

Catalyst Project Report

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Grower Information

Grower Name:	Faust Family
Entity Name:	Faust Farming
Trial Farm No/Name:	PSM-1102A Block 1-1
Mill Area:	Proserpine
Total Farm Area ha:	1450
No. Years Farming:	4 th generation
Trial Subdistrict:	Glenview
Area under Cane ha:	1000

Background Information

Aim: Assess the benefit of adding Worm Hit product to the soil

Background:

Worm Hit is a natural fertiliser which has been trialled and tested in a variety of cropping industries. Worm Hit is a vermicast which has the ability to both fertilise and rehabilitate the soil. Application of this product may lead to higher plant growth rates and utilisation of nitrogen earlier in the growing season. Advocates of Worm Hit claim its use can lead to increased root growth and increased uptake of chemical fertiliser leading to an increased Nitrogen Use Efficiency.

Different application rates will be trialled to examine impacts on crop growth and yield.

Potential Water Quality Benefit:

Increased use of nitrogen and increased nitrogen use efficiency

Expected Outcome of Trial:

Improved growth of sugarcane where the Worm Hit is applied, resulting in increased yield.

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	August 2017	Apply Worm Hit based on trial design
Stage 2	October 2017	Shoot counts, photo of root systems
Stage 3	May 2018	Sugarcane biomass samples collected
Stage 4	September 2018	Harvest trial
Stage 5	September 2019	Harvest trial

Project Trial site details

Trial Crop:	Sugar cane
Variety: Rat/Plt:	1R Q183
Trial Block No/Name:	1-1
Trial Block Size Ha:	10
Trial Block Position (GPS):	148.555148, -20.394737
Soil Type:	Koolachu, Sandy Loam

Block History, Trial Design:

Repetition		1	1	1	1	1	2	2	2	Water	2	2	3	3	3	3	3
Treatment	Guard	2	3	1	5	4	2	3	4	Furrow	5	1	3	4	2	1	5
No Rows	1	3	3	3	3	3	3	3	3		3	3	3	3	3	3	3

Treatments						
1	No Product Applied	N	P	K	S	
2	75 kg/ha	0.2985	0.093	0.403	0.391	
3	150 kg/ha	0.597	0.186	0.806	0.782	
4	250 kg/ha	0.995	0.31	1.343	1.303	
5	500 kg/ha	1.99	0.62	2.685	2.605	

Figure 1- Trial layout of treatments applied.

As well as the treatments shown in Figure 1, all treatments also received an application of 2.2m³ of Mky170P fertiliser as a top-up with nutrients added shown in Table 1

Product	Rate	N (kg/ha)	P (kg/ha)	K (kg/ha)	S (kg/ha)
MKY170P	2.2m ³ /ha	87	9	63	15

Results:

Drone flight 15/12/2017

No visual differences observed from the drone flight (Figures 2 and 3) or from the ground.



Figure 2 - Aerial image of whole trial



Figure 3 - Aerial image showing a closer view of one end of the trial block

2018 Harvest Results

The results from the 2018 cane harvest are shown below (Figures 4 and 5). As can be seen, the yields collected show inconclusive results as no clear patterns or trends can be observed. Further testing should be conducted to determine if the yield differences were due to the varying rates of the product applied.

