Peanut Disease Control Field Trials
2014

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ALABAMA AGRICULTURAL EXPERIMENT STATION

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A.K. Hagan, K.L. Bowen, and H.L. Campbell

INTRODUCTION

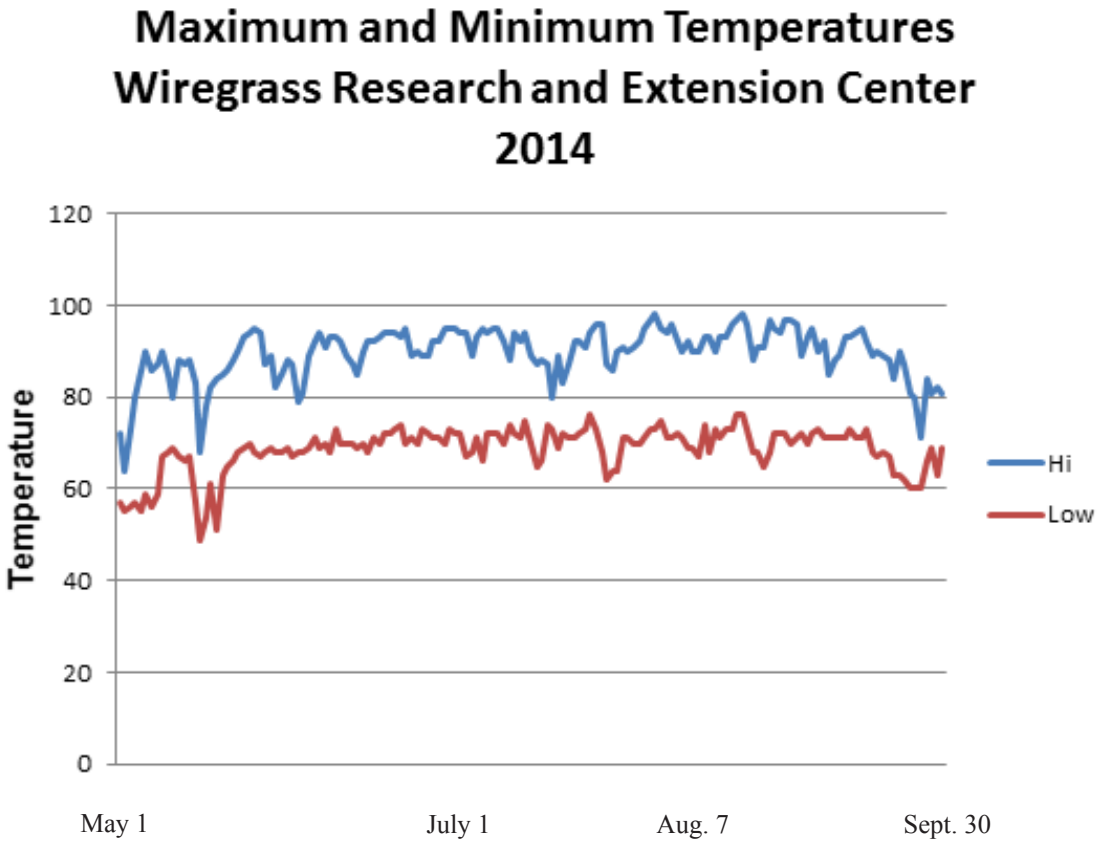
Fungicides, cultural practices, and resistant cultivars are available for the control of damaging diseases and nematode pests that can limit peanut yield. A management program that incorporates these practices can enhance the control of diseases and nematode pests and can increase crop yield and profit potential.

In order to provide timely information concerning disease management practices, Alabama Agricultural Experiment Station personnel conducted foliar and soil-borne disease, as well as nematode control trials at the Wiregrass Research and Extension Center (WREC) in Headland, Alabama, and at the Gulf Coast Research and Extension Center (GCREC) in Fairhope, Alabama. This report summarizes the results of those trials.

During the 2014 production season, at the WREC, temperatures were near normal historical averages (Fig. 1) and monthly rainfall totals were at or above normal historical averages throughout the entire growing season (Fig. 2). As a result of the higher than normal rainfall in September, leaf spot severity increased exponentially in all trials and soil-borne disease incidence was higher to that observed in previous years due to higher soil temperatures and rainfall and this adversely affected yield.

At the GCREC, temperatures were near historical averages throughout the entire growing season (Fig. 1) and rainfall totals were at or above normal throughout the entire growing season (Fig. 2). Less than normal rainfall throughout during the growing season in August and September decreased leaf spot severity throughout the season. Despite rainfall, rust never developed in the plots. Despite the high temperatures and rainfall, stem rot incidence was lower than had been previously observed and yield was not negatively impacted in most plots.

Figure 1. Daily maximum and minimum temperatures from May 1 – September 30



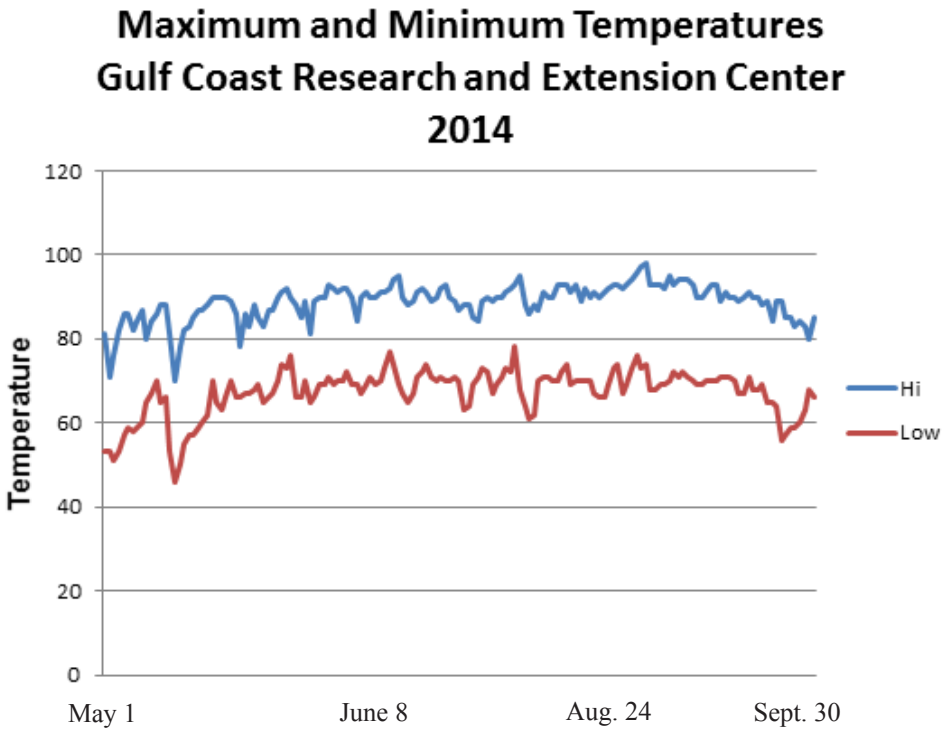
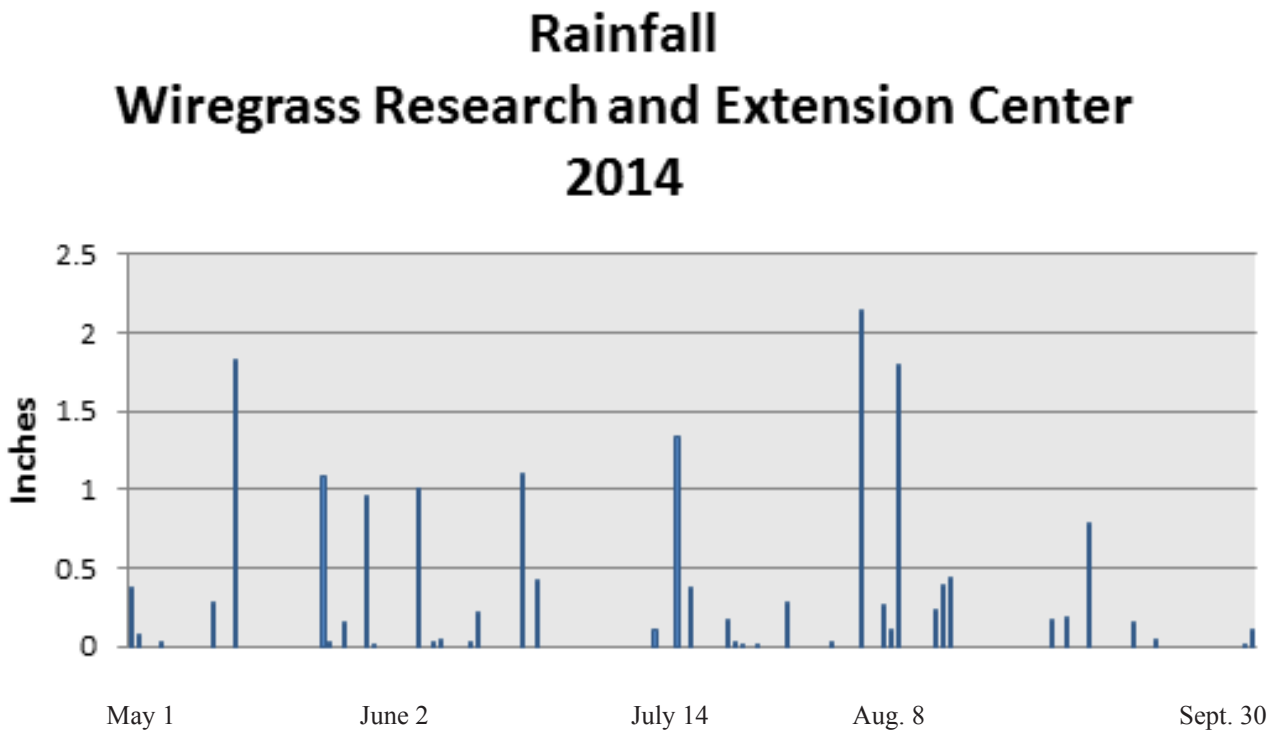
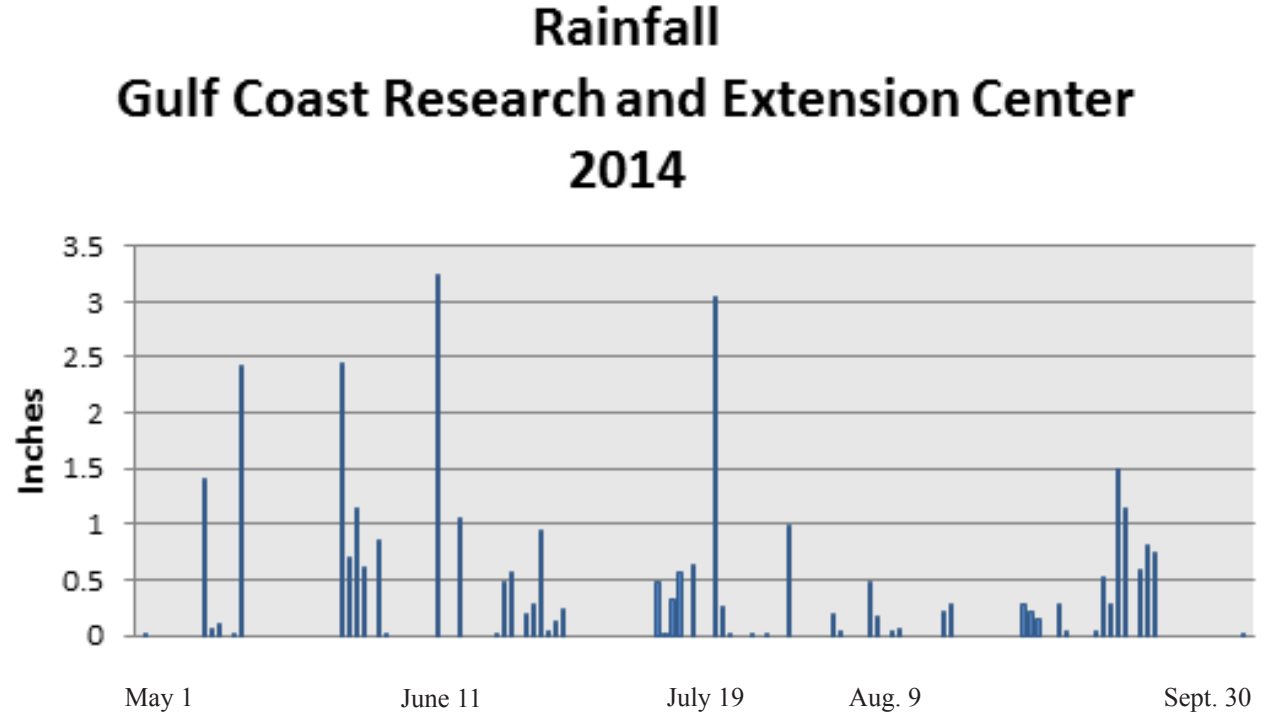


Figure 2. Daily precipitation (inches) from May 1 – September 30.





EVALUATION OF FONTELIS AND AZAKA FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHEAST ALABAMA, WREC

H.L. Campbell, A.K. Hagan, K.L. Bowen, and L.W. Wells

Objective: To evaluate Fontelis and the new product Azaka for control of early and late leaf spot and stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Georgia 09B' was planted on May 20 at the Wiregrass Research and Extension Center in Headland, AL in a field with a history of peanut production. Seed were sown at a rate of approximately five seed per ft of row, and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. The soil type was a Dothan sandy loam (OM<1%). On April 24, 1 qt/A of Sonalan + 0.45 oz/A of Strongarm were applied and incorporated to the test area for pre-emergent weed control. On May 20, 3 oz/A of Valor were applied to test area after planting for weed control. On June 17, 4 oz/A of Cadre + surfactant was applied for weed control. Thrips were controlled with an in-furrow application of 5.0 lb/A of Thimet 20G at planting.

Plots, which consisted of four 30-ft rows spaced 3-ft apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 0.5 inch on July 7 and 1 inch on July 31, August 4, August 19, September 4, and September 17. Rainfall recorded during the growing season was as follows: June – 3.8 in, July – 2.29 in, August – 5.38 in and September – 1.47 in. Foliar fungicides were applied on a 14-21 day schedule on June 27, July 1, July 9, July 22, August 5, August 21, September 3, and September 17 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A.

Early and late leaf spot were visually rated on September 25 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants).

Counts of stem rot (SR) loci (1 locus was defined as ≤ 1 ft of consecutive symptoms and signs of the disease) were made on October 6 immediately after plot inversion. Plots were harvested on October 13 and yields were reported at 6.88%

moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the 2014 peanut production season, temperatures were near normal and monthly rainfall totals were near normal during June, July, August, and September Early leaf spot appeared early and progressed rapidly during the season until September when late leaf spot became dominant. Stem rot incidence was higher than in previous years due to normal rainfall and elevated soil temperatures. Leaf spot intensity was lower for all fungicide programs than the untreated control, which suffered considerable premature defoliation. Of the fungicide programs tested, the best leaf spot control was observed with the TiltBravo/Fontelis/Bravo, Bravo/Azaka (24.5 fl oz), and Bravo/Provost programs which were lower than ratings observed with the season-long Bravo program. Among the remaining fungicide programs all gave similar leaf spot control as the season-long Bravo program except for Bravo/Muscle ADV, which had the highest leaf spot rating. All fungicide programs had lower stem rot indices than did the non-treated control. The lowest incidence of stem rot was observed with the Aproach Prima/Fontelis/Bravo program. However, when compared to the season-long Bravo treatment, similar stem rot control was obtained with all fungicide programs with the exception of Bravo/Muscle ADV, Bravo/Abound + Alto, and Bravo/Azaka(12 fl oz), all of which suffered significantly higher stem rot damage. All fungicide programs had a significantly higher yield than the untreated control. Among the treatment programs, only TiltBravo/Convoy + Bravo/Bravo, Bravo/Abound + Alto, Bravo/Muscle ADV, and Bravo/Provost yielded significantly lower than the season-long Bravo standard. Yields for all other programs were similar.

