AGRO-CULTURE LIQUID FERTILIZERS

Effect of AgroLiquid based nitrogen products on the yield of Roma type tomatoes, Escalon, CA. 2013

Experiment Info:

Experiment:	C13-102
Planted:	May 2nd
Variety:	Heinz 1015
Population:	3,650
Plot Size	5'x80'
Replications:	four
Harvest:	Aug 23rd

Soil Test Values (ppm):

pH:	7.5
CEC:	21.4
OM:	2.9
P1:	42
K:	388
S:	87
% K:	4.6
% Mg:	26.4
% Ca:	65.9
% H:	-
% Na:	3.1
Zn:	1.8
Mn:	1.0
Fe:	6
Cu:	1.0
B:	0.8

Objective:

Determine if AgroLiquid fertilizer based nitrogen products can compare with local standards for producing quality yields of Roma tomatoes with only drip irrigation.

Materials & Methods:

- This research was conducted by Two Bees Research Inc, Escalon, CA
- On May 2nd the tomatoes were planted and watered to establish the plots. All plots were single rows, 80 ft. long with plants spaced approximately 12" apart.
- Three weeks after the plots were established and at several other dates during the tomato development, 100% of the fertilizers were applied via the drip irrigation according to the rates and timings outlined in Table RT1. The appropriate amount of fertilizer was diluted into a uniform amount of water and then applied to the plot areas as part of the normal irrigation watering.
- Herbicides, insecticides and fungicides were applied uniformly and as appropriate over the course of this experiment.
- Evaluations for plant development (height, vigor, color, bloom, fruit set) were collected over the course of this study.
- On August 23rd the plots were harvested and the tomatoes weighted and quality evaluations were determined. Yields were then adjusted and values calculated to a per acre basis.

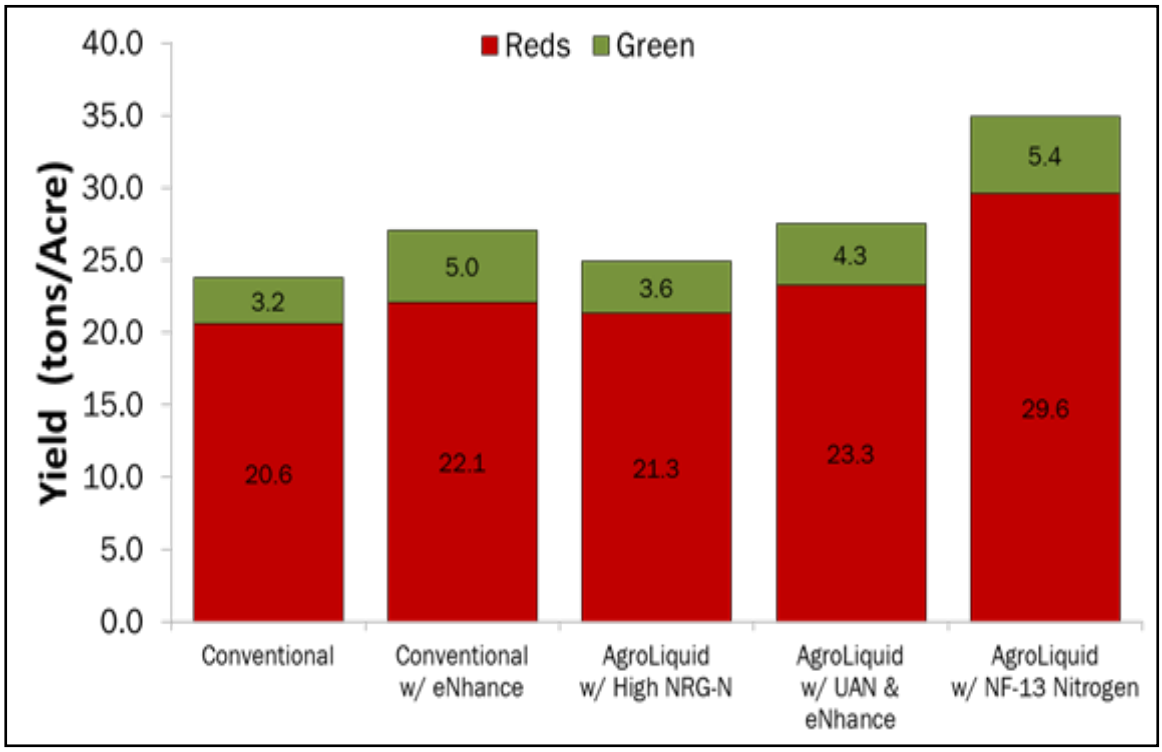

Figure RT1. Yield or red and green Heinz 1015 Roma tomatoes in response to various nitrogen fertility programs, Escalon, CA 2013

