

Effect of In-Furrow and Foliar Insecticide Treatments on Tomato Spotted Wilt and Yield in New TSWV Resistant Cultivars and Breeding Lines

Investigators: A. K. Culbreath, R. Srinivasan, T. Brenneman, R. Kemerait, C. Holbrook, W.D. Branch, R. S. Tubbs, B. Tillman, M. Abney, D. Anco, and W. S. Monfort

Several new peanut cultivars have excellent yield potential and good field resistance to Tomato spotted wilt. This improved resistance allows more flexibility with factors such as planting date and seeding rates used in integrated management of spotted wilt. Use of phorate (Thimet) insecticide has been a major factor in management of Tomato spotted wilt. Objectives of this project included determining the response of new peanut cultivars to Thimet and whether Thimet is needed on these cultivars.

Field experiments were conducted comparing new cultivars lines with and without in-furrow application of Thimet insecticide. In 2017, this trial included cultivars Georgia-06G, Georgia-12Y, Georgia-13M, Georgia-14N, Georgia-16HO, TUF Runner 297, TUF Runner 511, TUF Runner 331, FloRun 107, FloRun 157 TifNV High O/L, and AU-NPL 17. The trial was planted in April using a seeding rate of approximately 4.5 seed/ft of row. Pressure from spotted wilt was up some compared to recent years. Incidence in nontreated FloRun 157 was 39.4%, compared to 26.4 with Thimet. Final incidence in Georgia-12T, Georgia-13M, Georgia-14N, AU-NPL 17, or TifNV High O/L was 9.7% or lower in even nontreated plots. Across all cultivars, application of Thimet reduced spotted wilt incidence from 17.7% to 13.1%. However yield responses varied from approximately 600 lb increase with Thimet in TUF Runner 511 and TUF Runner 297, to no response in some entries. Yields in Georgia-16HO were over 7500 lb/A averaged across the two insecticide treatments.

Trials were conducted to examine the effects of Velum Total, Admire, and AgLogic as in-furrow treatments on thrips damage, incidence of tomato spotted wilt, and yield on Georgia-06G in a field without CBR or rootknot nematode infestation. In two trials, thrips control with the 18 fl oz/A rate of Velum Total and AgLogic at 5lb/A was comparable to that of Thimet. Admire Pro applied in furrow also acceptable good thrips control. Application of Thimet in-furrow reduced incidence of spotted wilt from 21.3 % to 12.1% in one trial, but had no significant effect in two others. None of Velum Total, Admire, Propulse, or AgLogic reduced the effect of spotted wilt in any trial. There were few differences in yield among any of the insecticide treatments in either trial.

One trial was conducted in cooperation with Dr. Dan Anco of Clemson University, in which three cultivars, Georgia-06G, TifNV High O/L, and FloRun 157 were combined with Thimet or Admire Pro insecticides, each with or without a super absorbent gel applied with the insecticide at planting. Incidence of spotted wilt was low (10.8% or lower) in TifNVHigh O/L regardless of insecticide treatment. Thimet reduced incidence of spotted wilt in both Georgia-06G and FloRun 157, and addition of the absorbent gel provided some additional suppression in Georgia-06G, and more in more susceptible FloRun 157.