Catalyst Project Report – Final Report

Reduced fertiliser on high N efficient varieties

Grower Information	
Grower Name:	Kevin Grech
Entity Name:	The Kevin Grech Family Trust
Trial Farm No/Name:	MKY-04249A
Mill Area:	Mackay Sugar
Total Farm Area ha:	150
No. Years Farming:	40
Trial Subdistrict:	Munbura
Area under Cane ha:	145

Background Information

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

Background:
Certain varieties respond to different environmental conditions in different ways. Soil type, climate and nutrient availability should be considered when selecting varieties. One factor that can be easily controlled is the amount of nutrient applied to the paddock. Having high nitrogen use efficiency means that a variety will grow just as well with reduced fertiliser rates as it would with a higher rate, as the fertiliser would be used more efficiently with a lower amount lost to external sources. This process of reducing rates could also lead to less lodging, higher chance of maturity at harvest and in turn higher sugar yields. The variety chosen for this site is Q242 which can have lodging issues along with significant suckering (new side shoots) that reduce sugar content resulting in lower 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.

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	**November 2017**	Apply fertiliser according to trial plan
Stage 3	**June 2018**	Sugar cane biomass samples
Stage 4	**September-October 2018**	Harvest production

Project Trial site details

Trial Crop:	Sugar Cane
Variety: **Rat/Plt:**	Q242 3R
Trial Block No/Name:	MKY-04249A-10-05
Trial Block Size Ha:	5.7
Trial Block Position (GPS):	149.118256, -21.375846
Soil Type:	Clay

Block History, Trial Design:

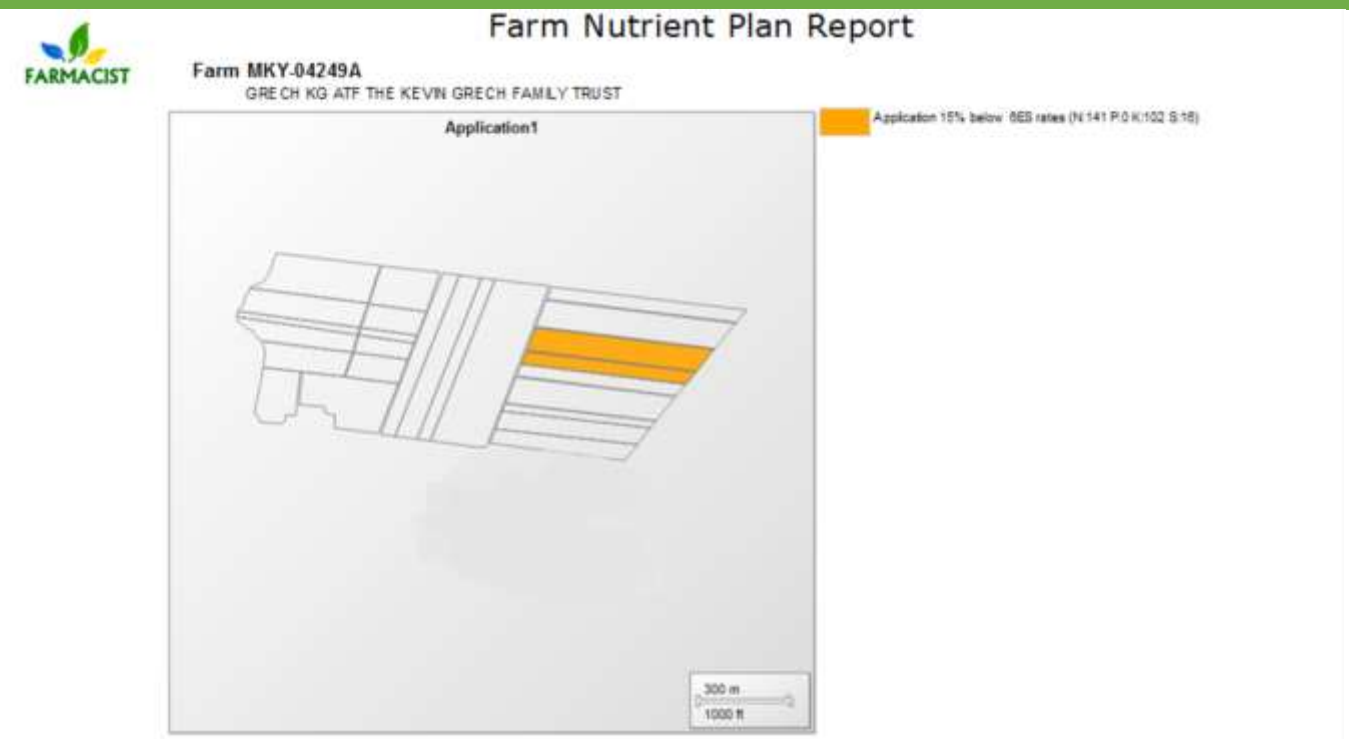

Figure 1 - Farm map showing paddock that received reduced fertiliser rate

Figure 1 above, shows the paddock that was applied with a lower than six easy steps fertiliser rate.

