

2013 Evaluation of In-Furrow and Foliar Fungicides for Disease Control in Peanut in Jay, Florida¹

Darcy E. P. Telenko, John Atkins, Nick Dufault,²

This report includes a summary of the 2013 in-furrow and foliar fungicide programs for control of early and late leaf spot and white mold (southern stem rot) of peanut in Jay, Florida. It shows the effectiveness of 13 fungicide programs for disease control, as compared to no treatment. This data represents only one year and one location, and readers are cautioned that test results should be considered over several locations and years before final conclusions are valid.

Fungicide treatments, treatment rates, and application dates (see Table 1 for treatment schedule):

1. **Untreated check**
2. **Bravo:** BravoWS 1.5 pt. (30, 45, 60, 75, 90, 105 days after planting [DAP])
3. **Monsoon:** BravoWS 1.5 pt. (30, 45 DAP); Monsoon 7.2 fl. oz. + BravoWS 1 pt. (60, 75, 105 DAP); Convoy 13 oz. + BravoWS 1.5 pt. (90 DAP)
4. **Proline (F) + Provost/Convoy:** Proline SC 5.7 fl. oz. (F); Bravo WS 1.5 pt. (30, 45 DAP); Provost 433SC 8 fl. oz. (60, 75, 105 DAP); Convoy 13 oz. + BravoWS 1.5 pt. (90 DAP)
5. **Proline 30 DAP banded:** Proline SC 5.7 fl. oz. (30 DAP Banded); Provost 433SC 8 fl. oz. (60, 75, 105 DAP); Convoy 13 oz. + BravoWS 1.5 pt. (90 DAP)
6. **Proline 40 DAP banded:** Proline SC 5.7 fl. oz. (40 DAP Banded); Provost 433SC 8 fl. oz. (60, 75, 105 DAP); Convoy 13 oz. + BravoWS 1.5 pt. (90 DAP)
7. **Abound (F) + Provost:** Abound 2.08SC 10 fl. oz. (F); BravoWS 1.5 pt. (30, 45 DAP); Provost 433SC 8 fl. oz. (60, 75, 105 DAP); Convoy 13 oz. + BravoWS 1.5 pt. (90 DAP)
8. **Provost/Convoy:** BravoWS 1.5 pt. (30, 45 DAP); Provost 433SC 8 fl. oz. (60, 75, 105 DAP); Convoy 13 oz. + BravoWS 1.5 pt. (90 DAP)
9. **Convoy/Headline:** BravoWS 1.5 pt. (30, 45 DAP); Convoy 13 oz. + BravoWS 1.5 pt. (60, 75, 105 DAP); Convoy 13 oz. + Headline 6 fl. oz. (90 DAP)
10. **TiltBravo/Artisan:** TiltBravo 1.5 pt. (30, 45 DAP); Artisan 16 fl. oz. + BravoWS 1 pt. (60, 75, 90, 105 DAP)
11. **TiltBravo/Fontelis:** TiltBravo 1.5 pt. (30, 45 DAP); Fontelis 16 fl. oz. (60, 75, 105 DAP); BravoWS 1.5 pt. (90 DAP)
12. **Abound 3 times:** BravoWS 1.5 pt. (30, 45, 105 DAP); Abound 2.08SC 12 fl. oz. (60, 75, 90 DAP)

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13. **Alto/Convoy:** Alto 5.5 fl. oz. + Convoy 13 oz. (60, 90 DAP); Convoy 13 oz. + BravoWS 1.5 pt. (75, 105 DAP)

14. **Alto/Abound:** Alto 5.5 fl. oz. + Abound 12 oz. (60, 90 DAP); TiltBravo 1.5 pt. (75, 105 DAP)

