

## **Efficacy and Profitability of Insecticide Treatments for Tomato Spotted Wilt Management on Peanut in South Carolina**

**D.J. ANCO\***, J.S. THOMAS, Department of Plant and Environmental Sciences, Clemson University, Blackville, SC 29817; and W.S. MONFORT, Department of Crop and Soil Sciences, University of Georgia, Tifton, GA 31793.

Tomato spotted wilt (TSW) is a common and serious disease of peanut (*Arachis hypogaea* L.) caused by *Tomato spotted wilt virus* (TSWV; family *Tospoviridae*, genus *Orthotospovirus*). Management frequently uses an integrated approach, with cultivar resistance and application of in-furrow insecticide as two critical components. In-furrow insecticides help suppress thrips, which can injure and stunt young growing plants and transmit TSWV, with postemergent application of acephate capable of providing additional thrips control. To examine effects of systemic insecticides (imidacloprid, imidacloprid plus fluopyram, phorate, and acephate) on TSW management, yield, and economic return across cultivar susceptibilities (susceptible, moderately susceptible, and resistant) in South Carolina, a meta-analysis was used to synthesize results from 32 studies conducted between 2009 and 2018.

Although efficacy and magnitude of individual treatments varied with susceptibility, imidacloprid increased, whereas phorate generally decreased TSW incidence relative to nontreated controls. In-furrow treatments followed by acephate further reduced TSW incidence and increased profitability. All examined treatments improved yield compared with untreated peanuts except for susceptible cultivars treated with imidacloprid. Imidacloprid plus fluopyram increased yield more than imidacloprid alone for the susceptible group, although there was little difference between these treatments in association with moderately susceptible cultivars. When comparing individual applications, phorate was overall the most profitable option across susceptibilities, although imidacloprid plus fluopyram exhibited analogous profitability for susceptible cultivars. Results from this study can be used to assist producer selection of management options for TSW in peanut.