



Levity
CROP SCIENCE

TRIAL REPORT: EVALUATION OF A LEMON TRIAL



Featured Products:

Lono K

Lono Plus

Albina

Indra Plus

Contents

Introduction:	2
Material and Methods:	2
Rate and timing of applications:	3
Observations.....	3
Results.....	4
Comparative Tables.....	4
Graphs.....	7
Pictures.....	8
Conclusion	10



Introduction:

The lemon industry in South Africa is planted for a number of reasons and/or purposes (local, export & juice production) with a total area of around 72731Ha (latest figures updated in 2016). The country produces approximately 510.52K Mt per year in 2019 (+7.67% yearly). The produce is not only for domestic use but it is exported throughout the world, South Africa exported around 377.80M Mt, in 2019, (+29.18% yearly). As of 2020 it is estimated that South Africa, Argentina, Italy, Morocco, Chile, Peru and Spain will produce 70% of the world's lemons.

Levity Crop Science works on a day-to-day basis with their clients in order to improve farmers productivity and enhance the quality of their final produce. Further, we our well-trained team are experts in solving the physiological disorders of the fruits if any.

A trial was conducted in the Letsitele area (RSA), in order to evaluate the effect of Levity's products on lemons. The program was conducted as an addition to the conventional farm practises that were followed and the products were applied as foliar sprays. The results are calculated on picked fruit statistics and not that our of usual packhouse results due to same being unavailable at time of writing.

Material and Methods:

The trial results were recorded from the Lemonera variety on the 15th of January 2021 in the Letsitele area. The data was collected from 10 trees on both the trial and the control side. Fruit was taken from the western, eastern, the top and bottom as well as in- and outside of the trees for a more accurate comparison and result.

Leaf samples from the east and west side of the trees were taken and compared. **(Figure 3)**

The following products were applied:

1. **Indra Plus:** 5-18-2+ micros Nitrogen (N) 5% w/w 65g/L, Phosphorous (P205) 18% w/w 234g/L, Potassium (K20) 2%w/w 26g/L, Copper (Cu) 0.1% w/w 1.3g/L, Magnesium (Mn) 0.3% w/w 3.9g/L, Iron (Fe) 0.3% w/w 3.9g/L, Zinc (Zn) 0.3% w/w 3.9g/L, Magnesium 0.3% w/w 3.9g/L.

2. **Lono plus:** 15-0-0-5. (Ca) plus micronutrients. Nitrogen (N) 15%w/w, Calcium (Ca) 5.4% w/w, Magnesium (Mg) 0.5% w/w, Copper (Cu) 0.1%w/w, Iron (Fe) 0.3%w/w, Manganese (Mn) 0.3%w/w, Zinc (Zn) 0.3% w/w.
3. **Albina:** 10% Nitrogen (N) (10%) Nitrate N) 12% Calcium (Ca) 17% (CaO) 1% Zinc (Zn) w/w
4. **Lono K:** 15-0-7 Nitrogen (N) 15%w/w, Potassium (K2O) 7%w/w.

Rate and timing of applications:

	Product	L/Ha	Timing of application	Total
1	Indra Plus	1L	Immediately	5L
2*	Lono Plus	7L	One week after 1 st application	35L
2*	Albina	1L	Mixed with Lono plus	5L
3	Lono Plus	7L	At 50 % Flowering	35L
4	Lono K	7L	At full fruit set	35L
5	Albina	1L	7 days after full fruit set	5L
6	Indra Plus	1L	15 days after full fruit set	5L
7	Lono K	7L	20 days after full fruit set	35L
8	Lono K	7L	40 days after full fruit set	35L
9	Albina	1L	40 days before harvest	5L

Observations

Criterion	Control	Treated	Comments & Explanations
Morphological traits	Or (Before treatment)	After treatment	Unit
tree general height	Control is 0,5m above the Trial.	Trial is 0,5m shorter the Control.	General Comments
winter suckers	Removed	Removed	average number of 10 random trees
leaf thickness	Thin	Thick	general comments
general green color	Light green	Dark green	general comments
Fruits Traits			
fruit length	65,17	67,9	average of 25 fruits
fruit width	61,28	64,27	average of 25 fruits
weight of 60 fruits	8,265	8,685	randomly picked (kg)
Number of fruits in 5Kg	44	32	randomly picked

Application methods:

Foliar Spray

Application device:

Tractor–drawn impliments

Results

General Remarks:

When the trial was compared to the control, there was a distinct difference in the height of the trees. The trees on the control side were higher, and branches leggier than the treated trees, thus showing more vegetative growth.

