

EVALUATION OF DRENCH & FOLIAR APPLIED INSECTICIDE TREATMENTS IN SQUASH 2007

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Introduction

Summer squash is targeted in the summer and fall growing seasons in southern Georgia by pickleworm, *Diaphania nitidalis* (Stoll), cucumber beetles, *Diabrotica* spp., squash bugs, *Anasa* spp., and sweetpotato whitefly, *Bemisia tabaci* (Gennadius). This experiment evaluated various drench and foliar control options for these pests in 2007.

Materials and Methods

Yellow squash, Hyb. Destiny III, was direct seeded into 2 rows per 6-ft bare ground beds on 3 August and maintained with standard cultural practices at the Lang Farm, Georgia Coastal Plain Experiment Station at Tifton. A total of 500 lbs/a of 10-10-10 was applied at planting to Tift pebbly clay loam field plots followed by two side-dress applications of 150 lbs/a Cal-nitrate. Irrigation was applied weekly with an overhead sprinkler system. Drench treatments of insecticide were made over the seed furrow using 1 gallon of water per 40 ft row. Four foliar applications of insecticide were made on 15, 21, 30 August and 5 September. Scouting was initiated on 17 August and continued weekly until harvest. One sample of 5 plants, with one leaf per plant for whitefly and aphid counts, was scouted per plot after weekly applications. Squash was harvested from 40 ft of 2 rows on 5 and 11 September and fruit were categorized as marketable, pickleworm damaged, or virus damaged and the average weight was measured. Squash fruit color ratings for whitefly induced whitening were also reported with 0=no fruit harvested, 1=all white fruit, 2= mixed white and yellow fruit, and 3=normal yellow colored fruit. Data was analyzed using GLM and LSD tests for separation of means (SAS Institute 1990).

Results and Discussion

The best treatments in terms of whitefly control were the A15452 treatments with the highest rate providing the greatest control and highest marketable yield. The fruit from this treatment was also the closest to a normal yellow color. The higher rate of A15365 provided similar control to the lower rate of A15452. The whitefly pressure during this test was the highest seen by this author in over ten years, causing the check plot plants to collapse by the harvest date. Most of the foliar treatments were similar in that almost no fruit were harvest in these treatments, indicating the importance of systemic insecticide treatment in the presence of severe whitefly pest pressure.

Treatment - rate per acre (2-8 drench and 9-15 foliar)	Silverleaf rating on 28 Aug	Silverleaf rating on 14 Sept	Silverleaf rating averaged	Whitefly adults on 17 Aug	Whitefly adults on 31 Aug	Fruit Color rating 0 to 3 (normal yellow)	Number of clean market- able fruit	Weight of clean market- able fruit
1. Untreated Check	2.95 a	3.0 a	3.0 a	142 abc	214 a	0.1 c	1 d	0.2 e
2. A15452 300SC 150ga/h	0.30 bc	2.7 bcd	1.5 b	102 cd	106 cd	1.6 ab	124 ab	33.2 bcd
3. A15452 300SC 225ga/h	0.13 bc	2.5 d	1.3 b	106 bcd	120 cd	1.6 ab	124 ab	38.8 b
4. A15452 300SC 300ga/h	0.05 c	2.0 e	1.0 b	76 d	105 cd	2.1 a	133 a	50.5 a
5. A15365 250SC 50ga/h	0.28 bc	2.8 abc	1.5 b	106 bcd	191 ab	1.3 b	101 bc	27.3 cd
6. A15365 250SC 75ga/h	0.13 bc	2.6 cd	1.4 b	99 cd	167 abc	1.8 ab	125 ab	35.2 bc
7. A15365 250SC 100ga/h	0.45 bc	2.9 ab	1.7 b	154 ab	117 cd	1.6 ab	101 bc	33.6 bcd
8. Platinum 240SC 150ga/h	0.53 b	2.9 ab	1.7 b	109 bcd	145 bcd	1.4 b	79 c	24.9 d
9. Provado 1.6SC 3.75oz/a	2.65 a	3.0 a	2.8 a	150 abc	146 bcd	0.3 c	14 d	1.6 e
10. Montana 2SC 2.3oz/a	2.73 a	3.0 a	2.9 a	123 bcd	162 abcd	0.1 c	2 d	0.5 e
11. Spintor 2SC 5oz/a +Provado 1.6SC 3.75oz/a	2.80 a	3.0 a	2.9 a	108 bcd	152 bcd	0.3 c	22 d	3.1 e
12. Synapse 24WG 3oz/a	2.88 a	3.0 a	2.9 a	149 abc	153 abcd	0.3 c	19 d	5.5 e
13. Spintor 2SC 5oz/a	2.90 a	3.0 a	3.0 a	177 a	133 bcd	0.0 c	0 d	0.0 e
14. QRD 400 25EC .3gal/a	2.73 a	3.0 a	2.9 a	130 abc	141 bcd	0.1 c	1 d	0.1 e
15. Ag Oil .3gal/a	2.73 a	3.0 a	2.9 a	125 bcd	102 d	0.1 c	1 d	0.2 e

* Means within columns followed by the same letter are not significantly different (LSD, P<0.05).