

Catalyst Project Report

Grower Information

| | |
|----------------------------|---|
| Grower Name: | John and Helen Pastega |
| Entity Name: | PASTEKA JP & MRS H ATF J & H PASTEKA FAMILY TRUST |
| Trial Farm No/Name: | MKY-03092A |
| Mill Area: | Mackay Sugar - Marian |
| Total Farm Area ha: | 700 |
| No. Years Farming: | 45 – 2 generations on farm |
| Trial Subdistrict: | Eton |
| Area under Cane ha: | 540 |

Background Information

Aim:

To lower the amount of imidacloprid applied per hectare by using variable rate technology, whilst maintaining adequate grub control.

Background:

In lighter soils grubs tend to be more prevalent so a higher rate of product to control numbers is required, compared to heavier soils. In paddocks with various soil types, generally a set rate would be applied to the whole paddock. This results in some areas receiving not enough product, while other areas receive excess.

Variable rate technology is being applied to the application of fertiliser and herbicides, and this trial will investigate the variable rate application of grub control. By better targeting application rates to soil type, grub control will be maintained, and excess applications will be avoided.

Potential Water Quality Benefit:

Decrease imidacloprid in run off

Expected Outcome of Trial:

Adequate grub control across the paddock

Service provider contact: Farmacist

Where did this idea come from: Farmacist /Grower

| <u>Plan - Project Activities</u> | Date: (mth/year to be undertaken) | Activities : (breakdown of each activity for each stage) |
|---|--|---|
| Stage 1 | April 2017 | Set up equipment and develop VR map |
| Stage 2 | August 2017 | Plant cane and apply VR Suscon |
| Stage 3 | November 2017 | Install KP samplers |
| Stage 4 | March-May 2018 | Grub counts and agronomic assessment |
| Stage 5 | July 2018 | Harvest production |
| Stage 6 | March-May 2019 | Grub counts and agronomic assessment |
| Stage 7 | October 2019 | Harvest trial |

Project Trial site details

| | |
|--|--------------------------|
| Trial Crop: | Sugar Cane |
| Variety: Rat/Plt: | Mixed |
| Trial Block No/Name: | 3092A block 03-01 |
| Trial Block Size Ha: | 9.79 |
| Trial Block Position (GPS): | 148.9592048, -21.2617426 |
| Soil Type: | Mixed |

Block History, Trial Design:



Figure 1 Trial layout in relation to EC map of the trial paddock. Rows run from East to West

As shown in Figure 1, the paddock had a number of different soil zones, therefore treatments were placed to capture the different zones.

Treatments:

1. Suscon Maxi applied at 15kg/ha (225g / 100m row)
2. Suscon Maxi applied at 10kg/ha (150g / 100m row)

Results:

Grub counts conducted during April 2018 indicated no greyback grubs present at the site in either treatment (Figure 2).

| Pastega Suscon Trial - Grub Counts | | | | | | | |
|------------------------------------|-----------|-----------|-----------|------------|-----------|-----------|----------------------|
| Date | 18.04.18 | | | | | | |
| | | | | | | | T1 = 15kg T2=10kg |
| Repetition | Treatment | Stool No. | No. Grubs | Repetition | Treatment | Stool No. | No. Grubs |
| 1 | 1 | 1 | 0 | 1 | 2 | 1 | 0 |
| | | 2 | 1 | | | 2 | 0 |
| | | 3 | 1 | | | 3 | 0 |
| | | 4 | 0 | | | 4 | 0 |
| 2 | 1 | 1 | 0 | 2 | 2 | 1 | 0 |
| | | 2 | 0 | | | 2 | 0 |
| | | 3 | 0 | | | 3 | 0 |
| | | 4 | 0 | | | 4 | 0 |
| 3 | 1 | 1 | 0 | 3 | 2 | 1 | 0 |
| | | 2 | 0 | | | 2 | 0 |
| | | 3 | 0 | | | 3 | 0 |
| | | 4 | 0 | | | 4 | 0 |

Figure 2 - Grub count at Pastega suscon trial site (Grub were identified as Christmas beetle and not greyback)

2018 Harvest

As seen in the graphs below (Figures 3 and 4), the treatments where Suscon was applied at 15kg/ha yielded slightly higher than the 10kg/ha treatment in both tonnes of cane and tonnes of sugar per hectare.

Grub counts will be conducted again in April 2019 to assess whether this yield difference can be attributed to grub presence. Yield will also be reassessed at harvest in 2019.

