

## EFFECTS OF TWO NATURIZE BIO-NUTRITION PRODUCTS ON TOMATO

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### **Introduction**

Naturize Biosciences produces two products that are a combination of beneficial microorganisms and fertilizers that supposedly support greater plant growth and yield. Since these products are new to Georgia tomato growers, evaluation is needed in order to make appropriate recommendations to Georgia growers and to compare the formulations and application timing.

### **Methods**

Tomato plots were established at the Coastal Plain Experiment Station in Tifton, Georgia to determine the effects of two Naturize products on yield and fruit quality. Tomato (variety “Amelia”, Harris Moran Seed Co.) transplants were commercially produced in polystyrene trays at a local plant farm. The transplants were planted into plastic-mulched beds on April 9-10, 2003. The plots had been treated with methyl bromide (200lb/A 67%) two prior to planting. The soil type was a Tifton sandy loam (fine-loamy siliceous thermic Plinthic Kandudults) soil. Elevation at the CPES is 382 feet. Tomatoes were planted in an arrangement of one row per bed in beds spaced 72 inches apart from center to center. Tomato plots consisted of 12 plants each spaced 18 inches apart.

The test consisted of seven treatments: 1) NA 2101 at 2 quarts/A at transplanting + 2 quarts/A 14 days later; 2) NA 2101A at 2 quarts/A at transplanting + 2 quarts/A 14 days later; 3) NA 2101 at 4 quarts/A at transplanting; 4) NA 2101A at 4 quarts/A at transplanting; 5) NA 2101 at 2 quarts/A at transplanting + 2 quarts/A 14 days later with 75% fertilizer; 6) untreated check with 75% fertilizer; and 7) an untreated check. The experiment was arranged in a Randomized Complete Block Design with four replications.

The equivalent of a two quart per acre rate was applied around each plant at transplanting in treatments one, two and five. The equivalent of four quarts per acre was applied in the same fashion for treatments three and four. Two additional quarts were applied in the same fashion 14 days later for the two quart treatments. Tomatoes received a pre plant granular fertilizer application of 600 pounds/acre 10-10-10. All additional fertilization was applied through the drip irrigation system. However, treatments one, two, three, four and seven received additional fertilizer applications around each plant. This was done so that treatments five and six would end up with only 75% of the total nitrogen applied to other plots. Total fertilizer application amounted to approximately 150 pounds nitrogen and potassium per acre as the full rate. Applications were made with a 7-0-7 liquid fertilizer material. Plots were treated with

recommended insecticide sprays as needed. Irrigation was applied daily through the drip system.

Tomatoes were harvested weekly from July 7-July 28, 2003. Data was taken on yield by grade, marketability, average fruit weight and fruit characteristics. It was generally a wet spring.

### Results

There were no significant differences among treatments in the tomato trial. There were also no detectable trends. The only noticeable factor was that plots that were treated with four quarts at planting did not seem to fair as well as other plots. Data are presented in Table 1.

**Table 1. Yield by grade, total yield of marketable grades, average fruit size and percent marketability of tomatoes treated with various rates of Naturize 2101 and 2101A and untreated tomatoes at Tifton, Georgia in 2003.**

Treatment	Yield (25# cartons)/Acre					Avg. Lg./XL wt. (g)	Avg. Mark. wt. (g)	Percent Marketable (%)
	Extra Large	Large	Medium	Extra Lg + Large <sup>1</sup>	Marketable			
NA 2101 <sup>2</sup>	74 A	618 A	909 A	692 A	1601 A	194 A	170 A	93 AB
NA 2101A <sup>2</sup>	174 A	564 A	653 A	738 A	1391 A	210 A	170 A	95 A
NA 2101 2X <sup>3</sup>	133 A	385 A	771 A	518 A	1289 A	188 A	149 A	89 B
NA 2101A 2X <sup>3</sup>	85 A	488 A	780 A	573 A	1353 A	207 A	168 A	92 AB
NA 2101 75% <sup>4</sup>	200 A	537 A	654 A	737 A	1391 A	182 A	158 A	90 AB
Untreated-75% <sup>5</sup>	155 A	633 A	567 A	788 A	1355 A	185 A	163 A	95 A
Untreated	201 A	581 A	817 A	782 A	1599 A	225 A	172 A	91 AB
Mean of Test	146	544	736	690	1426	197	164	92
L.S.D. (0.1)	279.3	363.4	357.4	447.1	690.5	45.9	27.3	5.4
C.V. (%)	129.00	44.99	32.70	43.56	32.60	15.66	11.20	3.92

<sup>1</sup>Total of Extra Large and Large fruit. Plots consisted of a single row with 20 plants per row spaced 18 inches apart.

<sup>2</sup>2qt/A at transplanting + 2qt 14 days later in drip

<sup>3</sup>4 qt/A at transplanting

<sup>4</sup>2 qt/A at transplanting + 2qt 14 days later in drip-75% fertilizer

<sup>5</sup>Untreated-75% fertilizer