2013 Growing Conditions and Experimental Design

The soil type was a Red Bay sandy loam that had a history of yield loss to white mold (southern stem rot). The field was planted in a rotation of cotton and peanut in 2012 and 2011, respectively. ‘Georgia-06G’ was planted at three seeds per foot in twin rows on 14 May. During planting, in-furrow treatments (F) were applied to the seed furrow at a volume of 20 gal./A using a microtube. A CO₂ backpack sprayer with nozzles 11002, at 3 mph and 20 psi, was used for both banded sprays (B) and foliar sprays. For banded sprays we used a single nozzle for each row, and for foliar sprays we used two nozzles per row spaced 12 inches apart on a four-foot boom. The initial application was at 30 days after planting (DAP) and thereafter according to each spray program (15-day spray). For resistance management, at 120 DAP 1.5 pt./A of BravoWS was applied to all but the untreated plots. Standard practices for production of runner-type peanuts were followed throughout the growing season. For post-emergence weed control, 1 qt./A of Stealth was applied on 20 May, and 4 oz./A of Cadre + 0.45 oz./A of Strongarm was applied on 26 June. For insect control at planting, 7.5 lb./A of Thimet was applied. Plots consisted of four 25-ft. rows spaced 3 ft. apart and treatments were replicated in four randomized complete blocks. Disease incidence and yield data were collected from two center rows in each plot. Peanuts were dug on 9 October and harvested on 14 October. Whole pods were dried to approximately 9% moisture and weighed to determine yield. Rainfall in May, June, and October was 7.1 in., 0.74 in., and 4.21 in. below normal, respectively; rainfall in July, August, and September was 5.23 in., 1.37 in., and 3.65 in. above normal, respectively. Rainfall during the entire study period totaled 33.23 in., which was 1.61 in. below normal. Weather data was obtained from the Florida Automated Weather Network (FAWN) station located on the Jay research farm, and “normal” represents the mean for the past 54 years of records (Table 2).



Summary

Fungicide programs did not affect peanut stand counts on the 30 May (Table 3). No significant differences for incidence of *Tomato spotted wilt virus* (TSWV) were detected between fungicide programs on 19 July and 12 August. On 29 July, the program containing BravoWS 1.5 pt./A and the program containing TiltBravo 1.5 pt./A followed by Artisan 16 fl. oz./A + BravoWS 1.5 pt./A had significantly more TSWV than the program containing Proline SC 5.7 fl. oz. banded and the programs containing Alto 5.5 fl. oz./A (Table 3).

Early leaf spot (*Cercospora arachidicola*) and late leaf spot (*Cercosporidium personatum*) were detected in the trial. In the untreated plots, greater than 80% of the leaves were infected, resulting in 85% defoliation by 20 September (Table 4). The BravoWS-only program reduced the incidence of leaf spot and improved defoliation compared with the untreated program, but it still had 50% infection and 36% defoliation (Table 4). All programs significantly reduced leaf spot (FL scale and % infected) compared to both untreated plots and plots treated with the BravoWS-only program on 12 August and 26 August (Tables 3 and 4).

These fungicide programs had 40% or less leaf spot incidence by 3 October (Table 4):

- All programs with Provost and Convoy
- TiltBravo and Artisan
- Alto+Convoy
- Alto+Abound

These fungicide programs had 3% or less defoliation on 20 September (Table 4):

- Proline 5.7 fl. oz./A banded 30 DAP followed by Provost 8 fl. oz./A and Convoy 13 oz./A + BravoWS 1.5 pt./A
- Proline 5.7 fl. oz./A banded 40 DAP followed by Provost 8 fl. oz./A and Convoy 13 oz./A + BravoWS 1.5 pt./A

- Abound 10 fl. oz./A in-furrow followed by BravoWS 1.5 pt./A, Provost 8 fl. oz./A and Convoy 13 oz./A + BravoWS 1.5 pt./A
- BravoWS 1.5 pt./A followed by Provost 8 fl. oz./A and Convoy 13 oz./A + BravoWS 1.5 pt./A
- Alto 5.5 fl. oz./A + Convoy 13 oz./A followed by Convoy 13 oz./A + BravoWS 1.5 pt./A
- Alto 5.5 fl. oz./A + Abound 12 fl. oz./A followed by TiltBravo 1.5 pt./A

White mold (*Sclerotium rolfsii*) was first detected in the trial on 19 July. All programs significantly reduced white mold compared to untreated plots from 29 July until 3 October. Total white mold during the season was measured by calculating area under disease progress curve (AUDPC) and taking diseased root ratings after digging on 9 October (Table 5). During the duration of the study, all fungicide programs that included alternative modes of action for white mold control also reduced white mold incidence on 20 September, AUDPC, and root infection better than the chlorothalonil (BravoWS 1.5 pt./A) program (Table 5).

