PROJECT CATALYST

Case Study

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

LANDHOLDER	PCCF2022BAV43
LOCATION	Ayr
CATCHMENT	Burdekin
RAINFALL	936mm/yr
PROPERTY SIZE	473ha
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 an old ratoon sugarcane block

Gypsum Spreader addressing Soil Constraints of Cracking Clay Soils

Australian Government | REEF TRUST | Great Barrier Reef Foundation | THE Coca-Cola FOUNDATION | WWF

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 older ratoon blocks, improving farm productivity and the quality of water leaving the paddock, thereby reducing the impact on the Great Barrier Reef.

Burning off Old Ratoon Sugarcane Block prior Reducing Nitrogen Application

Overview

This farm, situated in the Burdekin Catchment Area, is under furrow irrigation. It is located in the highest sugarcane producing region in Australia, where sugarcane thrives on high sunlight, low rainfall and high reliability on irrigation water supply. Where appropriate the grower aims to reduce nitrogen application across older ratoon blocks, while maintaining the farm's productivity. The farm consists predominately of cracking clay soil, and a loam over sodic clay. It is regarded as marginal, mainly due to the excessive levels of sodicity and salinity.
Sodicity is identified as a soil constraint and 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 to set a baseline of their current farming practices. With this information, the grower's Nutrient Management Plan is being revised and updated, in comparison to their current practices. With this completed, the grower could see where nitrogen application savings could be made, without impacting the farm's productivity.
As per Six Easy Steps, the nitrogen recommendation is 210kg/ha. Evidence supported a nitrogen reduction of 30kg/ha to older ratoon blocks, from 210kg/ha to 180kg/ha. Where appropriate a nitrogen reduction of 30kg/ha of was implemented across old ratoon blocks. Immediate cost savings result for the grower when nitrogen rate is able to be reduced across old sugarcane ratoons, without impacting crop yield. A reducing nitrogen application rate was by achieved by communication with the contractor, advising the blend and rate adjustment. This was a simple process to conduct, with support from Nutrien Ag Solutions.

Outcome

With the support of Project Catalyst and Nutrien Ag Solutions the grower has adopted this beneficial and sustainable farming practice change across his farm. 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 1,240kg.

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 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.