EVALUATION OF FONTELIS AND AZAKA FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHEAST ALABAMA, WREC

Treatment and rate/A	Application timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control……	---	7.8 a[3]	9.0 a	3543 f
Headline 2.09SC 9.0 fl oz Fontelis 16.0 fl oz Bravo WS 24.0 fl oz	1.5 3,4,5 6,7	3.6 def	2.1 fg	5824 ab
Aproach Prima 6.8 fl oz Fontelis 16.0 fl oz Bravo WS 24.0 fl oz	1,2 3,4,5 6,7	3.5 def	1.7 g	6114 a
TiltBravo 4.3SE 24.0 fl oz Fontelis 16.0 fl oz Bravo WS 24.0 fl oz	1,2 3,4,5 6,7	3.2 f	3.5 defg	5138 cde
TiltBravo 4.3SE 24.0 fl oz Convoy 16.0 fl oz + Bravo WS 24.0 fl oz Bravo WS 24.0 fl oz	1,2 3,4,5 6,7	4.1 bc	3.7 cdefg	4759 e
Bravo WS 24.0 fl oz Azaka 12.0 fl oz	1,2,4,6,7 3,5	3.7 cde	6.1 bc	5114 cde
Bravo WS 24.0 fl oz Azaka 24.5 fl oz	1,2,4,6,7 3,5	3.3 f	2.7 efg	5816 ab
Bravo WS 24.0 fl oz Abound 2.08SC 24.5 fl oz	1,2,4,6,7 3,5	3.6 def	3.7 cdefg	5502 abcd
Bravo WS 24.0 fl oz Abound 2.08SC 18.2 fl oz + Alto 0.83SL 5.5 fl oz	1,2,4,6,7 3,5	3.4 ef	6.5 ab	4953 de
Bravo WS 24.0 fl oz Muscle ADV 32.0 fl oz	1,2,7 3,4,5,6	4.3 b	5.7 bcd	4869 de
Bravo WS 24.0 fl oz Provost 433SC 10.7 fl oz	1,2,7 3,4,5,6	2.8 g	5.1 bcde	4945 de
Bravo WS 24.0 fl oz Bravo WS 24.0 fl oz + Convoy 21.0 fl oz	1,2,4,6,7 3,5	3.8 cd	3.0 efg	5638 abc
Headline 2.09SC 9.0 fl oz Muscle 3.6F 7.2 fl oz Headline 2.09SC 12.0 fl oz Bravo WS 24.0 fl oz	1.5 3,5 4 6,7	3.6 def	4.3 bcdef	5381 bcde
Bravo WS 24.0 fl oz	1-7	3.7 cde	3.7 cdefg	5638 abc
LSD (P = 0.05)		*0.4*	*2.6*	*671*

[1]Early and late leaf spot were assessed using the Florida leaf spot scoring system.
[2]Stem rot (SR) incidence is expressed as the number of disease loci per 60 ft of row.
[3]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test ($P = 0.05$).

EVALUATION OF THE NEW FUNGICIDE ELATUS FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHEAST ALABAMA, WREC

H.L. Campbell, A.K. Hagan, K.L. Bowen, and L.W. Wells

Objective: To evaluate the new product Elatus for control of early and late leaf spot and stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Georgia 09B' was planted on May 20 at the Wiregrass Research and Extension Center in Headland, AL in a field with a history of peanut production. Seed were sown at a rate of approximately five seed per ft of row, and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. The soil type was a Dothan sandy loam (OM<1%). On April 24, 1 qt/A of Sonalan + 0.45 oz/A of Strongarm were applied and incorporated to the test area for pre-emergent weed control. On May 20, 3 oz/A of Valor were applied to test area after planting for weed control. On June 17, 4 oz/A of Cadre + surfactant was applied for weed control. Thrips were controlled with an in-furrow application of 5.0 lb/A of Thimet 20G at planting.

Plots, which consisted of four 30-ft rows spaced 3-ft apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 0.5 inch on July 7 and 1 inch on July 31, August 4, August 19, September 4, and September 17. Rainfall recorded during the growing season was as follows: June – 3.8 in, July – 2.29 in, August – 5.38 in and September – 1.47 in. In-furrow applications were made at planting using a drop nozzle directly over the row and was applied at 10 gal/A. Early emergent sprays were made on June 13 using a fan nozzle directly over row and was applied at a rate of 20 gal/A. Foliar fungicides were applied on a 14-21 day schedule on June 27, July 1, July 9, July 22, August 5, August 21, September 3, and September 17 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A.

Early and late leaf spot were visually rated on September 25 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants).

Counts of stem rot (SR) loci (1 locus was defined as ≤ 1 ft of consecutive

symptoms and signs of the disease) were made on October 3 immediately after plot inversion. Plots were harvested on October 13 and yields were reported at 7.75% moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the 2014 peanut production season, temperatures were near normal and monthly rainfall totals were near normal during June, July, August, and September. Early leaf spot appeared early and intensified until September when late leaf spot became dominant. Stem rot incidence was higher than in previous years due to normal rainfall and higher soil temperatures. Leaf spot intensity was lower for all fungicide programs than the untreated control. All of the fungicide programs that included Elatus gave significantly better leaf control than the season-long Bravo program, while Bravo/Fontelis, Bravo/Muscle ADV, Bravo/Bravo + Convoy gave similar disease control to the latter program. With the exception of Bravo/Muscle ADV, Bravo/Bravo + Convoy, and season-long Bravo standard, all fungicide programs had lower stem rot indices than the non-treated control. The lowest incidence of stem rot was observed with the Abound (IF)/Elatus/Bravo program. When compared to the season-long Bravo standard, all of the Elatus programs except Elatus (EE)/TiltBravo/Elatus/Bravo significantly reduced stem rot incidence. All fungicide programs with the exception of Bravo/Muscle ADV and full-season Bravo standard had significantly higher yields than the untreated control. Yields for Abound (IF)/Elatus/Bravo were higher than all programs except for TiltBravo/Abound + Alto/Bravo, Elatus (EE)/ TiltBravo/Elatus/Bravo,and Headline/Muscle/Headline/Bravo. Other than Bravo/Muscle ADV, all other fungicide programs had higher yields than the full-season Bravo standard.

EVALUATION OF THE NEW FUNGICIDE ELATUS FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHEAST ALABAMA, WREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control……	---	8.0 a[3]	7.3 a	3630 e
TiltBravo 4.3SE 24.0 fl oz Abound 2.08SC 18.2 fl oz + Alto 0.83SL 5.5 fl oz Bravo WS 24.0 fl oz	1,2 3,5 4,6,7	3.2 gh	3.7 bc	5259 ab
Bravo WS 24.0 fl oz Fontelis 16.0 fl oz	1,2,6,7 3,4,5	3.7 cde	2.7 cd	5014 b
TiltBravo 4.3SE 36.0 fl oz Elatus 9.5 oz Bravo WS 24.0 fl oz	1,2 3,5 4,6,7	3.2 gh	3.1 cd	4921 b
Elatus 7.5 oz TiltBravo 4.3SE 24.0 fl oz Elatus 9.5 oz Bravo WS 24.0 fl oz	EE 1,2 3,5 4,6,7	3.0 h	3.5 bc	5130 ab
Abound 2.08SC 9.0 fl oz Elatus 7.14 oz Bravo WS 24.0 fl oz	IF 1,3,5 2,4,6,7	3.0 h	0.8 d	5638 a
Elatus 7.5 oz TiltBravo 4.3SE 36.0 fl oz Elatus 9.5 oz Bravo WS 24.0 fl oz	EE 1.5 3 4,5,6,7	3.5 efg	2.5 cd	5025 b
TiltBravo 4.3SE 24.0 fl oz Provost 433SC 8.0 fl oz Bravo WS 24.0 fl oz	1,2 3,4,5,6 7	3.4 fg	4.1 bc	5001 b
Bravo WS 24.0 fl oz Muscle ADV 32.0 fl oz	1,2,7 3,4,5,6	3.8 bcd	5.8 ab	4049 de
Bravo WS 24.0 fl oz Provost 433SC 10.7 fl oz	1,2,7 3,4,5,6	3.4 fg	4.7 bc	4872 bc
Bravo WS 24.0 fl oz Bravo 24.0 fl oz + Convoy 26.0 fl oz	1,2,4,6,7 3,5	4.1 b	5.8 ab	4356 cd
Headline 2.09SC 9.0 fl oz Muscle 3.6F 7.2 fl oz Headline 2.09SC 12.0 fl oz Bravo WS 24.0 fl oz	1.5 3,5 4 6,7	3.6 def	4.7 bc	5121 ab
Bravo WS 24.0 fl oz	1-7	4.0 bc	5.8 ab	4219 de
LSD (P = 0.05)		*0.3*	*2.5*	*538*

[1]Early and late leaf spot were assessed using the Florida leaf spot scoring system.
[2]Stem rot (SR) incidence is expressed as the number of disease loci per 60 ft of row.
[3]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test ($P = 0.05$).

EVALUATION OF THE PROPULSE AND VELUM TOTAL FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL AND NEMATODE CONTROL ON PEANUTS IN SOUTHEAST ALABAMA, WREC

H.L. Campbell, A.K. Hagan, K.L. Bowen, and L.W. Wells

Objective: To evaluate Propulse and the new product Velum Total for control of early and late leaf spot, stem rot, and nematodes and it effect on yield in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Georgia 09B' was planted on May 19 at the Wiregrass Research and Extension Center in Headland, AL in a field with a history of peanut production. Seed were sown at a rate of approximately five seed per ft of row, and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. The soil type was a Dothan sandy loam (OM<1%). On April 23, 1 qt/A of Sonalan + 0.45 oz/A of Strongarm were applied and incorporated to the test area for pre-emergent weed control. On May 20, 3 oz/A of Valor were applied to test area after planting for weed control. On June 15, 4 oz/A of Cadre + surfactant were applied for weed control. Thrips were controlled with an in-furrow application of 5.0 lb/A of Thimet 20G at planting.

Plots, which consisted of four 30-ft rows spaced 3-ft apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 0.5 inch on July 7 and 1 inch on July 31, August 4, August 19, September 4, and September 17. Rainfall recorded during the growing season was as follows: June – 3.8 in, July – 2.29 in, August – 5.38 in and September – 1.47 in. In-furrow applications were made at planting using a drop nozzle directly over the row and was applied at 10 gal/A. Early emergent sprays were made on June 13 using a fan nozzle directly over row and was applied at a rate of 20 gal/A. Foliar fungicides were applied on a 14-21 day schedule on June 26, July 1, July 8, July 24, August 7, August 25, September 2, and September 16 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A.

Early and late leaf spot were visually rated on September 24 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants).

Counts of stem rot (SR) loci (1 locus was defined as ≤ 1 ft of consecutive symptoms and signs of the disease) were made on October 3 immediately after plot inversion. Root-knot nematode damage was assessed at inversion as the percentage of roots and/or pods with galls. Plots were harvested on October 13 and yields were reported at 6.56% moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the 2014 peanut production season, temperatures were near normal and monthly rainfall totals were near normal during June, July, August and September. With the exception of the untreated control, leaf spot damage was limited to light leaf spotting with limited premature defoliation. Stem rot incidence was higher than in previous years due to normal rainfall and higher soil temperatures. Leaf spot intensity was lower for all fungicide programs than the untreated control. With the exception of Velum Total(IF)/ Proline (EE)/Echo/Provost, all other that included Proline, Propulse and Velum Total gave better leaf control than the season-long Echo standard. Otherwise there were no significant differences in leaf spot control among the remaining fungicide programs. With the exception of the season-long Echo standard, all other fungicide programs had lower stem rot indices than the non-treated control. Stem rot incidence was lower for Propulse(IF)/Echo/Provost and Velum total(IF)/Echo/Provost than the season-long Echo standard. Level of root knot damage was similar across all treatments. Yield was higher for Velum Total(IF)/Echo/Provost, Proline (EE)/Echo/Provost, and Propulse (EE)/Echo/ Provost programs compared with the untreated control and season-long Echo standard. All remaining programs yielded higher than the season-long Echo standard except for Echo/Provost, Velum Total(IF)/Proline (EE)/Echo/Provost, Echo/Muscle ADV, and Headline/Provost/Headline/Echo.

EVALUATION OF THE PROPULSE AND VELUM TOTAL FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL AND NEMATODE CONTROL ON PEANUTS IN SOUTHEAST ALABAMA, WREC

Treatment and Rate/A	Application Timing	Disease ratings			Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	RKN[3] Damage	
Untreated Control	---	6.5 a[4]	7.8 a	4.7 a	2791 bc
Echo 720 24.0 fl oz Provost 433SC 10.7 fl oz	1,2,7 3,4,5,6	2.6 cd	4.3 bc	4.1 abc	2896 bc
Proline 480SC 5.7 fl oz Echo 720 24.0 fl oz Provost 433SC 10.7 fl oz	IF 1,2,7 3,4,5,6	2.5 d	4.5 bc	4.3 ab	3170 ab
Propulse 13.7 fl oz Echo 720 24.0 fl oz Provost 433SC 10.7 fl oz	IF 1,2,7 3,4,5,6	2.5 d	3.1 c	4.1 abc	3315 ab
Velum Total 18.0 fl oz Echo 720 24.0 fl oz Provost 433SC 10.7 fl oz	IF 1,2,7 3,4,5,6	2.5 d	3.5 c	4.0 abc	3638 a
Proline 480SC 5.7 fl oz Echo 720 24.0 fl oz Provost 433SC 10.7 fl oz	EE 1,2,7 3,4,5,6	2.6 cd	3.7 bc	3.1 c	3525 a
Propulse 13.7 fl oz Echo 720 24.0 fl oz Provost 433SC 10.7 fl oz	EE 1,2,7 3,4,5,6	2.5 d	3.8 bc	3.5 bc	3485 a
Velum Total 18.0 fl oz Proline 480SC 5.7 fl oz Echo 720 24.0 fl oz Provost 433SC 10.7 fl oz	IF EE 1,2,7 3,4,5,6	2.8 bc	3.8 bc	4.0 abc	2896 bc
Echo 720 24.0 fl oz Abound 2.08SC 18.2 fl oz + Alto 0.83SL 5.5 fl oz	1,2,4,6,7 3,5	2.8 bc	5.7 abc	3.8 abc	3202 ab
Echo 720 24.0 fl oz Muscle ADV 32.0 fl oz	1,2,7 3,4,5,6	2.8 bc	5.3 abc	3.7 abc	2807 bc
Echo 720 24.0 fl oz Echo 720 24.0 fl oz + Convoy 21.0 fl oz	1,2,4,6,7 3,5	3.0 b	3.8 bc	4.5 ab	3113 ab
Headline 2.09SC 9.0 fl oz Provost 433SC 8.0 fl oz Headline 2.09SC 12.0 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	2.6 cd	5.1 abc	4.0 abc	2751 bc
Echo 720 24.0 fl oz Fontelis 16.0 fl oz	1,2,6,7 3,4,5	2.9 b	5.1 abc	3.7 abc	3106 ab
Echo 720 24.0 fl oz	1-7	3.0 b	6.7 ab	4.5 ab	2452 c
LSD (P ≤ 0.05)		*0.2*	*3.1*	*1.1*	*583*

[1]Early and late leaf spot were assessed using the Florida leaf spot scoring system.
[2]Stem rot (SR) incidence is expressed as the number of disease loci per 60 ft of row.
[3]Root knot nematode damage ratings 1 = no knots, 2= 1-25% roots/pods, 3 = 26-50%, 4 = 51-75%, 5 = >75% with visible knots
[4]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

EVALUATION OF CONVOY AND ARTISAN FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHEAST ALABAMA, WREC

H.L. Campbell, A.K. Hagan, K.L. Bowen, and L.W. Wells

Objective: To evaluate Convoy and Artisan for control of early and late leaf spot and stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Georgia 09B' was planted on May 20 at the Wiregrass Research and Extension Center in Headland, AL in a field with a history of peanut production. Seed were sown at a rate of approximately five seed per ft of row, and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. The soil type was a Dothan sandy loam (OM<1%). On April 24, 1 qt/A of Sonalan + 0.45 oz/A of Strongarm were applied and incorporated to the test area for pre-emergent weed control. On May 20, 3 oz/A of Valor were applied to test area after planting for weed control. On June 17, 4 oz/A of Cadre + surfactant was applied for weed control. Thrips were controlled with an in-furrow application of 5.0 lb/A of Thimet 20G at planting.