Two programs had similar white mold incidence on 3 October as the chlorothalonil (BravoWS 1.5 pt./A) program (Table 5):

- Abound 10 fl. oz./A in-furrow, BravoWS 1.5 pt./A, Provost 8 fl. oz./A and Convoy 13 oz./A + BravoWS 1.5 pt./A
- BravoWS 1.5 pt./A and Abound 12 fl. oz./A

These programs had lowest amount of white mold on 3 October, AUDPC, and root rot (Table 5):

- Alto 5.5 fl. oz./A + Abound 12 fl. oz./A and TiltBravo 1.5 pt./A
- Proline 5.7 fl. oz./A in-furrow, banded at 30 DAP and 40 DAP programs
- BravoWS 1.5 pt./A, Provost 8 fl. oz./A, and Convoy 13 oz./A + BravoWS 1.5 pt./A
- BravoWS 1.5 pt./A, Convoy 13 oz./A + BravoWS 1.5 pt./A, Convoy 13 oz./A + Headline 6 fl. oz./A
- TiltBravo 1.5 pt./A and Artisan 16 fl. oz./A + BravoWS 1 pt./A
- Alto 5.5 fl. oz./A + Convoy 13 oz./A and Convoy 13 oz./A + BravoWS 1.5 pt./A programs.

Yield of peanut in the untreated plot was 2,056 lb./A with a value and net return of \$514 (value based on \$500/ton of peanuts or \$0.25/lb.).

These programs were the highest yielding with a net return greater than \$1,150/A (Table 6):

- BravoWS 1.5 pt./A, Provost 8 fl. oz./A, and Convoy 13 oz./A + BravoWS 1.5 pt./A was the highest-yielding at 6,000 lb./A and had the greatest value (\$1500) and net return (\$1422).
- Proline 5.7 fl. oz./A in-furrow or banded 30 or 40 DAP followed by Provost 8 fl. oz./A, and Convoy 13 oz./A + BravoWS 1.5 pt./A
- Abound 10 fl. oz./A in-furrow followed by Provost 8 fl. oz./A, and Convoy 13 oz./A + BravoWS 1.5 pt./A
- BravoWS 1.5 pt./A, Convoy 13 oz./A + BravoWS 1.5 pt./A, and Convoy 13 oz./A + Headline 6 fl. oz./A
- Alto 5.5 fl. oz./A + Abound 12 fl. oz./A and TiltBravo 1.5 pt./A

The remaining programs did not significantly improve yield over the BravoWS only program and had values that ranged from \$952 to \$1,202/A, and net returns of \$880 and \$1,125/A. (Table 6).

Table 1. Fungicide Programs, Date/Number of Days after Planting (DAP) Fungicides Were Applied, and Rate of Application per Acre.

Treatment Name (See footnote for active ingredients and manufacturers)	In-furrow 15 May Stem Rot	30 DAP 14 June Leaf Spot	40 DAP 24 June Stem Rot	45 DAP 28 June Leaf Spot	60 DAP 15 July Stem Rot	75 DAP 30 July Leaf Spot	90 DAP 13 August Stem Rot	105 DAP 30 August Leaf Spot	120 DAP 11 September Leaf Spot
Untreated Control									
Bravo		BravoWS 1.5 pt.		BravoWS 1.5 pt.	BravoWS 1.5 pt.	BravoWS 1.5 pt.	BravoWS 1.5 pt.	BravoWS 1.5 pt.	BravoWS 1.5 pt.
Monsoon		BravoWS 1.5 pt.		BravoWS 1.5 pt.	Monsoon 7.2 fl. oz. + BravoWS 1 pt.	Monsoon 7.2 fl. oz. + BravoWS 1 pt.	Convoy 13 oz. + BravoWS 1.5 pt.	Monsoon 7.2 fl. oz. + BravoWS 1 pt.	BravoWS 1.5 pt.
Proline (F) + Provost/Convoy	Proline SC 5.7 fl. oz. (F)	BravoWS 1.5 pt.		BravoWS 1.5 pt.	Provost 433 SC 8 fl. oz.	Provost 433 SC 8 fl. oz.	Convoy 13 oz. + BravoWS 1.5 pt.	Provost 433 SC 8 fl. oz.	BravoWS 1.5 pt.
Proline 30DAP banded (B)*		Proline SC 5.7 fl. oz. (B)			Provost 433 SC 8 fl. oz.	Provost 433 SC 8 fl. oz.	Convoy 13 oz. + BravoWS 1.5 pt.	Provost 433 SC 8 fl. oz.	BravoWS 1.5 pt.
Proline 40DAP banded (B)			Proline SC 5.7 fl. oz. (B)		Provost 433 SC 8 fl. oz.	Provost 433 SC 8 fl. oz.	Convoy 13 oz. + BravoWS 1.5 pt.	Provost 433 SC 8 fl. oz.	BravoWS 1.5 pt.
Abound (F) + Provost	Abound 2.08 SC 10 fl. oz. (F)	BravoWS 1.5 pt.		BravoWS 1.5 pt.	Provost 433 SC 8 fl. oz.	Provost 433 SC 8 fl. oz.	Convoy 13 oz. + BravoWS 1.5 pt.	Provost 433 SC 8 fl. oz.	BravoWS 1.5 pt.
Provost/Convoy		BravoWS 1.5 pt.		BravoWS 1.5 pt.	Provost 433 SC 8 fl. oz.	Provost 433 SC 8 fl. oz.	Convoy 13 oz. + BravoWS 1.5 pt.	Provost 433 SC 8 fl. oz.	BravoWS 1.5 pt.
Convoy/Headline		BravoWS 1.5 pt.		BravoWS 1.5 pt.	Convoy 13 oz. + BravoWS 1.5 pt.	Convoy 13 oz. + BravoWS 1.5 pt.	Convoy 13 oz. + Headline 6 fl. oz.	Convoy 13 oz. + BravoWS 1.5 pt.	BravoWS 1.5 pt.
TiltBravo/Artisan		TiltBravo 1.5 pt.		TiltBravo 1.5 pt.	Artisan 16 fl. oz. + BravoWS 1 pt.	Artisan 16 fl. oz. + BravoWS 1 pt.	Artisan 16 fl. oz. + BravoWS 1 pt.	Artisan 16 fl. oz. + BravoWS 1 pt.	BravoWS 1.5 pt.
TiltBravo/Fontelis		TiltBravo 1.5 pt.		TiltBravo 1.5 pt.	Fontelis 16 fl. oz.	Fontelis 16 fl. oz.	BravoWS 1.5 pt.	Fontelis 16 fl. oz.	BravoWS 1.5 pt.
Abound 3 times		BravoWS 1.5 pt.		BravoWS 1.5 pt.	Abound 2.08 SC 12 fl. oz.	Abound 2.08 SC 12 fl. oz.	Abound 2.08 SC 12 fl. oz.	BravoWS 1.5 pt.	BravoWS 1.5 pt.

