



# Case Study

## Plant Sunn Hemp to Improve Sediment Control and Reduce Nitrogen for Potential Off-farm Losses to Waterways



LANDHOLDER	CSMW010021
LOCATION	Mt Martin
CATCHMENT	Pioneer
RAINFALL	1541 mm
PROPERTY SIZE	53.82 ha
ON-GROUND PROVIDER	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.



Legume Cover Crop - Sunn Hemp January 2024



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Great Barrier  
Reef Foundation



## Goal

To plant and establish a legume cover crop to fallow blocks for sediment control on slopes and to reduce Nitrogen in the subsequent plant sugarcane crop.

To yield the benefits of reducing Nitrogen application and also the associated benefits of soil health, erosion while improving the water quality leaving the paddock and reducing environmental effects.

## Overview

The farm is located at Mt Martin and is situated in the Pioneer Catchment Area. The farm has no irrigation and relies 100 per cent on annual rainfall. The farms two main sugarcane varieties are Q208 and Q240 due to their complementing suitability to the farms environment.

Sunn Hemp is the grower's choice of legume cover crop to plant to fallow blocks due to its ability to fix nitrogen, vigor, drought tolerance and weed suppression. Most Sunn Hemp crops will not require weed control and will tolerate a range of soil types.

The main soil profile across the farm is Prairie. Prairie topsoils are well structured, dark brown clay loams to light clays often with some stones and cobbles. Subsoils are yellow-brown to brown medium clays.



Prairie Soil Profile



Proud Grower with Legume Cover Crop - Sunn Hemp January 2024

## Action

Prior to planting legumes the old ratoons were cultivated out by off-setting, ripping and rolling. Following these management practices the block continued to maintain good organic matter and soil moisture in preparation for planting of the legume. The sunn hemp will be grown for approximately 3 to 4 months and depending on the blocks soil moisture, the sunn hemp will be terminated before soil moisture is depleted by slashing and off-setting.

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Soil samples were taken from fallow blocks after ratoon harvest, providing analysis to assess the current nutrient status and soil nutrition requirements. The grower received nutrient recommendations based on Six Easy Steps with an option to reduce the Nitrogen application rate to the subsequent plant crop of sugarcane if the sunn hemp cover crops are successful.

## Outcome

With the support of Project Catalyst and Nutrien Ag Solutions the grower has adopted beneficial and sustainable farming practice changes 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 achieved a projected DIN saving of 15kg. 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 has implemented 3 practice changes which exceeds the practice change pathway goal of 2 new practice changes adopted in 2 years.