



Case Study

Benefits Associated with Applying Variable Rates of Fertiliser



LANDHOLDER	Craig Keating
LOCATION	Orkabie
CATCHMENT	Plane Creek
RAINFALL	1500mm
PROPERTY SIZE	169ha
ON-GROUND PROVIDER	Farmacist Pty Ltd Author: Laura Sluggett

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.



Fig.1 Farmacist variable rate mapping guides Craig's applications



Fig.2 Craig using his GPS display to apply variable rates of fertiliser



●●●● Goal

To improve nutrient uptake by better matching fertiliser application to crop growing conditions and yield potential.

●●●● Overview

Variability in topography, soil type, soil moisture and soil health characteristics can be significant within a paddock. This is most often reflective in yield outcomes. Lower yield performance can be due to factors such as soil sodicity, acidity and poor drainage.

Applying fertiliser at a set rate across the entire paddock means valuable profit and nutrients are wasted on poor performing areas.

Responding to the variation in potential yield performance of a paddock, by tailoring fertiliser and soil ameliorants, will save input costs, increase farm profit and reduce loss to the environment.



Fig.4 Craig's in-cabin GPS display

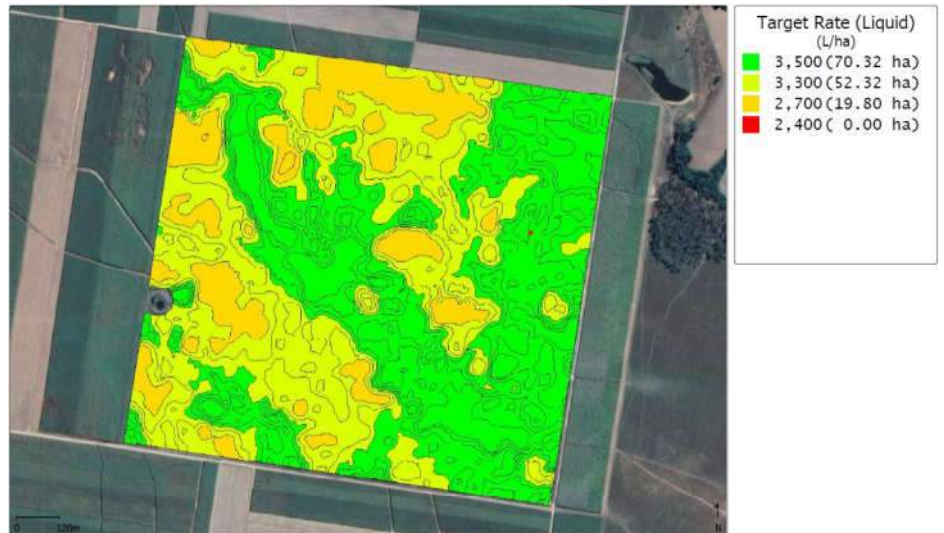


Fig.3 Craig's variable rate fertiliser application map produced by Farmacist

●●●● Action

Craig conducted a Project Catalyst trial to assess the benefit of applying variable rate fertiliser to identified management areas across the farm that displayed different characteristics.

Farmacist determined management areas by conducting an Electromagnetic (EM) survey across his paddocks. This technology maps changes in soil type and soil moisture by measuring electro-conductivity (EC). They then interpreted the results to prepare the variable rate recommendations.

Over 273 hectares, the amount of fertiliser applied in the trial was compared to the flat rate application amount of Craig's usual practice.

A reduction of 1535 kg of N, and 139 kg of phosphorus, was made by applying fertiliser at a variable rate.

An N fertiliser input cost reduction of \$2,164 was made without yield loss.

●●●● Outcome

Craig Keating is pleased with the result of this trial, experiencing no yield losses whilst lowering input costs.

He plans to continue to apply variable rate fertiliser across this non-uniform area of his farm.

This precision practice will reduce his annual input costs and N loss to the environment.

For further information contact Laura Sluggett (Farmacist) Mb. 0429 474 698.