

**Report to the
Southeastern Peanut Research Initiative
Final Report
On Progress on Research Supported by the Grant**

“Continued Development of Integrated Management Systems Using Resistant Genotypes, Cultural Practices and Pesticides for Control of Spotted Wilt, Fungal Diseases, Nematodes, and Insect Pests of Peanut”

Principal Investigators

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Update:

- A. A field experiment was conducted to determine the effects of cultivars Georgia Green, Georgia-03L, Georgia-01R, York, and new breeding lines CRSP 910 and C724-19-15 on incidence of spotted wilt and leaf spot. C724-19-15 has been approved for release as "Tifguard", a cultivar with high levels of resistance to TSWV, and good resistance to root-knot nematode. In addition, this experiment indicated that C724-19-15 (Tifguard) also has resistance to late leaf spot, as indicated by excellent performance for leaf spot and yield in treatments with reduced as well as full fungicide inputs (0, 3, 4, and 6 applications of fungicides that include chlorothalonil, tebuconazole, and prothioconazole). Late leaf spot epidemics began late in the season, but are progressed. Final leaf spot ratings for medium maturity cultivars Ratings made on Oct 17 in the non-treated plots were 8.8, 7.1, 6.5, 6.9, 8.1, and 6.5 (LSD = 0.9) for Georgia Green, Georgia-03L, Tifguard, Georgia-01R, CRSP 910, and York, respectively. Yields for those respective genotypes in non-treated plots were 4039, 5032, 5068, 3714, 4197, and 4581 lb/A (LSD = 552 lb). A similar test was planned and is in progress in the 2008 growing season.
- B. A field test was conducted at the UGA-CPES Rigdon Farm to examine the effect of in-furrow applications of the experimental fungicide prothioconazole (Proline), and neem oil, and broadcast applications of karanja cake on thrips feeding damage, plant stand and incidence of tomato spotted wilt virus. Georgia Green cultivar was used for the test. Treatments also included in-furrow applications of phorate (Thimet) and a non-treated control. Based on early season thrips severity ratings and row width measurements, Thimet was the only treatment that provided any suppression of thrips feeding injury. Plant width was significantly greater for the Thimet treatment. Thimet was the only treatment that reduced intensity of spotted wilt compared to the nontreated control. The thimet treatment also had yields numerically but not significantly higher than any other treatment. Yield in the phorate treatment was 3612 lb/A compared to 3262 or less in all other treatments. Similar tests are being conducted in 2008, with little effect of anything other than Thimet as of the July ratings.

C. Two field experiments were conducted in which the response of a total of 16 cultivars and genotypes to Thimet insecticide and twin row patterns were combined for management of spotted wilt. The tests included new cultivars Florida 07, McCloud, York, AP-4, Georgia-03L, C724-19-15 (Tifguard), AT-3081R and AT-3085A, and included Georgia Green and AP-3 as standards. The tests were planted April 24-25. Spotted wilt pressure was heavier than in most other fields on the farm and in the area. In the nontreated plots and single row plots, all entries in the tests had spotted wilt intensity ratings lower than that of Georgia Green. Across all cultivars, intensity ratings were lower in Thimet treated plots than nontreated plots and lower in twin rows than in single rows. However, there was not a corresponding yield increase with use of Thimet or twin row pattern in most of the more resistant lines. Several new cultivars and breeding lines had final incidence and AUDPC values similar to those of AP-3. McCloud and AT 3081 had final incidence values better than Georgia Green, but not as low as most of the other entries. Results on several of the entries in the 2006 and 2007 tests were incorporated into a manuscript submitted (and now published) in Plant Disease with acknowledgement of NPB support.

D. An experiment was conducted at the UGA-CPES Rigdon Farm to determine the effect of planting date on intensity of Tomato spotted wilt in Georgia Green vs. AP-3 cultivars. Planting dates were for 1) April 25; 2) May 1; 3) May 9; 4) May 16, and 5) May 24, 2007. Spotted wilt pressure was heavy, especially in the earlier planted plots. Intensity of spotted wilt was highest in the first two planting dates, and decreased with later plantings. Spotted wilt intensity was much lower for AP-3 than for Georgia Green across all planting dates, and incidence of spotted wilt in the earliest planting date was still numerically below that of Georgia Green planted in mid-May. Based on intensity ratings and yield, AP-3 can be planted in late April and have spotted wilt levels less than and yield greater than or similar to those of Georgia Green planted in mid-May. Results of the 2007 corroborated results of a similar experiment conducted in 2006. A manuscript is in progress for reporting the results from 2005-2007, and results have already been considered for most recent version of the TSWV risk index.

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12506.6
66236.9