

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

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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 2018, 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, TifNV High O/L, and AU-NPL 17. The trial was planted on May1, 2018 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 TUF Runner 551 was 37.9%, compared to 18.1% with Thimet. Final incidence in Georgia-12T, Georgia-13M, Georgia-14N, AU-NPL 17, or TifNV High O/L was 7.4% or lower in even nontreated plots compared to 20.2% in Georgia-06G in nontreated plots. Addition of Thimet to Georgia-06G reduced incidence to 9.1%. Across all cultivars, application of Thimet reduced spotted wilt incidence from 13.5% to 7.6%. However yield responses varied from approximately 600 lb increase with Thimet in TUF Runner TUF Runner 297, to no response in some entries. Yields in Georgia-16HO were over 7300 lb/A averaged across the two insecticide treatments.

One early planted trial was 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. 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 37.3 % in the nontreated plots to 19.7%. None of Velum Total, Admire, Propulse, or AgLogic reduced the effect of spotted wilt in any trial. Yields were highest in plots treated with Thimet or with the combination of Propulse and Admire.

One trial was conducted in cooperation with Dr. Dan Anco of Clemson University, in which three cultivars, Georgia-06G, TifNV High O/L, and TUF Runner 511 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 13.8% 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 TUF Runner 511.

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