Plots, which consisted of four 30-ft rows spaced 3-ft apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 0.5 inch on July 7 and 1 inch on July 31, August 4, August 19, September 4, and September 17. Rainfall recorded during the growing season was as follows: June – 3.8 in, July – 2.29 in, August – 5.38 in and September – 1.47 in. Foliar fungicides were applied on a 14-21 day schedule on June 27, July 1, July 8, July 24, August 5, August 25, September 4, and September 18 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A.

Early and late leaf spot were visually rated on September 25 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants).

Counts of stem rot (SR) loci (1 locus was defined as ≤ 1 ft of consecutive symptoms and signs of the disease) were made on October 6 immediately after plot inversion. Plots were harvested on October 13 and yields were reported at 7.85% moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the 2014 peanut production season, temperatures were near normal and

monthly rainfall totals were near normal during June, July, August, and September. Early leaf spot appeared early and progressed until September when late leaf spot became dominant. Stem rot incidence was higher than in previous years due to normal rainfall and elevated soil temperatures. Leaf spot intensity was lower for all fungicide programs than the untreated control. Among the fungicide programs, the highest level of leaf spot control was obtained with the Equus/Provost, Headline/Artisan + Topsin/Equus, Equus/Convoy + Headline, Equus/Abound, and Equus/Fontelis programs. The remaining programs had similar leaf spot control as that observed with the season-long Equus program. At inversion, all fungicide treatments, with the exception of the season-long Equus program, reduced stem rot incidence compared to the untreated control. Lowest incidence of stem rot was observed with Equus/Fontelis and Equus/Convoy(13 fl oz) + Abound. Yields for all fungicide programs except the season-long Equus program were higher than the untreated control. With the exception of Headline/Convoy+ Equus+ Topsin/Headline/Equus and Equus/Convoy(13 fl oz) + Abound, the remaining Artisan or Convoy programs yielded significantly higher than the season-long Equus program.

EVALUATION OF CONVOY AND ARTISAN FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHEAST ALABAMA, WREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control……	---	7.8 a[3]	9.0 a	3833 c
Headline 2.09SC 9.0 fl oz Convoy 21.0 fl oz + Equus 720 24.0 fl oz + Topsin 5.0 fl oz Headline 2.09SC 6.0 fl oz Equus 720 24.0 fl oz	1.5 3,5 6 4,7	3.8 cd	4.5 bcd	4993 ab
Headline 2.09SC 9.0 fl oz Artisan 26.0 fl oz + Topsin 5.0 fl oz Equus 720 24.0 fl oz	1.5 3,5 4,6,7	3.1 f	4.5 bcd	5227 a
Equus 720 24.0 fl oz Fontelis 16.0 fl oz	1,2,6,7 3,4,5	3.7 d	3.1 cd	4896 ab
Equus 720 24.0 fl oz Provost 433SC 10.7 fl oz	1,2,7 3,4,5,6	3.0 f	5.5 bc	4953 ab
Equus 720 24.0 fl oz Custodia 15.5 fl oz	1,2,7 3,4,5,6	3.9 bcd	5.1 bc	5219 a
Equus 720 24.0 fl oz Abound 2.08SC 12.0 fl oz + Muscle 3.6F 7.2 fl oz	1,2,7 3,4,5,6	4.2 b	5.3 bc	5449 a
Equus 720 24.0 fl oz Convoy 13.0 fl oz + Abound 2.08SC 12.0 fl oz	1,2,7 3,4,5,6	4.2 b	1.7 d	5065 ab
Equus 720 24.0 fl oz Convoy 21.0 fl oz + Abound 2.08SC 12.0 fl oz	1,2,4,6,7 3,5	4.1 b	4.7 bcd	5285 a
Equus 720 24.0 fl oz Abound 2.08SC 18.5 fl oz	1,2,4,6,7 3,5	3.6 de	4.3 bcd	5114 a
Equus 720 24.0 fl oz Convoy 21.0 fl oz + Headline 2.09SC 15.0 fl oz	1,2,4,6,7 3,5	3.2 ef	4.8 bc	5324 a
Equus 720 24.0 fl oz	1-7	4.1 bc	7.3 ab	4317 bc
LSD (P ≤ 0.05)		*0.4*	*3.1*	*756*

[1]Early and late leaf spot were assessed using the Florida leaf spot scoring system
[2]Stem rot incidence is expressed as the number of disease loci per 60 ft of row at inversion.
[3]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

COMPARISON OF FUNGICIDE R_X PROGRAMS FOR PEANUT DISEASE CONTROL IN SOUTHEAST ALABAMA, WREC

H.L. Campbell, A.K. Hagan, K.L. Bowen, and L.W. Wells

Objective: To evaluate and compare four different fungicide R_X for control of early and late leaf spot, stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Georgia 09B' was planted on May 21 at the Wiregrass Research and Extension Center in Headland, AL in a field with a history of peanut production. Seed were sown at a rate of approximately five seed per ft of row, and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. The soil type was a Dothan sandy loam (OM<1%). On April 24, 1 qt/A of Sonalan + 0.45 oz/A of Strongarm were applied and incorporated to the test area for pre-emergent weed control. On May 20, 3 oz/A of Valor were applied to test area after planting for weed control. On June 17, 4 oz/A of Cadre + surfactant were applied for weed control. Thrips were controlled with an in-furrow application of 5.0 lb/A of Thimet 20G at planting.

Plots, which consisted of four 30-ft rows spaced 3-ft apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 0.5 inch on July 7 and 1 inch on July 31, August 4, August 19, September 4, and September 17. Rainfall recorded during the growing season was as follows: June – 3.8 in, July – 2.29 in, August – 5.38 in and September – 1.47 in. Foliar fungicides were applied on a 14-28 day schedule on June 26, July 1, July 7, July 14, July 23, July 29,August 5, August 21, August 26,September 3, and September 18 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A.

Early and late leaf spot were visually rated on August 11, August 25, September 8, September 24, and October 1 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants). AUDPC (Area Under the Disease Progress Curve) was calculated to determine the severity of leaf spot as it progresses over the growing season.

Counts of stem rot (SR) loci (1 locus was defined as ≤ 1 ft of consecutive symptoms and signs of the disease) were made on October 3 immediately after plot inversion. Plots were harvested on October 13 and yields were reported at 7.56%

moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the 2014 peanut production season, temperatures were near normal and monthly rainfall totals were near normal during June, July, August, and September. Early leaf spot appeared early and progressed rapidly during the season until September when late leaf spot became dominant. Stem rot incidence was higher than in previous years due to normal rainfall and elevated soil temperatures. Severity of leaf spot among all treatments regardless of input was reduced when compared with the untreated control. Among the low risk index programs, when compared with Bravo WS alone, all gave better leaf spot control with the best control observed with the Bravo/Provost program. Among the medium risk programs, all gave better leaf spot control than did the Bravo applied five times. Control among the high risk programs was similar to that observed with the Bravo full season treatment program with the Proline/Provost/Convoy + Bravo/Bravo program having the best leaf spot control. When looking at AUDPC to determine disease severity all the treatment programs had indices that were significantly lower from the Bravo low risk program. With the exception of the Tilt-Bravo/Abound + Alto/Bravo and Proline/Provost/Convoy + Bravo/Bravo high risk programs, all other treatment indices were similar. Stem rot incidence was higher than in previous years and all risk programs with the exception of the Bravo medium risk program had significantly lower stem rot incidence than did the untreated control. All risk index programs significantly reduced stem rot incidence when compared to all three Bravo only index programs. With the exception of the Bravo only low risk 4 application treatment, yields for all treatment programs were significantly higher than the untreated control. Among the low risk programs, Headline/Artisan + Bravo/Topsin + Bravo yielded highest and was similar to all but the Tilt-Bravo/Fontelis program. All of the high risk index programs yielded higher than the Bravo only treatment.

COMPARISON OF FUNGICIDE R_x PROGRAMS FOR PEANUT DISEASE CONTROL IN SOUTHEAST ALABAMA, WREC

Treatment and Rate/A	Application Timing	Risk Index	Disease ratings			Yield lb/A
			Leaf Spot[1]	AUDPC	Stem Rot[2]	
Untreated Control	---		8.0 a[3]	246 a	10.7 a	3364 g
Bravo WS 24.0 fl oz Provost 433SC 10.7 fl oz	1,7 3,5	low	3.0 f	110.9 fghi	4.1 cde	4662 abcd
Proline 480SC 5.7 fl oz Provost 433 SC 10.7 fl oz Bravo WS 24.0 fl oz	1.5 3,4.5,6 7	medium	3.4 ef	111.2 fghi	6.3 bc	4704 abc
Proline 480SC 5.7 fl oz Provost 433 SC 10.7 fl oz Convoy + Bravo WS 13.0 + 24.0 fl oz Bravo WS 24.0 fl oz	1.5 3,4,5 6 7	high	3.0 f	108.9 hi	1.7 def	5122 a
Headline 2.09SC 9.0 fl oz Artisan + Bravo WS 26 + 16 fl oz Topsin + Bravo WS 5 + 16 fl oz	2 3.5, 5 6.5	low	4.0 d	121.7 cdefg	1.3 f	5276 a
Headline 2.09SC 9.0 fl oz Artisan + Bravo 21.0 + 16.0 fl oz Topsin + Bravo WS 5 + 16 fl oz	1.5 3, 4.5, 6 7	medium	3.9 d	130.2 c	3.0 def	4856 ab
Headline 2.09SC 9.0 fl oz Artisan + Bravo 16.0 + 19.0 fl oz Bravo WS 24.0 fl oz	1.5 3,4,5,6 7	high	3.8 de	118.1 defgh	2.1 def	4953 ab
Tilt-Bravo 36.0 fl oz Abound 2SC + Bravo WS 18.2 + 24 fl oz Bravo WS 24.0 fl oz	2 3.5,5 6.5	low	3.9 d	121.0 cdefg	3.0 def	4888 ab
Tilt-Bravo 36.0 fl oz Abound 2SC + Alto 18.2 + 5.5 fl oz Tilt-Bravo 24.0 fl oz Bravo WS 24.0 fl oz	1.5,4 3,5 4 6.5	medium	3.3 ef	110.4 ghi	1.5 ef	5009 ab
Tilt-Bravo 24.0 fl oz Abound 2SC + Alto 18.2 + 5.5 fl oz Bravo WS 24.0 fl oz	1,2,4 3,5 6,7	high	3.0 f	101.8 i	1.7 def	4816 ab
Tilt-Bravo 36.0 fl oz Fontelis 12.0 fl oz	1,3 4.5,6	low	4.1 d	126.6 cd	4.3 cd	4106 cdef
Tilt-Bravo 36.0 fl oz Fontelis 16.0 fl oz Bravo 24.0 fl oz	1, 2.5 4,5.5 6.5	medium	4.0 d	124.0 cde	4.1 cde	4388 bcde
Headline 2.09SC Fontelis 16.0 fl oz Bravo 24.0 fl oz	1.5 3,4,5 6,7	high	3.7 de	113.6 efgh	2.0 def	4921 ab
Bravo WS 24.0 fl oz	1,3,5,7	low	5.5 b	151.0 b	7.5 b	3581 fg
Bravo WS 24.0 fl oz	1,2.5,4,5.5, 7	medium	4.7 c	122.6 cdef	8.7 ab	4001 ef
Bravo WS 24.0 fl oz	1-7	high	3.8 de	113.4 efghi	7.5 b	4066 def
LSD (P = 0.05)			*0.4*	*11.6*	*2.7*	*626*

[1] Early and late leaf spot were assessed using the Florida leaf spot scoring system.
[2] Stem rot (SR) incidence is expressed as the number of disease loci per 60 ft of row.
[3] Mean separation within columns was according to Fisher's protected least significant difference (LSD) test ($P = 0.05$).

EVALUATION OF CUSTODIA AND CUPRO FIX ULTRA DISPERSE FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHEAST ALABAMA, WREC

H.L. Campbell, A.K. Hagan, K.L. Bowen, and L.W. Wells

Objective: To evaluate the new product Custodia and the biological product Cupro Fix Ultra Disperse for control of early and late leaf spot and stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Georgia 09B' was planted on May 20 at the Wiregrass Research and Extension Center in Headland, AL in a field with a history of peanut production. Seed were sown at a rate of approximately five seed per ft of row, and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. The soil type was a Dothan sandy loam (OM<1%). On April 24, 1 qt/A of Sonalan + 0.45 oz/A of Strongarm were applied and incorporated to the test area for pre-emergent weed control. On May 20, 3 oz/A of Valor were applied to test area after planting for weed control. On June 17, 4 oz/A of Cadre + surfactant was applied for weed control. Thrips were controlled with an in-furrow application of 5.0 lb/A of Thimet 20G at planting.

Plots, which consisted of four 30-ft rows spaced 3-ft apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 0.5 inch on July 7 and 1 inch on July 31, August 4, August 19, September 4, and September 17. Rainfall recorded during the growing season was as follows: June – 3.8 in, July – 2.29 in, August – 5.38 in and September – 1.47 in. Foliar fungicides were applied on a 14 day schedule on June 27, July 9, July 24, August 7, August 21, September 3, and September 17 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A.

Early and late leaf spot were visually rated on September 25 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants).

Counts of stem rot (SR) loci (1 locus was defined as $\leq$ 1 ft of consecutive symptoms and signs of the disease) were made on October 6 immediately after plot inversion. Plots were harvested on October 13 and yields were reported at 6.55% moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the 2014 growing season, temperatures were near normal and monthly rainfall totals were near normal during June, July, August, and September. Early leaf spot appeared early and intensified into September when late leaf spot became dominant. Stem rot incidence was higher than in previous years due to normal rainfall and higher soil temperatures. Leaf spot intensity was lower for all fungicide programs than the untreated control. Among the fungicide programs, the best leaf spot control was with Equus/Provost. Cupro Fix Ultra Disperse gave poorer leaf spot control compared with all remaining fungicide programs,which gave similar leaf spot control as the season-long Equus standard. At inversion, all fungicide treatments reduced stem rot incidence compared to the untreated control with Equus/Equus + Convoy, Equus/Fontelis, and Equus/Custodia (15.52 fl oz) giving equally effective disease control. Cupro Ultra Fix Disperse had less impact on stem rot incidence than any other fungicide program. All fungicide programs had higher yields than the untreated control. When compared with the season-long Equus standard, all fungicide programs with the exception of the Cupro Ultra Fix Disperse had similar yields.

