

Project Catalyst Final Report

Soil Biology to improve NUE

Grower Information

Grower Name:	Gino Zatta
Entity Name:	ZATTA G & AJ RA & JP
Trial Farm No/Name:	Soil Biology in improve NUE Farm # 658
Mill Area:	Herbert region Bambaroo.
Total Farm Area ha:	300 ha
No. Years Farming:	30 years
Trial Subdistrict:	Bambaroo
Area under Cane ha:	265.17 ha

Background Information

Aim: To produce better sugarcane yield by improving Nutrient use efficiency.

Background: (Rationale for why this might work)

We are trialling products that are said to help build cane root systems and encourage soil health and ratoon longevity.

Bio-activate is a microbial product that is said to stimulate root growth and encourage microbial activity which will help the plant access organic nutrients from the soil more readily. Seasol Plus is a brew of trace element with potassium humates. The humates will help with better cation exchange of minerals which should become more accessible to the sugarcane plant.

Potential Water Quality Benefit:

These products are thought to improve soil health. By improving soil health, soil structure also improves. This helps the water holding capacity of the block and therefore reduces sediment and nutrient losses into waterways. Growing bigger root systems will also take up more nutrients and reduce loss of nutrient from the block.

Expected Outcome of Trial:

That the two products should produce better yield, improve ratoon longevity and sugars per hectare compared to the conventional method.

Service provider contact: Megan Zahmel 0447 317 102

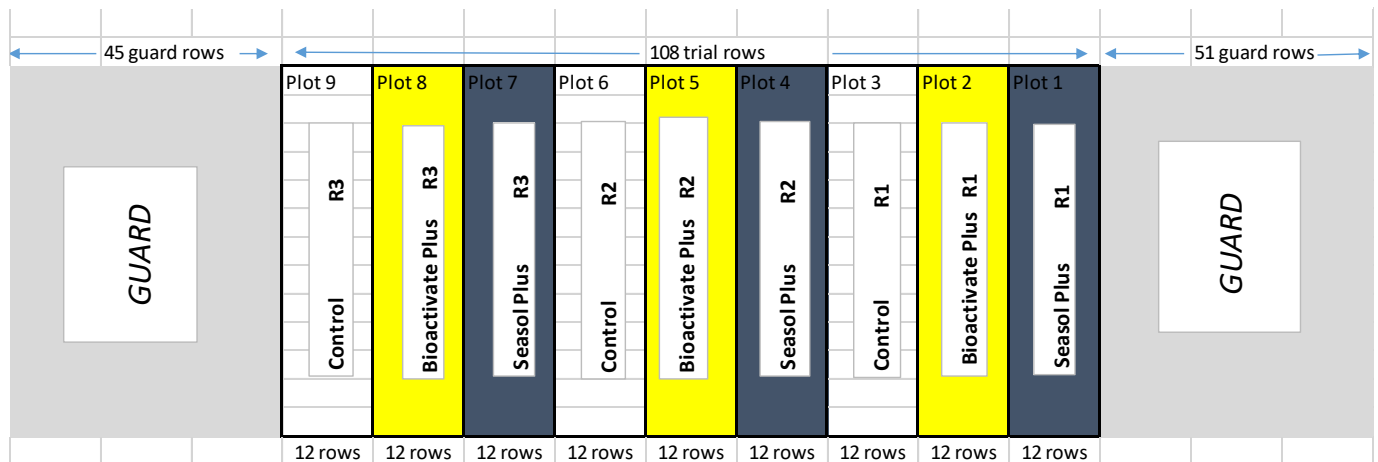
Where did this idea come from: Gino Zatta

Plan - Project Activities	Date: (mth/year to be undertaken)	Activities : (breakdown of each activity for each stage)
Stage 1	Establish Trial	Block Harvest in 2 nd Oct 2016 Trial design completed Product applied 22 nd of Nov 2016
Stage 2	Sampling 2017	Baseline soil nutrient samples 3mth stalk counts – 9 th Dec 2016 Nutrient leaf samples – 28 th of March 2017 6mth biomass and stalk counts – 28 th of March 2017 9mth biomass and stalk counts – 5 th of July 2017 Final yield and CCS - 6 th of Nov 2017 Product reapplied to trial – 7 th of Dec 2017 EM mapped block – 12 th of Dec 2017
Stage 3	Sampling 2018	NMP & WMP - 2018 Nutrient leaf samples – 1 st May 2018 Final yield and CCS – 19 th Nov 2018
Stage 4		
Stage 5		
Stage 6		

Project Trial site details

Trial Crop:	Sugar Cane
Variety:	Q231
Rat/Plt:	1 st ratoon 2016
Trial Block No/Name:	Farm # 0658A Block #11-1
Trial Block Size Ha:	11ha
Trial Block Position (GPS):	Refer to google earth map
Soil Type:	Sandy clay loam

Block History, Trial Design:



Block History

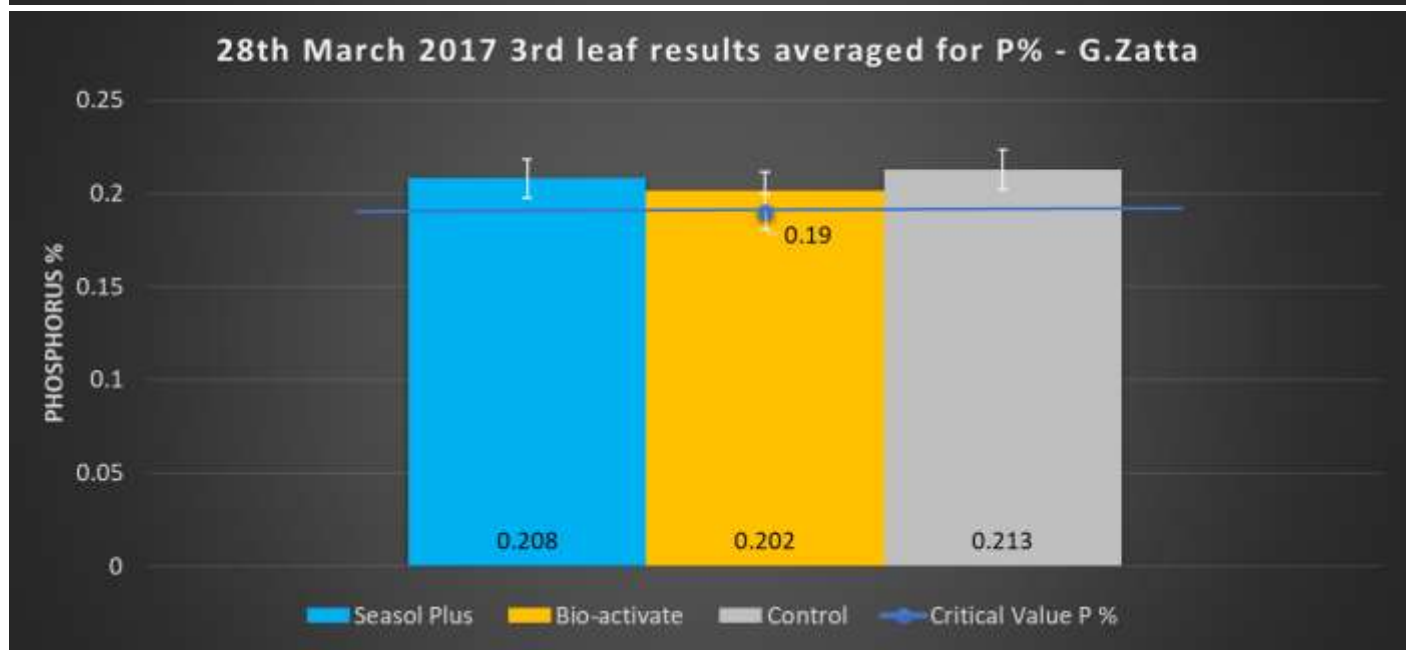
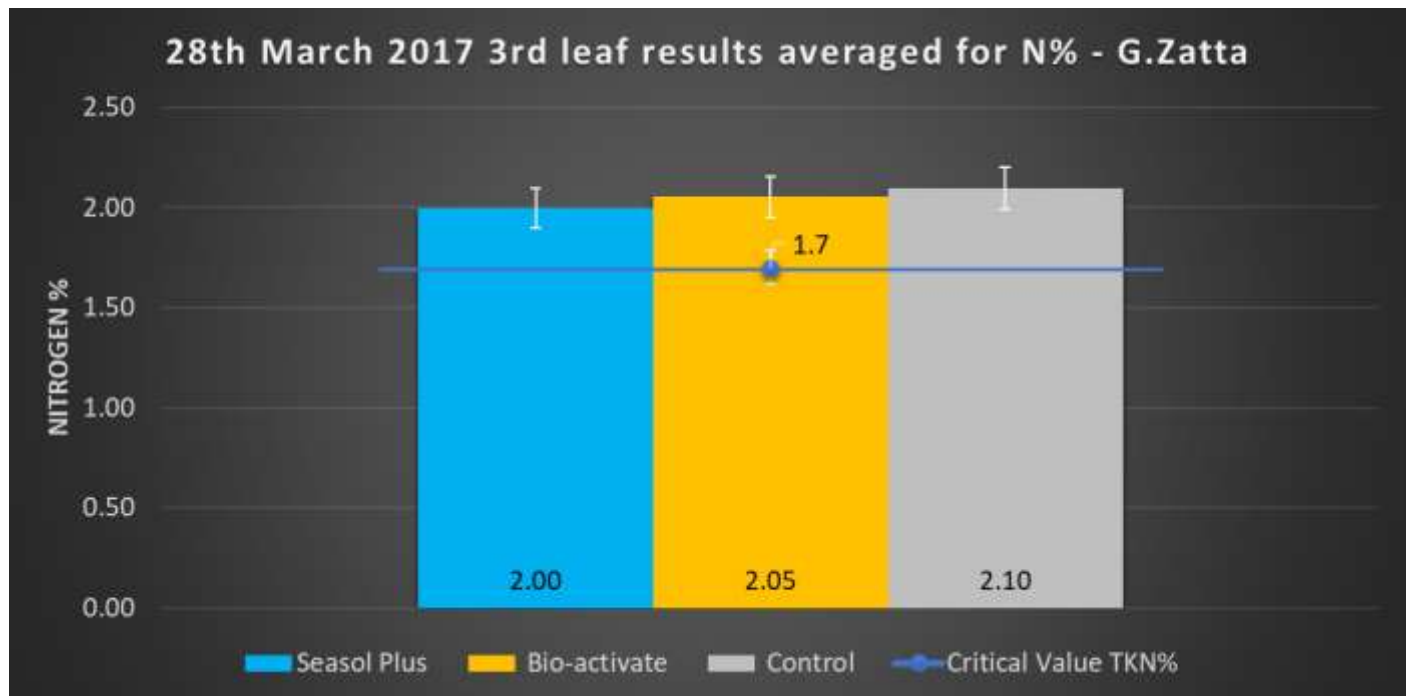
- No Mud
- 1.83m Dual rows
- Has had soy beans on in last fallow
- No Shirtan was used due to the Bioactivate treatments

Treatments:

