Report to the Georgia Agricultural Commodity Commission for Peanuts-2013

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, J. P. Beasley, N.B. Smith, and B. Tillman

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 are conducted each year comparing new cultivars/breeding lines with and without in-furrow application of Thimet. In 2013, this trial included cultivars Georgia-06G, Georgia-07W, Georgia-09B, Georgia-10T, Georgia-11J, Georgia-12Y, Georgia Greener, and Tifguard. The trial was planted in early May using a seeding rate of approximately 4.5 seed/ft of row. Pressure from spotted wilt was moderate, with incidence in nontreated Georgia-09B and Georgia-06G reaching 22.7 and 21.5%, repectively. Final incidence in Georgia-10T, Georgia-11J, or Georgia-12T was 10.5% or lower, regardless of Thimet treatment. Across all cultivars, application of Thimet significantly reduced incidence of TSW, with final incidence of TSW of 15.0% in nontreated plots and 10.7% in plots treated with Thimet. Thimet had no yield effect. Across Thimet treatments, yields were 7309 lb/A for Georgia-12Y, which was significantly higher than yields of the nest best yielding cultivars, Georgia-10T and Georgia-06G, repectively.

Regional field experiments were conducted in 2012 in which Georgia-06G and Georgia-12Y were planted with: 1) no insecticide for thrips control; 2) Cruiser seed treatment for thrips control; 3) Cruiser seed treatment + 1 Orthene spray; and 4)Thimet applied in-furrow at planting. Only the Thimet treatment reduced incidence of TSW in Georgia-06G, and final incidence in Georgia-12Y was low, regardless of insecticide treatment.

Trials were conducted in 2012 and 2013 to determine the effects of several insecticides (Cyazypyr, Movento, Radiant, Assail, Karate, Orthene, and Admire) on thrips populations and feeding damage and incidence of tomato spotted wilt on Georgia-06G. Thrips populations were exceptionally heavy in 2013. In furrow and at-cracking sprays of Cyazypyr resulted in thrips control and suppression of spotted wilt incidence that was similar to that provided by Thimet. However in-furrow or single at-crack applications of cyazypyr sprays alone were not as good as Thimet in 2013. Application of an later sprays of Cyazypyr after in-furrow application of Thimet improved thrips control compared to Thimet alone. In multiple trials in 2013, in-furrow applications of imidacloprid (Admire) provided thrips control that was similar to that of Thimet at early evaluations but not quite as good at later evaluations. Admire have not provided consistent suppression of spotted wilt, but on varieties such as Georgia-06G have not increased spotted wilt like it did on earlier varieties such as Florunner and Georgia Runner.