The leaves from the trial were a darker green colour and felt thicker than the leaves from the control. **(Picture 1,2 & 3)**

All the winter suckers from the control as well as the trial trees were pruned, therefore no comment on the amount of the winter suckers can be made.

Data recorded showed that the treated trees had less fruit but they were a lot heavier and in general had bigger fruit than the control.

The treated trees had a 9% increase in fruit size and a 6% increase in weight.

A 37.5% difference in the number of lemons in 5kg between the control and the treated trees was evident. There was less fruit in 5kg of the treated trees, but the fruit size was bigger and heavier than the fruit in the control.

Comparative Tables

Trial - Fruit Traits						
Position fruit was taken from tree:						
Column1	Column2	Column4	Column6	Column8	Column10	Column11
	West	East	Inside	Outside	Bottom	Top
Weight of fruit collected (g)	1295	1360	1645	1295	2155	935

CONTROL - Fruit Traits

Position fruit was taken from tree:

Column1	Column2	Column4	Column6	Column8	Column10	Column11
	West	East	Inside	Outside	Bottom	Top
Weight of fruit collected(g)	1325	1445	2020	1170	1345	960

FRUIT TRAITS - TRIAL

Column1	Fruit Length (mm)	Fruit Width (mm)
West	66,8	64,2
East	68,5	64,6
Inside	70,5	66,5
Outside	67,1	63,1
Bottom	74,4	71
Top	60,1	56,2
Average:	67,9	64,27

