PEANUT (*Arachis hypogaea* 'TUFRunner 511')
Tomato spotted wilt disease; *Tomato spotted wilt orthotospovirus*
Stem rot; *Sclerotium rolfsii*

J. M. Haynes, J.S. Thomas, J. Hiers, and D.J. Anco
Clemson University, Edisto REC, Blackville, SC 29817

Evaluation of pesticides for management of thrips and tomato spotted wilt in irrigated peanut, 2018.

'TUFRunner 511' peanuts were planted at Edisto Research and Education Center in Blackville, SC on 26 Apr, at a rate of 5.5 seed/ft and depth of 2-in. Soil type was a Barnwell sandy loam. Plots were four 40-foot single rows on 38 in. centers with treatments replicated four times and applied according to a randomized complete block design. The field was irrigated (with one replication outside the range of the lateral). Rotation history was cotton for the previous two years. Standard practices were used to manage tillage, weeds, fungal diseases and nutrition. Admire Pro and Velum Total were applied with a D2 orifice set to deliver 8.7 gal/A at 32 psi in-furrow. Thimet was applied with a SmartBox calibrated to deliver 4.7 lb/A in-furrow. Orthene was applied using two DG8002 nozzles/row (19-in spacing) delivering 15 gal/A on 8 May (11 days after planting [DAP]) for at-crack applications and 18 May (21 DAP). Thrips damage was rated 7 Jun (42 DAP) using a 0 to 10 scale where 0 = no injury and 10 = dead plants. Phytotoxicity was rated 7 Jun using a visual according to percent severity. Tomato spotted wilt stunting was rated by visually estimating the % of row exhibiting stunting symptoms of the disease (based on loci counts per row where 1 locus was $\leq$ 1 ft of consecutive tomato spotted wilt stunted plants) on 23 August (119 DAP). Ratings of % of row exhibiting symptoms or signs of stem rot (based on loci counts per row where 1 locus was $\leq$ 1 ft of consecutive stem rot damaged plants or signs per row) were taken 20 Sep. The trial was dug and inverted on 20 Sep and harvested 25 Sep (moisture adjusted to 10%). SAS 9.4 PROC GLIMMIX was used to determine effects of treatments, with mean separations compared according to Fisher's Protected LSD at $\alpha = 0.05$. Yield data was modeled according to a negative binomial distribution. Average monthly temperatures for the growing season are as follows: 61.3°F (Apr), 74°F (May), 80.1°F (Jun), 80.4°F (Jul), 79.9°F (Aug), and 79.6°F (Sep).

Characteristically, Thimet treatments had the most apparent phytotoxicity compared to other treatments. Thrips damage was significantly different among treatments 7 Jun ($P < 0.0001$) but were low overall. Tomato spotted wilt pressure was low overall and did not develop to substantial amounts in the trial (all treatments <5%). Stem rot was also low overall (<4%). Yield did not vary among treatments ($P > 0.05$). The replication outside of the irrigation area yielded substantially lower compared to irrigated replications due to considerable mid-season drought, but since the response was consistent across the replication, the data was not excluded from the analysis. Data from the trial does not support an obvious benefit to combined and concurrent in-furrow application of phorate (Thimet) and imidacloprid-based (Admire Pro or Velum Total) treatments.

Treatment and rate/A (Timing[z])	Phytotoxicity[y] 13-Jun	Thrips damage[x] 7-Jun	TSW % stunting[w] 23-Aug	Stem rot % incidence[w] 20-Sep	Yield (lb/A)[v]
Untreated	1.3 c[u]	3.3 a	3.8	1.3	4371
Thimet 4.7 lb (A)	7.5 a	0.8 b	2.8	3.9	4310
Admire Pro 10 fl oz (A)	1.3 c	0.3 b	3.0	3.6	4362
Velum Total 18 fl oz (A)	1.3 c	0.5 b	3.5	1.0	4678
Ag Logic 5 lbs (A)	1.3 c	0.5 b	4.8	0.7	4743
Admire Pro 10 fl oz (A) + Orthene 12 oz wt (B)	0.0 c	0.5 b	3.0	1.3	4919
Admire Pro 10 fl oz (A) + Orthene 12 oz wt (C)	1.3 c	0.8 b	3.0	1.3	4791
Admire Pro 10 fl oz (A) + Orthene 12 oz wt (BC)	2.5 bc	0.0 b	3.8	1.3	5034
Thimet 4.7 lb (A) + Velum Total 18 fl oz (A)	6.3 ab	0.5 b	2.3	1.0	4624
Thimet 4.7 lb (A) + Admire Pro 10 fl oz (A)	7.5 a	0.0 b	2.3	3.9	4837

[z] Timings correspond to A = 26 Apr (in-furrow), B = 8 May (at-crack), C = 18 May.
[y] Phytotoxicity was based on percent severity.
[x] Thrips damage was based on (0-10 scale) where 0 = no visible thrips damage and 10 = plant death.
[w] TSW stunting and stem rot incidence are expressed as the percent of the number of respective symptomatic loci per 80 ft of row (1 locus = $\leq$ 1 ft of consecutive symptoms of the disease, signs were included for stem rot ratings).
[v] Yield data was modeled according to a negative binomial distribution with inverse-link means of the original scale presented. Means followed by the same letter are not significantly different according to Fisher's Protected LSD ($\alpha = 0.05$).