



INDEPENDENT TRIAL OF TwinN IN ONIONS, IDAHO, 2020

SUMMARY

The trial was conducted by University of Idaho and tested the effects on yield of red onions grown with 80 and 120 lb N/acre with and without TwinN microbial biofertiliser. At 80 lb N/ac TwinN increased total yield by 5.3% which increased Gross Returns by \$280.50/ac. At 120 lb N/ac TwinN increased total yield by 5.7% which increased Gross Returns by \$282.90/ac.

INTRODUCTION

TwinN is a freeze-dried microbial biofertiliser from Australia. It acts to increase yields by a number of mechanisms. 1. The microbes colonise the roots and fix nitrogen from the atmosphere into a steady supply of plant available nitrogen through the season. 2. The microbes produce plant growth factors, particularly auxins, that increase secondary root structure which allows improved capture of applied nitrogen fertilisers. This improves nitrogen use efficiency and also reduces leaching of nitrogen into waterways. 3. The microbes produce several other plant growth factors which stimulate plant growth and yield accumulation.

TRIAL DESIGN

The trial was performed by University of Idaho at the Parma Research and Extension Centre, Parma, and was completed in September 2020. The red onion variety was SV4643NT. Trial design was Randomised Complete Block with four replicates. Plots were 11 x 40 ft. TwinN was applied once at single leaf stage at the standard rate via drip irrigation to deliver the microbes into the root zone. Note. Standard recommendation is for a second application of TwinN at the 2 – 3 month stage. The soil at the trial site was a Greenleaf silt loam soil (pH 8.5).

TREATMENTS

Treatment 1 80 lb N/ac. No TwinN

Treatment 2 80 lb N/ac. Single application of TwinN.

Treatment 3 120 lb N/ac. No TwinN

Treatment 4 120 lb N/ac. Single application of TwinN.

RESULTS

Table 1 Yield and Gross Return per acre for four treatments

Treatments	Total Yield (lb/ac)	Gross Returns (\$/ac)
80 lb N/ac (Non-inoculated)	800	5289.3
80 lb N/ac (TwinN inoculated)	842 (+5.3%)	5569.7 (+\$280.50/ac)
120 lb N/a (Non-inoculated)	785	5222.7
120 lb N/ac (TwinN inoculated)	829.5 (+5.7%)	5505.6 (+\$282.90/ac)

TwinN increased total yield by 5.3% and 5.7% respectively for the 80 and 120 lb N/ac fertiliser rates. This resulted in an increase of Gross Returns of \$280.50/ac and \$282.90/ac respectively for those fertiliser rates. The trial site was apparently already high in nitrogen as the 80 lb N/ac yielded slightly more than the 120 lb N/ac plot. Despite this TwinN increased yields consistently in both treatments.

SUMMARY

TwinN application, in a trial that followed commercial onion production practices in Idaho, produced increases in yield and increased commercial returns to the producer. Use of TwinN in onions and other vegetable crops provides a valuable option to increase yields and commercial returns to producers. It also increases sustainability of production via improved capture of applied nitrogen fertiliser (see Leaching trial on www.mabiotec.com) which reduces nitrogen pollution of waterways and aquifers.

TwinN is supplied by Mapleton Agri Biotec Pty Ltd, Australia. www.mabiotec.com

For information on locating distributors of TwinN in USA contact **DEWHOPS ENTERPRISES, LLC.**
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