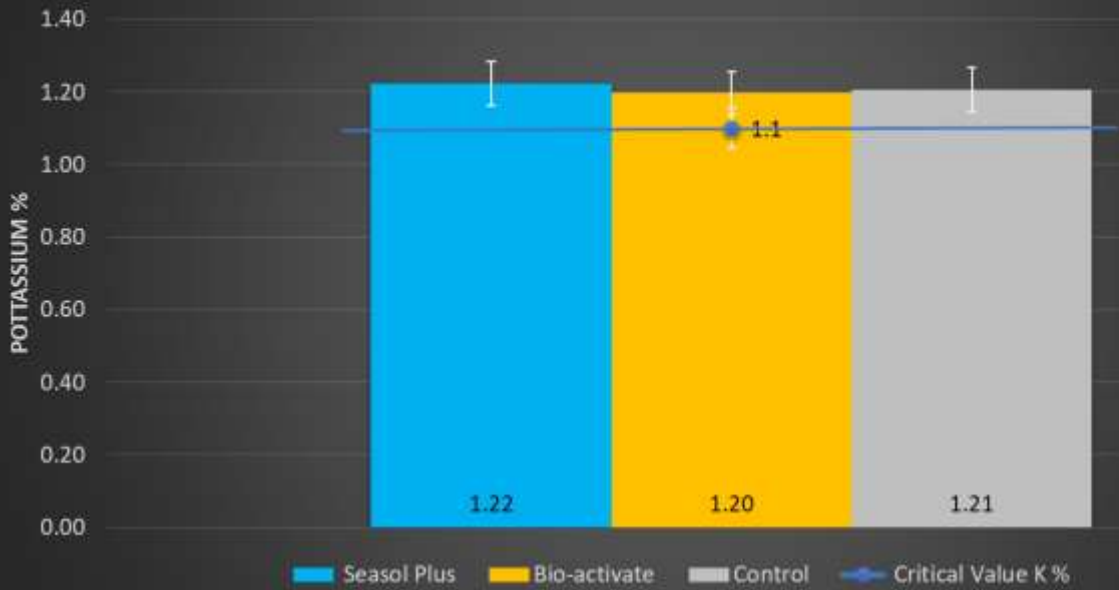
- Trt 1 – Seasol Plus
- Trt 2 – Bioactivate Plus
- Trt 3 – Control

Results:

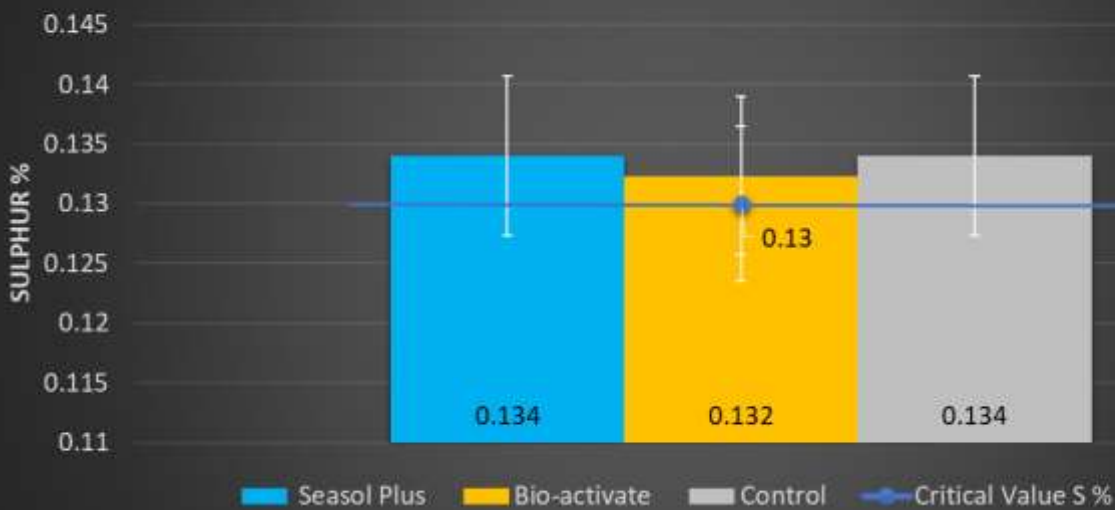
3rd leaf results taken 28th March 2017



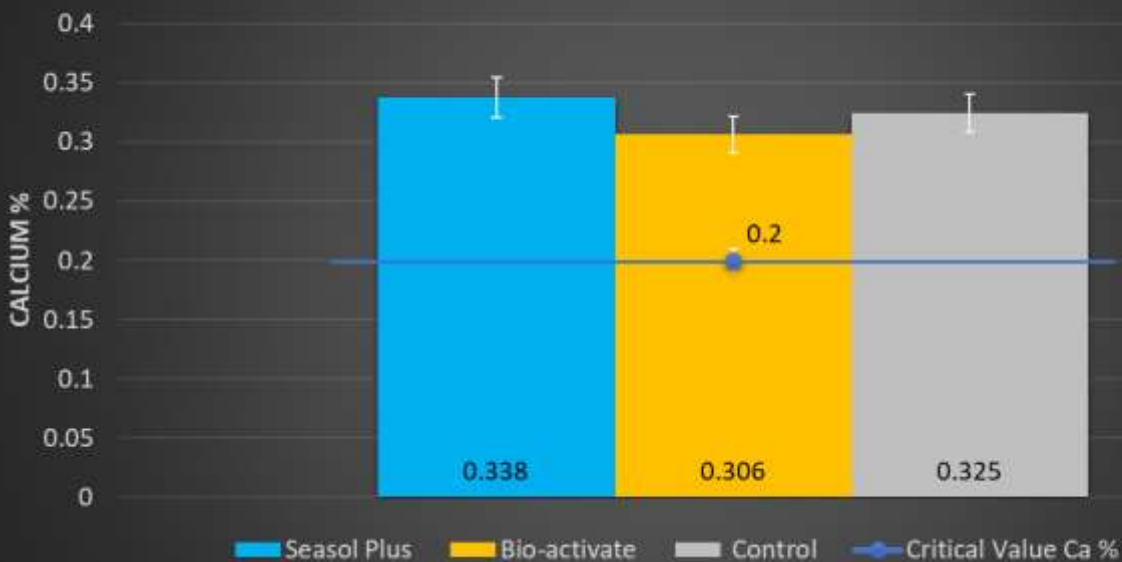
28th March 2017 3rd leaf results averaged for K% - G.Zatta

