

Increased carrot yield with the application of biostimulant Mycorrcin

Ross MacDiarmid BioStart Limited

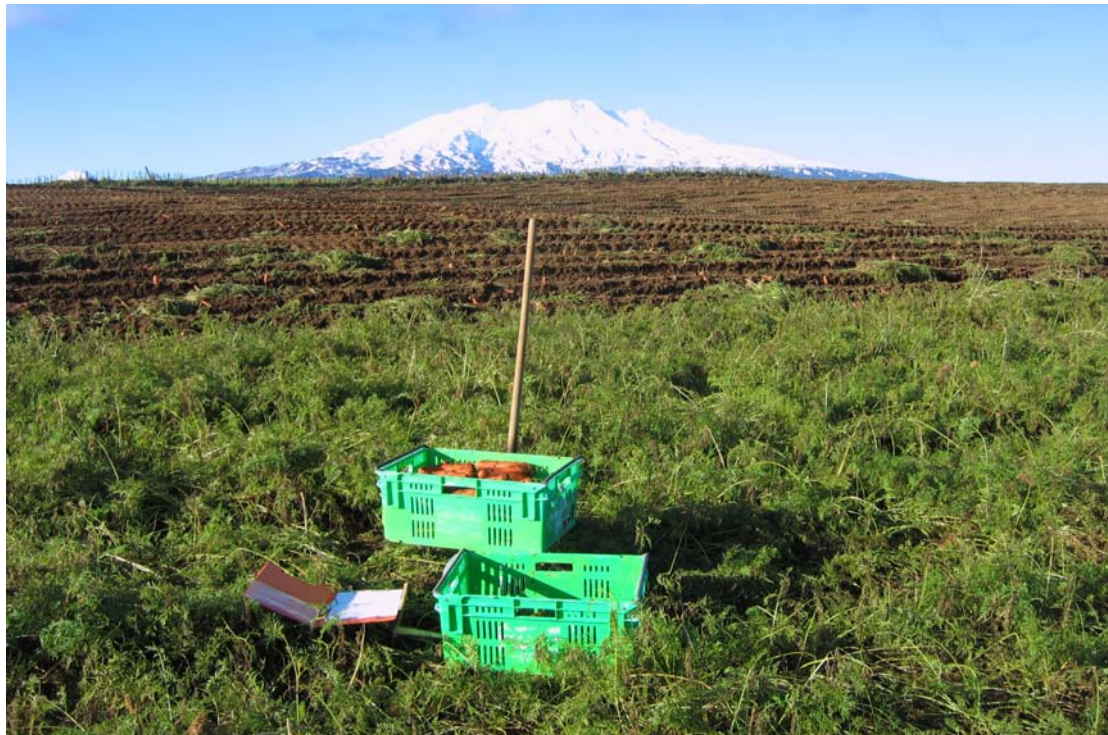
May 2009

Key words

Carrots, increased yield, Mycorrcin

Overview

- A 10ha block was divided into a 4ha and 6ha block. The 4ha block was treated with Mycorrcin and the 6ha block was used as the control.
- Program used:
5lt/ha Mycorrcin at post crop emergence.
- Prior to commercial harvest 8 sample plots measuring 1.65m x .69m were lifted from intervals down the full length of the rows in both the treated and untreated blocks. All the carrots from the sample areas were harvested, weighed, and graded into commercial and rejects.



Trial plots being dug, weighed, counted and graded in the field.

Results



The treated block had fewer carrots rejected for size and splitting.



The untreated block had a higher number of carrots rejected for deformities such as splitting and forking.

Trial plot harvest

Untreated

Rep	Total No. Carrots	Total Weight kg	Marketable No	Marketable weight kg	Reject No.	Reject weight kg
1	105	19.1	89	15.9	16	3.3
2	109	16.1	97	15.1	12	1.0
3	100	15.8	82	13.6	18	2.3
4	111	19.2	89	15.5	22	3.7
5	107	15.8	91	14.3	16	1.5
6	110	13.7	69	10.6	41	3.1
7	111	19.3	94	16.6	17	2.7
8	116	17.6	86	12.9	30	4.7
Total	869	136.7	697	114.4	172	22.3

Treated

Rep	Total No. Carrots	Total Weight kg	Marketable No	Marketable weight kg	Reject No.	Reject weight kg
1	104	18.3	93	16.7	11	1.6
2	104	20.4	98	18.5	6	1.9
3	120	21.2	104	17.8	16	3.4
4	105	20.4	95	18.3	10	2.1
5	111	19.1	105	17.7	8	1.4
6	113	18.5	103	16.6	10	1.9
7	108	18.6	95	17.0	13	1.6
8	114	17.4	105	16.9	9	0.5
Total	879	153.8	798	139.5	83	14.3

Summary

	Untreated	Treated	%
Total No.	869	879	+1%
Total weight kg	136.7	153.8	+13%
Average weight/carrot kg	0.157	0.175	+12%
Marketable No.	697	798	+14%
Marketable weight kg	114.4	139.5	+22%
Average marketable weight/carrot kg	0.164	0.175	+7%
Reject No.	172	83	-52%
Reject weight kg	22.3	14.3	-36%
Average reject weight kg	0.130	0.172	+32%

Return on investment

- Return on investment has been extrapolated to a hectare basis

	Control	Treated
Total commercial grade kg/ha	125,000kg	150,000kg
Price/kg	\$0.50	\$0.50
Gross return	\$62,500.00	\$75,000.00
Cost of BioStart program/ha	\$0.00	\$88.25
Net return	\$62,500.00	\$74,911.75
Difference		+\$12,411.75

Conclusion

The Mycorrcin treatment resulted in the following:

- The Mycorrcin was applied post emergence to the carrots and as a result the total number of carrots from the sample plots of both treatment areas are about the same.
- The 12% increase in the total weight in the area treated with Mycorrcin rises to 22% increase in marketable weight giving a very significant increase in the financial return per hectare of carrots compared with the untreated portion of the block.
- The increased marketable weight is due to two factors; 1) the large reduction in the number and weight of rejects in the area treated with Mycorrcin, and 2). average carrot weight in the marketable grade of the treated is 6% greater than the non-treated.
- It is worth noting that an analysis of the reject carrots from the two treatment areas, shows a the greater quantity of forked and deformed carrots and a greater quantity of very small carrots in the non-treated area.
- Post commercial harvest, the grower made the comment that in the Mycorrcin treated block there was a noticeable increase in the average size of the carrots and significantly fewer rejects going over the grading table.
- The treatment increased net return per ha by \$12,411.75