Treatment Name (See footnote for active ingredients and manufacturers)	In-furrow 15 May Stem Rot	30 DAP 14 June Leaf Spot	40 DAP 24 June Stem Rot	45 DAP 28 June Leaf Spot	60 DAP 15 July Stem Rot	75 DAP 30 July Leaf Spot	90 DAP 13 August Stem Rot	105 DAP 30 August Leaf Spot	120 DAP 11 September Leaf Spot
Alto/Convoy					Alto 5.5 fl. oz. + Convoy 13 oz.	Convoy 13 oz. + BravoWS 1.5 pt.	Alto 5.5 fl. oz. + Convoy 13 oz.	Convoy 13 oz. + BravoWS 1.5 pt.	BravoWS 1.5 pt.
Alto/Abound					Alto 5.5 fl. oz. + Abound 2.08 SC 18.5 fl. oz.	TiltBravo 1.5 pt.	Alto 5.5 fl. oz. + Abound 2.08 SC 18.5 fl. oz.	TiltBravo 1.5 pt.	BravoWS 1.5 pt.

Active ingredient (trade name – manufacturer).
Chlorothalonil (BravoWS – Syngenta); tebuconazole (Monsoon – Loveland Products); flutolanil (Convoy – Nichino America); prothioconazole (Proline 4805C – Bayer CropSciences);
prothioconazole+tebuconazole (Provost 433SC – Bayer CropSciences); azoxystrobin (Abound 2.08SC – Syngenta); pyraclostrobin (Headline – BASF Crop Protection);
propiconazole+chlorothalonil (Tilt Bravo – Syngenta); flutolanil+propiconazole (Artisan – Nichino America); penthiopyrad (Fontelis –DuPont); cyproconazole (Alto – Syngenta)
*Banded sprays (B) were applied with a single noz.zle directly over the peanut row.

Table 2. Weather conditions during 2013 in Jay, Florida

Month	Total rainfall (in.)	Average minimum air temperature (°F)	Average maximum air temperature (°F)
May	0.7 (7.1 below normal*)	43.0	91.8
June	5.8 (0.7 below normal)	65.5	93.8
July	11.8 (5.2 above normal)	67.6	92.9
August	5.5 (1.4 above normal)	67.5	95.2
September	8.0 (3.7 above normal)	58.6	93.7
October	1.7 (4.2 below normal)	38.0	88.1

* Normal represents the mean for the past 54 years of records.

Table 3. Effect of treatment on peanut stand, Tomato spotted wilt virus, and early leaf spot.