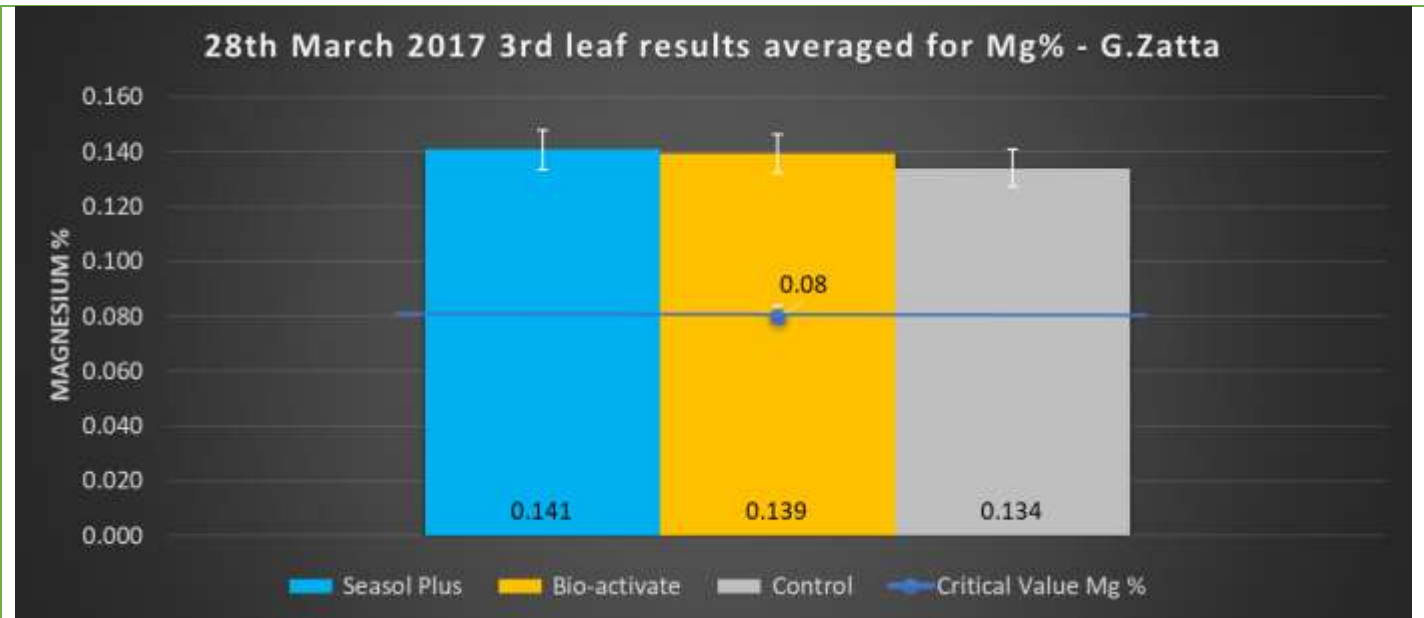


28th March 2017 3rd leaf results averaged for S% - G.Zatta

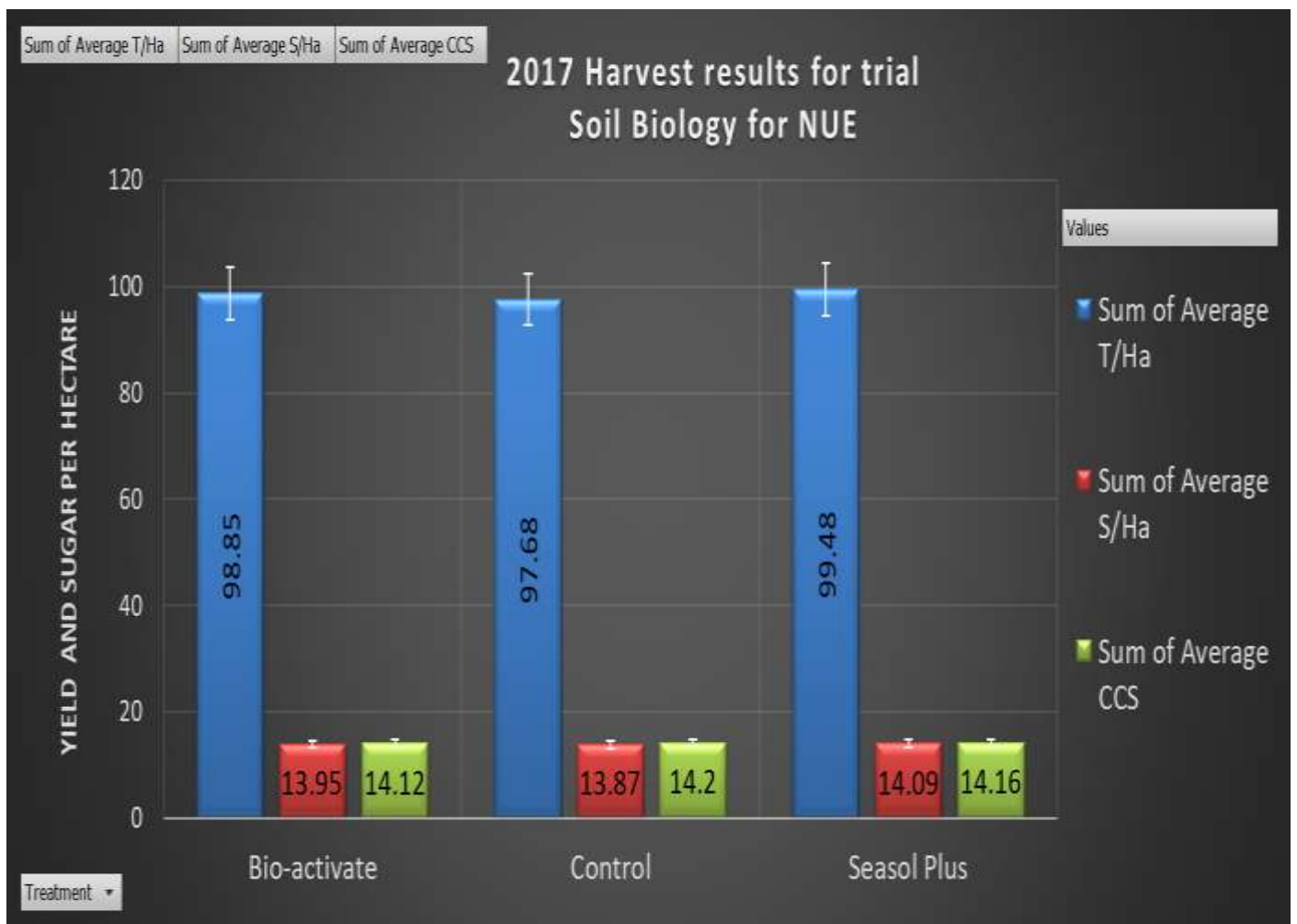


