PEANUT (*Arachis hypogaea* 'Georgia 06G')
Tomato spotted wilt; *Tomato spotted wilt virus*

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Evaluation of insecticides and application method for management of thrips and tomato spotted wilt on peanut, 2017.

'Georgia 06G' peanuts were planted at Edisto Research and Education Center in Blackville, SC on 27 April, at a rate of 5.8 seed/ft. Soil type was a Barnwell loamy sand. Rotation history was corn, cotton, and peanut in 2016, 2015, and 2014, respectively. Plots were eight 40-foot rows on 38 in. centers with treatments replicated two times and applied according to a randomized complete block design. Blocks were separated by 10-ft alleys. Standard practices were used to manage tillage, weeds, insects, fungal diseases, irrigation, and nutrition. Broadcast insecticides were applied using two TeeJet TX-4 tips per row set to deliver 14.5 gal/A at 50 psi. Banded applications were applied with one TeeJet 4002E per row set to deliver 14.1 gal/A at 30 psi. Thimet was applied with a SmartBox calibrated to deliver 4.7 lb/A. Thrips damage was rated 24 May and 29 May using a 0 to 10 scale where 0 = no injury and 10 = dead plants. Phytotoxicity was rated 29 May. Tomato spotted wilt (TSW) 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 ≤ 1 ft of consecutive tomato spotted wilt stunted plants) on 12 Jun, 19 Jun, and 7 Sep. On 12 Jun and 19 Jun, TSW incidence was rated similar to TSW stunting but also included foliar symptoms of mottling and chlorotic or necrotic rings. Four yield rows per plot were inverted 14 Sep and combined 21 Sep. 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 were modeled according to a negative binomial distribution. Average monthly temperatures for the growing season were as follows: 68.2 (Apr), 71.4 (May), 76.8 (Jun), 79.5 (Jul), 79.0 (Aug), 74.1 (Sep), and 66.0°F (Oct).

Thrips and TSW pressure was moderate in the trial. All treatments had significantly higher yield and significantly less thrips damage than the untreated check. Phytotoxicity was observed as leaflet chlorosis characteristic of Thimet. The untreated control had the highest TSW stunting, which was statistically similar to Thimet + Exirel banded at 4.26 fl oz/A. The lowest TSW stunting was within the grouping containing Thimet + one broadcast application of Exirel, Thimet alone, and Thimet + one banded Exirel application at 13.5 fl oz/A. Plants were noticeably drought stressed during the 7 Sep TSW stunting assessment, thus, the previous assessment is likely more representative. It is uncertain why yield overall was low across treatments in this irrigated trial. Another separate trial in the same field, however, similarly had relatively low yields. The only treatment sharing the lowest statistical grouping with the untreated control was Thimet + two Exirel 13.5 fl oz/A banded applications. Within this 2-replication trial, there did not appear to be a marked benefit to using the concentrated band application of Exirel. Similarly, within this study the different application methods of Exirel did not statistically surpass the Orthene treatment (current industry standard post-emergence insecticide).

		Thrips damage (0 -10 scale)[y]			TSW % stunting[x]			TSW % incidence[w]		
Treatment and rate/A	Timing[z]	24 May	29 May	Phytotoxicity (%)	12 Jun	19 Jun	7 Sep	12 Jun	19 Jun	Yield (lb/A)
Thimet 4.7 lb Exirel 13.5 fl oz	A B	4.0 b	4.0 b	7.0 a	5.9 c	10.2 cd	5.5 cd	6.3 c	10.2 cd	2426 bc
Thimet 4.7 lb Exirel 13.5 fl oz	A BC	3.5 b	2.5 c	4.0 ab	10.5 ab	12.8 bc	10.3 b	10.5 ab	13.5 bc	2912 ab
Thimet 4.7 lb Exirel 4.26 fl oz banded	A BC	4.0 b	4.0 b	7.5 a	9.9 ab	15.8 ab	13.1 b	12.2 a	16.1 ab	3230 a
Thimet 4.7 lb Exirel 13.5 fl oz banded	A B	4.0 b	3.5 bc	7.5 a	7.2 bc	8.0 d	4.2 cd	7.2 bc	8.5 d	2895 ab
Thimet 4.7 lb Exirel 13.5 fl oz banded	A BC	3.5 b	3.0 bc	5.0 a	12.2 a	14.8 b	6.4 c	12.8 a	14.8 abc	2193 c
Thimet 4.7 lb Orthene 12 oz	A BC	4.5 b	2.5 c	4.0 ab	7.2 bc	12.8 bc	4.5 cd	7.9 bc	12.8 bcd	3118 a
Thimet 4.7 lb	A	5.0 b	4.0 b	6.5 a	5.6 c	9.9 cd	3.2 d	5.9 c	10.2 c	2912 ab
Untreated check	---	8.5 a	7.5 a	0.0 b	8.2 bc	19.1 a	16.99 a	8.2 bc	19.4 a	2705 ab

[z] Timings correspond to A = in-furrow at planting, B = 7 May (at crack), C = 14 May.
[y] Thrips damage was based on a 0 to 10 scale where 0 = no visible thrips damage and 10 = plant death.
[x] Tomato spotted wilt (TSW) stunting is expressed as the percent of the number of stunted loci per 80 ft of row (1 locus = ≤ 1 ft of consecutive TSW stunting).
[w] TSW incidence is expressed as the percent of the number of symptomatic loci per 80 ft of row (1 locus = ≤ 1 ft of consecutive symptoms).
Means followed by the same letter are not significantly different according to Fisher's Protected LSD at $\alpha = 0.05$.