FRUIT TRAITS - CONTROL

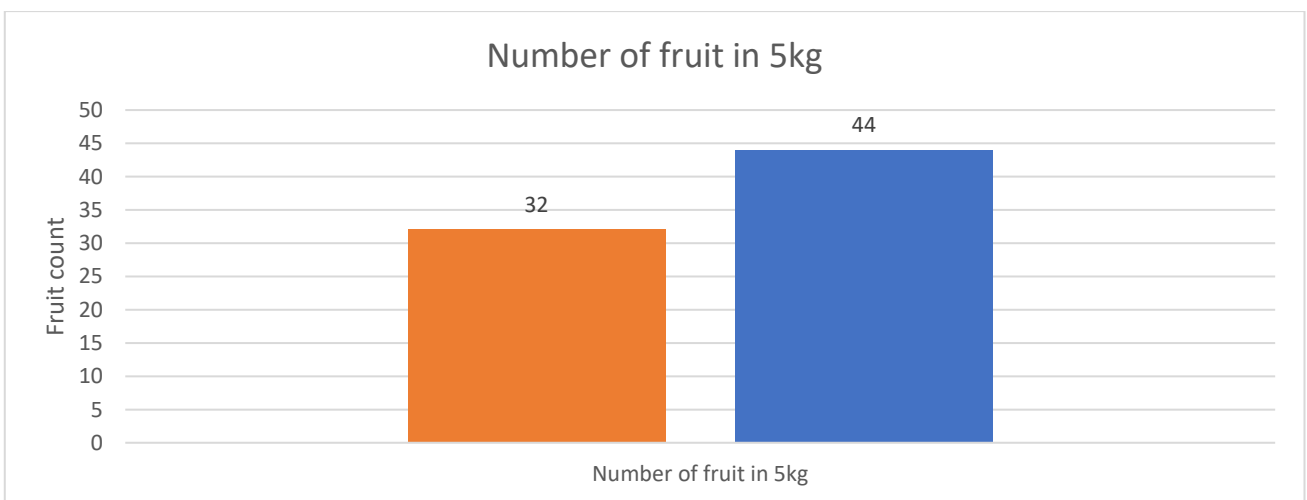
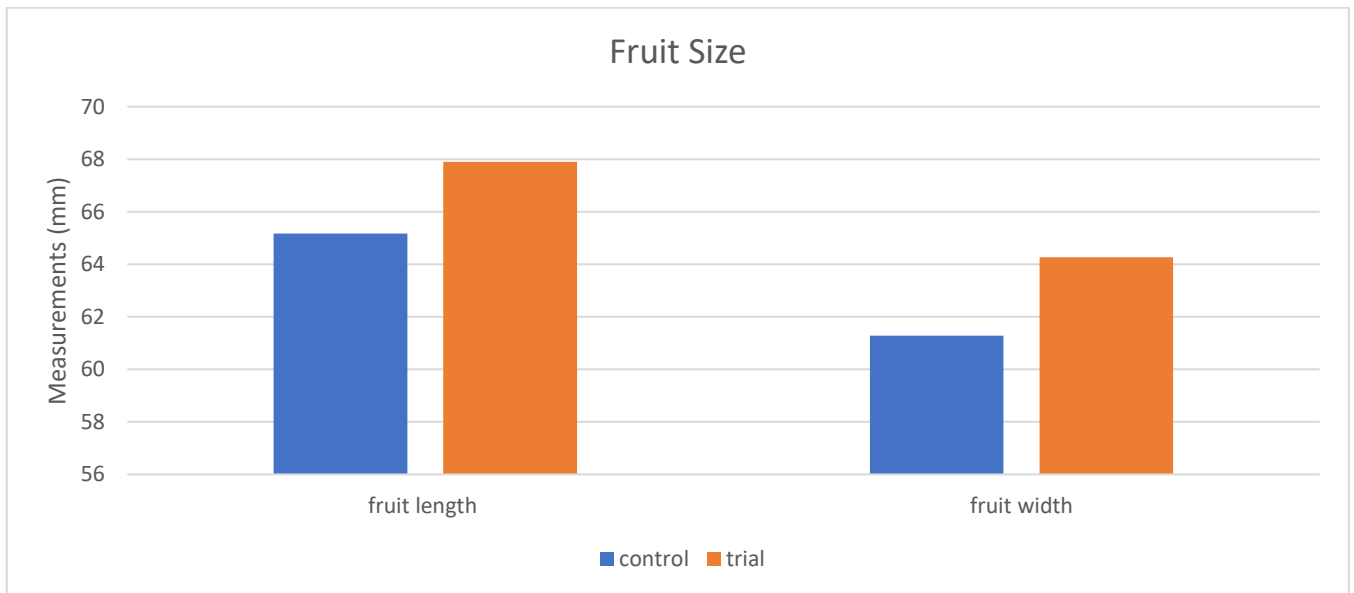
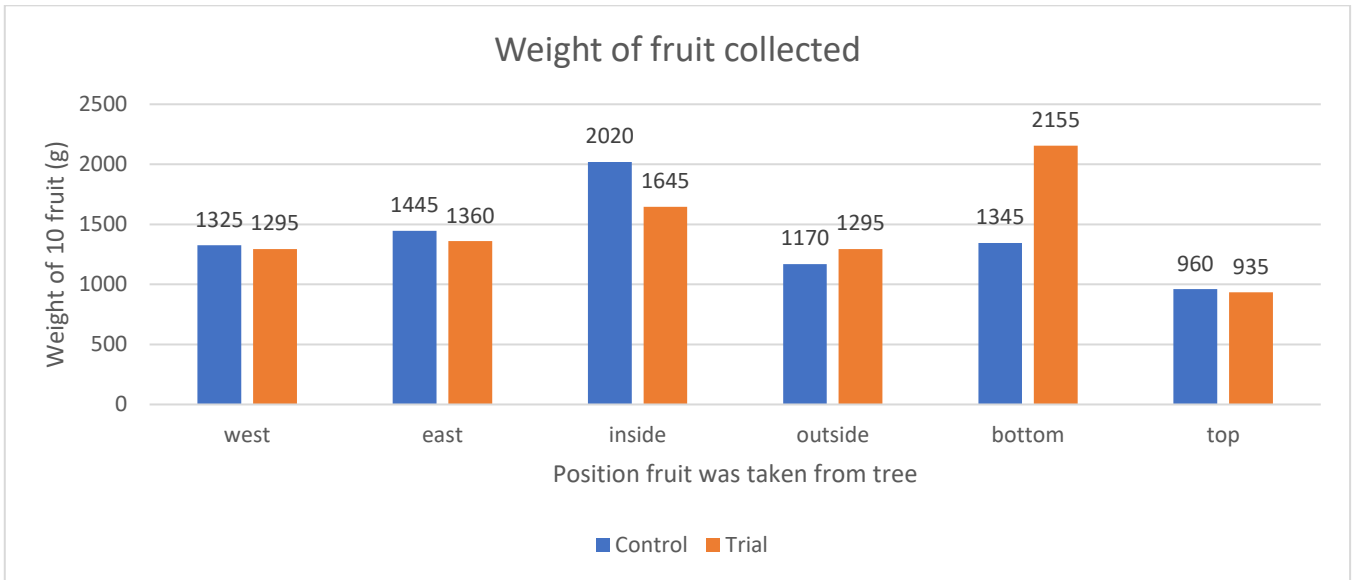
Column1	Fruit Length (mm)	Fruit Width (mm)
West	67,1	64,1
East	69,3	65,8
Inside	62	57,7
Outside	64,5	60,3
Bottom	67,4	63,4
Top	60,7	56,4
Average:	65,17	61,28