EVALUATION OF CUSTODIA AND CUPRO FIX ULTRA DISPERSE FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHEAST ALABAMA, WREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control	---	8.0 a[3]	9.8 a	3001 e
Equus 720 24.0 fl oz Custodia 12.0 fl oz	1,2,7 3,4,5,6	3.6 f	4.8 bc	4743 ab
Equus 720 24.0 fl oz Custodia 15.52 fl oz	1,2,7 3,4,5,6	3.7 ef	2.7 def	4848 a
Equus 720 24.0 fl oz Provost 433SC 8.0 fl oz	1,2,7 3,4,5,6	3.0 g	4.5 cd	4517 abc
Equus 720 24.0 fl oz Equus 720 24.0 fl oz + Convoy 21.0 fl oz	1,2,4,6,7 3,5	4.3 cd	1.8 f	4646 abc
Equus 720 24.0 fl oz Orius 3.6F 7.2 fl oz	1,2,7 3,4,5,6	4.7 c	4.0 cde	4203 c
Equus 720 24.0 fl oz Abound 2.08SC 18.5 fl oz	1,2,4,6,7 3,5	4.0 de	5.7 bc	4356 bc
Equus 720 24.0 fl oz Fontelis 16.0 fl oz	1,2,6,7 3,4,5	4.1 d	2.3 ef	4492 abc
Equus 720 SST 24.0 fl oz	1-7	3.9 def	3.8 cde	4646 abc
Cupro Ultra Fix Disperse 2.0 lb	1-7	5.7 b	6.7 b	3670 d
Equus 720 24.0 fl oz Orius 3.6F 7.2 fl oz + Topsin 10.0 fl oz	1,2,7 3,4,5,6	3.6 f	2.8 def	4437 abc
LSD (P ≤ 0.05)		*0.5*	*1.9*	*444*

[1] Early and late leaf spot were assessed using the Florida leaf spot scoring system.
[2] Stem rot (SR) incidence is expressed as the number of disease loci per 60 ft of row at inversion.
[3] Mean separation within columns was according to Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

EVALUATION OF SA-0040304 AND PRIAXOR FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHEAST ALABAMA, WREC

H.L. Campbell, A.K. Hagan, K.L. Bowen, and L.W. Wells

Objective: To evaluate the experimental product SA-0040304 and Priaxor for control of early and late leaf spot and stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Georgia 09B' was planted on May 20 at the Wiregrass Research and Extension Center in Headland, AL in a field with a history of peanut production. Seed were sown at a rate of approximately five seed per ft of row, and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. The soil type was a Dothan sandy loam (OM<1%). On April 24, 1 qt/A of Sonalan + 0.45 oz/A of Strongarm were applied and incorporated to the test area for pre-emergent weed control. On May 20, 3 oz/A of Valor were applied to test area after planting for weed control. On June 17, 4 oz/A of Cadre + surfactant was applied for weed control. Thrips were controlled with an in-furrow application of 5.0 lb/A of Thimet 20G at planting.

Plots, which consisted of four 30-ft rows spaced 3-ft apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 0.5 inch on July 7 and 1 inch on July 31, August 4, August 19, September 4, and September 17. Rainfall recorded during the growing season was as follows: June – 3.8 in, July – 2.29 in, August – 5.38 in and September – 1.47 in. Foliar fungicides were applied on a 14-21 day schedule on June 26, July 1, July 7, July 23, August 7, August 21, September 3, and September 17 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A.

Early and late leaf spot were visually rated on September 24 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants).

Counts of stem rot (SR) loci (1 locus was defined as ≤ 1 ft of consecutive symptoms and signs of the disease) were made on October 6 immediately after plot inversion. Plots were harvested on October 13 and yields were reported at 8.25% moisture. Significance of treatment effects was tested by analysis of variance and

Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the 2014 peanut production season, temperatures were near normal and monthly rainfall totals were near normal during June, July, August, and September. With the exception of the untreated control, leaf spot damage was limited to light leaf spotting in the lower and middle canopy with very little premature defoliation. Stem rot incidence was higher than in previous years due to normal rainfall and higher soil temperatures. Leaf spot intensity was significantly lower for all fungicide programs than the untreated control. Echo 720/Muscle, Echo 720/Provost, Priaxor/Muscle ADV/Priaxor (8 fl oz)/ Echo720, and Priaxor/Muscle ADV/Priaxor (4 fl oz)/Echo 720 had similarly low leaf spot ratings as the Echo 720/Abound program. All fungicide progams except for SA-0040304 + Perfectose/Muscle ADV/Echo 720, SA-0040304 (1.5)/Muscle ADV/Echo 720, and Echo 720/Convoy + Echo 720 gave better leaf spot control compared with the season-long Echo 720 standard. All fungicide treatments reduced stem rot incidence compared to the untreated control. Lower stem rot was for Echo 720/Convoy + Echo 720 compared with the season-long Echo 720 standard. All fungicide programs yielded higher than the untreated control. With the exception of the Priaxor(6 fl oz)/Muscle ADV/Priaxor(8 fl oz)/Echo treatment, all other Priaxor programs yielded higher than the season-long Echo 720 standard. Yields for those programs that included SA-0040304 were not significantly different from the full season Echo 720 standard.

EVALUATION OF SA-0040304 AND PRIAXOR FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHEAST ALABAMA, WREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control	---	7.8 a[3]	11.3 a	3017 f
SA-0040304 32.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	2.5 fghi	5.3 bcd	4098 bcde
SA-0040304 32.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1.5 3,4,5,6 7	3.2 c	7.1 bc	3848 de
Echo 720 24.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	2.8 def	5.7 bcd	4033 cde
SA-0040304 32.0 fl oz + Perfectose 56.0 fl oz SA-0040304 32.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1 2 3,4,5,6 7	2.5 fghi	4.8 bcd	4235 bcde
SA-0040304 32.0 fl oz + Perfectose 56.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1.5 3,4,5,6 7	3.7 b	5.7 bcd	4029 cde
Headline 2.09SC 9.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1.5 3,4,5,6 7	2.7 efg	4.8 bcd	4469 abcd
Echo 720 24.0 fl oz Muscle 3.6F 7.2 fl oz	1,2,7 3,4,5,6	2.2 hi	5.3 bcd	4082 cde
Echo 720 24.0 fl oz Provost 433SC	1,2,7 3,4,5,6	2.3 ghi	4.3 cd	4477 abcd
Echo 720 24.0 fl oz Abound 2.08SC 18.2 fl oz	1,2,4,6,7 3,5	2.1 i	4.1 cd	4767 ab
Echo 720 24.0 fl oz Echo 720 24.0 fl oz + Convoy 21.0 fl oz	1,2,4,6,7 3,5	3.1 cd	3.5 d	4251 bcde
Headline 2.09SC 9.0 fl oz Muscle ADV 32.0 fl oz Headline 2.09SC 12.0 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	2.6 efgh	4.1 cd	3864 de
Headline 2.09SC 9.0 fl oz Muscle ADV 32.0 fl oz Headline 2.09SC 6.0 fl oz Echo 720 24.0 fl oz	1.5 3,5 4,6 7	2.5 fghi	4.3 cd	4953 a
Priaxor 6.0 fl oz Muscle ADV 32.0 fl oz Priaxor 8.0 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	2.4 fghi	3.5 d	4025 cde
Priaxor 6.0 fl oz Muscle ADV 32.0 fl oz Priaxor 4.0 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	2.3 ghi	4.5 bcd	4614 abc
Priaxor 4.0 fl oz Muscle ADV 32.0 fl oz Priaxor 4.0 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	2.6 efgh	3.8 d	4549 abc
Echo 720 24.0 fl oz	1-7	2.9 cde	7.7 b	3751 e
LSD (P ≤ 0.05)		*0.3*	*3.2*	*681*

[1]Early and late leaf spot were assessed using the Florida leaf spot scoring system

[2] Stem rot (SR) incidence is expressed as the number of disease loci per 60 ft of row.

[3]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

EVALUATION OF FONTELIS, APROACH PRIMA AND AZAKA FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHWEST ALABAMA, GCREC

H.L. Campbell, A.K. Hagan, K.L. Bowen, M. Pegues and L.W. Wells

Objective: To evaluate Fontelis, Aproach Prima, and the new product Azaka for control of leaf spot diseases and stem rot and yield response in a dry-land peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Georgia 09B' was planted on May 27 at the Gulf Coast Research and Extension Center near Fairhope, AL at a rate of five seed per ft of row in a field that had previously been cropped to peanut. Recommendations of the Alabama Cooperative Extension System for fertility and weed control were followed. The soil type was a Malbis fine sandy loam (Organic matter <1%). Thrips were controlled with an in-furrow application of 6-7 bl/A of Thimet 20G at planting. 5.0 lb/A of Rhizobium inoculant was also applied at planting. On May 27, after planting, 1 qt/A of RoundUp + 1 qt/A of Prowl were applied to the test area for weed control. On June 16, 8 oz/A of Gramoxone + 1.5 pt/A of Storm + Induce at 1 pt/50 of H_20 were applied for post-emergent weed control. On July 8, 0.225 oz/A of Strongarm + 2 oz/A of Cadre + Induce at 1 qt/100 gal of H_20 were applied for weed control. On July 22, 1.5 pt/A of Poast + 1 qt/A of Herbimax were applied for weed control.

Plots, which consisted of four 30-ft rows on 38 in. centers, were arranged in a randomized complete block with six replications. Plots were not irrigated. Foliar fungicides were applied at 14-day intervals on July 7, July 14, July 22, August 5, August 19, September 2, September 18, and September 30 as a full canopy spray using a four-row ATV mounted CO_2 sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A.

Late leaf spot and rust were visually rated on October 10 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants) and the ICRISAT rust rating scale (1 = no disease, and 9 = plants severely affected, 80-100% leaves withering).

Counts of stem rot loci (SR) were made on October 16 immediately after plot inversion by determining the number of disease loci (1 ft is defined as ≤ 1 ft of consecutive stem rot damaged plants per row). Plots were harvested on October 23 and yields were reported at 9.25% moisture. Significance of treatment effects were tested

by analysis of variance and Fisher's protected least significant difference (LSD) test (P = 0.05).

Results: During the 2014 peanut production season, temperatures were near norm and monthly rainfall totals were near normal during June and July. However, beginning in early August and continuing through early September, a late season drought occurred. Late leaf spot appeared early but progression slowed during the drought period and never fully developed afterward resulting in lower than normal leaf spot severity. Stem rot incidence was comparable to that observed in previous years. Leaf spot intensity was lower for all fungicide programs than the untreated control. The best leaf spot control was observed with Tilt + Echo/Fontelis, Echo/Abound + Alto, and Echo/Provost treatment programs. Among the remaining programs, including those that included Azaka and Fontelis, leaf spot control was comparable to that observed with the season-long Echo only treatment. Stem rot incidence was low, and when compared with the untreated control, none of the treatments had significantly lower stem rot hits with that or the Echo only treatment. Due to the lower incidence and severity of leaf spot and stem rot, yield results were similar among all treatments when compared with the untreated control.

EVALUATION OF FONTELIS, APROACH PRIMA AND AZAKA FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHWEST ALABAMA, GCREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control	---	4.9 a[3]	2.3 ab	4248 abc
Headline 2.09SC 9.0 fl oz Fontelis 16.0 fl oz Echo 720 24.0 fl oz	1.5 3,4,5 6,7	3.2 bcd	1.5 ab	4573 ab
Aproach Prima 6.8 fl oz Fontelis 16.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5 6,7	3.3 bc	1.5 ab	4278 abc
Tilt + Echo 720 24.0 fl oz Fontelis 16.0 fl oz Bravo WS 24.0 fl oz	1,2 3,4,5 6,7	3.0 cd	2.0 ab	4049 bc
Tilt + Echo 720 24.0 fl oz Convoy 16.0 fl oz + Echo 720 24.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5 6,7	3.2 bcd	1.5 ab	4267 abc
Echo 720 24.0 fl oz Azaka 12.0 fl oz	1,2,4,6,7 3,5	3.1 bcd	1.0 ab	4668 a
Echo 720 24.0 fl oz Azaka 24.5 fl oz	1,2,4,6,7 3,5	3.1 bcd	0.5 b	4504 abc
Echo 720 24.0 fl oz Abound 2.08SC 24.5 fl oz	1,2,4,6,7 3,5	3.1 bcd	2.0 ab	4848 a
Echo 720 24.0 fl oz Abound 2.08SC 18.2 fl oz + Alto 0.83SL 5.5 fl oz	1,2,4,6,7 3,5	2.9 cd	3.0 a	4271 abc
Echo 720 24.0 fl oz Muscle ADV 32.0 fl oz	1,2,7 3,4,5,6	3.2 bcd	2.1 ab	4607 ab
Echo 720 24.0 fl oz Provost 433SC 10.7 fl oz	1,2,7 3,4,5,6	2.8 d	2.0 ab	4672 a
Echo 720 24.0 fl oz Bravo WS 24.0 fl oz + Convoy 21.0 fl oz	1,2,4,6,7 3,5	3.1 bcd	2.5 ab	4473 abc
Headline 2.09SC 9.0 fl oz Muscle 3.6F 7.2 fl oz Headline 2.09SC 12.0 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	3.1 bcd	0.7 b	4622 ab
Echo 720 24.0 fl oz	1-7	3.5 b	2.5 ab	3953 c
LSD (P = 0.05)		*0.4*	*2.1*	*618*

[1] Late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease; 10 = completely dead plants)
[2] Stem rot (SR) incidence is expressed as the number of disease loci per 60 ft of row.
[3] Numbers followed by the same letter do not differ significantly.

EVALUATION OF PROLINE, PROPULSE, AND VELUM TOTAL FOR THEIR EFFECT FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHWEST ALABAMA, GCREC

H.L. Campbell, A.K. Hagan, K.L. Bowen, M. Pegues and J. Jones

Objective: To evaluate Proline, Propulse, and the new product Velum Total for their effect on the control of leaf spot diseases and stem rot and the effect on yield response in a dry-land peanut production system in southwest Alabama.

Methods: Peanut cultivar 'Georgia 09B' was planted on May 28 at the Gulf Coast Research and Extension Center near Fairhope, AL at a rate of five seed per ft of row in a field that had previously been cropped to peanut. Recommendations of the Alabama Cooperative Extension System for fertility and weed control were followed. The soil type was a Malbis fine sandy loam (Organic matter <1%). Thrips were controlled with an in-furrow application of 6-7 bl/A of Thimet 20G at planting. 5.0 lb/A of Rhizobium inoculant was also applied at planting. On May 27, after planting, 1 qt/A of RoundUp + 1 qt/A of Prowl were applied to the test area for weed control. On June 16, 8 oz/A of Gramoxone + 1.5 pt/A of Storm + Induce at 1 pt/50 of H_20 were applied for post-emergent weed control. On July 8, 0.225 oz/A of Strongarm + 2 oz/A of Cadre + Induce at 1 qt/100 gal of H_20 were applied for weed control. On July 22, 1.5 pt/A of Poast + 1 qt/A of Herbimax was applied for weed control.

Plots, which consisted of four 30-ft rows on 38 in. centers, were arranged in a randomized complete block with six replications. Plots were not irrigated. Early emergent sprays were applied at 15 gal/A using a four-row ATV mounted CO_2 sprayer. Foliar fungicides were applied at 14-day intervals on July 7, July 14, July 22, August 5, August 19, September 2, September 18, and September 30 as a full canopy spray using a four-row ATV mounted CO_2 sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A.

Late leaf spot and rust were visually rated on October 9 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants) and the ICRISAT rust rating scale (1 = no disease, and 9 = plants severely affected, 80-100% leaves withering).

Counts of stem rot loci (SR) were made on October 16 immediately after plot inversion by determining the number of disease loci (1 ft is defined as ≤ 1 ft of consecutive stem rot damaged plants per row). Plots were harvested on October 23 and

yields were reported at 9.25% moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test (P = 0.05).