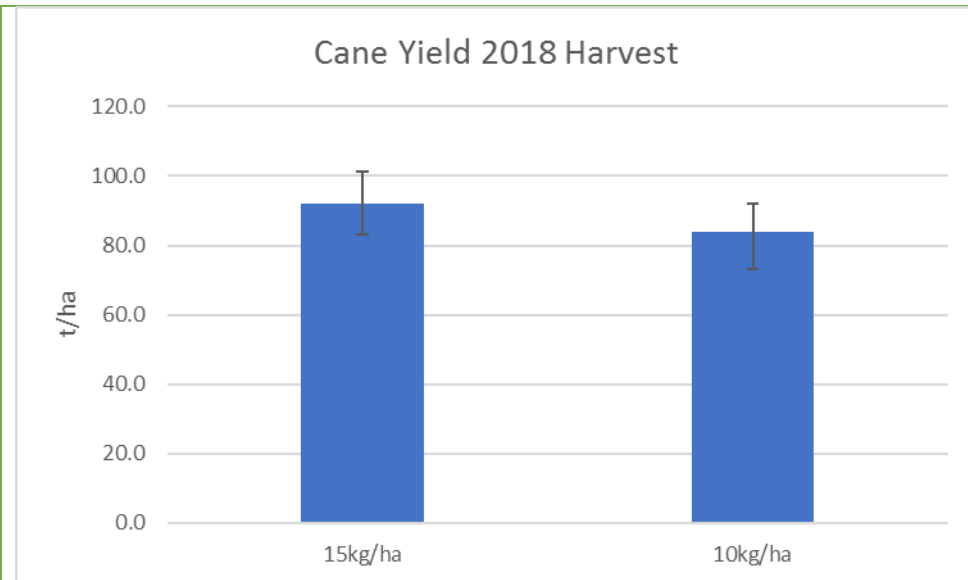


Figure 3 - Cane yield at 2018 harvest

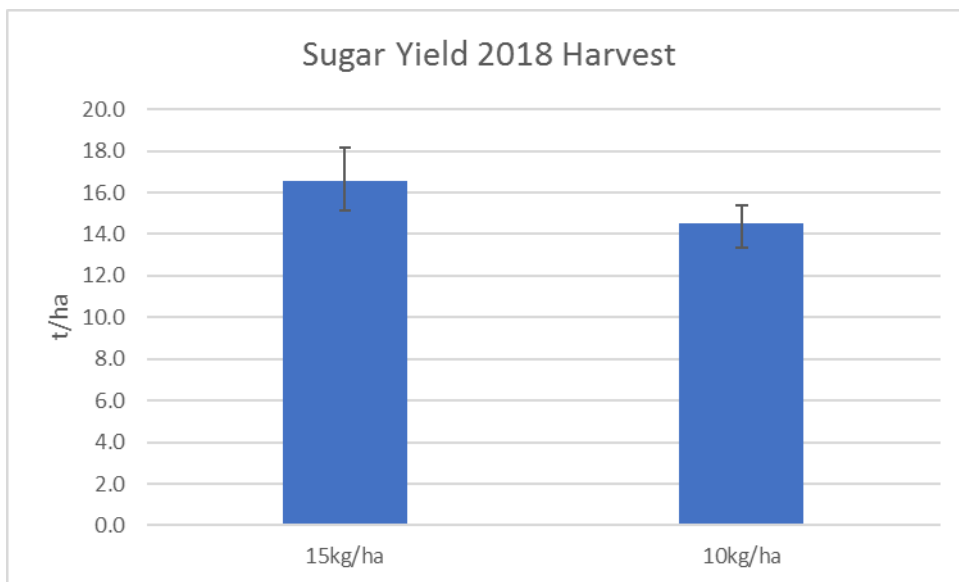


Figure 4 - Sugar yield at 2018 harvest

Grub Counts 2019

Grub counts were conducted across the paddock for all treatments and no cane grubs were present.

Conclusions and comments

In the early stages of this trial, no grubs were found in either treatment, indicating that the lower Suscon rate was adequate to reduce or eliminate grub pressure within the first year of application. The site will continue to be monitored to assess the differences in longevity of the product at the different rates.

Advantages of this Practice Change:

Reduced application of chemical that is found in waterways

Disadvantages of this Practice Change:

Risk of increased grub pressure

Will you be using this practice in the future:

% of farm you would be confident to use this practice:

Site is continuing 2019