Treatment and rate/A	Application timing ^y	Stand Count Plants/ft. ^w	TSWV ^x				Early leaf spot (FL scale) ^y				Early leaf spot (%)		
			19 Jul	29 Jul	12 Aug		19 Jul	29 Jul	12 Aug		19 Jul	29 Jul	12 Aug
Untreated check		4.8		0.8 a-d ^z	0.3	2.0 a	3.0 a	5.0 a		0.9 a	6.5 a	27.5 a	
BravoWS 1.5 pt.	1, 3-7	4.4		2.3 a	0.8	2.0 a	2.3 b	3.5 b		0.9 a	2.3 bc	12.0 b	
BravoWS 1.5 pt. Monsoon 7.2 fl. oz. + BravoWS 1 pt. Convoy 13 oz. + BravoWS 1.5 pt.	1, 3 4, 5, 7 6	4.6		0.3 c-d	1.0	2.0 a	1.8 c	2.8 c		0.5 b	0.5 c	6.8 c	
Proline SC 5.7 fl. oz. (F) Bravo WS 1.5 pt. Provost 433SC 8 fl. oz. Convoy 13 oz. + BravoWS 1.5 pt.	at planting 1, 3 4, 5, 7 6	4.7		2.0 ab	0.8	2.0 a	2.0 bc	2.8 c		0.5 b	0.6 c	6.8 c	
Proline SC 5.7 fl. oz. (banded) Provost 433SC 8 fl. oz. Convoy 13 oz. + BravoWS 1.5 pt.	1 4, 5, 7 6	4.6		1.3 a-d	0.5	2.0 a	2.0 bc	2.3 cd		0.5 b	0.5 c	3.5 cd	
Proline SC 5.7 fl. oz. (banded) Provost 433SC 8 fl. oz. Convoy 13 oz. + BravoWS 1.5 pt.	2 4, 5, 7 6	4.6		0.5 b-d	0.8	1.5 b	1.8 c	2.0 d		0.1 c	0.5 c	2.0 cd	
abound 2.08SC 10 fl. oz. (F) BravoWS 1.5 pt. Provost 433SC 8 fl. oz. Convoy 13 oz. + BravoWS 1.5 pt.	at planting 1, 3 4, 5, 7 6	5.0		0.8 a-d	1.0	2.0 a	2.3 b	2.3 cd		0.5 b	1.1 c	2.6 cd	
BravoWS 1.5 pt. Provost 433SC 8 fl. oz. Convoy 13 oz. + BravoWS 1.5 pt.	1, 3 4, 5, 7 6	4.5		2.0 ab	0.8	2.0 a	2.0 bc	2.0 d		0.5 b	0.6 c	1.6 d	
BravoWS 1.5 pt. Convoy 13 oz. + BravoWS 1.5 pt.	1, 3 4, 5, 7 6	4.7		1.0 a-d	1.0	2.0 a	2.0 bc	2.5 cd		0.5 b	0.6 c	4.4 cd	
TiltBravo 1.5 pt. Artisan 16 fl. oz. + BravoWS 1 pt.	1, 3 4, 5, 6, 7	4.7		2.3 a	1.5	2.0 a	2.0 bc	2.5 cd		0.5 b	0.6 c	6.8 c	
TiltBravo 1.5 pt. Fontelis 16 fl. oz. BravoWS 1.5 pt.	1, 3 4, 5, 7 6	4.2		1.8 a-c	0.8	2.0 a	1.8 c	2.5 cd		0.6 ab	0.5 c	5.8 cd	
BravoWS 1.5 pt. Abound 2.08SC 12 fl. oz.	1, 3, 7 4, 5, 6	4.5		1.3 a-d	0.3	1.8 a	2.0 bc	2.3 cd		0.4 bc	0.5 c	2.5 cd	
Alto 5.5 fl. oz. + Convoy 13 oz. Convoy 13 oz. + BravoWS 1.5 pt.	4, 6 5, 7	-		0.5 b-d	0.5	-	2.8 a	2.3 cd		-	3.5 b	3.1 cd	
Alto 5.5 fl. oz. + Abound 12 fl. oz. TiltBravo 1.5 pt.	4, 6 5, 7	-		0.0 d	0.0	-	2.0 bc	2.0 d		-	1.3 c	1.9 cd	
P>F		0.9156	0.8054	.0493	0.7359	0.0002	.0001	0.0001	0.0213	.0001	0.0001	0.0001	

^xApplication timing 1, 2, 3, 4, 5, 6, 7 corresponds to 30, 40, 45, 60, 75, 90, 105 days after planting (DAP). ^wDetermined from counts of two 25-ft. rows per plot. ^yNumber of plants per plot with symptoms of Tomato spotted wilt virus. ^zEarly and late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease; 10 = completely dead plants). ^zMeans followed by the same letter(s) in a column are not significantly different according to Fisher's Protected LSD (P=0.05).

