

Evaluation of insecticides for management of thrips and tomato spotted wilt on peanut, 2015.

'Champs' peanuts were planted at Edisto Research and Education Center in Blackville, SC on 1 May, at a rate of 5 seed/ft. Soil type was a Barnwell loamy sand. Rotation history was corn, cotton, and peanut in 2014, 2013, and 2012, respectively. Plots were four 40-foot rows with treatments replicated five times and applied according to a randomized complete block design. Blocks were separated by 10-ft alleys. Thimet was applied with a SmartBox calibrated to deliver 4.7 lb/A. Admire Pro and Velum Total were applied with a D2 orifice set to deliver 8.7 gal/A at 32 psi. Propulse was applied using two DG8002 nozzles/row (19 in. spacing) delivering 15 gal/A at 50 psi. Plant emergence was rated by counting the number of plants per row-foot on 12 May. Thrips damage was rated 22 May and 2 Jun using a 0 to 10 scale where 1 = no injury and 10 = dead plants. Phytotoxicity was rated 22 May. Tomato spotted wilt stunting was rated 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 18 Aug. Two yield rows per plot were dug on 14 Sep and combined 21 Sept with yield reported at 10 % moisture. 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 Poisson distribution. Average monthly temperatures for the growing season were as follows: 73.9 (May), 82.0 (Jun), 84.0 (Jul), 81.0 (Aug), and 95.9°F (Sep).

Thrips damage was consistently greatest in the untreated check, with all treatments having significantly less damage. The most phytotoxicity (chlorosis near edge of leaflet) was seen with Thimet followed by Propulse (16.0%), which was statistically more than Thimet alone, Velum Total 18 fl oz/A, and Velum Total 14 fl oz/A followed by Propulse (5.0%, 6.0%, and 8.0%, respectively). Neither did Velum Total nor one of its active ingredient component-related Propulse consistently produce phytotoxicity. Velum Total at 14 fl oz/A had significantly more stunting than the untreated check, and all Velum Total containing treatments had significantly more stunting than the Thimet only treatment, which also had the least stunting. Under the trial conditions, yield was greatest in the Thimet only treatment and least in the untreated control. Treatments with Velum Total had increased yield compared to the check, but this was not significant.

Treatment and rate/A	Timing ^z	Emergence (plants/ft)	Thrips damage (0 to 10 scale) ^y		Phytotoxicity (%)	TSW % stunting ^x	Yield (lb/A)
			22 May	2 Jun			
Untreated check	AB	2.5	5.0 a	7.8 a	0.0 c	6.4 bcd	3641 c
Thimet 20G 4.7 lb	A	2.3	1.8 b	3.8 b	5.0 bc	2.7 d	4386 a
Velum Total 14 fl oz	A	2.0	1.9 b	3.9 b	0.0 c	14.4 a	3904 bc
Velum Total 18 fl oz	A	1.9	1.4 c	3.5 b	6.0 bc	11.1 ab	3887 bc
Velum Total 14 fl oz Propulse 13.6 fl oz	A B	2.3	1.9 b	3.8 b	8.0 b	9.3 abc	3821 bc
Velum Total 18 fl oz Propulse 13.6 fl oz	A B	2.0	1.3 c	3.5 b	0.0 c	11.3 ab	3962 abc
Thimet 20G 4.7 lb Propulse 13.6 fl oz	A B	2.1	1.4 c	4.0 b	16.0 a	3.8 cd	4247 ab

^z Timings correspond to A = 1 May 2015 and B = 25 May 2015.

^y Thrips damage was based on a 0 to 10 scale where 0 = no visible thrips damage and 10 = plant death.

^x TSW stunting is expressed as the percent of the number of stunted loci per 80 ft of row (1 locus = \leq 1 ft of consecutive stunted plants).

Means within a column followed by the same letter are not significantly different according to Fisher's Protected LSD at $\alpha = 0.05$. Yield data was modeled according to a Poisson distribution with inverse-link means of the original scale presented.