Project Catalyst Final Report

Innovation Project Name : R7-2 Innovation GC Herbert

Project ID: RR-C-1415-062

Project Manager: Lawrence Di Bella

Project Completion Date: 30 June 2016 – Nov 2019.

Background Information

Grower/Landholder Name: Orazio/ Anthony Marino

Landholder ID: LH000101

Site ID: RR-C-1415-062-7

Entity Name: O & A MARINO FAMILY TRUST

Trial Name: Best Bang for the Buck

Farm No/Name: **504A** **Total Farm Area ha:** 70.01 ha

Mill Area: Herbert

No. Years Farming: 50 Years

Trial Subdistrict: Fair ford Trebonne

Crop Type: 1st Ratoon **Area ha:** **5.7ha**

Crop Type:	**Area ha:**
Crop Type:	**Area ha:**
Crop Type:	**Area ha:**
Crop Type:	**Area ha:**
Aim: (What are you specifically testing) $$$$ We are taking the amount it cost to apply conventional fertiliser custom blend $/Ha at 617.75kg/ha. Using the same financial figure to purchase an Entec blend, & Spreading it accordingly. (As entec is more expensive it will be at a reduced Kg/Ha) The yield will then be compared, at harvest using the Mill data	
Background: (Rationale for why this might work) The idea is getting more bang for the buck!! Can we achieve better / equal results using an Entec Blend even if it means reducing fertiliser application as Kg/Ha goes although increasing the length of time it is available for by using the control release.	

Why are you trying this: eg. Profitability

As a business we are always looking at increasing our profit margins.

Last year we had a play with Agrocote although didn't do an actual "Trial", so we are keen to get a "trial" in place & record the results.

Potential Water Quality Benefit:

Just within the application Process we will be applying less, than the Conventional methods. This will result in Reducing the risk of loss.

By applying an entec Blend subsurface, volatilisation will be kept to an all time low, & runoff to a minimum.

Expected Outcome of Trial:

We are hoping we can achieve the crop yield if not better using the Entec Blend.

Support Provided By:

HCPSL, Fertiliser Outlet.

Where did this idea come from: eg. Forum, Adviser

Something we have been wanting to trial for a while.

Plan - Project Activities	**Date :** (mth/year to be undertaken)	**Activities** :(breakdown of each activity for each stage)	**Actions** :(as per contract actions)
Stage 1	Completed	**Trial Designed**	Action 1: Setup design, establish and implement trial with O. Marino for; Variable rate liquid fertiliser. Seek agronomic advice for trial design. Develop workplan for trials.

Stage 2	Completed	**Soil Tests completed,** **Trial Site located & mapped out.**	Soil and product testing (if applicable). Set up trial sites. Action 2:
Stage 3	Completed In Process	**Rain Simulation Trial carried out.** **(***Did rain simulation accrue? Where is data?)*	Ongoing management of trial site: Monitor trials and keep accurate records of trial results, field operations, chemical and fertiliser inputs, crop yield and quality (as relevant to project), and provide to Terrain.
Stage 4 *Trial changed projects from Game Changer to Project Catalyst* *Trial handed over to Megan in Nov 2016*	June 2016 June 2016	**Harvest Trial, Splitting the Treatments & Reps, & Analyse Data.**	Action 3: Facilitate site access for Terrain NRM staff to observe trial results. WMP Site Access. Progress report. Final Project Information. Final Report.

Stage 5	2017	**Final Harvest and CCS data collected through mill** **Analysis data and compare with 2016 data**	Final harvest and CCS data collect for 2017 – 24/08/2017 Analysis data and compare with 2016 data – September 2017 Product re applied to trial for one more season of data collections – 11/10/2017
Stage 6	2018	**Final Harvest and CCS data collected through mill** **Plot sizes GPS measured for accurate treatment areas** **Data analysed and compared over three years of harvest results.**	Trial Harvested on the 22nd of September 2018 Analysed three years of data. Updated NMP for all farms

Project Trial

"More Bang for our Buck"

Crop: Cane	**Rat/Plt:** 1st Ratoon 2016
Variety: **Q247A** & **Q183A**	**Crop Height/Stage:**

Block History:(If Relevant)

Trial Block No/Name: 4-1	**Trial Block Size Ha:** **Block size 5.7ha** **Trial Size 5.2ha**	**Trial Block Position (GPS):** -18.653931, 146.112261

