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, and W. S. Monfort

Pressure from spotted wilt and yield losses to the virus were down 2024 compared to 2022 and 2023. Several new peanut cultivars have excellent yield potential and good field resistance to Tomato spotted wilt. Use of phorate (Thimet) insecticide has been a major factor in management of Tomato spotted wilt with results often more obvious during years with high pressure from the virus. 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 with and without in-furrow application of Thimet insecticide. Cultivars Georgia-06G, Georgia-12Y, Georgia-21GR, Georgia-22MPR, Georgia 23NHO, TifTb, FloRun'618', FloRun'725", Arnie, UF-1, and CB-7. The trial was planted on May 3, 2025 using a seeding rate of approximately 4.5 seed/ft of row. Disease pressure was light. Incidence in nontreated Georgia-06G was 17.5% compared to 11.9% with Thimet. Final incidence in nontreated plots was lowest for UF-1 and Arnie, and multiple cultivars had incidence lower than in Georgia-06G. Few cultivars had a significant reduction of TSW with Thimet. Averaged across all varieties, use of Thimet had no effect on incidence of spotted wilt (6.8% nontreated vs 4.52% with Thimet) or pod yield (5968 lbs/A nontreated vs 5673 lbs/A with Thimet. Average yield for TifTB was 7314 lb/A followed by Georgai-22MPR at 6561 lb/A. Yield for Georgia-06G and Georgia-12Y was 4964 and 6121 lb/A, respectively.

A field experiment was conducted to determine the effect of multiple peanut genotypes on incidence of TSW. Entries included lines from USDA, UGA, UF, and private breeders. Disease pressure was light, with highest incidence oof 11.3 % in Georgia-06G. Multiple lines from Dr. Holbrook's program (USDA), Dr. Brown's program (UGA), and Dr. Tillman's program (Univ. Florida) had very low incidence, similar to or lower than that of Georgia-12Y, and lower than in Georgia-06G.