



# Case Study

## Krasnozem Soil Type and Plant Available Phosphorous



<b>LANDHOLDER</b>	CSMW010005
<b>LOCATION</b>	Pinnacle
<b>CATCHMENT</b>	Pioneer
<b>RAINFALL</b>	1541 mm
<b>PROPERTY SIZE</b>	747.70 ha
<b>ON-GROUND PROVIDER</b>	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.



Structure Trial - at Planting 2021



Structure Trial - Plant cane 2021



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●●●● Goal

Better plant available phosphorous in early stages of plantcane growth.



●●●● Overview

Krasnozem soil types are only .1% of Mackay District, these soils are heavy volcanic clays (ferrosol soils) which have a tendency to tying up available phosphorous.

Growers common practice is to broadcast mill mud/ash onto these soil types. Sometimes the mill mud/ash availability is not always available and then only part blocks are treated.

The product Structure was selected to see if we could get a visual reaction infield before placing further trials out in a more scientific layout.

●●●● Action

Planted 14th June 2021

To compare the grower regular planting granular fertiliser GF Planter5 @ 250 kg/ha and using fertiliser GF 352 @ 250 kg/ha with Structure @ 10 L/ha added to fungicide tank.

Montior crop throughout the growth stages for visual difference, and shoot count in early stages.

The grower is also now planting legume fallows, reducing N by 20kg/ha on plant cane after a good legume fallow, reducing N on plough-out, replant cane by 10kg/ha, reducing N by 15kg/ha on ratoon cane and reducing N by 20kg/ha on lat cut or older ratoons.

●●●● Outcome

Early growth 3-4 leaf stage shoot counts where taken with little difference. 12 week stage the treated area with Structure was showing more biomass and has continued throughout the growth stage to out of hand.

January inspection is visually showing that there is still more biomass and appears to have more stooling out than the other untreated area.

The aerial shot in January seems even in crop height, however the treated area looks slightly deeper green as the untreated area looks to have a slight yellow appearance.

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 5 practice changes and exceeds the practice change



Aerial view of trial



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