



# Case Study

## Whole Farm Nutrient Planning



<b>LANDHOLDER</b>	Paul Willis
<b>LOCATION</b>	Airdmillan
<b>CATCHMENT</b>	Burdekin
<b>RAINFALL</b>	984mm
<b>PROPERTY SIZE</b>	45ha
<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 Paul'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 Paul's farms to reduce inputs whilst maintaining yield and reduce the risk of nitrogen and phosphorous loss, such as:

- Using fixed nitrogen from a legume crop to supplement the nitrogen rates in plant cane
- reducing the nitrogen and phosphorous rates in late ratoon cane due to the reduced yield potential
- Reducing nitrogen and phosphorous rates following the application of mill mud, mill ash or mud/ash mixtures

## ●●●● Outcome

Through the continued support of Project Catalyst, Paul has been able to bring his input rates and costs back whilst maintaining yields.

Paul grows legumes crops (soybean and mungbean) as standard practice during his fallow periods - this has been a great opportunity to not only develop another income stream, but also to garner the benefits of legumes! Not only do soybean and mungbean fixate nitrogen that is available to the following plant cane crops, but they are an opportunity to break from a sugarcane monoculture (from a pest and disease perspective) and use another suite of pesticides to control grass weeds before planting sugarcane again.

Paul has also been able to reduce his input costs on old/late cut ratoons and nitrogen use efficient varieties (Q240 & Q232) whilst maintaining cane yield and improving his CCS.