●●●● Outcome

With the support of Project Catalyst and Nutrien Ag Solutions the grower will now implement a new practice change post harvest 2024, being a beneficial and sustainable farming practice change across his farm. The main focus has been 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 compliant Nutrient Management Plan which guides a Best Management Practice approach to farming and the environment. The grower has taken advice that has helped to efficiently manage nutrients in response to their own on-farm conditions, crop requirements and farming practices.

The grower will now implement one practice change post harvest 2024 and will meet the project practice change pathway goal of one new practice change being adopted per year.



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