



# Case Study

## Whole Farm Nutrient Planning



<b>LANDHOLDER</b>	Joe Linton
<b>LOCATION</b>	Home Hill
<b>CATCHMENT</b>	Burdekin
<b>RAINFALL</b>	984mm
<b>PROPERTY SIZE</b>	136ha
<b>ON-GROUND PROVIDER</b>	Farmacist-Burdekin

**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.



Great Barrier Reef Foundation



●●●● Goal

To develop a whole farm nutrient plan that takes soil test results, soil limitations (salinity, sodicity), legume crops, mill mud applications and different block yield potentials into account.



●●●● Overview

Applying nutrient to suit block conditions and/or history, rather than a blanket approach, can help growers maintain production, whilst saving money on fertiliser inputs. Practices such as reducing nitrogen and phosphorous applications on late cut ratoons due to reduced yield potential has been supported by a number of Project Catalyst trials. Similarly, PC has supported trials that have investigated reducing nitrogen and phosphorous rates following legumes and mill mud application. These trials have helped growers gain confidence that they should maintain productions, if they choose to reduce their N and P rates on some blocks.



●●●● Action

A Whole Farm Nutrient Plan (WFNP) has been developed for Joe's farms for the 2020 cropping season. This plan has put several strategies in place to reduce input costs whilst maintaining yield.

There are several opportunities across Joe's farms to reduce inputs whilst maintaining yield and reduce the risk of nitrogen and phosphorous loss, such as:

- Several small applications of nitrogen through the drip tape (on the section of the farm that is drip irrigated) instead of one or two large applications
- Using fixed nitrogen from a legume crop to supplement the nitrogen rates in plant cane
- reducing nitrogen rates on blocks that are irrigated with bores high in nitrate

●●●● Outcome

Through the continued support of Project Catalyst, a whole farm nutrient plan was developed for Joe's farms.

One of Joe's farms is entirely under trickle irrigation as of 2020 - this has allowed him to apply a small amount of nitrogen and all of the required phosphorous, potassium and sulphur as a granular application whilst the cane is small and apply the remaining nitrogen in small, regular amounts through the trickle tape! Applying nitrogen this way allows the crop to take the nutrition up periodically through the season and significantly reduces the risk of loss through run off and deep drainage.

Joe was also able to use the groundwater nitrates in his irrigation water and fixated nitrogen from legume crops to reduce his input costs on his other farm.

