

Onion Trial in Pukekohe

Purpose

A trial was undertaken to ascertain if two applications of Mobilizer would help improve total yield, quality and size of an onion crop in Pukekohe.

Location

The site of the trial was in Pukekohe located near Webb Street.

Method

The onions were planted in late June. Mobilizer was applied when the onions were at 1 leaf stage on the 7th July and the second application was when they were at two leaf stage 3 weeks later on the 1st August. The Mobilizer was applied on both occasions at a rate of 2L per hectare in 500L of water.

44 beds of onions were sprayed with Mobilizer which is four spray runs.

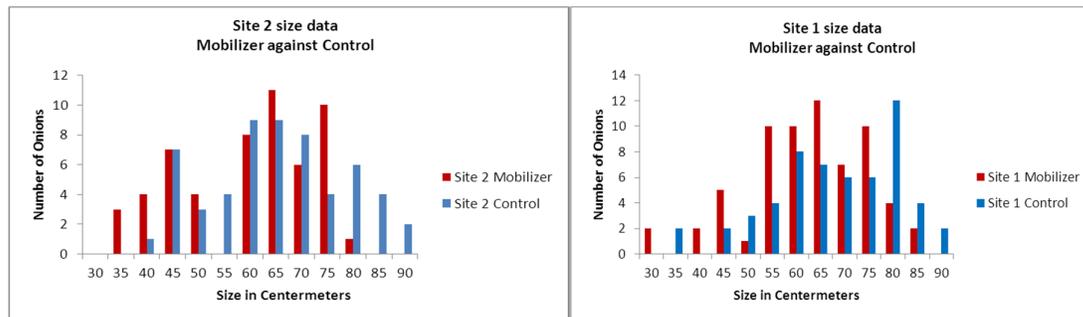
A further 22 beds located next to the Mobilizer sites were used as the control.

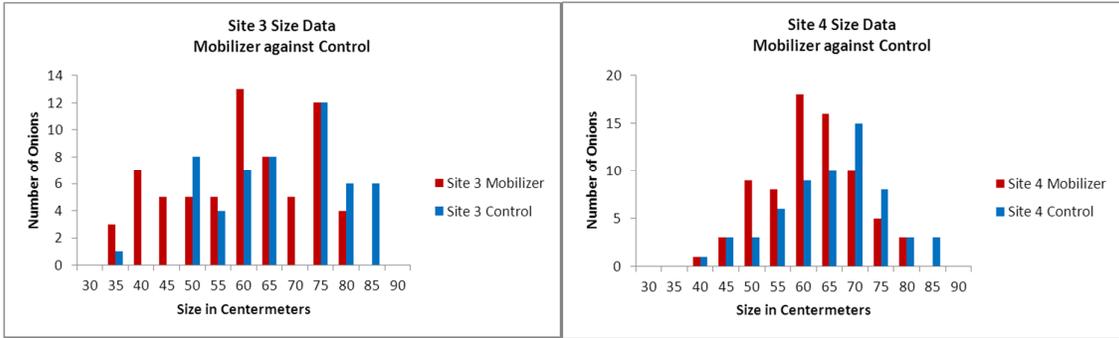
A spray unit was filled with 12L of "Mobilizer" in 3000L of water and sprayed over 6 Hectares. One hectare of potatoes (Nadine variety) were sprayed, the rest was applied to the onion crop.

The data for this trial was collected on the 14th January 2013 when the onion crop was ready for harvest.