Table 4. Effect of treatment on early and late leaf spot and defoliation.

Treatment and rate/A	Application Timing*	Leaf spot (FL scale)**				Leaf spot (%)			% defoliation (20 Sep)
		26 Aug	20 Sep	3 Oct	26 Aug	20 Sep	3 Oct		
Untreated check		45.0 a	7.3 a	8.3 a	5.0 a	88.8 a	82.5 a	85.0 a	
BravoWS 1.5 pt.	1, 3-7	13.8 b	5.3 b	5.3 b	3.5 b	55.0 b	53.8 b	36.3 b	
BravoWS 1.5 pt. Monsoon 7.2 fl. oz. + BravoWS 1 pt. Convoy 13 oz. + BravoWS 1.5 pt.	1, 3 4, 5, 7 6	7.3 c	4.5 bc	5.0 b	2.8 cd	40.0 bc	57.3 bc	17.5 c	
Proline SC 5.7 fl. oz. (F) Bravo WS 1.5 pt. Provost 4335C 8 fl. oz. Convoy 13 oz. + BravoWS 1.5 pt.	at planting 1, 3 4, 5, 7 6	4.5 cd	4.0 c-e	4.0 cd	2.5 c-e	21.3 de	40.0 c-e	12.8 c-e	
Proline SC 5.7 fl. oz. (banded) Provost 4335C 8 fl. oz. Convoy 13 oz. + BravoWS 1.5 pt.	1 4, 5, 7 6	1.8 d	3.3 ef	4.0 cd	2.3 de	9.0 e	36.3 de	2.0 e	
Proline SC 5.7 fl. oz. (banded) Provost 4335C 8 fl. oz. . Convoy 13 oz. + BravoWS 1.5 pt.	2 4, 5, 7 6	2.8 cd	2.8 f	3.8 cd	2.0 e	8.3 e	32.5 d-f	0.8 e	
Abound 2.08SC 10 fl. oz. (F) BravoWS 1.5 pt. Provost 4335C 8 fl. oz. Convoy 13 oz. + BravoWS 1.5 pt.	at planting 1, 3 4, 5, 7 6	4.0 cd	3.3 ef	4.0 cd	2.5 c-e	9.5 e	35.0 de	1.5 e	
BravoWS 1.5 pt. Provost 4335C 8 fl. oz. Convoy 13 oz. + BravoWS 1.5 pt.	1, 3 4, 5, 7 6	2.0 d	3.3 ef	3.5 d	2.3 de	8.3 e	35.0 de	2.0 e	
BravoWS 1.5 pt. Convoy 13 oz. + BravoWS 1.5 pt. Convoy 13 oz. + Headline 6 fl. oz..	1, 3 4, 5, 7 6	6.5 cd	4.0 c-e	4.0 cd	2.8 cd	30.0 cd	41.3 b-e	12.0 c-e	
TiltBravo 1.5 pt. Artisan 16 fl. oz. + BravoWS 1 pt.	1, 3 4, 5, 6, 7	5.0 cd	4.5 bc	4.0 cd	2.8 cd	36.3 cd	40.0 c-e	18.8 c	
TiltBravo 1.5 pt. Fontelis 16 fl. oz. BravoWS 1.5 pt.	1, 3 4, 5, 7 6	4.8 cd	4.3 cd	4.5 bc	3.0 bc	28.8 cd	43.8 b-d	16.5 c	
BravoWS 1.5 pt. Abound 2.08SC 12 fl. oz.	1, 3, 7 4, 5, 6	2.5 cd	4.8 bc	4.5 bc	2.8 cd	33.8 cd	41.3 b-e	15.0 cd	
Alto 5.5 fl. oz. + Convoy 13 oz. Convoy 13 oz. + BravoWS 1.5 pt.	4, 6 5, 7	2.8 cd	3.5 d-f	3.8 cd	2.3 de	12.5 e	30.0 ef	3.0 de	
Alto 5.5 fl. oz. + Abound 12 fl. oz. TiltBravo 1.5 pt.	4, 6 5, 7	2.5 cd	3.3 ef	3.3 d	2.3 de	8.9 e	21.3 f	1.0 e	
P>F		0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	

* Application timing 1, 2, 3, 4, 5, 6, 7 corresponds to 30, 40, 45, 60, 75, 90, 105 days after planting (DAP).