Soil Type: Clay	**No. Replicates:** 5

Control/Standard Practice: **(T2) Standard Custom Blend**

N 24.9, **P** 2.5, **K** 16.6, **S** 2.5. **Treatment 1** = 617kg X 2.6ha = 1605.5kg (1.605T)

=1.605T X 782.24 = $1255.49

Total cost for T1 = $1255.49

Application Method: 3 Row Sub surface Stool Splitting applicator **Rate:** 5 Bags/Acre or 617.5kg/ha **Date Applied:** 28/10/15

Changed Practice: 1 **(T2)** Entec Custom Blend

N 23.2, **P** 2.7 **K** 17.9 **S** 2.7 **Treatment 2** =494kg X 2.6ha = 1284.4kg (1.284T)

=1.284T X 898.15 = $1153.22

Total Cost for T2 = $1153.22

Application Method:	3 Row Sub surface Stool Splitting applicator	**Rate:**	4 Bags/Acre or 494kg/ha	**Date Applied:**	28/10/15
Changed Practice: 2	**(T3)**				
Application Method:		**Rate:**		**Date Applied:**	
Changed Practice: 3	**(T4)**				
Application Method:		**Rate:**		**Date Applied:**	
Changed Practice: 4	**(T5)**				
Application Method:		**Rate:**		**Date Applied:**	

Conclusions

Conclusions based on results:

The trial now has 3 years of harvest data. The data shows no statistical differences between the treatments. Even though the Entec hasn't increase yield above the conventional method, the trial is still showing that there is no yield drop due to having a lower kg/ha rate. By reducing the use of chemical fertiliser there is less chance for nutrient runoff.

It should be noted that the years 2016 & 2017 have been below average wet seasons for the district. If an above average wet season occurred, there is still a good chance that the Entec treatments will perform better than the conventional treatments. This prediction has come true with the year 2018. We had an above average wet season early in the year and the Entec treatment this harvest has slightly higher yield than the control.

There are still no statistical differences between treatment yields, showing that reducing the rate of fertiliser hasn't decrease yield in any significant way.

Advantages of this Practice Change:

There is more guarantee that your nitrogen will stay in the soil as a compatible form for longer, specially in the wet season. By comparing cost of products, Anthony knows that he can use the more expensive and better product without comprising his yield.

Disadvantages of this Practice Change:

Entec cost more than conventional fertiliser.

Will you be using this practice in the future: Yes

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

Trial Map Attached Y/N

A.Marino

ENTEC trial

Farm # 0504A

B# 4-1

Marino Bang for Buck Trial

Siding this end

8rows guard	9 rows	9 rows	9 rows	9 rows	9 rows	9 rows	3 rows	9 rows	9 rows	9 rows	9 rows
	Trt 2 Conven	Trt 1 Entec	Trt 2 Conven	Trt 1 Entec	Trt 2 Conven	Trt 1 Entec	BUFFER	Trt 2 Conven	Trt 1 Entec	Trt 2 Conven	Trt 1 Entec
	9 rows Trt 2 Conven	9 rows Trt 1 Entec	9 rows Trt 2 Conven	9 rows Trt 1 Entec	9 rows Trt 2 Conven	9 rows Trt 1 Entec	BUFFER	9 rows Trt 2 Conven	9 rows Trt 1 Entec	9 rows Trt 2 Conven	9 rows Trt 1 Entec
	Rep 5		Rep 4		Rep 3		3 rows	Rep 2		Rep 1	

Hamliegh Road

SHED

Headland

Headland

Trebonne

FARM 0504A
Block 4-1
Entect Trial

HCPSL
Herbert Cane Productivity Services Ltd.