Results: During the 2014 peanut production season, temperatures were near norm and monthly rainfall totals were near normal during June and July. However, beginning in early August and continuing through early September, a late season drought occurred. Late leaf spot appeared early but progression slowed during the drought period and never fully developed afterward resulting in lower than normal leaf spot severity. Stem rot incidence was low and was comparable to that observed in previous years. Rust never fully developed in the field and pockets of rust were observed sporadically throughout the field therefore no ratings were made. Leaf spot severity was lower for all fungicide programs than the untreated control. Among the fungicide treatments, all gave similar levels of leaf spot control. Due to stem rot incidence and severity being lower than normal there was little differences among the treatments when compared with the untreated control. None of the treatments which included Proline, Propulse, or Velum Total significantly reduced stem rot when compared with the untreated control. Among the remaining treatments, the Echo/Abound + Alto, Echo/Echo + Artisan, and Echo/Fontelis significantly reduced stem rot compared to the untreated control. With the exception of Echo/Muscle ADV all treatments increased yield compared to the untreated control. However among those that included either Proline, Propulse, or Velum Total, only the early emergent application of Proline significantly increased yield over that observed with the untreated control. Among the remaining treatment programs, only Echo/Provost and Echo/Fontelis significantly increase yield compared with the untreated control.

EVALUATION OF PROLINE, PROPULSE, AND VELUM TOTAL FOR THEIR EFFECT ON FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHWEST ALABAMA, GCREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control	---	5.6 a[3]	1.3 a	4405 cd
Echo 720 24.0 fl oz Provost 433SC 10.7 fl oz	1,2,7 3,4,5,6	2.9 b	0.5 ab	5628 a
Proline 480SC 5.7 fl oz Echo 720 24.0 fl oz Provost 433SC 10.7 fl oz	EE[4] 1,2,7 3,4,5,6	2.8 b	0.5 ab	5655 a
Propulse 13.7 fl oz Echo 720 24.0 fl oz Provost 433SC 10.7 fl oz	EE 1,2,7 3,4,5,6	2.8 b	0.8 ab	5226 abc
Velum Total Echo 720 24.0 fl oz Provost 433SC 10.7 fl oz	EE 1,2,7 3,4,5,6	2.8 b	0.8 ab	5238 abc
Echo 720 24.0 fl oz Abound 2.08SC 18.2 fl oz + Alto 0.83SL 5.5 fl oz	1,2,4,6,7 3,5	3.1 b	0.2 b	5196 abc
Echo 720 24.0 fl oz Muscle ADV 32. fl oz	1,2,7 3,4,5,6	3.2 b	0.5 ab	4186 d
Echo 720 24.0 fl oz Echo 720 24.0 fl oz + Artisan 26.0 fl oz	1,2,4,6,7 3,5	3.1 b	0.2 b	4752 abcd
Headline 2.09SC 9.0 fl oz Provost 433SC 8.0 fl oz Headline 2.09SC 12.0 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	2.8 b	0.5 ab	4775 abcd
Echo 720 24.0 fl oz Fontelis 16.0 fl oz	1,2,6,7 3,4,5	3.0 b	0.2 b	5498 ab
Echo 720 24.0 fl oz	1-7	3.2	0.7	4668 bcd
LSD (P = 0.05)		*0.5*	*0.9*	*944*

[1] Late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease; 10 = completely dead plants)
[2] Stem rot (SR) incidence is expressed as the number of disease loci per 60 ft of row.
[3] Numbers followed by the same letter do not differ significantly.
[4] EE = Early emergent sprays 14- 21 days after planting.

EVALUATION OF THREE FUNGICIDE R_X PROGRAMS FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHWEST ALABAMA, GCREC

H.L. Campbell, A.K. Hagan, K.L. Bowen, M. Pegues and J. Jones

Objective: To evaluate three different fungicide R_X programs and compare them for control of leaf spot diseases and stem rot and yield response in a dry-land peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Georgia 09B' was planted on May 27 at the Gulf Coast Research and Extension Center near Fairhope, AL at a rate of five seed per ft of row in a field that had previously been cropped to peanut. Recommendations of the Alabama Cooperative Extension System for fertility and weed control were followed. The soil type was a Malbis fine sandy loam (Organic matter <1%). Thrips were controlled with an in-furrow application of 6-7 bl/A of Thimet 20G at planting. 5.0 lb/A of Rhizobium inoculant was also applied at planting. On May 27, after planting, 1 qt/A of RoundUp + 1 qt/A of Prowl were applied to the test area for weed control. On June 16, 8 oz/A of Gramoxone + 1.5 pt/A of Storm + Induce at 1 pt/50 of H_20 were applied for post-emergent weed control. On July 8, 0.225 oz/A of Strongarm + 2 oz/A of Cadre + Induce at 1 qt/100 gal of H_20 were applied for weed control. On July 22, 1.5 pt/A of Poast + 1 qt/A of Herbimax were applied for weed control.

Plots, which consisted of four 30-ft rows on 38 in. centers, were arranged in a randomized complete block with six replications. Plots were not irrigated. Foliar fungicides were applied at 7-14 day intervals on July 7, July 14, July 22, July 28, August 5, August 12, August 19, August 25, September 2, September 11, September 18, September 22, and September 30 as a full canopy spray using a four-row ATV mounted CO_2 sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A.

Late leaf spot was visually rated on August 13, August 27, September 10, September 23, October 8, and October 15 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants). Rust was rated using the ICRISAT rust rating scale (1 = no disease, 9 = plants severely affected, 80-100% leaves withering).

Counts of stem rot loci (SR) were made on October 16 immediately after plot inversion by determining the number of disease loci (1 ft is defined as ≤ 1 ft of consecutive

stem rot damaged plants per row). Plots were harvested on October 23 and yields were reported at <10% moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P = 0.05$).

Results: During the 2014 peanut production season, temperatures were near norm and monthly rainfall totals were near normal during June and July. However, beginning in early August and continuing through early September, a late season drought occurred. Late leaf spot appeared early but progression slowed during the drought period and never fully developed afterward resulting in lower than normal leaf spot severity. Stem rot incidence was comparable to that observed in previous years. Leaf spot intensity was lower for all fungicide R_X programs than the untreated control. All of the R_X programs gave similar levels of leaf spot control as that observed with the 4, 5 and 7 application treatments of Bravo WS. Because of the low severity of late leaf spot, AUDPC (area under the disease progress curve) showed no differences among any of the treatment programs and were only lower than that observed in the untreated control. Stem rot in the untreated control was low and although there were some differences among the treatments, none showed a significant decrease when compared with the Bravo only treatments. Because disease severity was low compared with recent years, impact on yield was minimal and all of the treatment programs yielded similarly.

COMPARISON OF FUNGICIDE R_x PROGRAMS FOR PEANUT DISEASE CONTROL IN SOUTHWEST ALABAMA, GCREC

Treatment and Rate/A	Application Timing	Risk Index	Disease ratings			Yield lb/A
			Leaf Spot[1]	AUDPC	Stem Rot[2]	
Untreated Control	---	---	5.3 a[3]	187 a	2.7 a	3896 bcde
Bravo WS 24.0 fl oz Provost 433SC 10.7 fl oz	1,7 3,5	low	3.1 cde	136 bc	1.1 abc	3514 de
Proline 480SC 5.7 fl oz Provost 433 SC 10.7 fl oz Bravo WS 24.0 fl oz	1.5 3,4.5,6 7	medium	2.9 e	131 c	1.8 abc	4198 bcd
Proline 480SC 5.7 fl oz Provost 433 SC 10.7 fl oz Convoy + Bravo WS 13.0 + 24.0 fl oz Bravo WS 24.0 fl oz	1.5 3,4,5 6 7	high	2.9 e	129 c	1.8 abc	5184 a
Headline 2.09SC 9.0 fl oz Artisan + Bravo WS 26 + 16 fl oz Topsin + Bravo WS 5 + 16 fl oz	2 3.5, 5 6.5	low	3.1 cde	131 c	1.5 abc	4389 bc
Headline 2.09SC 9.0 fl oz Artisan + Bravo 21.0 + 16.0 fl oz Topsin + Bravo WS 5 + 16 fl oz	1.5 3, 4.5, 6 7	medium	3.3 bcde	130 c	1.3 abc	4358 bc
Headline 2.09SC 9.0 fl oz Artisan + Bravo 16.0 + 19.0 fl oz Bravo WS 24.0 fl oz	1.5 3,4,5,6 7	high	3.0 de	129 c	1.0 bc	4441 bc
Tilt-Bravo 36.0 fl oz Abound 2SC + Bravo WS 18.2 + 24 fl oz Bravo WS 24.0 fl oz	2 3.5,5 6.5	low	3.3 bcde	131 c	0.8 bc	3781 bcde
Tilt-Bravo 36.0 fl oz Abound 2SC + Alto 18.2 + 5.5 fl oz Tilt-Bravo 24.0 fl oz Bravo WS 24.0 fl oz	1.5,4 3,5 4 6.5	medium	3.7 b	132 c	1.5 abc	4243 bc
Tilt-Bravo 24.0 fl oz Abound 2SC + Alto 18.2 + 5.5 fl oz Bravo WS 24.0 fl oz	1,2,4 3,5 6,7	high	3.2 bcde	132 c	1.8 abc	4022 bcde
Tilt-Bravo 36.0 fl oz Fontelis 12.0 fl oz	1,3 4.5, 6	low	3.1 cde	132 c	0.5 c	3358 e
Tilt-Bravo 36.0 fl oz Fontelis 16.0 fl oz Bravo 24.0 fl oz	1, 2.5 4,5.5 6.5	medium	3.7 b	135 bc	1.1 abc	3720 cde
Headline 2.09SC Fontelis 16.0 fl oz Bravo 24.0 fl oz	1.5 3,4,5 6,7	high	3.4 bcd	133 bc	1.0 bc	4454 b
Bravo WS 24.0 fl oz	1,3,5,7	low	3.7 b	141 b	1.4 abc	3322 e
Bravo WS 24.0 fl oz	1,2.5,4,5.5,7	medium	3.5 bc	1.5 bc	2.1 ab	4118 bcd
Bravo WS 24.0 fl oz	1-7	high	3.3 bcde	132 c	0.7 bc	4198 bcd
LSD (P = 0.05)			*0.4*	*8.3*	*1.5*	*726*

[1] Late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease; 10 = completely dead plants).
[2] Stem rot (SR) incidence is expressed as the number of disease loci per 60 ft of row.
[3] Numbers followed by the same letter do not differ significantly.

EVALUATION OF CUSTODIA AND CUPRO FIX ULTRA DISPERSE FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHWEST ALABAMA, GCREC

H.L. Campbell, A.K. Hagan, K.L. Bowen, M. Pegues, and J. Jones

Objective: To evaluate the new product Custodia and the biological product Cupro Fix Ultra Disperse for control of leaf spot diseases and stem rot and yield response in a dry-land peanut production system in southwest Alabama.

Methods: Peanut cultivar 'Georgia 09B' was planted on May 27 at the Gulf Coast Research and Extension Center near Fairhope, AL at a rate of five seed per ft of row in a field that had previously been cropped to peanut. Recommendations of the Alabama Cooperative Extension System for fertility and weed control were followed. The soil type was a Malbis fine sandy loam (Organic matter <1%). Thrips were controlled with an in-furrow application of 6-7 bl/A of Thimet 20G at planting. 5.0 lb/A of Rhizobium inoculant was also applied at planting. On May 27, after planting, 1 qt/A of RoundUp + 1 qt/A of Prowl were applied to the test area for weed control. On June 16, 8 oz/A of Gramoxone + 1.5 pt/A of Storm + Induce at 1 pt/50 of H_20 were applied for post-emergent weed control. On July 8, 0.225 oz/A of Strongarm + 2 oz/A of Cadre + Induce at 1 qt/100 gal of H_20 were applied for weed control. On July 22, 1.5 pt/A of Poast + 1 qt/A of Herbimax were applied for weed control.

Plots, which consisted of four 30-ft rows on 38 in. centers, were arranged in a randomized complete block with six replications. Plots were not irrigated. Foliar fungicides were applied at 14-day intervals on July 7, July 22, August 5, August 19, September 2, September 18, and September 30 as a full canopy spray using a four-row ATV mounted CO_2 sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A.

Late leaf spot and rust were visually rated on October 9 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants) and the ICRISAT rust rating scale (1 = no disease, and 9 = plants severely affected, 80-100% leaves withering).

Counts of stem rot loci (SR) were made on October 11 immediately after plot inversion by determining the number of disease loci (1 ft is defined as ≤ 1 ft of consecutive stem rot damaged plants per row). Plots were harvested on October 23 and yields were reported at 9.25% moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test (P = 0.05).

Results: During the 2014 peanut production season, temperatures were near norm and monthly rainfall totals were near normal during June and July. However, beginning in early August and continuing through early September, a late season drought occurred. Late leaf spot appeared early but progression slowed during the drought period and never fully developed afterward resulting in lower than normal leaf spot severity. Stem rot incidence was comparable to that observed in previous years. Leaf spot intensity was lower for all fungicide programs than the untreated control. Among the programs that included Custodia both had better leaf spot control than did the Equus only full season treatment. With the exception of the Cupro Fix Ultra Disperse treatment, all other treatment programs gave similar leaf spot control. With the exception of the Equus/Orius and Equus/Orius + Topsin treatment programs, none of the remaining treatment programs had significantly lower stem rot incidence than did the untreated control. Yield among the treatment programs was similar. None had significantly different yield than did the untreated control or the full season Equus only treatment. Among the treatment programs, highest yield was with the Equus/Fontelis program and lowest was with the Cupro Fix Ultra Disperse program.

EVALUATION OF CUSTODIA AND CUPRO FIX ULTRA DISPERSE FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHWEST ALABAMA, GCREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control	---	5.6 a[3]	1.8 a	4408 ab
Equus 720SST 24.0 fl oz Custodia 12.0 fl oz	1,2,7 3,4,5,6	2.9 de	1.0 ab	3987 ab
Equus 720SST 24.0 fl oz Custodia 15.52 fl oz	1,2,7 3,4,5,6	2.8 e	0.7 ab	4477 ab
Equus 720SST 24.0 fl oz Provost 433SC 8.0 fl oz	1,2,7 3,4,5,6	2.8 e	0.8 ab	4370 ab
Equus 720SST 24.0 fl oz Equus 720SST 24.0 fl oz + Convoy 21.0 fl oz	1,2,4,6,7 3,5	3.4 cd	1.0 ab	4247 ab
Equus 720SST 24.0 fl oz Orius 3.6F 7.2 fl oz	1,2,7 3,4,5,6	3.2 cde	0.5 b	3792 b
Equus 720SST 24.0 fl oz Abound 2.08SC 18.5 fl oz	1,2,4,6,7 3,5	3.2 cde	1.0 ab	4175 ab
Equus 720SST 24.0 fl oz Fontelis 16.0 fl oz	1,2,6,7, 3,4,5	3.0 cde	1.0 ab	4849 a
Equus 720SST 24.0 fl oz	1-7	3.5 bc	1.3 ab	4374 ab
Cupro Fix Ultra Disperse 2.0 lb	1-7	4.0 b	1.1 ab	3804 ab
Equus 720SST 24.0 fl oz Orius 3.6F 7.2 fl oz + Topsin 10.0 fl oz	1,2,7 3,4,5,6	3.5 bc	0.3 b	4136 ab
LSD (P = 0.05)		*0.5*	*1.3*	*879*

[1] Late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease; 10 = completely dead plants).
[2] Stem rot (SR) incidence is expressed as the number of disease loci per 60 ft of row.
[3] Numbers followed by the same letter do not differ significantly.

