2022

PROJECT CATALYST

Case Study

Reduced Nitrogen Application on Old Sugarcane Ratoons and Plant Blocks Following Legume Cover Crops

LANDHOLDER	PCCCF2021BAV33
LOCATION	Bloomsbury
CATCHMENT	O'Connell
RAINFALL	1705 mm
PROPERTY SIZE	113.42 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.

LabLab Cover Crop Fallow Block Prior Sugarcane Planting

2023 Plant cane-Reduced Nitrogen and Mill Mud Applications

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Goal

Reduce Nitrogen fertiliser application to plant sugarcane blocks following legume cover crop of Lablab. To identify and implement reductions in Nitrogen applications in other areas such as mill mud application rate and on old sugarcane ratoons without attracting productivity penalties while also cost saving and reducing off-farm environmental effects.

Practice change of cover crops forms part of the farm management plan

Overview

The farm is located near Bloomsburry and is situated in the O'Connell Catchment Area. The farm has limited irrigation and relies on seasonal rainfall.

The growers aim is to maintain the farms productivity while adopting practice changes to decrease Nitrogen application to plant cane (following legume crops), on old ratoons and reduce mill mud application across the farm. Benefits to the grower would include reduced fertiliser costs and off-farm environmental effects.

The two main soil types are Grey Clay- a grey light clay cracking when dry and Prairie- a well structured dark brown clay loam.

Soil Types: Grey Clay and Prairie

Action

The Grower planted a legume cover crop of Lablab to fallow blocks prior the 2022 sugarcane planting. Mill Mud was applied at a reduced application rate to fallow blocks prior planting of the cover crop (Lablab). The Lablab was well established. Volunteer sugarcane and grasses present in legume crops were sprayed out with an appropriate herbicide. After 3 to 4 months the Lablab was harvested and baled for Silage. The Lablab crop was terminated before the soil moisture was depleted for the subsequent sugarcane crop and before seed set. Any remaining stubble was disced and hoed prior planting the sugarcane plant crop. Soil samples were taken from fallow blocks after ratoon harvest, providing analysis to assess the nutrient status of the soil requirements. The grower received nutrient recommendations based on six Easy Steps taking into account good legume crops and was able to reduce Nitrogen application to the plant crop of sugarcane by 40kg/ha . Another Nitrogen reduction of 10kg/ha was made to old ratoon sugarcane blocks across the farm.

Outcome

With the support of Project Catalyst and Nutrien Ag Solutions this 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 on the Great Barrier Reef.
The Grower has made a DIN saving of 465.0kg.
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 now implemented two Nitrogen reduction practice changes and meets the project practice change pathway goal of "2 new practices adopted in 2 years".

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