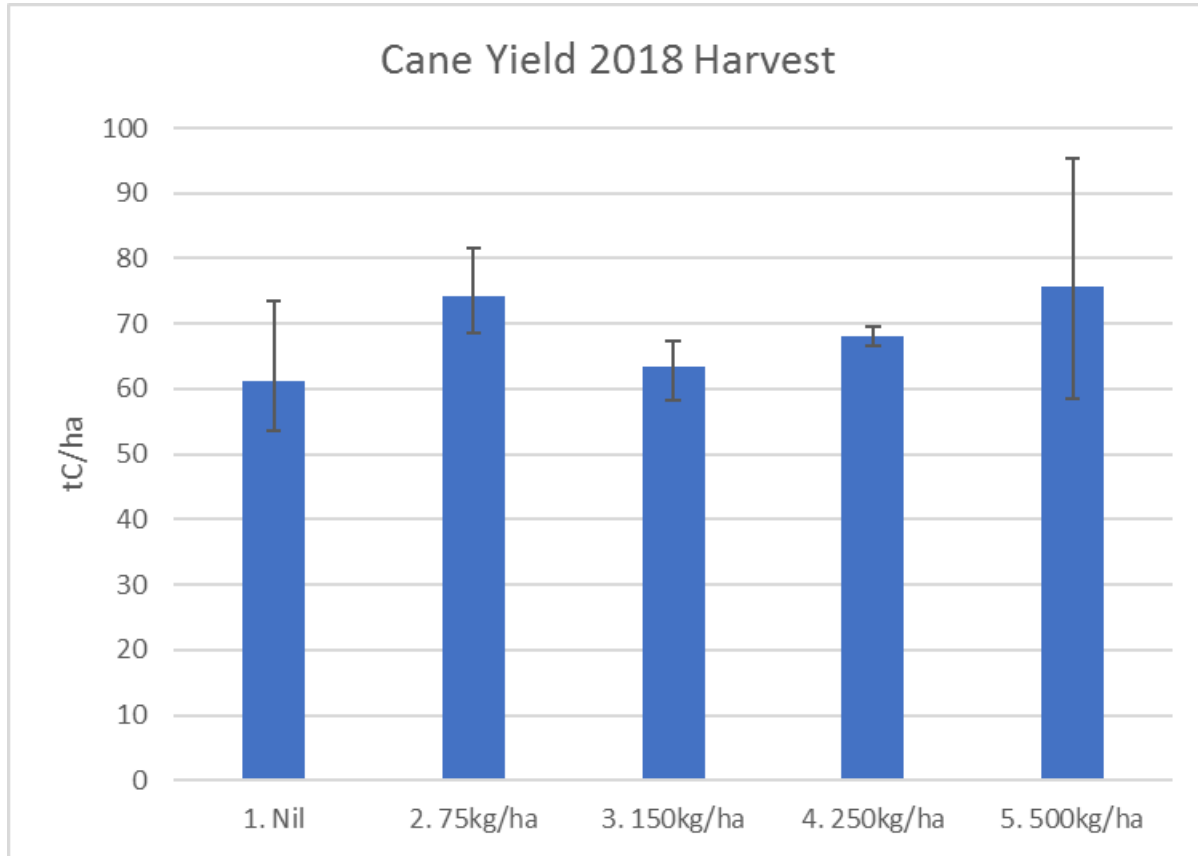


Figure 4 - Cane yield from the 2018 harvest

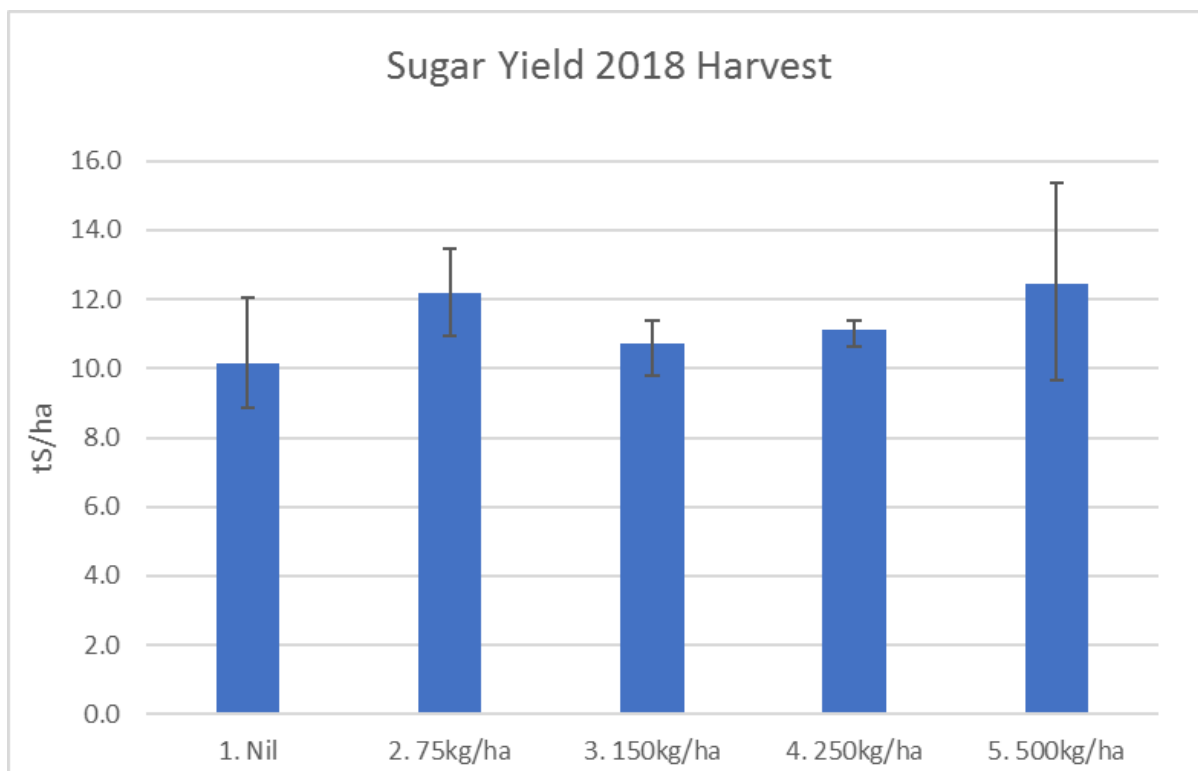


Figure 5 - Sugar yield from the 2018 harvest.

Conclusions and comments

Due to the spread of error across the treatments and the inconsistency of yields, it is unlikely that the application of worms hit has affected the cane yield in the first year of monitoring. The yield will be collected in 2019 to assess any longer-term effects.

Advantages of this Practice Change:

Disadvantages of this Practice Change:

Will you be using this practice in the future:

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

Project site is continuing