EVALUATION OF SA-0040304, MUSCLE ADV, AND PRIAXOR FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHWEST ALABAMA, GCREC

H.L. Campbell, A.K. Hagan, K.L. Bowen, M. Pegues, and J. Jones

Objective: To evaluate the new product Custodia and the biological product Cupro Fix Ultra Disperse for control of leaf spot diseases and stem rot and yield response in a dry-land peanut production system in southwest Alabama.

Methods: Peanut cultivar 'Georgia 09B' was planted on May 27 at the Gulf Coast Research and Extension Center near Fairhope, AL at a rate of five seed per ft of row in a field that had previously been cropped to peanut. Recommendations of the Alabama Cooperative Extension System for fertility and weed control were followed. The soil type was a Malbis fine sandy loam (Organic matter <1%). Thrips were controlled with an in-furrow application of 6-7 bl/A of Thimet 20G at planting. 5.0 lb/A of Rhizobium inoculant was also applied at planting. On May 27, after planting, 1 qt/A of RoundUp + 1 qt/A of Prowl were applied to the test area for weed control. On June 16, 8 oz/A of Gramoxone + 1.5 pt/A of Storm + Induce at 1 pt/50 of H_20 were applied for post-emergent weed control. On July 8, 0.225 oz/A of Strongarm + 2 oz/A of Cadre + Induce at 1 qt/100 gal of H_20 were applied for weed control. On July 22, 1.5 pt/A of Poast + 1 qt/A of Herbimax were applied for weed control.

Plots, which consisted of four 30-ft rows on 38 in. centers, were arranged in a randomized complete block with six replications. Plots were not irrigated. Foliar fungicides were applied at 14-day intervals on July 7, July 22, August 5, August 19, September 2, September 18, and September 30 as a full canopy spray using a four-row ATV mounted CO_2 sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A.

Late leaf spot and rust were visually rated on October 9 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants) and the ICRISAT rust rating scale (1 = no disease, ...9 = plants severely affected, 80-100% leaves withering).

Counts of stem rot loci (SR) were made on October 11 immediately after plot inversion by determining the number of disease loci (1 ft is defined as ≤ 1 ft of consecutive stem rot damaged plants per row). Plots were harvested on October 23 and yields were reported at 9.25% moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test (P = 0.05).

Results: During the 2014 peanut production season, temperatures were near norm and monthly rainfall totals were near normal during June and July. However, beginning in early August and continuing through early September, a late season drought occurred. Late leaf spot appeared early but progression slowed during the drought period and never fully developed afterward resulting in lower than normal leaf spot severity. Stem rot incidence was comparable to that observed in previous years. Leaf spot intensity was lower for all fungicide programs than the untreated control. Among the programs that included Custodia both had better leaf spot control than did the Equus only full season treatment. With the exception of the Cupro Fix Ultra Disperse treatment, all other treatment programs gave similar leaf spot control. With the exception of the Equus/Orius and Equus/Orius + Topsin treatment programs, none of the remaining treatment programs had significantly lower stem rot incidence than did the untreated control. Yield among the treatment programs was similar. None had significantly different yield than did the untreated control or the full season Equus only treatment. Among the treatment programs, highest yield was with the Equus/Fontelis program and lowest was with the Cupro Fix Ultra Disperse program.

EVALUATION OF SA-0040304, MUSCLE ADV, AND PRIAXOR FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHWEST ALABAMA, GCREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control	---	7.8 a[3]	11.3 a	3017 f
SA-0040304 32.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	2.5 fghi	5.3 bcd	4098 bcde
SA-0040304 32.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1.5 3,4,5,6 7	3.2 c	7.1 bc	3848 de
Echo 720 24.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	2.8 def	5.7 bcd	4033 cde
SA-0040304 32.0 fl oz + Perfectose 56.0 fl oz SA-0040304 32.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1 2 3,4,5,6 7	2.5 fghi	4.8 bcd	4235 bcde
SA-0040304 32.0 fl oz + Perfectose 56.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1.5 3,4,5,6 7	3.7 b	5.7 bcd	4029 cde
Headline 2.09SC 9.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1.5 3,4,5,6 7	2.7 efg	4.8 bcd	4469 abcd
Echo 720 24.0 fl oz Muscle 3.6F 7.2 fl oz	1,2,7 3,4,5,6	2.2 hi	5.3 bcd	4082 cde
Echo 720 24.0 fl oz Provost 433SC	1,2,7 3,4,5,6	2.3 ghi	4.3 cd	4477 abcd
Echo 720 24.0 fl oz Abound 2.08SC 18.2 fl oz	1,2,4,6,7 3,5	2.1 i	4.1 cd	4767 ab
Echo 720 24.0 fl oz Echo 720 24.0 fl oz + Convoy 21.0 fl oz	1,2,4,6,7 3,5	3.1 cd	3.5 d	4251 bcde
Headline 2.09SC 9.0 fl oz Muscle ADV 32.0 fl oz Headline 2.09SC 12.0 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	2.6 efgh	4.1 cd	3864 de
Headline 2.09SC 9.0 fl oz Muscle ADV 32.0 fl oz Headline 2.09SC 6.0 fl oz Echo 720 24.0 fl oz	1.5 3,5 4,6 7	2.5 fghi	4.3 cd	4953 a
Priaxor 6.0 fl oz Muscle ADV 32.0 fl oz Priaxor 8.0 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	2.4 fghi	3.5 d	4025 cde
Priaxor 6.0 fl oz Muscle ADV 32.0 fl oz Priaxor 4.0 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	2.3 ghi	4.5 bcd	4614 abc
Priaxor 4.0 fl oz Muscle ADV 32.0 fl oz Priaxor 4.0 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	2.6 efgh	3.8 d	4549 abc
Echo 720 24.0 fl oz	1-7	2.9 cde	7.7 b	3751 e
LSD (P ≤ 0.05)		*0.3*	*3.2*	*681*

[1] Early and late leaf spot were assessed using the Florida leaf spot scoring system

[2] Stem rot incidence is expressed as the number of disease loci per 60 ft of row at inversion.

[3] Mean separation within columns was according to Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

EVALUATION OF CHLOROTHALONIL AND ALTERNATIVE FUNGICIDE PRODUCTS FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHWEST ALABAMA, GCREC

H.L. Campbell, A.K. Hagan, K.L. Bowen, M. Pegues, and J. Jones

Objective: To evaluate the chlorothalonil alternatives Elast, Koverall in combination with currently registered fungicides for control of leaf spot diseases and stem rot and yield response in a dry-land peanut production system in southwest Alabama.

Methods: Peanut cultivar 'Georgia 06G' was planted on May 22 at the Gulf Coast Research and Extension Center near Fairhope, AL at a rate of five seed per ft of row in a field that had previously been cropped to peanut. Recommendations of the Alabama Cooperative Extension System for fertility and weed control were followed. The soil type was a Malbis fine sandy loam (Organic matter <1%). Thrips were controlled with an in-furrow application of 6-7 bl/A of Thimet 20G at planting. 5.0 lb/A of Rhizobium inoculant was also applied at planting. On May 27, after planting, 1 qt/A of RoundUp + 1 qt/A of Prowl were applied to the test area for weed control. On June 16, 8 oz/A of Gramoxone + 1.5 pt/A of Storm + Induce at 1 pt/50 of H_20 were applied for post-emergent weed control. On July 8, 0.225 oz/A of Strongarm + 2 oz/A of Cadre + Induce at 1 qt/100 gal of H_20 were applied for weed control. On July 22, 1.5 pt/A of Poast + 1 qt/A of Herbimax were applied for weed control.

Plots, which consisted of four 30-ft rows on 38 in. centers, were arranged in a randomized complete block with six replications. Plots were not irrigated. Foliar fungicides were applied at 14-day intervals on July 7, July 22, August 5, August 18, September 2, September 18, and September 30 as a full canopy spray using a four-row ATV mounted CO_2 sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A.

Late leaf spot and rust were visually rated on October 6 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants) and the ICRISAT rust rating scale (1 = no disease, and 9 = plants severely affected, 80-100% leaves withering).

Counts of stem rot loci (SR) were made on October 7 immediately after plot inversion by determining the number of disease loci (1 ft is defined as ≤ 1 ft of consecutive stem rot damaged plants per row). Plots were harvested on October 15 and

yields were reported at <10% moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test (P = 0.05).

Results: During the 2014 peanut production season, temperatures were near norm and monthly rainfall totals were near normal during June and July. However, beginning in early August and continuing through early September, a late season drought occurred. Late leaf spot appeared early but progression slowed during the drought period and never fully developed afterward resulting in lower than normal leaf spot severity. Stem rot incidence was comparable to that observed in previous years. Leaf spot intensity was lower for all fungicide programs than the untreated control. Compared to the Echo only full season treatment, control of leaf spot varied among the alternative treatment programs. Among the treatment programs that included either Elast or Koverall, the Elast/Muscle ADV, Elast only, Elast/Artisan +Elast, and Koverall/Azaka programs had similar leaf spot control as that observed with the Echo only treatment. Rust never materialized therefore no data was taken. Stem rot incidence was reduced among all treatment programs when compared with the untreated control however the Echo/ Headline treatment was not significantly different. None of the treatment programs significantly reduced stem rot when compared with Echo only treatment. Among the treatment programs, Koverall applied full season and Koverall/Azaka significantly increased yield when compared with the untreated control. Yield among the other programs was not significantly different than the untreated control. Yield among all treated plots was similar.

EVALUATION OF CHLOROTHALONIL ALTERNATIVE FUNGICIDE PRODUCTS FOR FOLIAR AND SOIL-BORNE DISEASE CONTROL OF PEANUTS IN SOUTHWEST ALABAMA, GCREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control	---	5.5 a[3]	4.5 a	4519 bcd
Elast 15.0 fl oz Muscle ADV 32.0 fl oz	1,2,7 3,4,5,6	3.1 cd	0.2 b	4840 ab
Elast 15.0 fl oz Muscle 3.6F 7.2 fl oz	1,2,7 3,4,5,6	3.8 b	1.5 b	4048 d
Elast 15.0 fl oz	1-7	3.5 bcd	0.5 b	4691 abc
Elast 15.0 fl oz Artisan + Elast 26.0 fl oz + 15.0 fl oz	1,2,4,6,7 3,5	3.4 bcd	2.0 b	4496 bcd
Koverall 2.0 lb Muscle 3.6F 7.2 fl oz + Koverall 2.0 lb	1,2,7 3,4,5,6	3.8 b	1.0 b	4840 ab
Koverall 2.0 lb Artisan 26.0 fl oz + Koverall 2.0 lb	1,2,7 3,4,5,6	3.9 b	1.5 b	4674 abc
Koverall 2.0 lb	1-7	3.6 bc	0.5 b	5138 a
Koverall 2.0 lb Muscle 3.6F	1,2,7 3,4,5,6	3.6 bc	1.5 b	4524 bcd
Echo 24.0 fl oz Headline 2.09SC 9.0 fl oz	1,2,4,6,7 3,5	3.0 d	2.2 ab	4766 abc
Elast 15.0 fl oz Azaka 18.2 fl oz	1,2,4,6,7 3,5	3.9 b	1.0 b	4209 cd
Koverall 2.0 lb Azaka 18.2 fl oz	1,2,4,6,7 3,5	3.1 cd	0.2 b	5201 a
Echo 720 24.0 fl oz	1-7	3.0 d	0.2 b	5069 ab
LSD (P ≤0.05)		*0.6*	*2.3*	*591*

[1]Early and late leaf spot were assessed using the Florida leaf spot scoring system.
[2]Stem rot incidence is expressed as the number of disease loci per 60 ft of row at inversion.
[3]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

RECOMMENDED FUNGICIDE PROGRAMS COMPARED FOR YIELD RESPONSE AS WELL AS LEAF SPOT AND STEM ROT CONTROL IN SOUTHEAST ALABAMA, WREC

A.K. Hagan, H.L. Campbell, K.L. Bowen and L. Wells

Objective: Compare the effectiveness of recommended fungicide programs for the control of leaf spot diseases and white mold as well as assess their impact on the yield of two peanut varieties.

Production Methods: The study area at the Wiregrass Research and Extension Center, which is maintained in a peanut-corn rotation, was turned with a moldboard plow and worked to seed bed condition with a disk harrow. On April 20, rows were laid off with a KMC strip till rig with rolling baskets. On May 16, the peanut varieties Georgia-06G and Tifguard were planted at a rate of 6 seed per foot in a Dothan fine sandy loam (OM<1%) soil. Thimet 20G at 5 pounds per acre was applied in-furrow for thrips control. Weed control was obtained with a April 24 pre-plant, incorporated broadcast application of 1 quart per acre Sonalan HFP + 1.5 pint per acre Dual Magnum II followed broadcast applications of 3 ounces per acre Valor by May 20 and 4 ounces per acre Cadre on June 17. Soil fertility recommendations of the Alabama Cooperative Extension System were followed.

The test area received 0.5 acre inches of water on July 7 followed by 1.0 acre inches of water on July 31, August 8, August 19, September 4, and September 17. A factorial design, arranged in split plot, with peanut cultivar as whole plots and fungicide treatments as sub-plots was used. Whole plots were randomized in four complete blocks. Sub-plots, which consisted of four 30-foot rows spaced 3-feet apart, were randomized within each whole plot. Fungicides were applied on 1 = July 1, 1.5 = July 8, 2 = July 14, 3 = July 29, 4 = August 11, 5 = August 26, 6 = September 12, and September 26 with a tractor mounted boom sprayer with three TX-8 nozzles per row calibrated to deliver 15 gallons per acre of spray volume 45 psi.

On October 13, early and late leaf spot diseases were rated together using the 1-10 Florida peanut leaf spot scoring system where 1 = no disease, 2 = very few leaf spots, 3 = few leaf spots in lower and upper canopy, 4 = some leaf spotting and ≤ 10% defoliation, 5 = leaf spots noticeable and ≤ 25% defoliation, 6 = leaf spots numerous and ≤ 50% defoliation, 7 = leaf spots very numerous and ≤ 75% defoliation, 8 = numerous leaf spots on few remaining leaves and ≤ 90% defoliation, 9 = very few remaining leaves covered with leaf spots and ≤ 95% defoliation, and 10 = plants defoliated or dead. On October 21, white mold hit counts (1 hit was defined as ≤ 1 foot of consecutive white mold-damaged plants per row) were made immediately after plot inversion. Plots were combined several days after inversion. Yields were reported at 6.6% moisture. Significance of interactions was evaluated using PROC GLIMMIX in SAS. Statistical analyses were calculated on rank transformations for non-normal data for leaf spot diseases and white mold, which were back transformed for presentation. Means were separated using Fisher's least significant difference (LSD) test ($P \leq 0.05$).

Rainfall totals for May and June were at or above the 30 year average but below to well below

average for July, August, and September. Temperatures were near to above average in May, June, July, August, and September. As indicated by a significant variety × fungicide treatment interaction for leaf spot intensity, the ranking of treatment performance against leaf spot diseases differed by peanut variety with Georgia-06G having a higher mean leaf spot rating than Tifguard. On both varieties, leaf spot symptoms were limited to light leaf spotting in the lower canopy with limited premature defoliation. On the former variety, all fungicide programs except for the full-season Echo 720 standard gave better leaf spot control than the Echo 720/Muscle ADV and Echo 720/Convoy + Echo 720 programs. The Echo 720/Abound 2.08SC + Alto 0.83SL, Echo 720/Provost 433SC, Headline 2.09SC/Muscle ADV/Headline 2.09SC/Echo 720, Echo 720/Fontelis, Echo 720/Artisan 3.6E + Echo 720, and Priaxor/Muscle ADV Priaxor/Echo 720 programs were similarly effective in controlling leaf spot diseases on Georgia-06G. The season-long Echo 720 standard matched the efficacy of Priaxor/Muscle ADV Priaxor/Echo 720, Echo 720/Fontelis, Echo 720/Muscle ADV, Echo 720/Provost 433SC, and Echo 720/Artisan 3.6E + Echo 720 in controlling leaf spot diseases on Tifguard.

