

Increased potato yield with reduced fertiliser inputs with the application of soil biostimulant Mycorrcin

Ross MacDiarmid BioStart Limited Auckland

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Key words

Potato, reduced fertiliser, Mycorrcin

Overview

- This trial looked into the impact of Mycorrcin on reducing fertiliser inputs in potato crop
- Rows were 115m long and 0.8m between row centres.
- The treatments used were:
 - 1. Standard fertiliser program 2,000kg/ha
 - 2. Reduced fertiliser (32% less than standard program) + Mycorrcin 5lt/ha at sowing and 3lt/ha at mounding up
 - 3. Standard fertiliser program + Mycorrcin 5lt/ha at sowing and 3lt/ha at mounding up
- At harvest 3 replicates of 6 plants, 18 plants in total, were harvested from each treatment.
- Potatoes were graded into marketable and rejects and their weights recorded.



Results

	Standard fertiliser	Reduced fertiliser + Mycorrcin	% increase over standard fertiliser	Standard fertiliser + Mycorrcin	% increase over standard fertiliser
Total weight kg	28.20	29.79	+6%	30.01	+6%
Marketable weight kg	25.01	27.46	+10%	27.65	+11%
Reject weight kg	3.19	2.33	-27%	2.36	-26%

Return on investment

- Return on investment has been extrapolated to a per hectare basis

	Standard fert	Reduced fert + Mycorrcin	Standard fert + Mycorrcin
Total marketable potatoes kg/ha	57,862kg	63,542kg	63,971kg
Gross return @ \$0.40/kg	\$23,145	\$25,417	\$25,588
Cost of fertiliser/ha*	\$3,200	\$2,176	\$3,200
Cost of Mycorrcin/ha		\$141	\$141
Net return/ha	\$19,945	\$23,100	\$22,247
Difference compared to Standard fert		+\$3,154	+\$2,303

* Standard fertiliser cost \$1,600/t, Mycorrcin \$17.69/lt

Conclusion

- The addition of Mycorrcin to both treatments has increased total and marketable yields respectively. The addition of Mycorrcin to both treatments also resulted in a similar reduction in the weight of rejects.
- The combination of reduced fertiliser and Mycorrcin resulted in the best return on investment per hectare. This was a function of the increased marketable yield and the reduced fertiliser costs. The standard fertiliser plus Mycorrcin yielded slightly more marketable potatoes but the full cost of the fertiliser reduced the final return on investment figure.
- This case study supports previous trials where a combination of reduced fertiliser inputs and Mycorrcin have improved crop yields. This can be explained by Mycorrcin's ability to increase mycorrhizal colonisation and phosphate and moisture uptake.