28th March 2017 3rd leaf results averaged for Ca% - G.Zatta

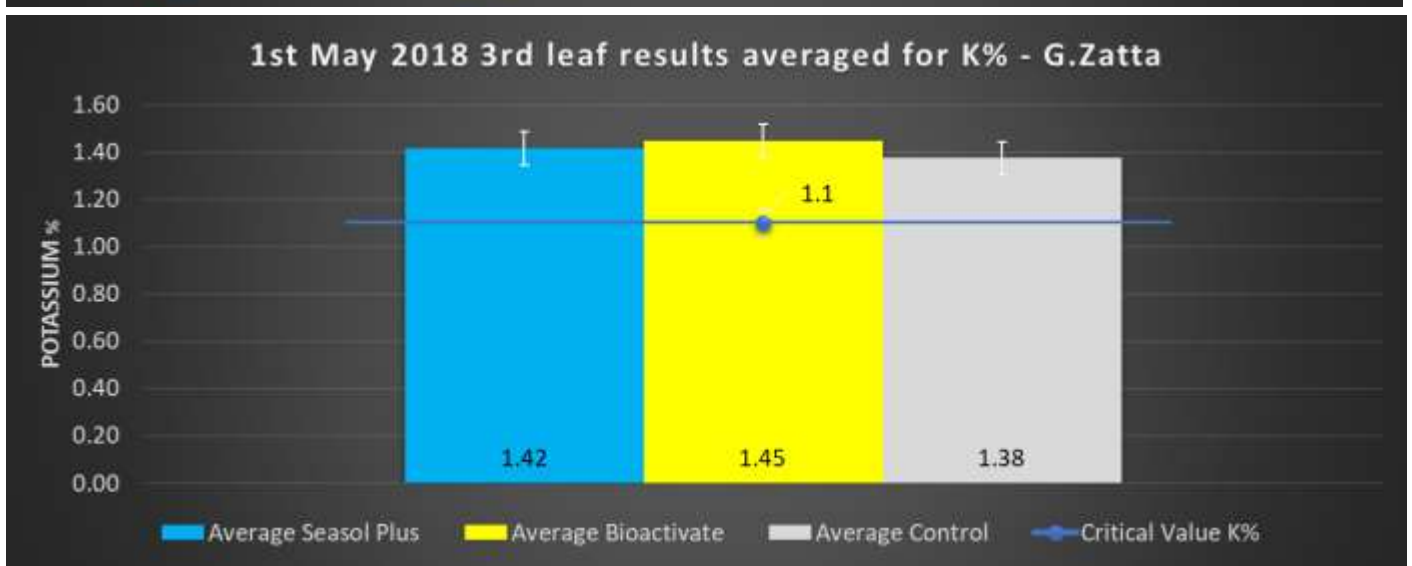
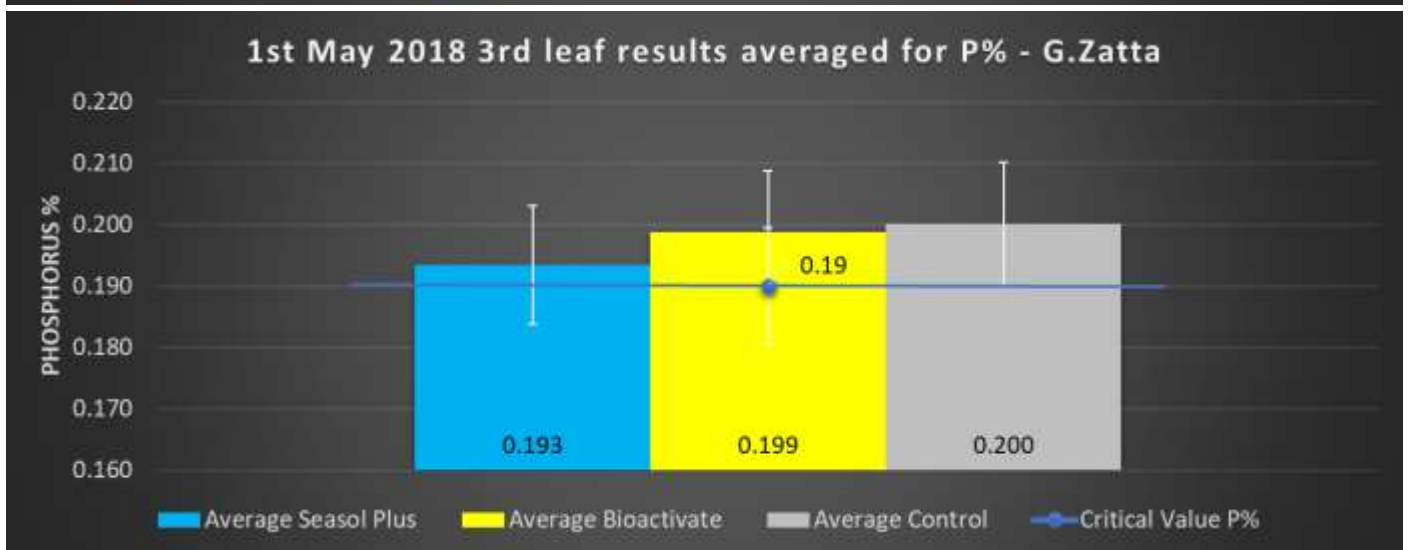
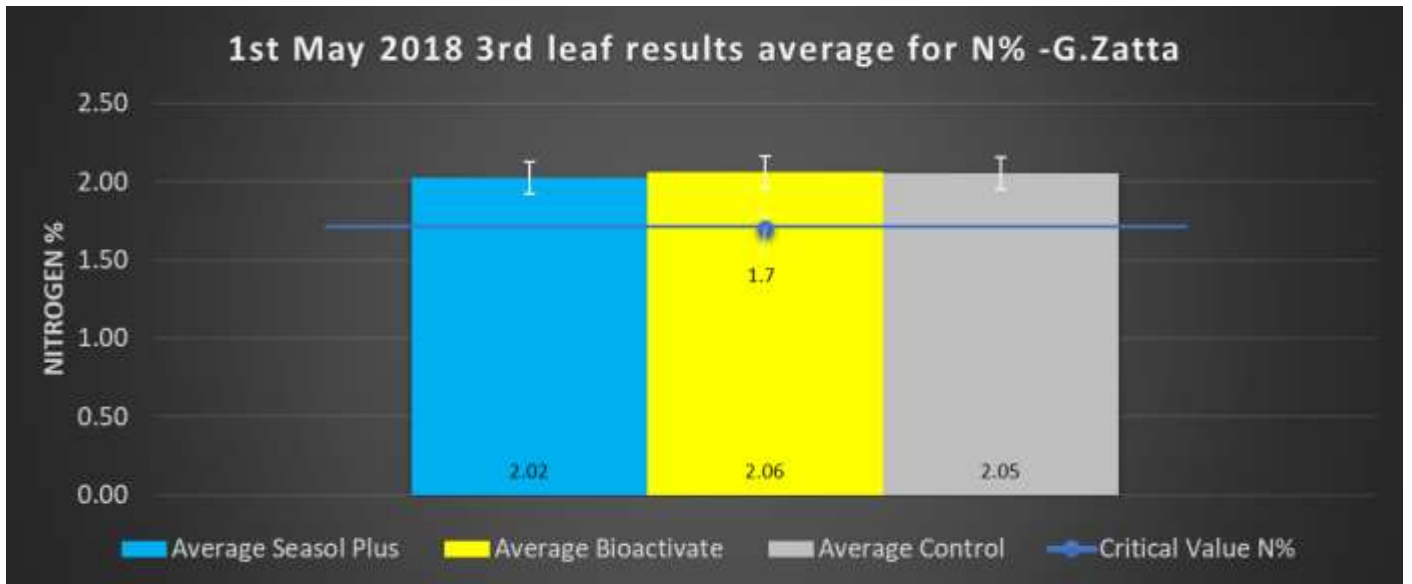




