

Project Catalyst Trial Report

Variable Rate Gypsum on a Sodic block trial

Grower Information

Grower Name:	Walter Giordani
Entity Name:	W & N.M. Giordani
Trial Farm No/Name:	Variable rate gypsum within a sodic block Farm # 796A
Mill Area:	Victoria
Total Farm Area ha:	178 ha
No. Years Farming:	15 years
Trial Subdistrict:	Helens Hills/Yuruga
Area under Cane ha:	175.53 ha

Background Information

Aim: To compare between a variable rate of Gypsum that targets sodic zones within the block to a conventional practice of 2t/ha across the whole block.

Background: (Rationale for why this might work)

By applying more gypsum to the higher sodic patches within the block by using EM mapping and variable prescriptions to apply, we believe that there will be an improvement in sodicity, sugarcane yield and ratooning ability.

Potential Water Quality Benefit:

By improving our sodicity factor within the block, we will also be improving the plant uptake of nutrient and NUE; which in turn will reduce nutrient runoff from the block to the waterways. Also, by reducing our sodicity, we will also improve the structure of our soil and make it less prone to effects of erosion.

Expected Outcome of Trial:

To improve yield across the block and hopefully get longer ratoon life.

Service provider contact: Megan Zahmel 0447 317 102

Where did this idea come from: Walter Giordani

Plan - Project Activities	Date : (mth/year to be undertaken)	Activities : (breakdown of each activity for each stage)
Stage 1	Establish trial 2018	10-1-2018 – Baseline soils samples taken from the block by Wal May 2018 – Block EM mapped 22/05/2018- More soil samples taken in the poor zones of the block and the good zones of the block to compare. 25/25/2018 – Trial treatments applied to the block. 31/05/2018 – Trial planted SRA3 variety
Stage 2	Sampling 2018	5/7/2018 – Germination shoot counts 14/8/2018 – Shoot counts 22/10/2018 – Shoot counts
Stage 3	Sampling 2019	Final yield and CCS at Harvest season 2019 Soil samples to check for sodicity improvement after harvest. Late 2019
Stage 4		
Stage 5		
Stage 6		

Project Trial site details

Trial Crop:	Sugarcane
Variety:	SRA 3
Rat/Plt:	Plant 2018
Trial Block No/Name:	#6-5 F#796A Variable Gypsum trial
Trial Block Size Ha:	5.18ha
Trial Block Position (GPS):	Refer to google earth map
Soil Type:	Sandy Clay

Block History, Trial Design:

Block History:

- Wal Giordani bought the farm in 2012
- Zonal mud & ash since 2012
- Variable rate amendment since 2012
- Change row spacing to 1.8m in 2017