Table RT1. Fertilizer application rate and timing schedule for Heinz 1015 tomatoes. Escalon, CA 2013

	Product	May 24	June 7	June 28	July 12	July 26
1.	Conventional	UAN @ 15 10-34-0 @ 12	UAN @ 15 10-34-0 @ 12	CAN-17 @ 5 KTS @ 10	CAN17 @ 3.25 KTS @ 10	KTS @ 10
2.	Conventional w/ eNhance	UAN @ 15 10-34-0 @ 12 eNhance @ 1.2 pt	UAN @ 15 10-34-0 @ 12 eNhance @ 1.2 pt	CAN-17 @ 5 KTS @ 10	CAN17 @ 3.25 KTS @ 10	KTS @ 10
3.	AgroLiquid #1 High NRG-N	High NRG-N @ 11 Pro-Germinator @4.5 Micro-500 @ 1 qt	High NRG-N @ 11 Pro-Germinator @4.5 Micro-500 @ 1 qt	High NRG-N @2.6 Sure-K @ 3 Liberate Ca @ 0.75 eNhance @ 0.05	High NRG-N @2.6 Sure-K @ 3 Liberate Ca @ 0.75 eNhance @ 0.05	Sure-K @ 3
4.	AgroLiquid #2 UAN w/ eNhance	UAN @ 12 Pro-Germinator @4.5 Micro-500 @ 1 qt eNhance @ 1.2 pt	UAN @ 12 Pro-Germinator @4.5 Micro-500 @ 1 qt eNhance @ 1.2 pt	UAN @ 3 Sure-K @ 3 Liberate Ca @ 0.75 eNhance @ 0.05	UAN @ 2 Sure-K @ 3 Liberate Ca @ 0.75 eNhance @ 0.05	Sure-K @ 3
5.	AgroLiquid #3 NF-13 (experimental)	NF-13 @ 12 Pro-Germinator @4.5 Micro-500 @ 1 qt	NF-13 @ 12 Pro-Germinator @4.5 Micro-500 @ 1 qt	NF-13 @ 3 Sure-K @ 3 Liberate Ca @ 0.75 eNhance @ 0.05	NF-13 @ 2 Sure-K @ 3 Liberate Ca @ 0.75 eNhance @ 0.05	Sure-K @ 3

Conclusions:

- No significant differences were observed among the various treatments for evaluation of plant development over the course of this study. Development appeared fairly uniform across all treatments for the entire season.
- Yields were lower than expected and further investigation determined that additional nitrogen should have been applied for maximum development of this particular Heinz tomato variety. Still, uniform amounts of nitrogen were applied across all treatments allowing relative comparisons among treatments.
- The conventional fertility program (Trt #1) had the lowest overall yield in this study. Adding eNhance to the 32% UAN applications did increase the total yields by over 3 tons per acre.
- The AgroLiquid program (Trt #3) utilized High NRG-N as the nitrogen source as well as other AgroLiquid products for phosphorus, potassium, sulfur and calcium. Despite using significantly lower rates of actual nutrients, the total yield was above that of the conventional fertilizer program (Trt #1).
- AgroLiquid #2 (Trt #4) utilized 32% UAN, like treatment #1&2, but the rate was reduced to 80% of the conventional treatments and eNhance was added to these applications. Total application volume was similar to that of AgroLiquid #2. This treatment resulted in the best total yield among the first four treatments.
- The highest yield was obtained with the experimental nitrogen product, NF-13. This was the first year of evaluations and further experimentation will be necessary to confirm this type of response on tomatoes as well as many other crops where these types of applications are commonly used.