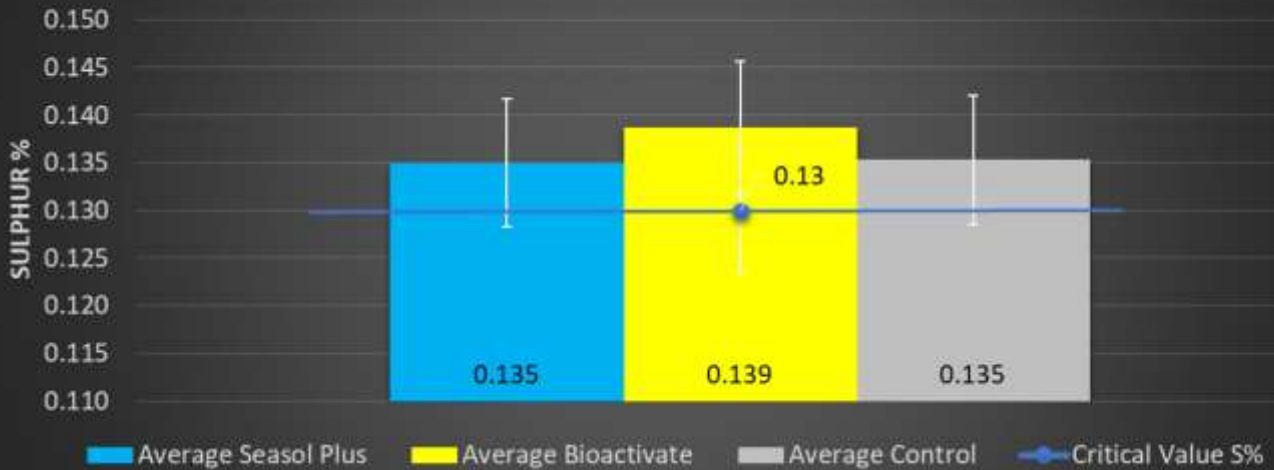
2017 Harvest Results



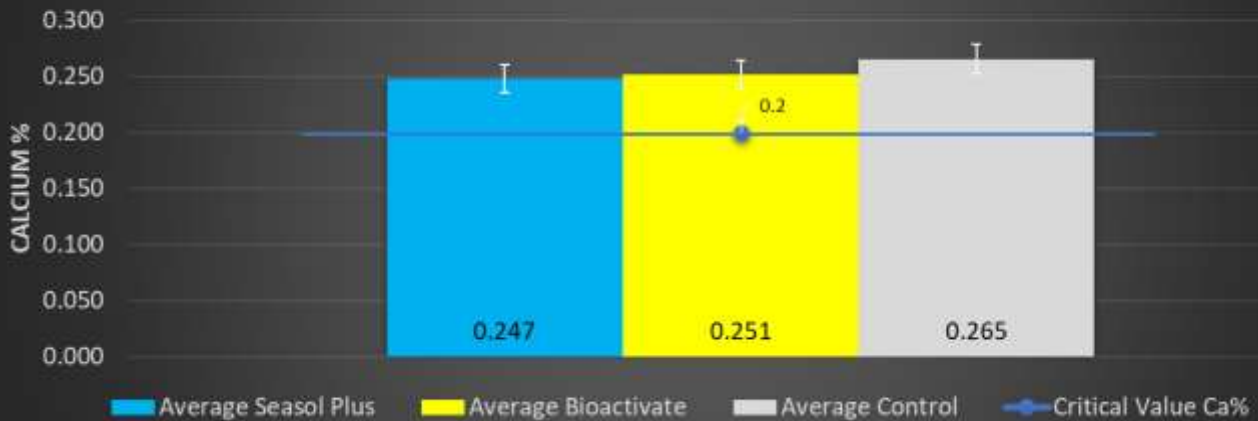
3rd leaf results taken 1st May 2018



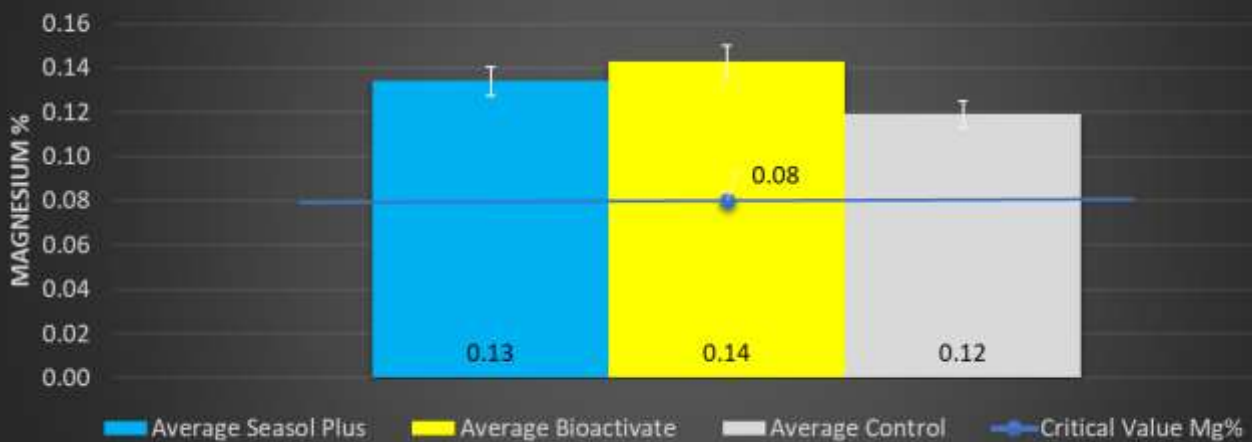