Programs that provided better disease control on Tifguard than on Georgia-06G were the Echo 720 standard, Priaxor/Muscle ADV Priaxor/Echo 720, Echo 720/Muscle ADV, and Echo 720/Fontelis. As indicated by a non-significant variety × treatment interaction, the ranking of fungicide programs efficacy for the control of white mold was similar on both peanut varieties. Better white mold control was obtained with the Echo 720/Convoy + Echo 720 than any other program except for Echo 720/Fontelis. White mold ratings for the Echo 720 standard, Echo 720/Provost 433SC, Headline 2.09SC/Muscle ADV/Headline 2.09SC/Echo 720, and Echo 720/Abound 2.08SC + Alto 0.83SL matched the high level of white mold damage recorded for the Echo 720/Muscle ADV, Priaxor/Muscle ADV Priaxor/Echo 720 programs. In the absence of a significant variety x fungicide program interaction, yields for both varieties were pooled. Yields response obtained with Echo 720/Convoy + Echo 720, Echo 720/Artisan 3.6E + Echo 720, and Echo 720/Abound 2.08SC + Alto 0.83SL did not differ from those recorded for the highest yielding program Echo 720/Fontelis. Low yields similar to those obtained with the Echo 720 standard were recorded for all remaining programs except for Echo 720/Convoy + Echo 720, Echo 720/Artisan 3.6E + Echo 720, and Echo 720/Abound 2.08SC + Alto 0.83SL.

Summary: While overall leaf spot pressure was light to moderate, significant differences in leaf spot control were seen between recommended fungicide programs. Several programs gave better disease control on Tifguard than Georgia-06G with the former variety suffering significantly less leaf spotting and premature leaf shed. On Tifguard, Priaxor/Muscle ADV Priaxor/Echo 720, Echo 720/Fontelis, Echo 720/Muscle ADV, Echo 720/Provost 433SC, Echo 720/Artisan 3.6E + Echo 720, and Echo 720 standard alone all gave superior leaf spot control. The pattern of white mold control with all recommended fungicide programs was the same on both peanut varieties with Tifguard suffering significantly less damage. The high level of white mold control obtained with Echo 720/

Fontelis and Echo 720/Convoy + Echo 720 was reflected in higher pod yields. Echo 720/ Provost 433SC and Echo/Muscle ADV, and Headline 2.09SC/Muscle ADV/Headline 2.09SC/ Echo 720 proved unexpectedly ineffective in controlling white mold and had relatively poor yield response. Despite higher leaf spot and white mold ratings, Georgia-06G posted yields similar to Tifguard.

COMPARISON OF RECOMMENDED FUNGICIDE PROGRAMS FOR THE CONTROL OF LEAF SPOT DISEASE AND WHITE MOLD ALONG WITH YIELD RESPONSE OF TWO PEANUT VARIETIES

Factorial analysis (*F* values)	Application Timing[1]	Leaf Spot Intensity [2]		White Mold # Hits/60 ft[3]	Yield lb/A
Variety	--	51.14***[4]		3.28	0.66
Fungicide program	--	1.83		4.45***	4.79***
Variety x fungicide program	--	2.79**		0.76	1.11
Peanut variety					
Georgia-06G	--	3.7 a[5]		6.7 a	5684 a
Tifguard	--	3.3 b		4.5 b	5391 a
Fungicide program		*Georgia-06G*	*Tifguard*		
Echo 720 1.5 pt	1-7	3.9 ab	3.2 gh	6.9 ab	5090 d
Priaxor 6 fl oz Muscle ADV 1 qt Priaxor 6 fl oz Echo 720 1.5 pt	1.5 3,5 4,6 7	3.7 bcd	3.1 h	7.8 a	5457 bcd
Echo 720 1.5 pt Provost 433SC 10.7 fl oz	1,2,7 3-6	3.5 c-f	3.3 fgh	5.8 ab	5284 cd
Echo 720 1.5 pt Convoy 26 fl oz + Echo 720 1.5 pt	1,2,4,6,7 3,5	3.8 abc	3.5 c-f	2.5 d	5869 ab
Echo 720 1.5 pt Artisan 3.6E 26 fl oz + Echo 720 1.5 pt	1,2,4,6,7 3,5	3.7 bcd	3.4 d-g	4.3 bc	5735 abc
Echo 720 1.5 pt Muscle ADV 1 qt	1,2,7 3,4,5,6	4.1 a	3.3 fgh	7.9 a	5230 bcd
Headline 2.09SC 9 fl oz Muscle ADV 1 qt Headline 2.09SC 9 fl oz Echo 720 1.5 pt	1.5 3,5 4 6,7	3.6 b-e	3.5 c-f	6.7 ab	5429 bcd
Echo 720 1.5 pt Fontelis 16 fl oz	1,2,6,7 3,4,5	3.7 bcd	3.2 gh	2.9 cd	6139 a
Echo 720 1.5 pt Abound 2.08SC + Alto 0.83SL 5.5 fl oz	1,2,4,6,7 3,5	3.4 d-g	3.3 e-h	5.8 ab	5611 a-d

[1] Fungicide application dates were 1) July 1, 1.5) July 8, 2) July 14, 3) July 29, 4) August 11, 5) August 26, 6) September 12, 7) September 26.

[2] Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale.

[3] White mold incidence is expressed as the number of disease loci per 60 ft of row.

[4] Significance of *F* values at the 0.05, 0.01, and 0.001 levels is indicated by *, **, or ***, respectively.

[5] Means in each column that are followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test ($P \leq 0.05$).

STANDARD- AND HIGH-INPUT FUNGICIDE PROGRAMS IMPACT DISEASE CONTROL AND YIELDS OF SELECTED PEANUT VARIETIES, WREC

A. K. Hagan, H. L. Campbell, K. L. Bowen, and L. Wells

Objective: Compare the yields and level of leaf spot and white mold control obtained with **a** standard **a**nd high input fungicide program on selected commercial peanut cultivars at the Wiregrass Research and Extension Center in southeast Alabama.

Production Methods: The study area at the Wiregrass Research and Extension Center, which is maintained in a peanut-corn rotation, was turned with a moldboard plow and worked to seed bed condition with a disk harrow. On April 20, rows were laid off with a KMC strip till rig with rolling baskets. On 16 May, the peanut varieties Georgia-06G and Tifguard were planted at a rate of 6 seed per foot of row in a Dothan fine sandy loam (OM<1%) soil. Thimet 20G at 5 pounds per acre was applied in-furrow for thrips control. Weed control was obtained with a April 24 pre-plant, incorporated broadcast application of 1 quarts per acre Sonalan HFP + 1.5 pints per acre Dual Magnum II followed broadcast applications of 3 ounces per acre Valor by May 20, and 4 ounces per acre Cadre on June 17.

Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The test area received 0.5 acre inches of water on July 7 followed by 1.0 acre inches of water on July 31, August 8, August 19, September 4, and September 17. A factorial design, arranged in split plot, with peanut cultivar as whole plots and fungicide treatments as sub-plots was used. Whole plots were randomized in four complete blocks. Sub-plots, which consisted of four 30-foot rows spaced 3-feet apart, were randomized within each whole plot. While the standard fungicide program consisted of eight applications of 1.5 pints per acre Bravo WeatherStik 6F, the high input program included two initial applications of 1.5 pints per acre Bravo WeatherStik 6F followed by 1.1 pints per acre Abound 2SC, 1.5 pints per acre Bravo WeatherStik 6F + 21 fluid ounces per acre Convoy, 1.1 pints per acre Abound 2SC, 1.5 pints per acre Bravo WeatherStik 6F + 21 fluid ounces per acre Convoy, and two applications of 1.5 pints per acre Bravo WeatherStik 6F. Fungicides were applied on 1 = July 1, 2 = July 14, 3 = July 29, 4 = August 11, 5 = August 26, 6 = September 12, 7 = September 26, and 8 = October 9 with a tractor mounted boom sprayer with three TX-8 nozzles per row calibrated to deliver 15 gallons per acre of spray volume 45 psi. Thrips feeding damage to the juvenile leaves and shoot terminals was rated on a 1 to 10 scale on June 3. Tomato spotted wilt hits counts (1 hit was defined as ≤ 1 foot of consecutive severely TSW-damaged plants per row) were made on August 14.

Early and late leaf spot diseases were rated together using the 1-10 Florida peanut leaf spot scoring system where 1 = no disease, 2 = very few leaf spots, 3 = few leaf spots in lower and upper canopy, 4 = some leaf spotting and ≤ 10% defoliation, 5 = leaf spots noticeable and ≤ 25% defoliation, 6 = leaf spots numerous and ≤ 50% defoliation, 7 = leaf spots very numerous and ≤ 75% defoliation, 8 = numerous leaf spots on few remaining leaves

and ≤ 90% defoliation, 9 = very few remaining leaves covered with leaf spots and ≤ 95% defoliation, and 10 = plants defoliated or dead on October 13. On October 21, white mold hit counts (1 hit was defined as ≤ 1 foot of consecutive white mold-damaged plants per row) were made immediately after plot inversion. Plots were combined several days after inversion. Yields were reported at 6.6% moisture. Significance of interactions was evaluated using PROC GLIMMIX in SAS. Statistical analyses were calculated on rank transformations for non-normal data for leaf spot intensity, AUDPC, and white mold incidence, which were back transformed for presentation. Means were separated using Fisher's least significant difference (LSD) test ($P \leq 0.05$).

Rainfall totals for May and June were at or above the 30 year average but below to well below average for July, August, and September. Temperatures were near to above average in May, June, July, August, and September.

Results: Incidence of TSW was very low across all varieties and is not presented. Flavorunner 458 and Tifguard had higher thrips damage ratings than all other varieties except for TUFRunner 511 and TUFRunner 727, while Georgia Greener suffered the least thrips damage (Table 1). As indicated by a significant variety × fungicide interaction, leaf spot intensity differed by peanut variety and fungicide program. Higher leaf spot intensity ratings were observed for the high- than standard-input fungicide program on Flavorunner 458, Florida-07, Georgia-12Y, Georgia Greener, TUFRunner 511, and TUFRunner 727. The remaining varieties had similar leaf spot ratings for the standard- and high-input fungicide programs. With the standard fungicide program, highest leaf spot intensity was recorded for Georgia-06G, while the ratings for Tifguard, Georgia-12Y, Georgia-09B, and Flavorunner 458 matched the low ratings obtained for TUFRunner 727. Under the high-input fungicide program, TUFRunner 511 had higher leaf spot ratings than all varieties except for Georgia-06G and Georgia Greener, while Georgia-09B and Tifguard had similarly low leaf spot intensity ratings. Highest season-long leaf spot AUDPC values were noted for Georgia-09B, Tifguard, and Flavorunner 458. Low AUDPC values obtained for TUFRunnner 727 was similar to those for Georgia Greener, TUFRunner 511, FloRun 107, Georgia-06G, and Florida-07. Flavorunner 458 had higher stem rot ratings than all varieties except for Georgia-09B, while Georgia-12Y suffered the least damage. The high yields recorded for Florida-07 were similar to all varieties except for Tifguard, Georgia Greener, and Flavorunner 458 with the latter variety producing the lowest pod yield. The standard fungicide program provided better leaf spot but poorer stem rot control than the high-input program. Yield was not influenced by fungicide program.

Summary: Low TSW rating continues a trend of low virus activity that has been seen over the previous three production seasons. The low level of symptomatic plants proved to be a bit of a surprise given the sizable thrips population peak in May 2014 as well as high thrips feeding damage observed in other trials at this same location. Elevated thrips feeding injury on Tifguard, TUFRunner 511, and TUFRunner 727 suggest that additional thrips control inputs may be needed on these compared with other peanut varieties to maintain sufficient

control of this pest. Unfortunately, the lowest thrips damage ratings were noted for the now unavailable varieties Georgia-07W and Georgia Greener. While differences were noted between varieties, the overall level of leaf spotting and premature defoliation was insufficient to significantly impact pod yield. On several varieties, higher leaf spot intensity ratings were recorded for the costly high-input compared with standard input fungicide program. Overall white mold damage levels were not particularly high on any widely grown peanuts lines. Very low white mold hit counts for Georgia-12Y and TUFRunner 511 suggests that both varieties have good resistance to this disease. All of the widely planted varieties had similarly high yields, while the now unavailable Georgia Greener and susceptible control Flavorunner 458 yields were lower. Fungicide program inputs had limited impact on diseases with the standard program giving better and poorer control of leaf spot diseases and white mold, respectively, compared with the high-input fungicide program. Due largely to low leaf spot and particularly white mold pressure, no yield advantage was noted for the high- than for the standard-input fungicide programs.

DISEASE CONTROL AND YIELD RESPONSE OF COMMERCIAL RUNNER-TYPE PEANUT VARIETIES AS INFLUENCED BY FUNGICIDE INPUT LEVEL AT THE WREC

		Leaf Spot				
Source (F values)	TDR Rating[1]	Intensity [2]		AUDPC	White Mold # Hits/60 ft[3]	Yield lb/A
Peanut Variety	7.59***	5.24***		3.58***	6.63***	4.75***
Fungicide program	0.00	80.03***		21.10***	44.86***	0.53
Variety x fungicide	0.00	5.01***		0.97	1.91	1.81
Peanut Variety		*Standard*	*Hi-Input*			
Flavorunner 458	4.6 a[4]	2.8 j	3.7 b-e	137 ab	5.9 a	4811 d
Florida-07	3.8 cd	3.2 ghi	3.8 a-d	129 bcd	2.3 cd	6292 a
FloRun 107	4.0 bc	3.7 b-e	3.5 d-g	127 cd	3.0 bc	5934 ab
Georgia-06G	3.8 cd	3.8 a-d	4.0 ab	127 cd	4.0 bc	5889 ab
Georgia-07W	3.4 de	3.3 f-i	3.6 c-f	130 bcd	2.5 bc	5890 ab
Georgia-09B	3.8 cd	3.0 ij	3.2 ghi	142 a	3.5 ab	5963 ab
Georgia-12Y	3.8 cd	3.0 ij	3.4 e-h	131 bc	0.2 e	6074 ab
Georgia Greener	3.2 e	3.4 e-h	4.0 abc	124 cd	1.6 cd	5023 cd
Tifguard	4.6 a	3.0 ij	3.1 hij	137 ab	2.2 cd	5769 bc
TUFRunner 511	4.4 ab	3.2 ghi	4.2 a	127 cd	1.1 de	6277 ab
TUFRunner 727	4.4 ab	2.7 j	3.5 d-g	123 d	1.9 cd	6287 ab
Fungicide program						
Standard	4.0 a	---		127 b	3.7 a	5792 a
Hi-Input	4.0 a	---		134 a	1.5 b	5881 a

[1] Thrips feeding damage (TDR) on juvenile leaves and shoot terminals was rated on a 1 to 10 scale on June 3.
[2] Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale.
[3] White mold incidence is expressed as the number of disease hits per 60 ft of row.
[4] Means in each column that are followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test ($P \leq 0.05$).

STANDARD IMPACT OF ROW SPACING, CULTIVAR, AND INSECTICIDES ON THRIPS DAMAGE, TSW AND WHITE MOLD INCIDENCE, LEAF SPOT AND YIELD OF THREE PEANUT CULTIVARS, WREC

A. K. Hagan, H. L. Campbell, and L. Wells

Objective: Evaluate the effect of row spacing, cultivar selection, along with seed treatment, granular in-furrow, and at-cracking insecticide treatments on the level of thrips feeding damage to juvenile leaves and terminals, incidence of TSW and white mold, leaf spot intensity, and yield of peanut in 2014.