Trial Design

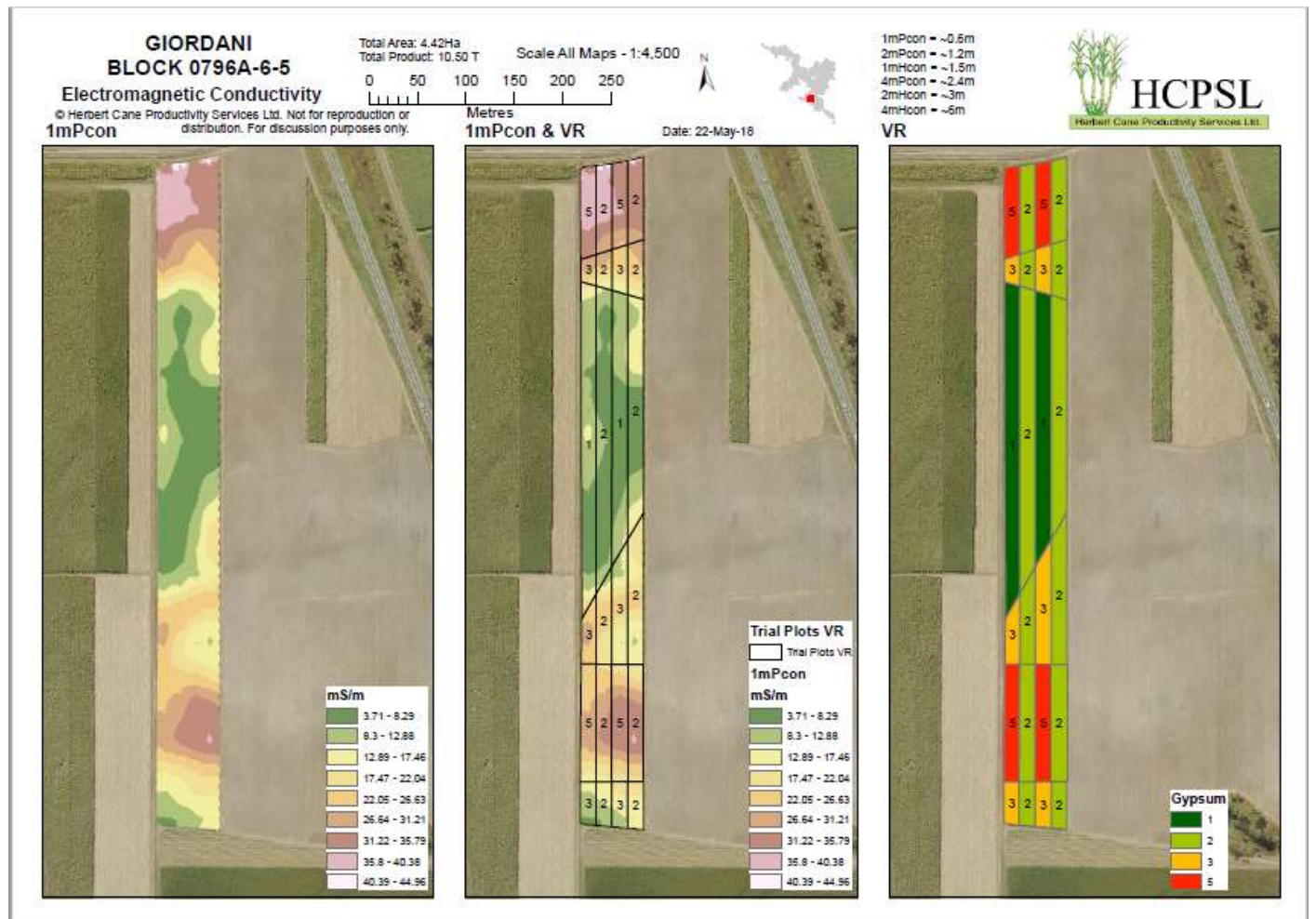
Walter Giordani					
Variable Rate Gypsum trial					
25/05/2018 established					
Farm # 796					
Block# 6-5					
Block 5-3					
HeadLand					
Block 6-6 Q253	Plot 1 Trt 1 Conventional Rate 12 rows	Plot 2 Trt 2 Variable Rate 10 rows	Plot 3 Trt 1 Conventional Rate 10 rows	Plot 4 Trt 2 Variable Rate 8 rows	Headland
Train Track					

Treatments:

- Treatment 1 – Conventional rate of 2 tonnes per hectare of Gypsum
- Treatment 2 – Variable rates of 5 tonnes, 3 tonnes, 1 tonne per hectare of Gypsum

Results:

Variable prescription map:



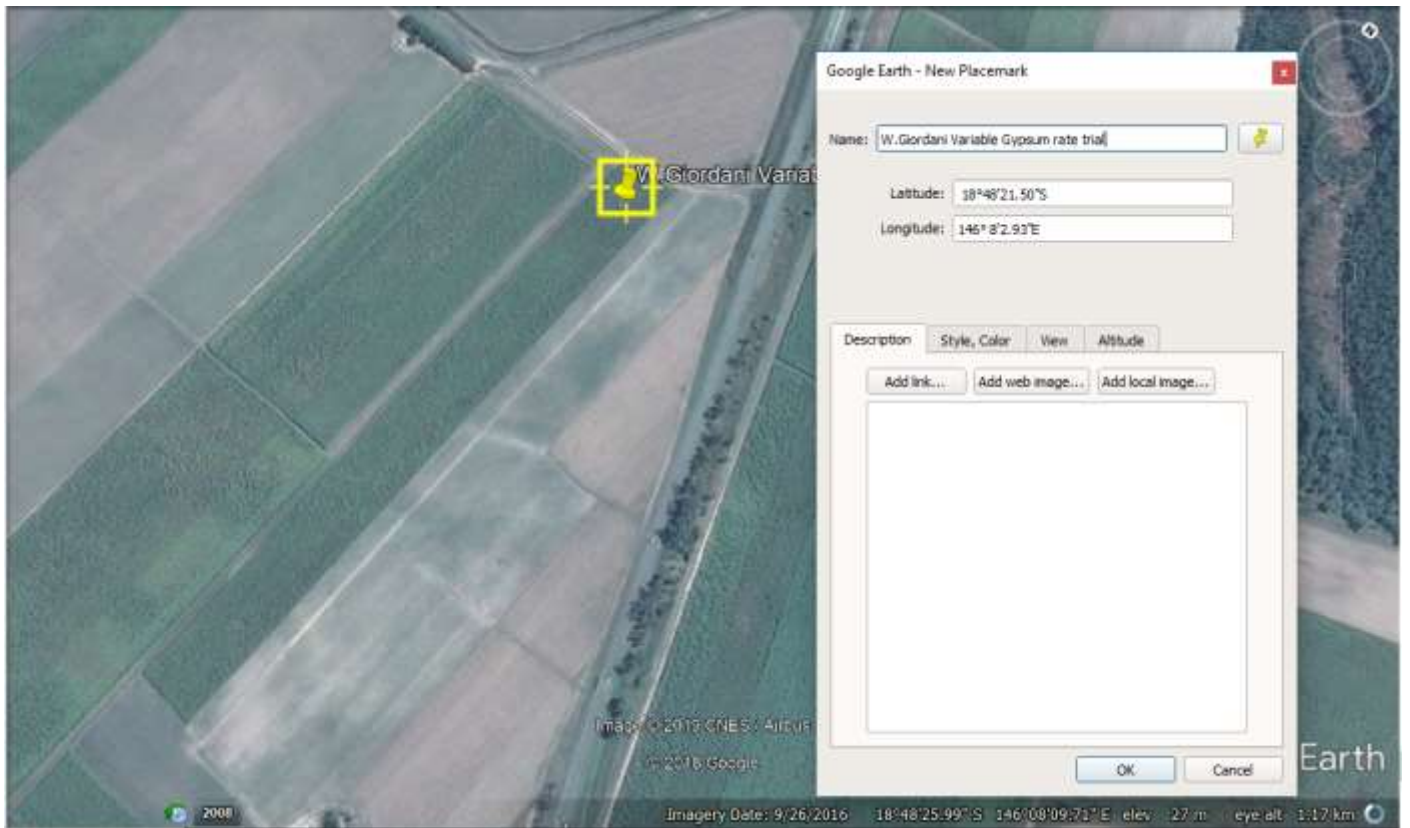
Average Shoot counts for July, August and October 2018 to compare between conventional rates and variable rates

5th July 2018				14th of August 2018			
Conventional rate		Variable rate		Conventional rate		Variable rate	
Average shoot count for Area 3 - 2t/ha	57	Average shoot count for Area 3 - 5t/ha	75	Average shoot count for Area 3 - 2t/ha	109	Average shoot count for Area 3 - 5t/ha	167
Average shoot count for Area 2 - 2t/ha	107	Average shoot count for Area 2 - 1t/ha	138	Average shoot count for Area 2 - 2t/ha	285	Average shoot count for Area 2 - 1t/ha	379
Average shoot count for Area 1 - 2t/ha	95	Average shoot count for Area 1 - 5t/ha	82	Average shoot count for Area 1 - 2t/ha	299	Average shoot count for Area 1 - 5t/ha	266

22nd of October 2018			
Conventional rate		Variable rate	
Average shoot count for Area 3 - 2t/ha	339	Average shoot count for Area 3 - 5t/ha	391
Average shoot count for Area 2 - 2t/ha	483	Average shoot count for Area 2 - 1t/ha	546
Average shoot count for Area 1 - 2t/ha	444	Average shoot count for Area 1 - 5t/ha	425



Google earth reference map



Conclusions and comments

Still waiting on 2019 harvest results before any conclusions can be made.

Advantages of this Practice Change:

Economical advantages, possible soil health advantages, nutrient input advantages

Disadvantages of this Practice Change:

Observations so far would have to say that the higher rates of gypsum have a higher nut grass coverage. So, the nutgrass issue would need to be address and managed once high amount of gypsum have been applied. The return of nutgrass however indicates that the sodicity in those high gypsum patches has shifted to a lower value which has allowed the nut grass to take advantage. So, this is a positive sign.

Will you be using this practice in the future?

Yes

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

All sodic fallow blocks