1st May 2018 3rd leaf results averaged for S% -G. Zatta



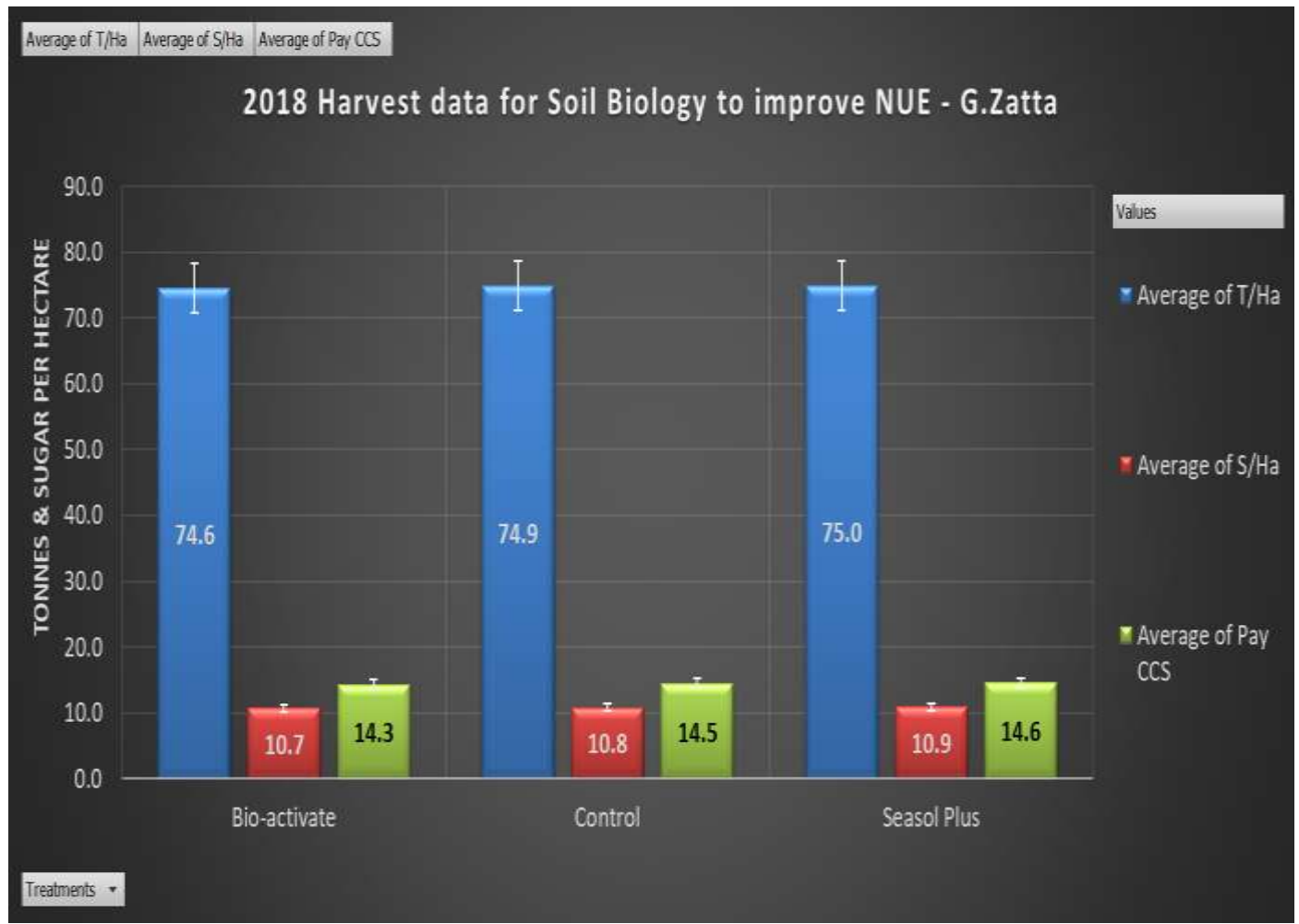
1st May 2018 3rd leaf results averaged for Ca% - G.Zatta



