PEANUT (*Arachis hypogaea* 'Sullivan')
Leaf spot, late; *Nothopassalora personata*
Stem rot; *Sclerotium rolfsii*

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

Evaluation of Miravis and Elatus for control of late leaf spot and stem rot on 'Sullivan' peanut, 2019.

'Sullivan' peanut was planted on 12 May 2019 at a rate of 5.5 seed/ft and depth of 2" in bedded single rows spaced 38". Plots were four rows by 40'. Treatments were replicated five times and arranged according to a randomized completely block design. Blocks were separated by 10-ft alleys. The field was irrigated and was grown to corn the previous two years. Soil type was a Barnwell loamy sand. Standard practices were used to manage tillage, weeds, insects, and nutrition. Fungicides were applied with two DG8002 nozzles/row (19 in. spacing) delivering 15 gal/A at 50 psi. Late leaf spot incidence (% symptomatic leaves), severity (% diseased leaf area) and defoliation (% canopy defoliation) were rated on 7 Oct (139 DAP). Ratings of % of row exhibiting symptoms or signs of stem rot (based on loci counts per row where 1 locus $\leq$ 1 ft consecutive stem rot damaged plants or signs per row) were taken on 8 Oct (140 DAP). Two yield rows of peanut per plot were inverted on 8 Oct and combined 18 Oct 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 negative binomial distribution. Rainfall during the period totaled 26.3 in. In May, Jul and Sep the average of rainfall was 0.10, 0.09 and 0.11 in. below average, and in Jun and Aug the average of rainfall was 0.09 and 0.11 in. above average, respectively. Average maximum air temperatures were 0.4, 0.8 and 7.5°F below average in May, Jun and Oct, and 3.9, 2.3 and 2.6°F above average in Jul, Aug and Sep, respectively. Average minimum temperatures were 1.2 and 8.1°F below average in May and Oct, and 0.8, 3.8, 4.2 and 0.7°F above average in Jun, July, Aug and Sep, respectively.

Late leaf spot % incidence, % severity, and % defoliation were significantly different among treatments (P = <0.0001). All treatments were associated with significantly less late leaf spot defoliation (<60%) compared to the untreated control, which was completely defoliated. A fungicide program containing Provost Silver at timings 2, 4 was the only treatment that was not included in the lowest statistical grouping with regards to defoliation. A fungicide program containing Priaxor at timings 2, 4 (with total of six applications of fungicides), resulted in no significant difference of late leaf spot incidence, severity and defoliation with a fungicide program containing Elatus at timings 2, 4 + Miravis at timings 2,4 (with total of four applications of fungicides). Stem rot incidence did not significantly differ among treatments (P = 0.5676). Yield significantly varied among treatments (P = 0.0016). All treatments were associated with significantly greater yield compare to the untreated control (2852 lb/A). However, yield was not significantly different among fungicide programs (excluding the untreated check) and ranged from 3836 to 4268 lb/A. It can be common for defoliation above 50% to be associated with significant yield loss. In this study, while a fungicide program containing Provost Silver resulted in ~59% late leaf spot defoliation during the final assessment, its yield was not significantly different compared to other non-untreated treatments. In this trial, late leaf spot defoliation among fungicides programs (non-untreated treatments) increased above 3% relatively late within 19 days prior to harvest. This condition softens the relationship between end season defoliation and yield loss. The yield grouping observed in the present study may not apply to a condition where harvest needs to be delayed several days to a week due to adverse weather. Under those circumstances, fungicide programs associated with more effective leaf spot management overall would be anticipated to provide an advantageous buffer.

Treatment and amount/A	Timing[z]	Late leaf spot[y]			Stem rot	Yield (lb/A)[w]
		% incidence	% severity	% defoliation	% incidence[x]	
Untreated		100 a	100 a	100 a	1.0	2852 a
Alto 5.5 fl oz	1	15.3 c	12.4 d	0.7 c	0.8	4129 b
Bravo 16 fl oz	1					
Elatus 9.5 oz	3, 5					
Miravis 3.4 fl oz	3, 5					
Bravo 24 fl oz	2					
Alto 5.5 fl oz	1, 5	66.6 b	45.1 bc	13.0 c	0.8	4181 b
Bravo 16 fl oz	1, 5					
Priaxor 8 fl oz	2, 4					
Tebuzol 7.2 fl oz	3					
Bravo 24 fl oz	3, 6					
Alto 5.5 fl oz	1	66.3 b	41.8 bcd	12.3 c	0.3	3836 b
Bravo 16 fl oz	1					
Elatus 9.5 oz	2, 4					
Miravis 3.4 fl oz	2, 4					
Bravo 24 fl oz	6					
Alto 5.5 fl oz	1, 5	82 ab	70.3 ab	58.6 b	0.5	4084 b
Bravo 16 fl oz	1, 5					
Provost Silver 13 fl oz	2, 4					
Tebuzol 7.2 fl oz	3					
Bravo 24 fl oz	3, 6					
Alto 5.5 fl oz	1	15.4 c	17.8 cd	0.8 c	1.3	4298 b
Bravo 16 fl oz	1					
Elatus 8 oz	2, 4					
Miravis 3.4 fl oz	3					
Tebuzol 7.2 fl oz	3					
Bravo 24 fl oz	5, 6					

[z]Fungicide application dates: 1) 26 Jun, 2) 11 Jul, 3) 26 Jul, 4) 12 Aug, 5) 26 Aug, 6) 9 Sep.
[y]Percentage of symptomatic leaves (incidence), diseased leaf areas (severity) and total canopy defoliated (defoliation) in the two yield rows of the plot. Means in each column followed by the same letter are not significantly different according to Fisher's Protected LSD ($\alpha = 0.05$).
[x]Stem rot incidence expressed as number of disease loci per 80 ft row (1 locus = < 1 ft consecutive stem rot symptoms and signs).
[w]Yield data was modeled according to a negative binomial distribution with inverse-link means on the original scale presented. Means followed by the same letter are not significantly different according to Fisher's Protected LSD ($\alpha = 0.05$).