# Catalyst Project Report – Final report

# Reduced fertiliser on high N efficient varieties

| Grower Information | |
|---|---|
| **Grower Name:** | Peter Canning |
| **Entity Name:** | Canning Family Trust |
| **Trial Farm No/Name:** | PCK-00806A |
| **Mill Area:** | Plane Creek |
| **Total Farm Area ha:** | 170 |
| **No. Years Farming:** | |
| **Trial Subdistrict:** | Koumala |
| **Area under Cane ha:** | 155 |

## Background Information

**Aim:**
To reduce the amount of Nitrogen and Phosphorus applied to varieties that have high nitrogen use efficiency without suffering a yield or sugar reduction.

**Background: (Rationale for why this might work)**
Certain varieties are better adapted to different environmental conditions e.g. soil types. Some varieties also have higher nitrogen use efficiency, which means that it will grow just as well with reduced fertiliser rates as it would with a higher rate. This is due to the fact the fertiliser is used more efficiently with a lower amount lost to external sources.

Better matching Nitrogen application to variety requirement could lead to less lodging, higher chance of maturity at harvest and in turn higher sugar yields.

**Potential Water Quality Benefit:**
Lower amounts of fertiliser applied, and fertiliser used more efficiently means there will be less left in the paddock, therefore losses to the environment will be reduced.

**Expected Outcome of Trial:**
No difference between yields of the higher rate and reduced rate treatments. Improved Nitrogen Use efficiency within the block

**Service provider contact: Farmacist**

**Where did this idea come from: Grower /Farmacist**

| Plan - Project Activities | Date: (mth/year to be undertaken) | Activities :(breakdown of each activity for each stage) |
|---|---|---|
| **Stage 1** | **October 2017** | Harvest crop |
| **Stage 2** | **October 2017** | Full profile soil analysis |
| **Stage 3** | **November 2017** | Apply fertiliser according to trial plan – replicated strips |
| **Stage 4** | **July 2018** | Sugarcane biomass samples |
| **Stage 5** | **September-October 2018** | Harvest production |

## Project Trial site details

| | |
|---|---|
| **Trial Crop:** | Sugar Cane |
| **Variety:**<br>**Rat/Plt:** | Q183 |
| **Trial Block No/Name:** | 6-1 |
| **Trial Block Size Ha:** | 7.6 |
| **Trial Block Position (GPS):** | 149.268847, -21.612861 |
| **Soil Type:** | Illbillbie - light grey, duplex soil |

## Block History, Trial Design:

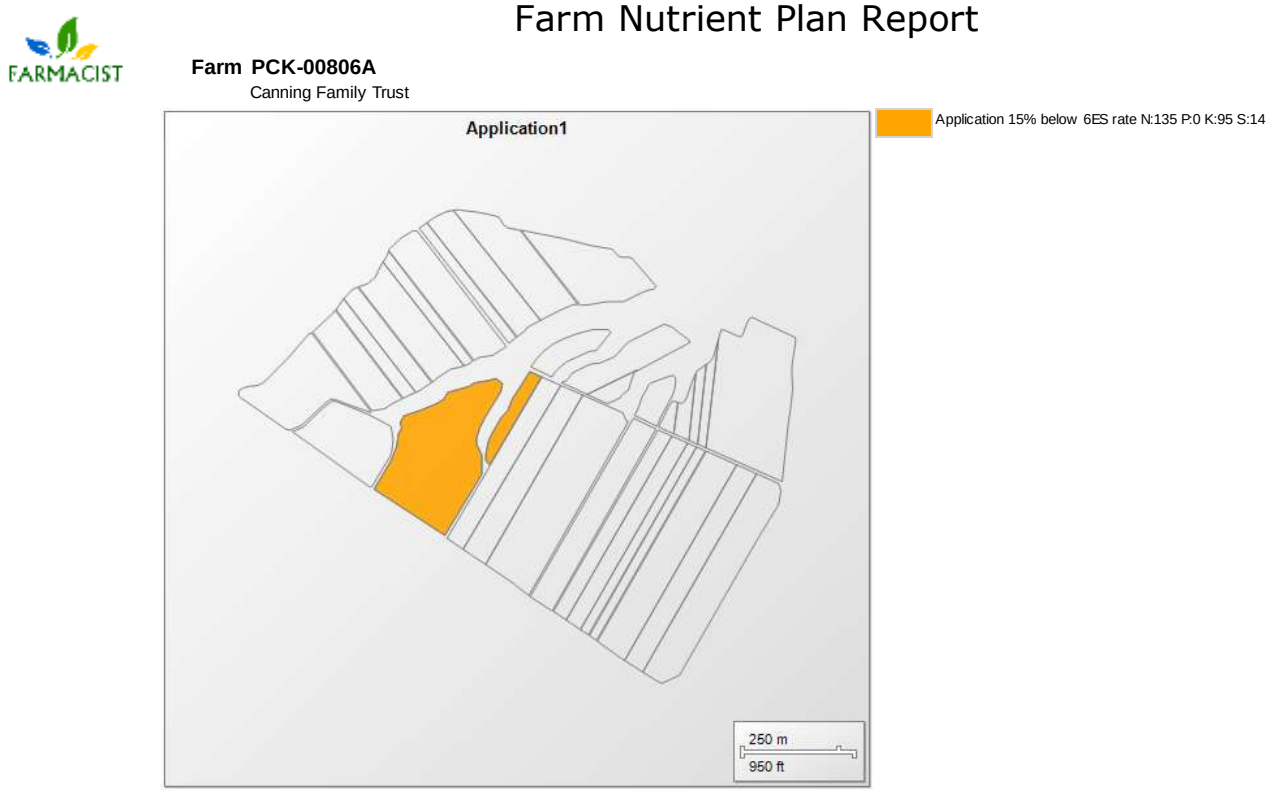


*Figure 1 - Farm map showing the application of reduced fertiliser application*

## Results:

Cane yields at this site were not impacted upon by reducing N and P. Sugar content also improved with the grower indicating a continuation of the lower nutrient application. Re-application of the lower rates occurred after the 2017 harvest.

As shown in Figure 1, this is a reduction of 15 kg/ha of N as compared to the standard grower application. The prospect of this being applied to other locations containing varieties with high nutrient efficiencies is encouraging, however this is a small-scale trial designed to be a first step and to gain the grower's confidence in making these changes across a broader area of their farm.

Due to the success of the trial in the initial year, the grower reduced rates on larger areas of his farms in 2018, totalling to approximately 20% of his total farm area. These blocks have had nitrogen applied at least 10 kg/ha lower than the standard 6ES rate for the farm.

## Conclusions and comments

This trial has been successful in generating confidence in this grower to reduce his nitrogen rates on paddocks and varieties where higher rates of nitrogen were not being effectively utilised. Phosphorus has also been reduced across all of the blocks, however due to fertiliser brews, the change in kilos per hectare is not as substantial as what it is for nitrogen.

**Advantages of this Practice Change:**
Increased nitrogen use efficiency

**Disadvantages of this Practice Change: No disadvantages so long as the variety information is correct**

**Will you be using this practice in the future: Yes**

**% of farm you would be confident to use this practice:**
On locations where cane varieties have higher nitrogen use efficiencies.

**Project site is complete**