Scale 1:2,000

N

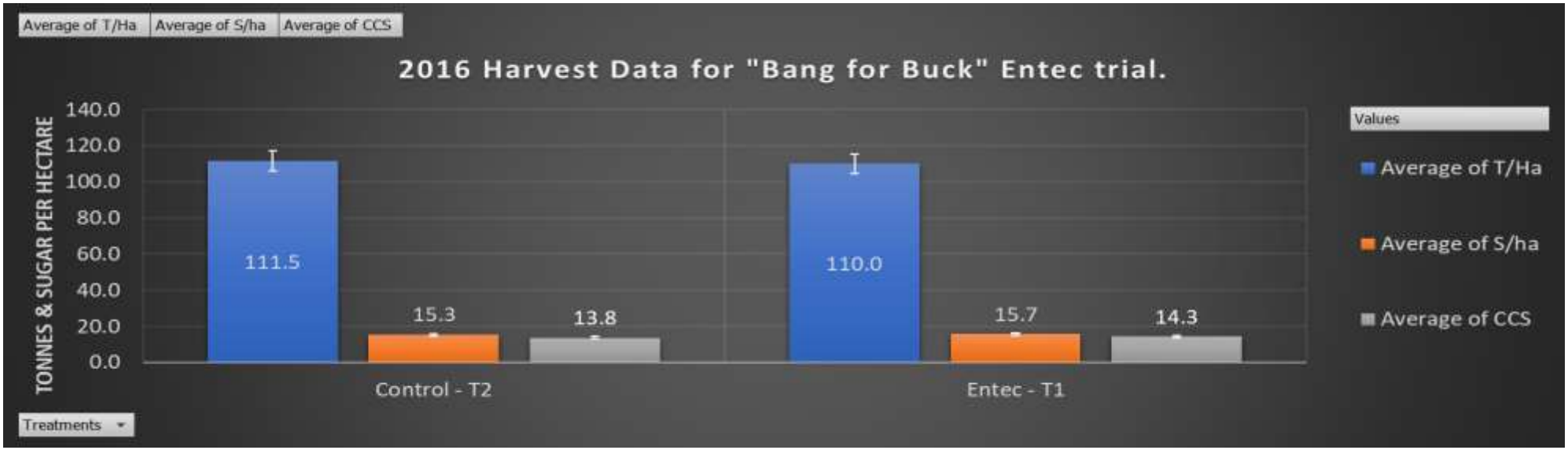
0 50
Meters

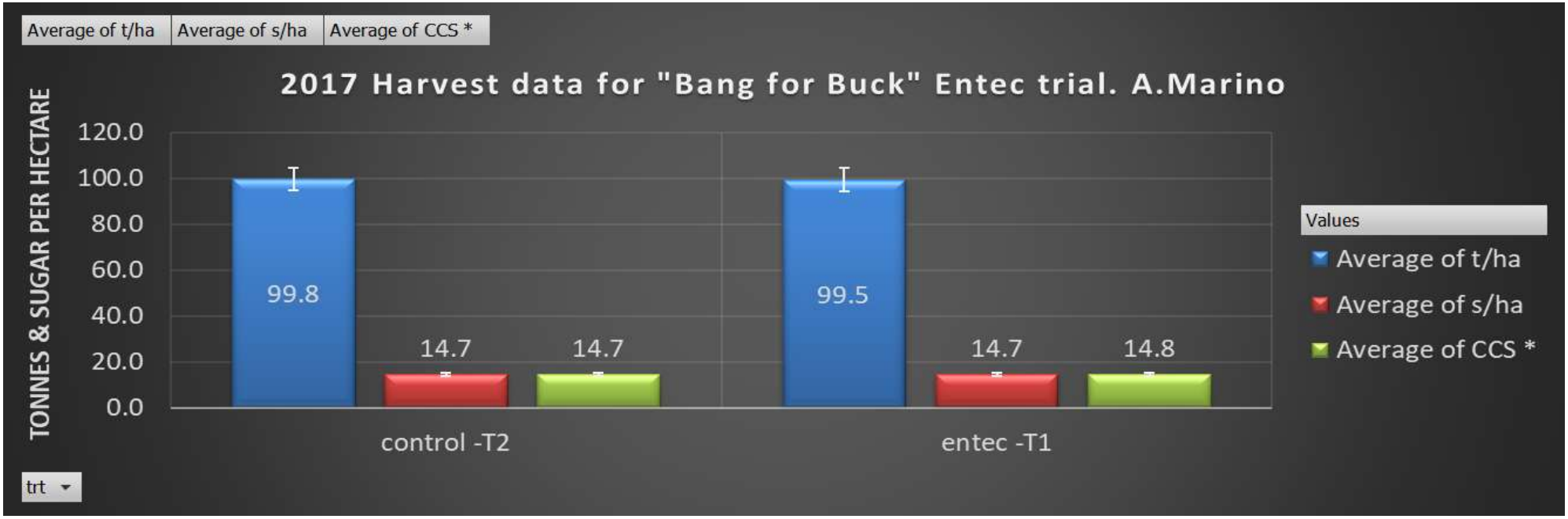
Trial_points_181118
