

PEANUT (*Arachis hypogaea* 'CHAMPS')
Leaf spot, late; *Cercosporidium personatum*
Stem rot; *Sclerotium rolfsii*

D. J. Anco, J. S. Thomas and
J. Chapin, Clemson University, Edisto
Research and Education Center, Blackville,
SC 29817

Evaluation of fungicide programs for peanut disease management, 2015.

'CHAMPS' peanuts were planted at a rate of 6 seed/ft on 13 May in Barnwell loamy sand. Rotation history was corn, cotton and peanut in 2014, 2013 and 2012, respectively. Plots were four 40-foot rows on 38 in. centers with treatments replicated 5 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 and nutrition. Fungicides were applied with two DG8002 nozzles/row (19-in. spacing) delivering 15 gal/A at 50 psi. Late leaf spot % canopy defoliation ratings were taken on 27 Aug and 21 Sep, and ratings of % of row exhibiting symptoms or signs of stem rot (based on loci counts per row where 1 locus was ≤ 1 ft of consecutive stem rot damaged plants or signs per row) were taken on 21 Sep immediately after inversion. Two yield rows per plot were combined on 19 Oct. 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 23.81 in. In May, Jun, July and Aug the rainfall was 3.49, 1.9, 2.58 and 0.72 in. below average, and in Sep and Oct rainfall was 1.47 and 4.66 in. above average, respectively. Average maximum air temperatures were 1.7, 3.1, 2.5 and 0.5°F above average in May, Jun, Jul and Aug and 1.4 and 2 °F below average in Sep and Oct, respectively. Average minimum air temperatures were near average in May and Aug and 1.4, 1.2, 2.2 and 1.3°F above average in Jun, Jul, Sep and Oct, respectively.

The trial site was exposed to high levels of late leaf spot disease pressure. Late leaf spot disease incidence was 100% on all treatments during both rating dates and as such was not included in the analysis. Stem rot disease pressure was essentially absent from half of the trial site. As such, over interpretation of efficacy of stem rot control is cautioned. The only treatments with significantly less stem rot compared to the untreated check were Bravo 24 fl oz/A + Elatus 7.14 fl oz/A + Induce 0.25% and Bravo 24 fl oz/A + Elatus 9.5 oz/A + Induce 0.25%. Highly variable and low irrigated yields were the result of nearly a month of weathering and deer damage after peanuts were inverted. The most severely deer damaged plots were excluded from the yield analysis (1 plot was severely affected for the following treatments: untreated check, Bravo 24 fl oz/A, Bravo 24 fl oz/A + Convoy 13 fl oz/A, Bravo 24 fl oz/A + Priaxor 6 fl oz/A, Bravo 24 fl oz/A + Orius 7.2 fl oz/A, and Bravo 24 fl oz/A + Elatus 7.14 oz/A + Induce 0.25% v/v 1 plot; 2 plots were severely affected for the following treatments: Bravo 24 oz/A + Provost 10.7 fl oz/A, and Bravo 24 fl oz/A + Abound 12 fl oz/A + Orius 7.2 fl oz/A; and 3 plots were severely affected for Bravo 24 fl oz/A + Elatus 9.5 oz/A + Induce 0.25% v/v). All treatments had significantly greater yield than the untreated check.

Treatment and amount/A	Application timing ^z	Leaf spot % defoliation 27 Aug 2015 ^y	Leaf spot % defoliation 21 Sep 2015 ^y	Stem rot % incidence ^x	Yield (lb/A)
Untreated check	Not applicable	85.6 a	97.0 a	11.0 ab	1454 e
Bravo Weather Stik SE 24 fl oz	ABCD	41.0 b	77.0 b	7.6 abc	2655 cd
Convoy 40 SC 13 fl oz	BCD				
Chlorothalonil 720 SE 24 fl oz	ABCD	36.4 b	66.0 bc	7.4 abc	2542 d
Orius 3.6F 7.2 fl oz	BCD				
Bravo Weather Stik SE 24 fl oz	ABCD	30.0 bc	67.0 bc	4.4 bc	2680 cd
Bravo Weather Stik SE 24 fl oz	A	22.0 cd	79.0 b	5.0 bc	3239 abc
Abound 2.08F 12 fl oz	BCD				
Orius 3.6F 7.2 fl oz	BCD				
Bravo Weather Stik SE 24 fl oz	ABCD	20.4 cd	52.0 cd	11.5 a	3085 abcd
Orius 3.6F 7.2 fl oz	BCD				
Bravo Weather Stik SE 24 fl oz	A	17.0 de	19.6 efg	5.9 abc	3646 ab
Priaxor 4.17F 6 fl oz	BCD				
Bravo Weather Stik SE 24 fl oz	A	12.8 de	24.0 ef	4.4 bc	3163 abc
Fontelis 1.67 SC 16 fl oz	BCD				
Bravo Weather Stik SE 24 fl oz	A	11.8 de	10.4 fgh	1.2 c	3669 a
Elatus 0.45 WG 7.14 oz wt	BCD				
Induce L 0.25% v/v	BCD				
Bravo Weather Stik SE 24 fl oz	ABCD	10.2 de	26.0 e	7.6 abc	2956 bcd
Orius 3.6F 7.2 fl oz	BCD				
System K L 32 fl oz	BCD				
Bravo Weather Stik SE 24 fl oz	A	7.4 e	45.0 d	4.4 bc	3135 abcd
Provost 433 SC 10.7 fl oz	BCD				
Bravo Weather Stik SE 24 fl oz	A	7.2 e	2.8 h	5.1 abc	3180 abc
Priaxor 4.17F 8 fl oz	BCD				
Bravo Weather Stik SE 24 fl oz	A	6.8 e	5.6 gh	4.2 c	3865 a
Elatus 0.45 WG 9.5 oz wt	BCD				
Induce L 0.25% v/v	BCD				

^zApplication timings correspond to A: 26 Jun 2015 (45 days after planting [DAP]), B:13 Jul 2015 (60 DAP), C: 28 Jul 2015 (75 DAP), D: 12 Aug 2015 (90 DAP).

^y Percentage of total canopy in the two yield rows of the plot defoliated.

^x Stem rot incidence expressed as the number of disease loci per 80 ft of row (1 locus = \leq 1 ft of consecutive symptoms and signs of the disease).

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