Trial: weight of 60 fruit (kg):	8,685
Control: weight of 60 fruit (kg):	8,265
Trial: Number of fruits in 5kg:	32
Control: Number of fruits in 5kg:	44

FRUIT TRAITS - Trial						
Column1	West	East	Inside	Outside	Bottom	Top
Length (mm)	70	69	85	65	68	66
	66	67	68	71	71	63
	65	68	68	65	71	54
	68	64	66	70	90	57
	65	70	82	69	76	53
	68	67	66	59	75	56
	66	74	64	70	63	62
	65	64	65	67	79	61
	69	73	63	67	81	62
	66	69	78	68	70	67
Width (mm)	63	64	75	66	69	63
	62	65	68	67	65	50
	62	62	58	66	67	61
	67	65	61	66	89	61
	68	70	76	55	73	53
	64	67	65	64	74	51
	64	61	62	64	78	53
	63	65	61	61	72	57
	67	63	63	58	57	57
	62	64	76	64	66	56

FRUIT TRAITS - Control						
Column1	West	East	Inside	Outside	Bottom	Top
Length (mm)	70	75	56	70	69	65
	66	68	67	57	58	66
	66	74	64	63	62	56
	67	66	63	66	65	67
	70	69	60	64	63	69
	67	69	58	63	73	52
	66	66	63	65	61	62
	66	68	59	72	65	55
	66	69	62	65	75	54
	67	69	68	60	83	61
Width (mm)	67	64	65	69	77	61
	64	62	56	65	67	63
	63	67	57	61	72	56
	63	68	51	55	56	56
	64	64	64	60	55	63
	63	72	57	61	59	56
	62	64	60	58	66	59
	65	65	56	59	61	51
	63	67	56	54	61	50
	67	65	55	61	60	49

Graphs



Pictures



Picture 1 – Two leaves left – Levity trial; Two leaves right – Control (Western side of trees)



Picture 2 – Two leaves left – Levity trial; Two leaves right – Control (Eastern side of trees)



Picture 3 – Two leaves left – Levity trial; Two leaves right – Control

Conclusion

- 9% increase in fruit size.
- 6% increase in the weight of the fruit.
- 12 less fruit was required in order to total 5 kg.
- 37.5% difference in the number of fruit required in order to make up 5kg.

9% increase in fruit size

6% weight increase

12 less fruit was in 5kg of the trial

37,5% difference in the number of fruit in the 5kg