Results:

Cane yields for the Q242 at this site were not impacted on 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 indicated by the fertiliser plan in Figure 2.

This is a reduction of 10 kg/ha of N as compared to the standard grower application. The trial has given the grower the confidence to reduce his rates across a number of other paddocks across the farm that are also growing vigorous varieties, as seen in the image below.

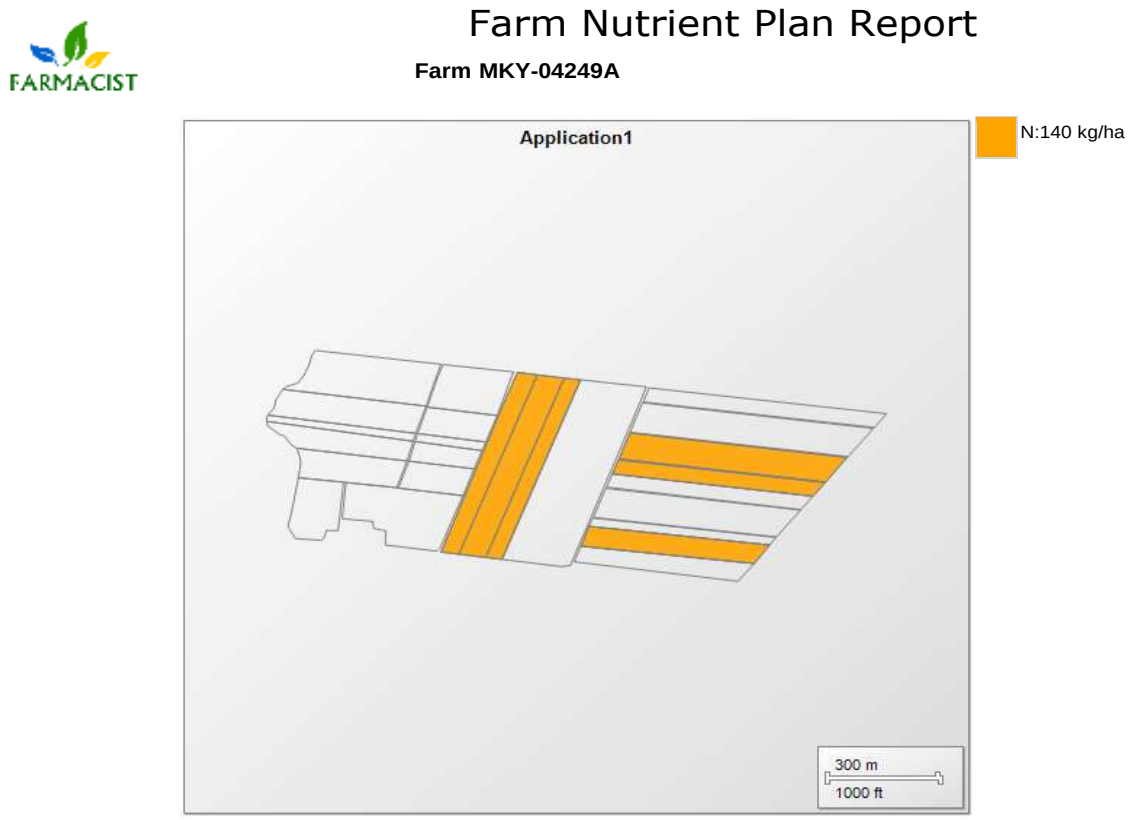

Figure 2 - Paddocks receiving reduced fertiliser rates in 2017

Conclusions and comments

This grower has reduced his nitrogen by 10 kg/ha on 16% of his farm due to the confidence gained from this trial.
Further work assessing the growth patterns between varieties could be beneficial to the industry to create more tailored nutrient plans.

Advantages of this Practice Change:
Increased nitrogen use efficiency – comparable yields grown with less fertiliser

Disadvantages of this Practice Change:
No disadvantages are likely as long as variety information is correct and fertiliser rates are not reduced too much.

Will you be using this practice in the future:
Yes

% of farm you would be confident to use this practice:
On all blocks with appropriate varieties that are efficient at utilising nitrogen.

Project site complete