



Case Study

Break Crop and Soil Constraints



LANDHOLDER	CSMW010003
LOCATION	Carmila
CATCHMENT	Plane Creek
RAINFALL	1500 mm
PROPERTY SIZE	515 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.



Failed soybean crop in 2020-2021 fallow



Structure @ 10 L/ha with Liquaforce Plant Starter 21 @ 100 L/ha



Great Barrier
Reef Foundation



Goal

After a failed break-crop in 2020-2021 due to a soil constraint high Aluminum levels, which is highly toxic to legumes. This block also had further soil constraints of low pH, calcium, phosphorous, zinc levels.

To address the constraints in a cost effective way to improve sugarcane yields.

Overview

With the above mentioned constraints we identified a new product Structure which has a unique reacted carbon technology formulation of nitrogen, phosphorous and zinc with very high quality organic acids, which accentually buffers for roots taking up undesirable ions like salt (Na), chloride (Cl) and aluminum (Al).

Structure has the ability to assist the plant with long and short chain molecules with organic acids and trans-membrane proteins which gives the plant the ability to uptake more nutrients.

A small infield trial was to be established at planting.



Aerial view of trial, photo 6th January 2022



Structure Trial - photo taken 6th January 2021 during heatwave.

Action

Discussions with the grower to identify different break crops for future fallows.

At planting the grower used his Liguaforce Plant Starter @ 100 L/ha verses the trial strip of Liguaforce Plant Starter @ 100 L/ha and Structure @ 10 L/ha added to his fungicide tank.

To address the low pH and calcium the grower decided that broadcasting Ag lime wasn't an option due to control trafficking and 1.8 metre row spacing, he opted for OzCal @ 450 kg/ha post plant.

Outcome

Structure strips have expressed visually more biomass and larger stooling compared to the untreated area.

During the heatwave the treated area with Structure was less stressed with fully opened leaves compare to the untreated area showing part open leaves and leaf curling.

Further field trials are required in a more formal strip trial program to quantify the trial data more extensively.

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 now implemented 2 practice changes which meets to project practice change pathway goal of 2 new practice changes being adopted.