Trial_Plots

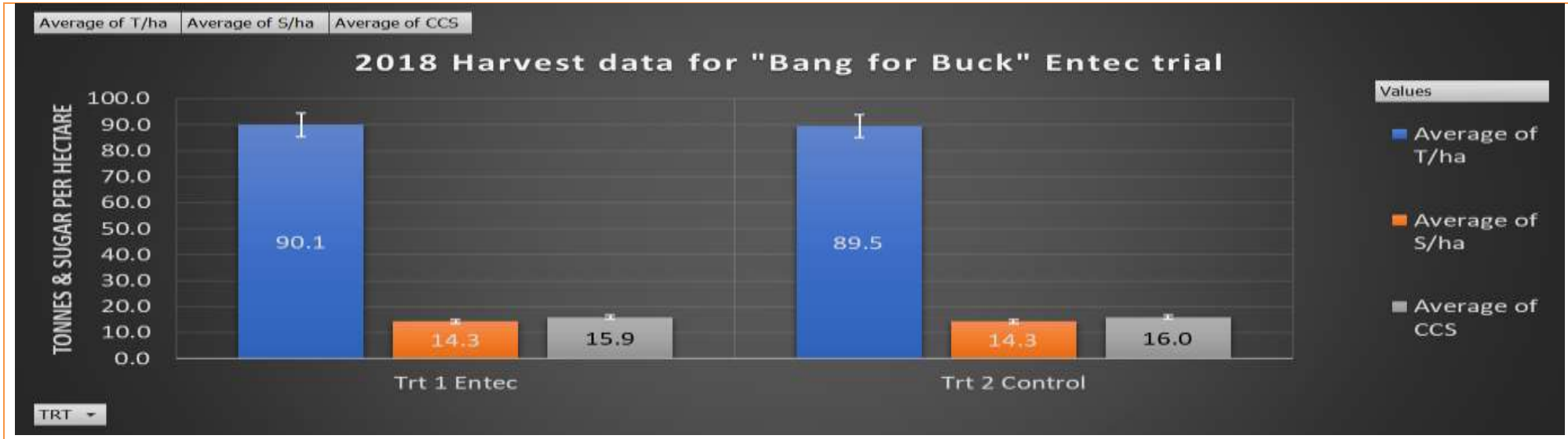
Produced 06/01/2017

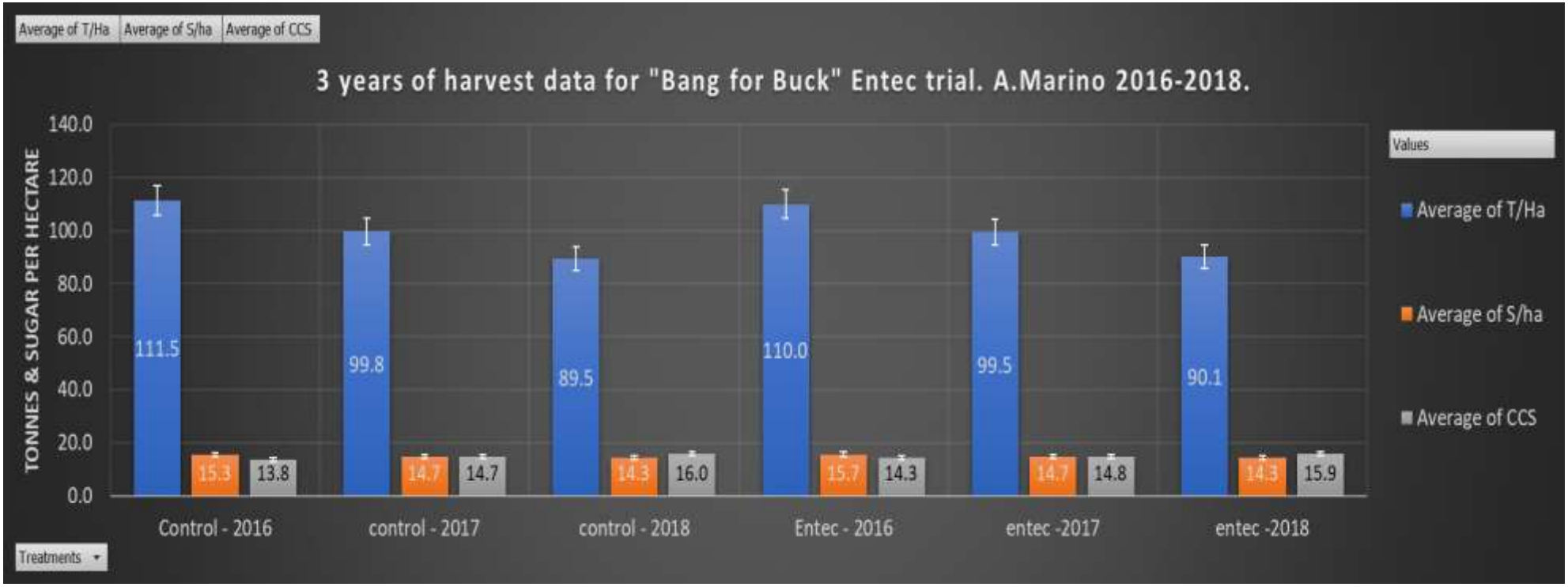
Plot area map above.

