

Evaluation of S2399 for control of late leaf spot and stem rot on 'Georgia 06G' peanut, 2018.

'Georgia 06G' peanuts were planted 2" deep on 1 May at rate of 5.5 seed/ft. Soil type was a Barnwell loamy sand. The trial was in a dryland field that had been in continuous peanut production for the last approximately 15 years. Plots were four 40-foot rows on 38 in. centers with treatments replicated 4 times and arranged according to a randomized completely 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 incidence (% symptomatic leaflets) and % canopy defoliation were rated on 28 Aug and 26 Sep, respectively. 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 27 Sep. Two yield rows of peanut per plot were dug and inverted on 27 Sep and harvested 4 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 25.9 in. In May, Jun and Aug the rainfall was 2.3, 1.2 and 1.0 in. below average, and in July and Sep rain fall was 1.9 and 2.5 in. above average, respectively. Average maximum air temperatures were 3.1 and 0.4°F below average in May and July, and 2.3, 0.9 and 0.1°F above average in Jun, Aug and Sep, respectively. Average minimum temperatures were 2.7°F below average in May, and 0.2, 1.2, 0.3 and 0.8°F above average in Jun, July, Aug and Sep, respectively.

Most fungicide programs resulted in low late leaf spot incidence corresponding to $\leq 11\%$ incidence (lowest statistical grouping). While some S2399 treatments (Bravo WS + 2 applications of S2399 4 fl oz and Bravo WS + 3 applications of S2399 2.65 fl oz at timing 1, 3, and 5) had statistically greater late leaf spot incidence than this lowest grouping, the treatment observed with the highest late leaf spot incidence included four applications of Convoy. Late leaf spot defoliation on 26 Sep was not significantly different among treatments. However, the general trend as seen with the previous disease incidence rating can be seen with the defoliation rating, in which the Convoy treatment had the numerically highest % defoliation. While numerically lower, the Bravo WS + Tebuconazole and Bravo WS + Convoy treatments were not significantly different from the Bravo-only control, in which each had $> 32\%$ stem rot incidence. Except for the Bravo WS + 2 applications of Elatus program, all remaining treatments were in the lower statistical grouping. The numerically lowest treatment was Bravo WS + 4 applications of S2399 2 fl oz, followed by Bravo WS + 3 applications of Elatus and several S2399 treatments, notably the Bravo WS + 2 applications of S2399 4 fl oz, and two programs of Bravo WS + 3 applications of S2399 2.65 fl oz (at timings 1, 3, 5 and 3, 4, 5) (stem rot incidence $< 18\%$). The program with Fontelis was at the upper end of the lower statistical grouping and was comparable to the Bravo WS + Provost + Convoy program. As overall late leaf spot defoliation levels were managed to a fairly low level, treatment yields closely followed corresponding stem rot incidences. All treatments had significantly greater yield compared to the Bravo check. While not statistically different, the Convoy program had numerically less yield than the Bravo WS + Tebuconazole program. All S2399 programs were in the upper grouping for yield (yield ≥ 4000 lb/A) with the numerically highest yield noted from the Bravo WS + 4 applications of S2399. Results from this trial support S2399 being a competitive stem rot product compare to Elatus applied at 7.3 oz/A and a more effective product compared to Fontelis or Convoy applied at 16 fl oz/A or tebuconazole.

| Treatment and amount/A | Timing ^z | Late leaf spot | | Stem rot % incidence ^w | Yield (lb/A) ^v |
|-------------------------|---------------------|--------------------------|----------------------------|-----------------------------------|---------------------------|
| | | % incidence ^y | % defoliation ^x | | |
| Bravo WS 24 fl oz | 1-7 | 4.5 d | 9.3 | 44.1 a | 2674 f |
| Bravo WS 24 fl oz | 1-7 | 31.3 a | 23.8 | 36.9 a | 3282 e |
| Convoy 16 fl oz | 3, 4, 5, 6 | | | | |
| Bravo WS 24 fl oz | 2, 4, 6, 7 | 2.8 d | 8.0 | 13.4 cd | 4540 ab |
| Elatus 7.3 oz wt | 1, 3, 5 | | | | |
| Bravo WS 24 fl oz | 1, 2, 4, 6, 7 | 7.8 cd | 8.0 | 24.1 bc | 3872 d |
| Elatus 7.3 oz wt | 3, 5 | | | | |
| Bravo WS 24 fl oz | 1, 2, 6, 7 | 8.0 cd | 9.8 | 21.9 bcd | 3760 d |
| Fontelis 16 fl oz | 3, 4, 5 | | | | |
| Bravo WS 24 fl oz | 1-7 | 6.8 cd | 6.5 | 10.0 d | 4752 a |
| S-2399 2 fl oz | 3, 4, 5, 6 | | | | |
| Bravo WS 24 fl oz | 1-7 | 16.3 bc | 8.0 | 17.2 cd | 4419 abc |
| S-2399 2.65 fl oz | 1, 3, 5 | | | | |
| Bravo WS 24 fl oz | 1-7 | 11.0 bcd | 8.5 | 14.7 cd | 4563 a |
| S-2399 2.65 fl oz | 3, 4, 5 | | | | |
| Bravo WS 24 fl oz | 1-7 | 9.0 cd | 10.5 | 20.0 cd | 4017 cd |
| S-2399 2 fl oz | 3, 5 | | | | |
| Bravo WS 24 fl oz | 1-7 | 19.3 b | 9.8 | 14.4 cd | 4553 a |
| S-2399 4 fl oz | 3, 5 | | | | |
| Bravo WS 24 fl oz | 1, 2, 4, 6, 7 | 8.0 cd | 10.8 | 21.6 bcd | 4063 bcd |
| Provost Opti 10.7 fl oz | 3, 5 | | | | |
| Convoy 16 fl oz | 3, 6 | | | | |
| Bravo WS 24 fl oz | 1-7 | 4.0 d | 10.0 | 33.4 ab | 3659 de |
| Tebuzol 7.2 fl oz | 3, 4, 5, 6 | | | | |

^zFungicide application dates: 1) 31 May, 2) 15 Jun, 3) 29 Jun, 4) 16 Jul, 5) 31 Jul, 6) 13 Aug, 7) 29 Aug.

^yPercentage of symptomatic leaflets.

^xPercentage of total canopy defoliated.

^wStem rot incidence expressed as number of disease loci per 80 ft row (1 locus = < 1 ft consecutive stem rot symptoms and signs).

^vYield 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 ($\alpha = 0.05$).