

RESCUE, NUTRIPHITE AND CALCIPHITE DO NOT SIGNIFICANTLY INCREASE YIELD OF WATERMELON AND SNAP BEAN

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Introduction

Snap beans and watermelons are routinely two of the largest commercial vegetable crops by acreage in Georgia, each accounting for over 20,000 acres annually. These crops combined are worth over \$150 million in farm gate value in Georgia. A foliar nutrient product from Triangle Chemical called TriCard Rescue and two from Biagro Western Sales called Nutri-phite Magnum and Calci-Phite have been reported to increase yields in these crops. Nutri-phite Magnum is a 2-0-16 solution and Calci-Phite is a 0-0-5 solution with 8% calcium. TriCard Rescue is a 7-4-9 solution. These materials were applied according to label protocols to determine their effects on yield of fresh market snap beans and watermelons. Calci-Phite was not used on the snap beans.

Methods

Watermelon transplants (variety “Imagination”, Syngenta Seed Co.) were produced in a UGA greenhouse. Plots were established at the Coastal Plain Experiment Station Tifton Vegetable Park (elev. 382 feet) in Tifton, GA. Plot land was deep turned and disked and 400 pounds 10-10-10 fertilizer was broadcast. Beds for watermelons were fumigated with methyl bromide (134 lb. a.i./acre) and black plastic mulch and drip tape installed prior to planting.

Watermelons were transplanted on April 17, 2007 into a Tifton sandy loam (fine-loamy siliceous thermic Plinthic Kandiudults) soil. “Nash” variety snap beans were direct seeded into bare ground plots on April 19, 2007. Watermelon plots consisted of a single row of plants 20 feet long with four feet between plants and were planted on raised beds that were spaced six feet apart (from center to center). Snap beans were seeded in four-row plots with an in-row spacing of two inches and plots were 25 feet in length. Plots were replicated four times in both tests. The experiments were arranged in a Randomized Complete Block Design.

TriCard Rescue was applied as a 1% solution to the foliage 1) when first male flowers appeared on melons and when first buds appeared on snap beans; 2) at pod fill on beans; and 3) after each harvest on melons. Nutri-phite Magnum was applied at one quart per acre at the same timings for both crops. Calci-Phite was applied at one quart per acre to watermelons at the same timings as the other two. Applications were made on May 25 and June 12 for snap beans and on May 25, May 30, June 4, June 8, June 13, June 18, June 25 June 29 and July 9, 2007 for watermelons. These were compared to an untreated check.

Additional fertilizer was applied through the drip irrigation system approximately weekly from May 3 through July 5 for watermelons. Snap beans were side dressed with 300 pounds per acre 10-10-10 four weeks after planting. A total of 180 pounds of N and K was applied during the season to watermelons. Watermelons were harvested on June 28, July 6, and July 13, 2007 and data collected on yield and fruit number. Snap beans were harvested once over by machine on June 20, 2007 and data collected on yield. Other than treatment applications, normal cultural and pest control practices were used. Data were analyzed using the Statistical Analysis System and means separated using Least Significant Difference.

Results

Results are presented in Table 1 and Table 2. Watermelons in the untreated check was numerically lower in yield and fruit number compared to watermelons treated with Rescue and Nutri-Phite, but the differences were not significant, but only yield fruit number was lower in the

Calci-Phite treated plots. The average fruit size of watermelons was largest in watermelons treated with Nutri-Phite and Calci-Phite but again not significantly. Yields of snap beans that were not treated fell between yields of snap beans treated with Nutri-Phite and Rescue, but they were not significantly different from each other in either case. Yields of snap beans treated with either product were statistically similar.

Table 1. Total marketable yield, fruit number and average fruit weight of watermelons treated with Rescue, Nutriphite Magnum, Calci-Phite and untreated watermelons at Tifton, Georgia in 2007.

Treatment	Yield (lbs)/Acre	Fruit/Acre	Average Fruit Size (lbs)
Rescue	62,345 a	6080 a	10.1 a
Nutriphite	57,790 a	5082 a	11.4 a
Calciphite	52,127 a	5082 a	10.5 a
Untreated	53,252 a	4991 a	10.3 a
Mean of Test	56,378	5308.9	10.6
L.S.D. (0.05)	24,091	1889	1.4
C.V. (%)	26.7	22.2	8.0

Table 2. Total marketable yield in pounds and 28-pound bushels per acre of snap beans treated with Rescue and Nutriphite Magnum and untreated beans at Tifton, Georgia in 2007.

Treatment	Yield (lbs./Acre)	Yield (28-pound bushels/Acre)
Rescue	8832 a	315.4 a
Nutriphite	8396 a	300.0 a
Untreated	8549 a	305.3 a
Mean of Test	8592	306.9
L.S.D. (0.05)	3874.1	138.4
C.V. (%)	26.1	26.1