The sampling method

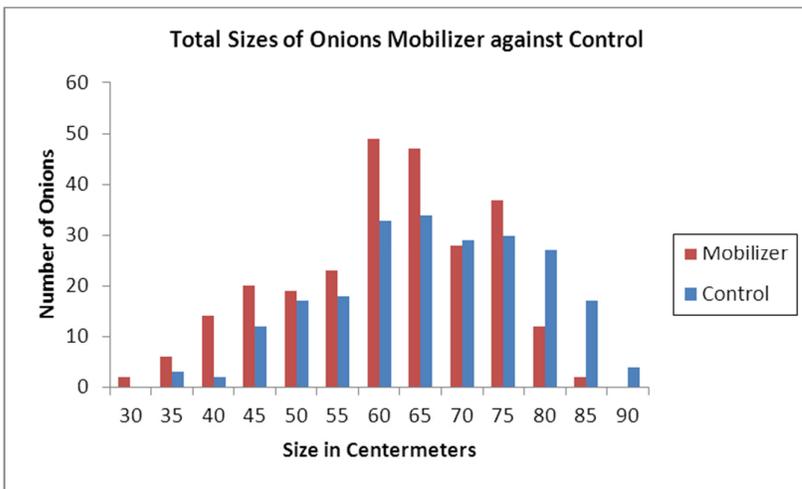
The sample technique took 4 x one square metre area replicates located within the Mobilizer and Control sites in the field. Each square metre sample was taken randomly but at a similar topographic position for the Mobilizer against Control in order to reduce the impact of variable conditions such as slope. The samples were measured for size and weight to determine if there were any differences due to the Mobilizer application.





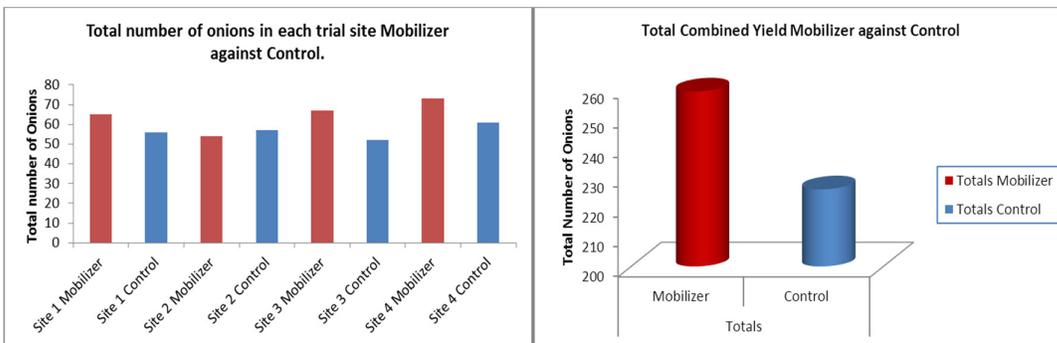
Graphs 1-4 above show the size variations between Mobilizer and Control onions in each of the 4 square metre sites.

From the above graphs it appears that there were less large onion sizes in the Mobilizer trial sites but more average and small sizes in the Mobilizer sites.



Graph 5. Total sizes of the combined square metre trial blocks for the Mobilizer against Control.

When the data for the individual sites are combined the trend of more medium to smaller sized onions in the Mobilizer sites is more pronounced.

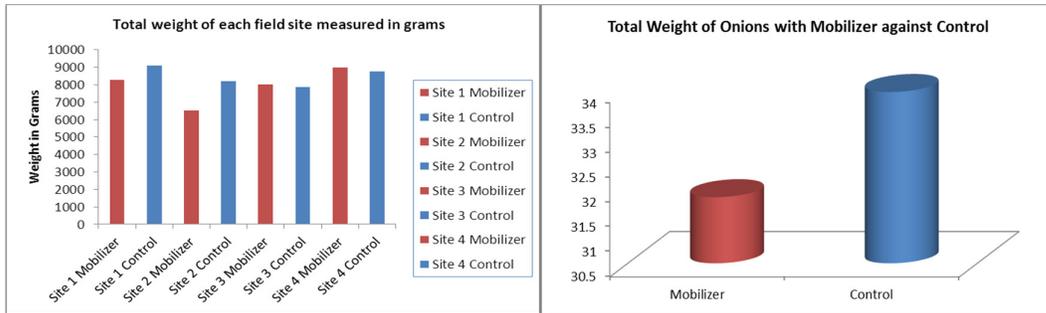


Graph 6 and 7. Total Yield of Onions in each individual trial site and total combined yield for trial sites with Mobilizer against the Control.

Totals	
Mobilizer	Control
259	226

Table. 1 Total number (yield) of onions in all 4 replicates of the square metre trial blocks.

