

PEANUT (*Arachis hypogaea* 'Georgia-06G')
Leaf spot, late; *Nothopassalora personata*
Stem rot; *Sclerotium rolfsii*

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Evaluation of Excalia for control of stem rot on 'Georgia-06G' peanut, 2019.

'Georgia-06G' peanut was planted on 23 April 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 rain fed and was grown to peanut the previous 15 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) and severity (% diseased leaf area) were rated on 26 Aug (125 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 10 Sep (140 DAP). Two yield rows of peanut per plot were inverted on 10 Sep and combined 17 Sep 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 21.4 in. In Apr, May, Jul and Sep the average of rainfall was 0.02, 0.07, 0.06 and 0.09 in. below average, and in Jun and Aug the average of rainfall was 0.11 and 0.14 in. above average, respectively. Average maximum air temperatures were 11.64 and 0.02°F below average in April and Jun, and 0.41, 4.64, 3.02 and 3.42°F above average in May, Jul, Aug and Sep, respectively. Average minimum temperatures were 12.22 and 0.40°F below average in April and May, and 1.55, 4.59, 4.92 and 1.42°F above average in Jun, July, Aug and Sep, respectively.

Overall, late leaf spot pressure was very low in the trial as incidence and severity in the untreated control were $\leq 10\%$ and $< 2\%$, respectively. Late leaf spot incidence and severity were significantly different among treatments ($P < 0.0001$). All fungicide programs resulted in significantly lower late leaf spot incidence and severity compared to untreated control. The low overall late leaf spot disease pressure may be attributed to the relatively dry weather during the trial. Stem rot incidence was significantly different among treatments ($P = < 0.0001$). No significant difference on the incidence of stem rot was observed between the untreated control and Bravo only treatment. With the exception of the fungicide program containing Convoy 24 fl oz at timings 5 & 10, all other fungicide programs had significantly less stem rot incidence ($< 16\%$) than the highest grouping (Bravo and untreated control). The fungicide program with the next highest stem rot incidence (15.4%) was the Provost Silver program. All other treatments including all Excalia treatments were in the grouping with the lowest statistical stem rot incidence ($< 12\%$). Yields were not significantly different among treatments ($P = 0.0729$) and ranged from 1135 to 1627 lb/A. The long history of poor rotation in the field combined with high levels of stem rot incidence and a dryland field during drought and heat stressed year may contribute to these poor yields.

| Treatment and amount/A | Timing ^z | Late leaf spot ^y | | Stem rot % incidence ^x | Yield (lb/A) ^w |
|-------------------------|------------------------|-----------------------------|------------|--------------------------------------|---------------------------|
| | | % incidence | % severity | | |
| Untreated | | 9.90 a | 1.88 a | 24.3 ab | 1460 |
| Bravo WS 24 fl oz | 1, 3, 5, 7, 10, 11, 12 | 0.40 b | 0.10 c | 31.8 a | 1489 |
| Bravo WS 24 fl oz | 1, 3, 7, 11, 12 | 0.30 b | 0.06 c | 9.3 de | |
| Alto 5.5 fl oz | 1, 11 | | | | |
| Elatius 9.5 oz | 5, 10 | | | | |
| Bravo WS 24 fl oz | 3, 6, 7, 11 | 0.08 b | 0.02 c | 11.8 de | 1494 |
| Toledo 3.60 7.2 fl oz | 3, 11 | | | | |
| Excalia 2 fl oz | 6, 7 | | | | |
| Bravo WS 24 fl oz | 2, 4, 8, 10, 11 | 1.13 b | 0.31 c | 4.6 e | 1593 |
| Toledo 3.60 7.2 fl oz | 2, 8, 11 | | | | |
| Excalia 3 fl oz | 4, 10 | | | | |
| Bravo WS 24 fl oz | 1, 3, 5, 7, 10, 11, 12 | 0.38 b | 0.08 c | 7.9 de | 1617 |
| Toledo 3.60 7.2 fl oz | 3, 11 | | | | |
| Excalia 2.65 fl oz | 1, 5, 10 | | | | |
| Bravo WS 24 fl oz | 1, 3, 5, 7, 10, 11, 12 | 0.19 b | 0.04 c | 5.4 e | 1558 |
| Toledo 3.60 7.2 fl oz | 1, 11 | | | | |
| Excalia 4 fl oz | 5, 10 | | | | |
| Bravo 24 fl oz | 1, 3, 5, 7, 10, 11, 12 | 0.31 b | 0.06 c | 5.7 e | 1627 |
| Convoy 32 fl oz fl oz | 5, 10 | | | | |
| Bravo 24 fl oz | 1, 3, 5, 7, 10, 11, 12 | 0.08 b | 0.02 c | 20.0 bc | 1135 |
| Convoy 24 fl oz | 5, 10 | | | | |
| Bravo 24 fl oz | 1, 3, 7, 11, 12 | 0.35 b | 0.10 c | 15.4 cd | 1412 |
| Provost Silver 13 fl oz | 5, 10 | | | | |

^zFungicide application dates: 1) 23 May, 2) 28 May, 3) 7 Jun, 4) 18 Jun, 5) 22 Jun, 6) 28 Jun, 7) 7 Jul, 8) 9 Jul, 9) 19 Jul, 10) 22 Jul, 11) 6 Aug, 12) 21 Aug.

^yPercentage of symptomatic leaves (incidence) and diseased leaf areas (severity) 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 ($\alpha = 0.05$).

^xStem rot incidence expressed as number of disease loci per 80 ft row (1 locus = < 1 ft consecutive stem rot symptoms and signs). Means followed by the same letter are not significantly different according to Fisher's Protected LSD ($\alpha = 0.05$).

^wYield data was modeled according to a negative binomial distribution with inverse-link means on the original scale presented.