** Early and late leaf spot were assessed using the Florida leaf spot scoring system (1= no disease; 10 = completely dead plants).

Means followed by the same letter(s) in a column are not significantly different according to Fisher's Protected LSD (P=0.05).

Table 5. Effect of treatment on white mold (southern stem rot, *Sclerotium rolfsii*).

Treatment and rate/A	Application timing*	White mold (Southern stem rot)**							White mold AUDPC	White mold root 9 Oct	Yield (lb./A)
		19 Jul	29 Jul	12 Aug	26 Aug	20 Sep	3 Oct				
Untreated check		1.5	2.8 a	6.5 a	8.0 a	13.3 a	14.3 a	643 a	34.3 a	2056 f	
BravoWS 1.5 pt.	1, 3-7	1.0	0.3 b	3.5 b	4.5 b	13.3 a	9.5 b	467 b	19.5 b	3792 e	
BravoWS 1.5 pt. Monsoon 7.2 fl. oz. + BravoWS 1 pt. Convoy 13 oz. + BravoWS 1.5 pt.	1, 3 4, 5, 7 6	0.3	0.3 b	2.8 bc	1.8 c	6.5 b	5.8 c-e	242 c	5.3 cd	3944 de	
Proline SC 5.7 fl. oz. (F) Bravo WS 1.5 pt. Provost 4335C 8 fl. oz. Convoy 13 oz. + BravoWS 1.5 pt.	at planting 1, 3 4, 5, 7 6	0.8	0.5 b	2.3 bc	1.0 c	3.8 b-d	4.0 c-f	160 c-e	5.5 cd	4960 b-d	
Proline SC 5.7 fl. oz. (banded) Provost 4335C 8 fl. oz. Convoy 13 oz. + BravoWS 1.5 pt.	1 4, 5, 7 6	0.5	0.3 b	2.3 bc	0.5 c	3.5 cd	2.3 ef	130 de	3.0 d	5184 a-c	
Proline SC 5.7 fl. oz. (banded) Provost 4335C 8 fl. oz. Convoy 13 oz. + BravoWS 1.5 pt.	2 4, 5, 7 6	0.0	0.3 b	2.3 bc	0.8 c	4.0 b-d	3.5 d-f	150 c-e	3.8 d	4912 b-d	
Around 2.08SC 10 fl. oz. (F) BravoWS 1.5 pt. Provost 4335C 8 fl. oz. Convoy 13 oz. + BravoWS 1.5 pt.	at planting 1, 3 4, 5, 7 6	0.8	0.8 b	2.5 bc	1.8 c	4.5 bc	6.0 b-d	210 cd	4.0 d	5144 a-c	
BravoWS 1.5 pt. Provost 4335C 8 fl. oz. Convoy 13 oz. + BravoWS 1.5 pt.	1, 3 4, 5, 7 6	0.5	0.0 b	2.0 bc	1.0 c	3.0 cd	4.0 c-f	135 c-e	2.0 d	6000 a	
BravoWS 1.5 pt Convoy 13 oz. + BravoWS 1.5 pt. Convoy 13 oz. + Headline 6 fl. oz..	1, 3 4, 5, 7 6	0.0	0.5 b	2.8 bc	0.5 c	2.5 cd	1.8 f	115 de	4.3 cd	5040 a-c	
TiltBravo 1.5 pt. Artisan 16 fl. oz. + BravoWS 1 pt.	1, 3 4, 5, 6, 7	1.0	0.3 b	2.3 bc	1.5 c	3.8 b-d	4.3 c-f	170 c-e	6.8 cd	4352 c-e	
TiltBravo 1.5 pt. Fontelis 16 fl. oz. BravoWS 1.5 pt. Around 2.08SC 12 fl. oz..	1, 3 4, 5, 7 6	1.5	0.5 b	2.3 bc	2.5 bc	3.5 cd	4.3 c-f	191 cd	3.8 d	4616 b-e	
BravoWS 1.5 pt. Alto 5.5 fl. oz. + Convoy 13 oz.	1, 3, 7 4, 5, 6	1.5	0.0 b	1.0 c	2.5 bc	4.8 bc	7.3 bc	211 cd	9.5 c	4808 b-e	
Alto 5.5 fl. oz. + Convoy 13 oz. Convoy 13 oz. + BravoWS 1.5 pt.	4, 6 5, 7	-	0.5 b	2.3 bc	1.3 c	2.8 cd	1.8 f	128 de	4.0 d	3808 e	
Alto 5.5 fl. oz. + Around 12 fl. oz. TiltBravo 1.5 pt.	4, 6 5, 7	-	0.0 b	1.8 bc	0.5 c	1.5 d	2.0 f	77 e	2.5 d	5496 ab	
P>F		0.2600	<.0001	0.0214	0.001	0.0001	0.0001	0.0001	0.001	0.0001	

