

Field trial to determine if the use of JH Biotech Inc. nutritional products improved Crop health, yield and quality over the growers usual practices.

A trial was undertaken in Pukekohe for Set Sue Ltd comparing their standard practices against a Roots, Shoots and Fruit plant nutrient programme. (Programme is attached). The overall aim was to reduce white rot loss and improve yield and quality.

The crop of Brown Onion was planted in early July . Superzyme, Mobilizer and Humax were sprayed out on the 15th July. The trial ran following the programme specifications. (See attachment).

Some initial measurements were taken to get an idea if the Superzyme, Mobilizer and Humax had helped increase survival rates of the new plants. Measurements were taken four times in the same place up until 10th October.2014. 4 replicates were counted and overall on average there was a 15% increase in numbers in total out of the replicated trial blocks.

This result warrants further research.

Data Collection 23rd January

4 replicated trial samples of 2 metre lengths were dug prior to the onion paddock being mechanically lifted later that day.

The samples were left in bins to dry out for 2 weeks and then measured to determine size, weight and quality.



Photo 1: Set Sue Onions : left side Trail; right side Control



Photo 2: Set Sue Onions: Right side Trial and left side Control.

Table 1: Total weights of all onions in each size range.

	Trial Plot 1				Trial Plot 2				Trial Plot 3				Trial Plot 4		
Size	65<	65-80	80+		65<	65-80	80+		65<	65-80	80+	Rot	65<	65-80	80+
Total Weight	4645	8656	4598		6160	8294	4157		4882	9485	3322	1	4239	12210	2927
count	45	35	11		66	35	11		49	41	8	1	41	53	7
Average	103	247	418		93	237	378		100	231	415	1	103	230	418
Stdev	39	52	92		44	56	68		43	45	59		39	52	69
	Control Plot 1				Control Plot 2				Control Plot 3				Control Plot 4		
Size	65<	65-80	80+	Rot	65<	65-80	80+		65<	65-80	80+		65<	65-80	80+
Total Weight	6356	8163	1198	3	7110	8399	1690		5524	10399	1569		5242	9663	3569
count	78	39	3	3	75	40	5		58	43	4		55	41	9
Average	81	209	399	3	95	210	338		95	242	392		95	236	397
Stdev	40	35	56		32	38	51		44	45	22		39	48	41
% Difference	-27%	6%	284%		-13%	-1%	146%		-12%	-9%	112%		-19%	26%	-18%

Table 2: Total percentage yield weight difference in each Trial plot compared to the Control plots.

	Plot 1 totals			Plot 2 Totals			Plot 3 Totals			Plot 4 Totals		
	Trial Plot 1	Control Plot 1		Trial Plot 2	Control Plot 2		Trial Plot 3	Control Plot 3		Trial Plot 4	Control Plot 4	Green
Totals	17899	15717		18611	17199		17689	17492		19376	18474	
% Diff	13.88%			8.21%			1.13%			4.88%		% diff

Table 3: Overall difference in weight yield in combined plots comparing Trial against Control.

Totals		
Trial Total	Control Total	
73575	68882	
6.81%		

Discussion and Conclusion

This trial gave an overall statistically significant increase in yield and we can feel confident that the use of Roots, Shoots and Fruits products will give you better returns.

After an analysis of the spray diaries it was discovered that 'Nova Devotion' a white rot fungicide was either incorporated or sprayed out the same day as the Superzyme. This would have had a detrimental effect on the live organisms within this product and would have made it ineffectual, as well as impacting on any conclusions we could make around efficacy against whiterot,. Overall there was low incidence and severity of white rot.

With this in mind the positive results are due to the other products being Mobilizer, Humax, Biomin and K-Forte.

These products were all applied once during the growing period. The timings of the applications are recorded as appendix.

In total I have estimated the per hectare yield of the control block to be 86 tonne per hectare compared to a 92 tonne per hectare yield in the trial block. This figure is probably inflated due to my extrapolation from 2m plot data.

However, if I were to use this information we would be looking at an increase of 6 tonne giving a \$2,400 increase in profit per hectare.

However, if I take the average yield data of 50 tonne per hectare the increase would lead to a 3 tonne increase in yield and an increase in profit of \$1200 per hectare.

The total cost of the product was \$239.95 per hectare, thus the grower would make \$720 per hectare by just incorporating these few products into their spray programme. The addition of Humax and Mobilizer will also benefit the soil over time for future cropping.

Statistical Analysis Spreadsheet

TRIAL DATA:

	Treatment A	Treatment B
Block 1	17899	15717
Block 2	18611	17199
Block 3	17689	17492
Block 4	19376	18474
Extra blocks...		

Results of the statistical analysis:

This is a really encouraging result - it suggests real treatment differences in these conditions.

Average result for each treatment

Treatment A	Treatment B
18390	17200

The p-value is between 0.05 and 0.075.
 This means that the probability of the differences between treatments being due to chance is between 5% and 7.5%.

The least significant difference, or LSD (95%) is 1300

The LSD is the smallest difference between treatments that can be detected.
 The '95%' relates to the percentage of times the LSD gives the correct answer.

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PLANTING

Apply when first roots develop

SOIL APPLICATION - Beneficial Organisms

(OVERSPRAYED WITH FUNGICIDE) Superzyme

Mobilizer

Humax

NB: ** Activate Superzyme according to protocols

1kg / Ha

2L / Ha

2kg / Ha

➤ Ask your supplier for protocols

➤ Ask your supplier for protocols

EARLY VEGETATIVE GROWTH

LEAF COLLECTION



Nutritional requirements will be recommended based on leaf sample

OR APPLY

At 2nd & 3rd True leaf stage

FOLIAR SPRAY (NOT APPLIED)

Phoscare (2.5 L / Ha)



(** 21 day stand down before or after copper application)

NB: ** Repeat the Phoscare application as needed

NB: ** Phoscare may be mixed with Mancozeb or Dithane.

4th Leaf - Neck Thickening stage

FOLIAR SPRAY



Biomin Booster V

Mobilizer

1kg / Ha

2L / Ha

3 WEEKS LATER NECK THICKENING

FOLIAR SPRAY (NOT APPLIED)



Biomin Calcium

2kg / Ha

AT BULBING

FOLIAR SPRAY



Biomin Calcium

2kg / Ha

2 WEEKS LATER

FOLIAR SPRAY

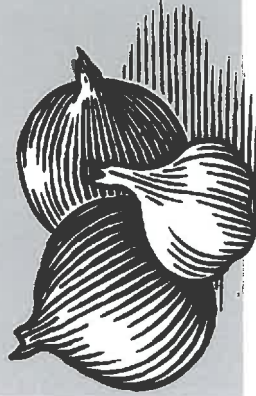


K-Forte

10L / Ha

***NB: DO NOT mix PHOSCARE with any other foliar nutrients. If the application of Phoscare coincides with any of the above foliar applications, please do not mix them all together, Phoscare is to be sprayed with Humax or alone.

***CAUTION: DO NOT apply PHOSCARE in conjunction or alternation with any COPPER containing products. If copper sprays have to be applied, leave a gap of 21 DAYS between Phoscare and any Copper sprays.



Please note: this program represents a general guide only. It does not take into account certain microclimates, seasonal variations or on farm management practices. Soil and leaf tests are always recommended to ascertain the nutritional status of crops to optimize product efficacy and plant performance