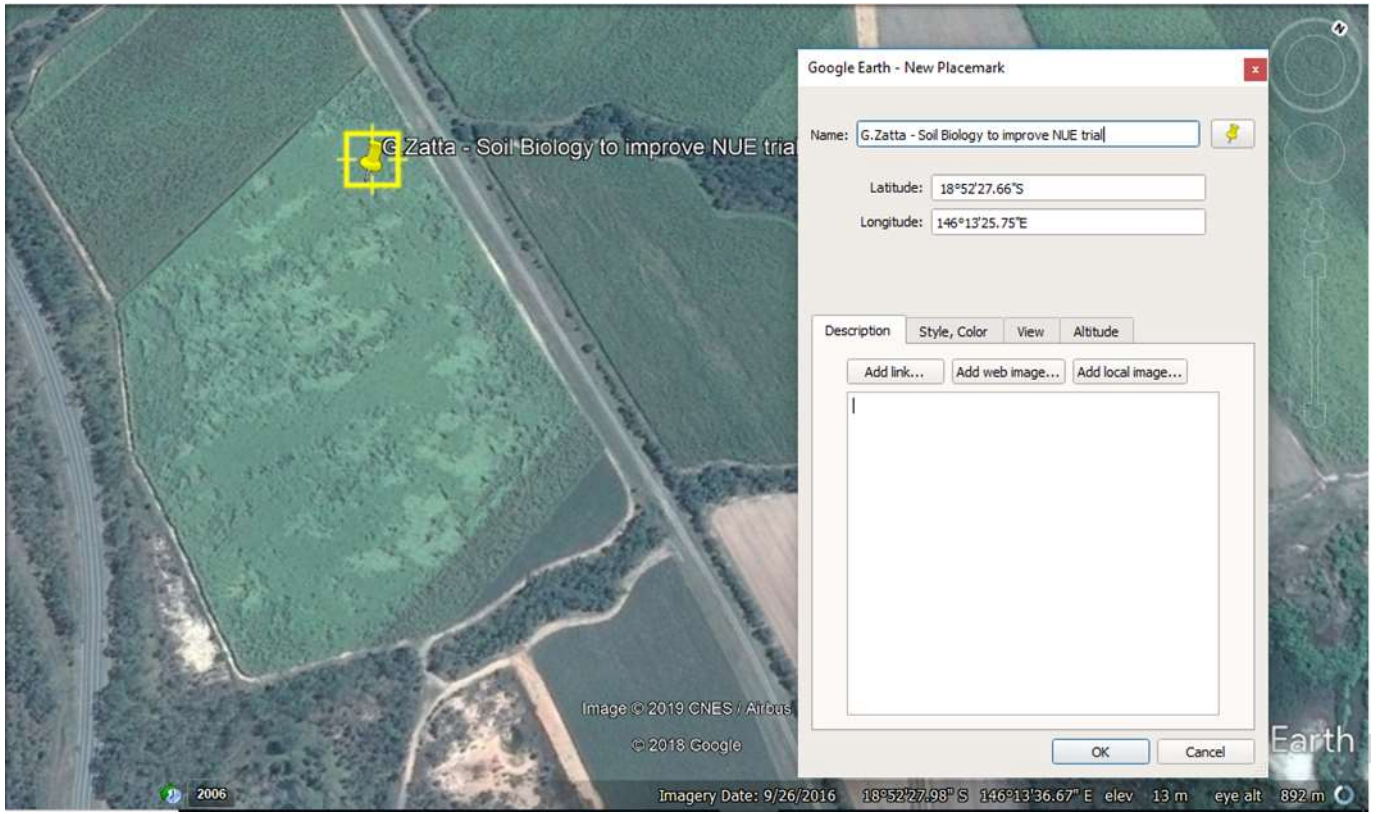
1st May 2018 3rd leaf results averaged for Mg% - G.Zatta.



2018 Harvest Results



Google Earth Reference Map



Conclusions and comments

There is no statistical difference between treatments over two years of trial data. Given more time perhaps the two product treatments would have held ratoon longevity better than the control. This trial would need to run for a longer period to determine if using these products would improve yield, sugar per hectare and help ratooning over the crop cycle. Unfortunately, the variety growing in this trial is not ideal for the area and the trial will not continue.

Advantages of this Practice Change:

Increase in sugarcane yield
Improve soil health for future agricultural use
Seasol Plus made the sugar cane leaves wider as a field observation

Disadvantages of this Practice Change:

Extra cost to production of farm

Will you be using this practice in the future?

Probably not

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

Maybe on plant blocks