*Application timing 1, 2, 3, 4, 5, 6, 7 corresponds to 30, 40, 45, 60, 75, 90, 105 days after planting (DAP). **Counts of infection centers in the two center rows of each plot, which amounted to a total of 50 ft. per row. An infection center was a point in which symptoms and signs of white mold (*Sclerotium rolfsii*) were found and include the 6 in. on either side of that point. Means followed by the same letter(s) in a column are not significantly different according to Fisher's Protected LSD (P=0.05).

Table 6. Effect of treatment on peanut yield and value.

Treatment and rate/A	Application timing ^x	Yield (lb/A)	Value (\$/A) ^y	Fungicide cost (\$/A)	Net return (\$/A) ^z
Untreated check		2056 f	514 f	0.00	514 f
BravoWS 1.5 pt.	1, 3–7	3792 e	948 e	43.20	905 c–e
BravoWS 1.5 pt. Monsoon 7.2 fl. oz. + BravoWS 1 pt. Convoy 13 oz. + BravoWS 1.5 pt.	1, 3 4, 5, 7 6	3944 de	986 de	67.01	919 de
Proline SC 5.7 fl. oz. (F) Bravo WS 1.5 pt. Provost 433SC 8 fl. oz. Convoy 13 oz. + BravoWS 1.5 pt.	at planting 1, 3 4, 5, 7 6	4960 b–d	1240 b–d	102.06	1138 b–e
Proline SC 5.7 fl. oz. (banded) Provost 433SC 8 fl. oz. Convoy 13 oz. + BravoWS 1.5 pt.	1 4, 5, 7 6	5184 a–c	1296 a–c	89.72	1206 a–c
Proline SC 5.7 fl. oz. (banded) Provost 433SC 8 fl. oz. Convoy 13 oz. + BravoWS 1.5 pt.	2 4, 5, 7 6	4912 b–d	1228 b–d	89.72	1138 b–e
Abound 2.08SC 10 fl. oz. (F) BravoWS 1.5 pt. Provost 433SC 8 fl. oz. Convoy 13 oz. + BravoWS 1.5 pt.	at planting 1, 3 4, 5, 7 6	5144 a–c	1286 a–c	92.54	1194 a–d
BravoWS 1.5 pt. Provost 433SC 8 fl. oz. Convoy 13 oz. + BravoWS 1.5 pt.	1, 3 4, 5, 7 6	6000 a	1500 a	78.02	1422 a
BravoWS 1.5 pt. Convoy 13 oz. + BravoWS 1.5 pt. Convoy 13 oz. + Headline 6 fl. oz.	1, 3 4, 5, 7 6	5040 a–c	1260 a–c	97.53	1163 b–e
TiltBravo 1.5 pt. Artisan 16 fl. oz. + BravoWS 1 pt.	1, 3 4, 5, 6, 7	4352 c–e	1088 c–e	100.26	988 c–e
TiltBravo 1.5 pt. Fontelis 16 fl. oz. BravoWS 1.5 pt.	1, 3 4, 5, 7 6	4616 b–e	1154 b–e	105.66	1048 c–e
BravoWS 1.5 pt. Abound 2.08SC 12 fl. oz.	1, 3, 7 4, 5, 6	4808 b–e	1202 b–e	76.96	1125 b–e
Alto 5.5 fl. oz. + Convoy 13 oz. Convoy 13 oz. + BravoWS 1.5 pt.	4, 6 5, 7	3808 e	952 e	72.24	880 e
Alto 5.5 fl. oz. + Abound 12 fl. oz. TiltBravo 1.5 pt.	4, 6 5, 7	5496 ab	1374 ab	60.90	1313 ab
<i>P>F</i>		0.0001	0.0001	-	0.0001

^xApplication timing 1, 2, 3, 4, 5, 6, 7 corresponds to 30, 40, 45, 60, 75, 90, 105 days after planting (DAP).

^yValue based on \$500/ton of peanuts (\$0.25 per lb.).

^zNet return = Value (\$/A) – Fungicide cost (\$/A).

Means followed by the same letter(s) in a column are not significantly different according to Fisher's Protected LSD (P=0.05).