Attach Trial Results Attached Y/N





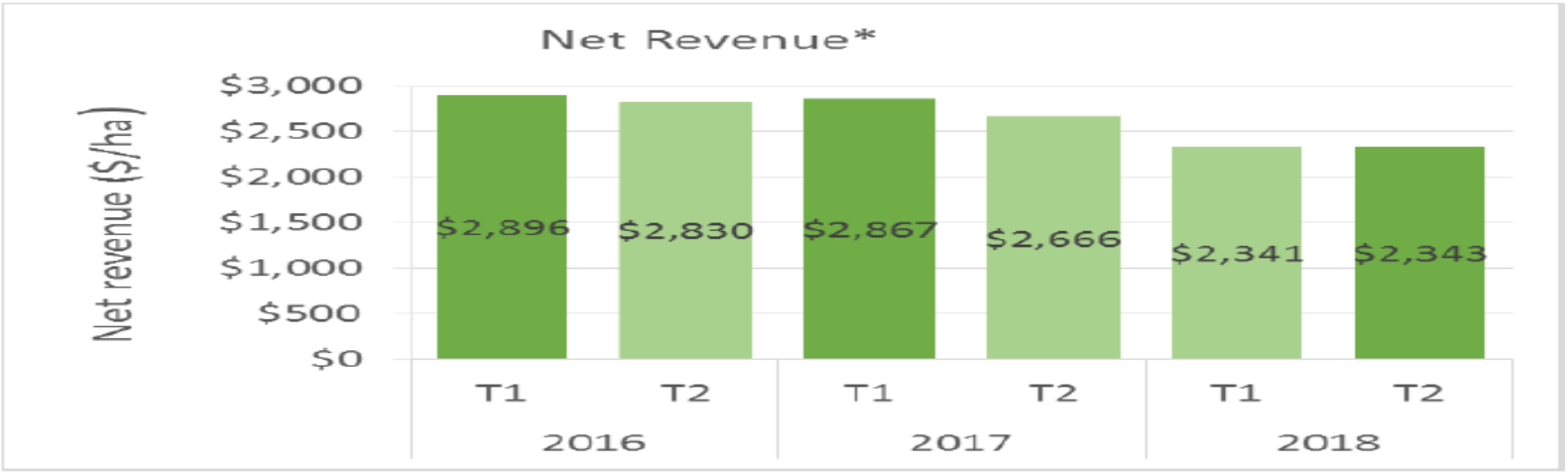

Average of T/ha
Average of S/ha
Average of CCS
2018 Harvest data for "Bang for Buck" Entec trial
TONNES & SUGAR PER HECTARE
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
90.1
14.3
15.9
89.5
14.3
16.0
Trt 1 Entec
Trt 2 Control
Values
Average of T/ha
Average of S/ha
Average of CCS
TRT


Average of T/Ha
Average of S/ha
Average of CCS
3 years of harvest data for "Bang for Buck" Entec trial. A.Marino 2016-2018.
TONNES & SUGAR PER HECTARE
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
111.5
15.3
13.8
99.8
14.7
14.7
89.5
14.3
16.0
110.0
15.7
14.3
99.5
14.7
14.8
90.1
14.3
15.9
Control - 2016
control - 2017
control - 2018
Entec - 2016
entec -2017
entec -2018
Values
Average of T/Ha
Average of S/ha
Average of CCS
Treatments

