Improved Management of Tomato Spotted Wilt Virus in the North Carolina and Virginia Peanut Areas: Evaluation of the Thrips Vectors, Their Seasonal Abundance, and Sensitivity to Insecticides.

B.M. ROYALS*, R.L. BRANDENBURG, Department of Entomology, North Carolina State University, Box 7613, Raleigh, NC 27695-7613, D.A. HERBERT, JR., Tidewater AG RES & EXT Center, 6321 Holland Road, Suffolk VA 23437, D.L. JORDAN, Department of Crop Science, North Carolina State University, Box 7620, Raleigh, NC 27695-7620.

North Carolina peanut growers have seen an increase in the amount of tomato spotted wilt virus (TSWV) over the past five years. TSWV is transmitted by thrips as they feed on the peanuts. Both in furrow and foliar insecticides are quite efficacious in controlling thrips, but often have only a limited impact on the incidence of the disease since the virus may be transmitted to peanut before the thrips die. There are no known controls measures for TSWV, but several cultural practices are available to help reduce the incidence of the virus. Research in NC and VA has looked at using multiple applications of foliar insecticides as an additional approach to reduce the amount of TSWV. Field studies were conducted in 2003 and 2004 in Bertie County, NC and Suffolk, VA. Plots were 2 rows wide (1.8 m) and 40 feet long (12.2 m). VA98R peanuts were planted in Bertie County, NC on 9 May in 2003 and 10 May in 2004. VA98R peanuts were also planted in Suffolk, VA on 7 May in both 2003 and 2004. Plots were established using Temik 15G at 1.0 lb ai/A in-furrow and Thimet 20G at 0.4 lb ai/A in-furrow. Plots were treated with acephate 97S at 0.36 lb ai/A at 2, 4, and 6 weeks after planting. Thrips damage ratings were taken prior to each foliar application. Results indicate no significant difference between the at-plant, in-furrow treatments versus plots treated with multiple applications of acephate in reducing the number of thrips. TSWV ratings were also taken during the growing season and at harvest and these results indicate no significant reduction in the amount of TSWV with multiple acephate foliar sprays. There was no yield difference between the standard in-furrow treatments and those treated with multiple foliar sprays. Management of TSWV remains focused on options such as variety selection, planting date, plant population, insecticide selection, and tillage practices rather than multiple insecticide applications. All of these production practices play a vital role in minimizing the amount TSWV in peanuts and multiple insecticide applications increase cost of production with no documented benefits.