The above graph indicates that the total number (yield) of onions was greater for the Mobilizer compared to the Control sites.



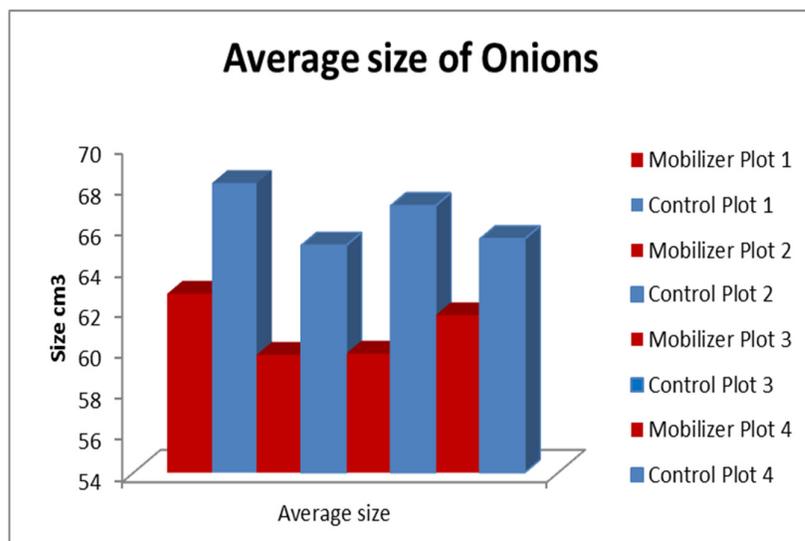
Graph 8 and 9. The total weight of the onions in each of the replicated sites Mobilizer compared to the Control and combined weights.

It appears that the total weight of onions overall was greater for the control sites

	Mobilizer Plot 1	Control Plot 1	Mobilizer Plot 2	Control Plot 2	Mobilizer Plot 3	Control Plot 3	Mobilizer Plot 4	Control Plot 4	Total Mobilizer	Total Control
Difference in yield	9		-3		15		12			
Average size	63	68	60	65	60	67	62	65	61	66
Total Yield	65	56	54	57	67	52	73	61	259	226
Total Weight (gms)	8290	9103	6532	8222	8004	7854	9006	8772	31832	33951
Percentage Yield	25.10%	24.78%	20.85%	25.22%	25.87%	23.01%	28.19%	26.99%	14.60%	
Percentage Weight	26.04%	26.81%	20.52%	24.22%	25.14%	23.13%	28.29%	25.84%	-6.24%	
Percentage change in Yield	1.28%		-17.33%		12.43%		4.42%			
Percentage change in weight	-2.87%		-15.27%		8.69%		9.50%			

Table. 2 Averages and totals for data collected.

Overall, there was a greater amount of onions found on the Mobilizer sites over the Control but the total weight of onions was greater for the Control.



Graph 10. The average size of onions in each of the Onion sites Mobilizer against the Control.

In each of the sites the average size of the onions was greater for the Control over the Mobilizer sites.

Results and Discussion

Overall, the data suggests from this trial that with 2 applications of Mobilizer there was an increase in the total number of onions in the sites treated with Mobilizer over the control of 14.6%. The average size of the onions was smaller in the Mobilizer plots compared to the control and this would suggest that more onions survived in the Mobilizer sites leaving less room for the onions to grow to the larger sizes.

The overall total weight of the onions per hectare would give 70.58 Tonne/Ha in the Mobilizer sites compared to the Control of 84.878 tonne/Ha. This increase in weight is attributed to the larger onion sizing in the Control sites giving a 6.24% decrease in overall weight for the Mobilizer sites.

Conclusion:

This trial indicates that there are improved survival rates for onions treated with Mobilizer giving a 14.6% increase in total yield. To compensate for this increase it is recommended that the spacing of onions at planting should be increased. The aim would be to increase the size of the onions (weight) in conjunction with increasing the yield.

A further trial utilizing Mobilizer with larger plant spacing's will be undertaken to prove this hypothesis.