Economic Results

Entec Trial – Variable Costs 2016 – 2017

Entec Trial – Net Revenues 2016 -2018



*Net revenue = Gross revenue net of fertiliser costs, harvesting costs and levies ($/ha)

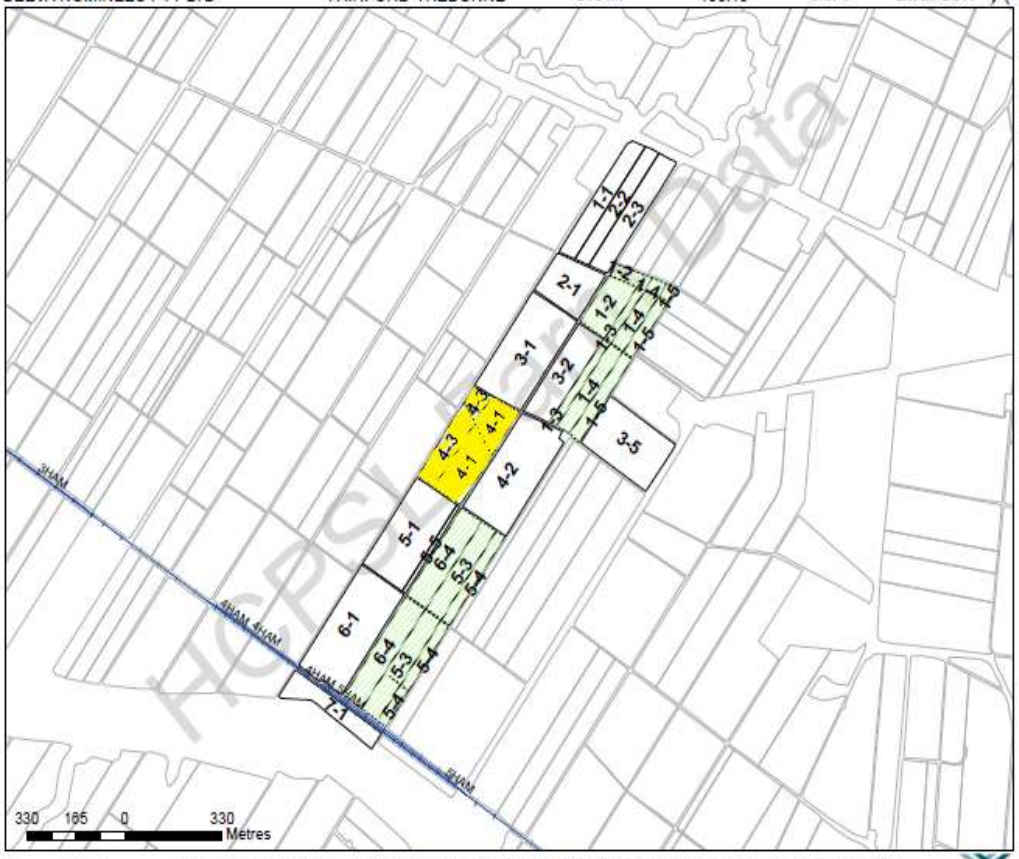
Photos of Trial Attached Y/N

Photo Left: Harvest 2018

Farm Map attached Indicating

Trial Position (from grants officer) Y/N

Grower Name	Mill District	Farm No.	Farm Area	Sheet	Date
BEEVA NOMINEES PTY LTD	FAIRFORD-TREBONNE	0504A	133.13	3 of 3	25/09/2017



Block	Area	Var	Class
1-1	2.41	SRA3	PL
1-2	2.2	Q183	3R
1-3	1.44	Q204	1R
1-4	2.75	Q242	1R
1-5	2.16	Q226	1R
2-1	2.66	Q215	3R
2-2	2.08	Q253	PL
2-3	2.78	Q232	PL
3-1	6	Q208	6R
3-2	3.07	Q183	4R
3-5	4.72	Q208	1R
4-1	3.53	Q183	2R
4-2	6.16	Q208	5R
4-3	2.17	Q247	2R
5-1	5.14	MQ239	4R
5-3	4.38	Q238	2R
5-4	2.29	Q232	2R
5-5	0.4	Q238	4R
6-1	6.41	Q200	5R
6-4	5.29	MQ239	3R
7-1	2.11	Q208	PL

Group No.44 Farm Map Produced by Wilmar Sugar for HCPSL Farm Agronomy Data Collection wilmar

Trial block highlighted in yellow