2022

PROJECT CATALYST

Case Study

Reducing Nitrogen Application Rates on Ratoons Including Older Ratoons While Maintaining the Farms Productivity

LANDHOLDER	PCCF2022BAV45
LOCATION	Ayr
CATCHMENT	Burdekin
RAINFALL	936 mm/yr
PROPERTY SIZE	193 ha
ON-GROUND PROVIDER	Nutrien Ag Solutions (Ayr)

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.

Reduced Nitrogen Application on Ratoons including Older Ratoons

Gypsum Spreader addressing Soil Constraints of Cracking Clay Soils

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Goal

To work with Nutrient Ag Solutions, and be supported by Project Catalyst and the Coca Cola Foundation, on improving farm management practices while meeting reef regulations. To optimise Nitrogen application across ratoon blocks, improving farm productivity and the quality of water leaving the paddock, thereby reducing the impact on the Great Barrier Reef.

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Overview

This farm, situated in the Burdekin Catchment Area and under furrow irrigation, is located in the highest sugarcane producing region in Australia. Here, sugarcane thrives on high sunlight and relies heavily on irrigation water supply.

Where appropriate, the grower aims to reduce nitrogen application across ratoon blocks, including old ratoons, while maintaining the farm's productivity.
The farm is comprised of a cracking clay soil, and a loam over sodic clay. The soil is considered marginal, mainly due to excessive levels of sodicity and salinity. The grower is aware that an ameliorant is required to maximise the crop yield and nutrient application.

Soil Types: Cracking Clay and Sodic Clay

Action

The grower completed the P2R-21 Question Survey and provided farm property information, setting a baseline of their current farming practices. With this information, the grower's Nutrient Management Plan was revised and updated. When completed, the grower could see where reductions in nitrogen rate could be made, without impacting the farm's productivity.
As per Six Easy Steps, the nitrogen rate recommended for ratoons is 210kg/ha. The grower reduced application to 190kg N/ha across all ratoons where appropriate. This rate was identified as ideal in some instances, however not all. A reduced rate of 160kg N/ha was optimum for some older ratoons, whilst 170kg N/ha was optimum for others.
The optimum N rate was not found to coincide with crop class due to the presence of soil constraints in different areas of the farm.
The grower benefits immediately from the cost reductions attained when nitrogen rates are reduced on cane ratoon blocks, without impacting crop yield.

Outcome

With the support of Project Catalyst and Nutrien Ag Solutions the grower has adopted this beneficial and sustainable farming practice change across his farms. The main focus on improving the quality of water leaving the paddock and reducing the impact on the Great Barrier Reef. The grower made a DIN saving of 47.6kg.

The Grower has been provided with a current Nutrient Management Plan which extends a revitalised Best Management Practice (BMP) approach to farming and the environment. The grower now has the latest advice that allows for efficient management of nutrients, in response to their own on-farm conditions, crop requirements and farming practices. The grower has implemented the recommended practice change and meets the projects practice change pathway goal of one new practice change adopted over the one year term of the project.

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