

# EVALUATION OF TRANSPLANT DRENCH TREATMENTS FOR CONTROL OF SILVERLEAF IN SQUASH

Alton N. Sparks, Jr., Georgia Cooperative Extension, University of Georgia, Tifton Campus, P.O. Box 748, Tifton, GA 31793

## Introduction

The sweetpotato whitefly (a.k.a silverleaf whitefly) is a key pest of many vegetable crops grown in the fall in south Georgia. It is particularly damaging in squash, as even low densities of this pest can result in silverleaf symptoms. The neonicotinoid insecticides have been the cornerstone of whitefly management for more than a decade and results in 2006 trials suggested that resistance may be developing in south Georgia. Thus, it is imperative that we evaluate additional chemistries for control of whiteflies. This test was conducted to evaluate the efficacy potential soil applied drench applications of selected insecticides for control of sweetpotato whitefly.

## Materials and Methods

A small plot trial was conducted at the UGA Horticulture Farm in Tifton, Georgia. The trail was established as a RCB design with four replications. Squash transplants (var. Destiny III) were started in the greenhouse on 30 July, 2007. These plants were transplanted and treated on 13 August, 2007. The insecticide treatments were applied in 3 oz of water per transplant. The transplant hole was punched in dry soil and the plant was placed into the hole. The transplant water with the designated treatment was then poured onto the root ball in the transplant hole and the hole then filled in with soil. Each experimental plot consisted of twelve with 1.5 foot in-row plant spacing.

Treatments evaluated were Admire Pro at 7 oz/ac, Venom 70WDG at 6 oz/ac, Coragen at 5 oz/ac, Movento 240SC at 8 oz/ac, and a water check. Rates applied were based on 14520 plants per acre (3 feet between rows and 1 foot in-row).

It was intended that plots would be rated for silverleaf and growth after plant growth to occurred and differences became apparent; however, this never happened. The test ended with a single plot rating on 29 August (16 days after transplanting). Silverleaf symptoms were severe and evenly distributed throughout the test and plant growth was minimal in the best treatments. Plots were rated as 1= plants alive with some growth, 2 = plants alive but with little or no growth, or 3 = most plants dead. Plot ratings were analyzed with the PROC ANOVA procedure of PC-SAS. Where significant differences were detected ( $P<0.05$ ), means were separated with LSD ( $P=0.05$ ).

## Results and Discussion

Pest pressure was extremely high. No treatment provided enough control to prevent silverleaf and none of the plots exhibited anything resembling normal growth. Plants were stunted even in the best plots and it was obvious that none of the treatments would have carried the plants to any level of yield. Differences were detected in plant health at 16 days after transplanting (Table 1), but none of the treatments were truly “healthy”. Coragen, Admire Pro and Venom provided some benefit with plants still alive, but with minimal growth. Under extreme whitefly pressure, it is doubtful that any single application will provide control for long and that applications applied at transplanting may not enter the plant rapidly enough to prevent severe plant damage.

Table. Plot health ratings, Squash transplant drench trail, UGA Horticulture Farm, Tifton, Georgia, 2007.

Treatment	Check	Movento	Venom	Admire Pro	Coragen
Plot rating	3.00 a	2.75 a	2.00 b	1.50 bc	1.25 c