Production Methods: The study area at the Wiregrass Research and Extension Center, which is maintained in a peanut-cotton rotation, was turned with a moldboard plow and worked to seed bed condition with a disk harrow. Rows were laid off with a KMC strip till rig with rolling baskets. On May 7, the peanut varieties Flavorunner 458, Georgia-12Y, and Georgia-06G were planted at a rate of 6 seed/ft in a Dothan fine sandy loam (OM<1%) soil. With the exception of the peanut seed treated with CruiserMaxx 4 ounces per 100 pounds of seed, all remaining peanut seed were treated with Dynasty PD fungicide seed treatment at 3.4 ounces per 100 pounds of seed. Weed control was obtained with a May 6 pre-plant, incorporated broadcast application of 1 quart per acre Sonalan HFP + 0.45 ounces per acre Strongarm followed an at-plant broadcast application of 3 ounces per acre Valor on May 7. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The area received 0.5 acre inches of water on July 7 followed by 1.0 acre inches of water on July 21, July 28, August 5, August 25, September 2, and September 15. A factorial design, arranged in split split-plot, with peanut cultivar as whole plots, single or twin row spacing as the split plot, and insecticides as the split split-plot treatments was used. Whole plots were randomized in four complete blocks. The smallest experimental units, which consisted of four 30-foot rows spaced 3-feet apart, were randomized within each whole plot. While 5.5 ounces per 1000 foot of row Thimet 20G granular insecticide was applied in-furrow at planting, foliar applications of the insecticides Radiant SC at 5 fluid ounces per acre and Admire Pro at 1.7 fluid ounces per acre were made on May 27 using a tractor-mounted sprayer with a single drop nozzle with a TX-8 tip located over the row middle at 10 gallons of spray volume per acre at 31 psi. Chlorothalonil at 1.5 pints per acre was applied for leaf spot control on June 16, July 1, July 14, July 28, August 12, August 26, and September 11 with a tractor mounted boom sprayer with three TX-8 nozzles per row calibrated to deliver 15 gal/A of spray volume 45 psi.

Thrips and Disease Damage Assessment: Thrips damage on the leaves was assessed on June 10 on a 0 to 10 scale where 0 = no visible leaf scarring, 1=10% leaf area scarred, 2=20% leaf area scarred, 3=30% leaf area scarred, 4=40% leaf area scarred, to 10=100% leaf area affected and plants near death. Final tomato spotted wilt (TSW) hit counts (1 hit was defined as ≤ 1 foot of consecutive TSW-damaged plants per row) were made on September 18. On September 18, early and late leaf spot diseases were rated together using the 1-10 Florida peanut leaf spot scoring system where 1 = no disease, 2 = very few leaf spots, 3 = few leaf spots in lower and upper canopy, 4 = some leaf spotting and ≤ 10% defoliation, 5 = leaf spots noticeable and ≤ 25% defoliation, 6 = leaf spots numerous and ≤ 50% defoliation, 7 = leaf spots very numerous and ≤ 75% defoliation, 8 = numerous leaf spots on few remaining leaves and ≤ 90% defoliation, 9 = very few remaining leaves covered with leaf spots and ≤ 95% defoliation, and 10 = plants defoliated or dead. White mold hit counts (1 hit was defined as ≤ 1 foot of consecutive damaged plants per row) were made immediately after plot inversion on September 26 for Flavorunner 458 and Georgia-06G, and on October 13 for Georgia-12Y. Plots were combined several days after inversion. Significance of interactions was evaluated using PROC GLIMMIX in SAS. Statistical analyses were calculated on rank transformations for non-normal data for thrips damage, TSW, leaf spot diseases and white mold, which were back transformed for presentation. Means were separated using Fisher's least significant difference (LSD) test ($P \leq 0.05$).

Results: Thrips damage, TSW and white mold incidence, and leaf spot intensity differed by peanut variety (Table 1). Thrips damage was higher on Flavorunner 458 than Georgia-12Y and Georgia-06G with the latter variety having the lowest damage rating (Table 2). While Flavorunner 458 had considerably higher TSW ratings, disease incidence in Georgia-12Y and Georgia-06G was very low. While overall leaf spot intensity was low, leaf spot levels were lower for Georgia-06G than Georgia-12Y and Flavorunner 458, which both had similarly higher leaf spot intensity ratings. White mold ratings were lower for Georgia-06G and Georgia-12Y compared with Flavorunner 458.

TABLE 1. *F* VALUES FOR GENERALIZED LINEAR MODELS GENERATED FOR EFFECTS FOR THRIPS DAMAGE, TSW AND WHITE MOLD INCIDENCE, AND YIELD AS INFLUENCED BY PEANUT CULTIVAR, ROW SPACING, AND INSECTICIDE TREATMENT.

Source of Variation (*F* values)	Thrips Damage	TSW	Leaf Spot	White Mold	Yield
Variety	14.71***[1]	84.84***	11.51**	14.00**	6.61*
Row Spacing	21.76***	0.30	2.94^	3.70^	4.42*
Variety x Row Spacing	0.05	0.73	0.11	0.95	2.72^
Treatment	71.09***	0.60	1.47	0.87	0.49
Peanut Variety x Treatment	0.46	0.61	0.66	0.80	0.31
Row Spacing x Treatment	22.47***	0.71	0.75	0.27	0.83
Variety x Row Spacing x Treatment	1.11	0.37	0.72	0.96	2.27*

[1]Significance at the 0.05, 0.01, and 0.001 levels is indicated by *, **, or ***, respectively.

TABLE 2. THRIPS DAMAGE RATING, TSW AND WHITE MOLD INCIDENCE, AND LEAF SPOT INTENSITY AS INFLUENCED BY CULTIVAR SELECTION

Peanut Variety	Thrips Damage[1]	TSW Incidence[2]	Leaf Spot[3]	White Mold[2]
Flavorunner 458	7.5a[4]	4.0 a	3.0 a	1.9 a
Georgia 12Y	7.0 b	0.0 b	3.1 a	0.4 b
Georgia 06G	6.5 c	0.3 b	2.8 b	1.0 b

[1] Thrips damage rating on the leaves was assessed on June 10 on a 0 to 10 scale.
[2] TSW and white mold incidence is expressed as the number of disease loci per 60 foot of row.
[3] Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale.
[4] Means in each column followed by the same letter are not significantly different according to Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

While considerable damage attributed to thrips, symptoms on juvenile leaves and shoot tips were lower for the twin than single row peanuts (Table 3). Row spacing did not impact TSW or white mold incidence as well as leaf spot intensity.

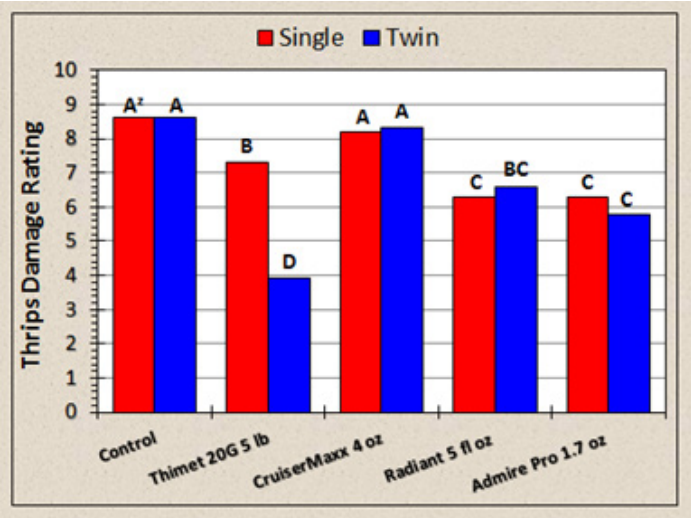
TABLE 3. ROW SPACING IMPACT ON THRIPS DAMAGE, TSW AND WHITE MOLD INCIDENCE, AND LEAF SPOT INTENSITY

Row Spacing	Thrips Damage[1]	TSW Incidence[2]	Leaf Spot[3]	White Mold[2]
Single	7.3 a[4]	1.5 a	2.9 a	1.3 a
Twin	6.6 b	1.4 a	3.0 a	0.9 a

[1] Thrips damage rating (TDR) on the leaves was assessed on June 10 on a 0 to 10 scale.
[2] TSW and white mold incidence is expressed as the number of disease loci per 60 foot of row.
[3] Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale.
[4] Means in each column followed by the same letter are not significantly different according to Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Thrips damage ratings to the juvenile leaves and shoot terminals were influenced by row spacing and insecticide (Table 1). When compared with the non-insecticide control, significant reductions in the level of thrips damage were obtained with Thimet 20G applied in-furrow as well as at-cracking applications of Radiant and Admire Pro but not with the CruiserMaxx seed treatment (Fig. 4). Low thrips damage ratings were recorded for Thimet 20G applied to the twin than single row peanuts with the latter treatment giving the best thrips protection. Regardless of the row spacing, Radiant and Admire Pro proved equally effective in protecting against thrips. Overall, none of the insecticide treatments gave a high level of thrips protection except for Thimet 20G applied to the twin row peanuts.

Figure 1. Thrips damage ratings as impacted by row spacing and insecticide treatment.



[Z] Means in each column followed by the same letter are not significantly different according to Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Overall TSW, leaf spot, and white mold damage was low. Insecticide treatments had no impact on leaf spot intensity along with TSW and white mold intensity (Table 4).

TABLE 4. IMPACT OF INSECTICIDE TREATMENTS ON LEAF SPOT INTENSITY, TSW AND WHITE MOLD INCIDENCE

Insecticide Treatments and Rate/A	Placement	TSW Incidence[1]	Leaf Spot[2]	White Mold Incidence[1]
Control	---	1.8 a[3]	3.0 a	1.1 a
Thimet 20G 5.5 oz/1000 row ft	In-furrow	1.2 a	2.9 a	1.4 a
CruiserMaxx 4 oz/100 lb seed	Seed treatment	1.6 a	3.0 a	1.2 a
Radient 5 fl oz	At-cracking[4]	1.3 a	2.9 a	1.0 a
Admire Pro 1.7 oz	At-cracking	1.4 a	3.0 a	0.8 a

[1] TSW and white mold incidence is expressed as the number of disease loci per 60 foot of row.
[2]Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale.
[3]Means in each column that are followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test ($P \leq 0.05$).
[4]At-cracking insecticide applications were applied on a narrow band 20 days after planting on May 27.

Due to a significant peanut variety × row spacing × insecticide interaction, yield data are segregated by cultivar, row spacing, and insecticide treatment (Table 1). On single rows, similar yields were noted for all cultivars when treated with CruiserMaxx and for the non-insecticide treated control. When established on single rows and treated with Thimet 20G, higher yields were reported for Georgia-12Y and Georgia-06G than for Flavorunner 458 (Table 5). When treated with Radiant, higher yields were recorded for Georgia-06G compared with Flavorunner 458. Also, Georgia-12Y had higher yields on single rows than Flavorunner 458 when treated with Admire Pro. On twin rows, similar yields were noted across all cultivars for all insecticide treatments except with Admire Pro where Georgia-06G outyielded Georgia-12Y and Flavorunner 458. No differences in yield were noted for Flavorunner 458 on the single and twin row across all insecticide treatments. While similar yields were recorded for Georgia-06G on single rows for all insecticide treatments, higher yields for this same cultivar on twin rows were noted for the Admire Pro compared with Radiant. For the single row Georgia-12Y, yields were higher with Admire Pro-treated Georgia-12Y than the non-insecticide control. Similar yields were obtained for all insecticide treatments on the twin row Georgia-12Y peanut.

TABLE 5. POD YIELD AS INFLUENCED BY ROW SPACING, CULTIVAR SELECTION, AND INSECTICIDE TREATMENT

Row Spacing and Insecticide Treatment	Peanut Cultivar		
Single Row	Flavorunner 458[1]	Georgia-06G	Georgia-12Y
Non-insecticide treated control	4586 d-h	4574 d-h	4864 c-h
Thimet 20G 5.5 oz/1000 row ft	3775 h	5276 a-g	5106 b-g
CruiserMaxx 4 oz/100 lb seed	4187 gh	5070 b-g	5167 a-g
Radiant 5 fl oz	4319 f-h	5554 a-d	5191 a-g
Admire Pro 1.7 oz	4344 e-h	5082 b-g	6231 ab
Twin Row			
Non-insecticide treated control	4271 fgh	5349 a-f	5590 a-d
Thimet 20G 5.5 oz/1000 row ft	5191 a-g	5844 abc	5276 a-g
CruiserMaxx 4 oz/100 lb seed	4816 c-h	5820 abc	5058 b-g
Radiant 5 fl oz/A	4973 c-g	5058 b-g	5518 a-e
Admire Pro 1.7 oz/A	4755 c-h	6340 a	4356 e-h

[1]Means in each column that are followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test ($P \leq 0.05$).

Summary

As has been noted in other trials, peanut varieties differ in their sensitivity to thrips feeding activity in the buds and juvenile leaves with Georgia-06G suffering the least damage. While the differences in damage between varieties is unlikely to significantly impact yield, sowing a less thrips susceptible peanut cultivar could when combined with an efficacious insecticide treatment would minimize the risk of thrips-related yield losses. In addition, Georgia-06G and Georgia-12Y demonstrated good TSW and white mold resistance.

Reduced thrips damage for the twin compared with single row peanuts was unexpected as row spacing had not previously been shown to impact thrips activity on peanut. Due to low pressure, row spacing did not impact TSW and white mold incidence or leaf spot intensity. At elevated disease levels, twin row peanut generally suffer less TSW and white mold damage compared with single rows. As has been often seen in previous trials, higher yields were recorded for the twin the single row peanuts. Individually, Flavorunner 458 and Georgia-06G but not Georgia-12Y yielded higher when sown in twin than single rows.

Reductions in thrips damage were obtained on single and twin rows with Thimet 20G, Admire Pro, and Radiant insecticides, while CruiserMaxx was ineffective. The superior thrips control obtained with Thimet 20G on twin than single rows was attributed to an effective doubling of the per acre rate of this insecticide at the former row spacing. When both row spacing were considered, Admire Pro and Radiant proved the most effective treatments for protecting peanuts from thrips damage. The cultivar × row spacing × insecticide interaction clouded the differentiation of treatment effects on yield. With the exception of a few insecticide treatments, yields for Georgia-06 and Georgia-12Y were not consistently higher than Flavorunner 458. In some cases, higher yields were noted for either of the former two varieties when treated with Thimet 20G, Admire Pro, or Radiant. Yields for the CruiserMaxx-treated seed and the non-insecticide treated control were similar regardless of the row spacing. Row spacing also had limited impact on yield as well.

INTERACTION OF PLANTING DATE, CULTIVAR, AND SEEDING RATE ON THRIPS DAMAGE, TSW AND WHITE MOLD INCIDENCE, LEAF SPOT INTENSITY, AND YIELD OF THREE PEANUT CULTIVARS IN A DRYLAND PRODUCTION SYSTEM, WREC

A. K. Hagan, H. L. Campbell, and L. Wells

Objective: Determine the impact of seeding rate on stand density, thrips feeding damage, occurrence of tomato spotted wilt (TSW), leaf spot, white mold, as well as the yield of selected commercial peanut cultivars in a dryland production system at the Wiregrass Research and Extension Center in Headland, AL.

Production Methods: The study area at the Wiregrass Research and Extension Center, which is maintained in a peanut-cotton rotation, was turned with a moldboard plow and worked to seed bed condition with a disk harrow. Rows were laid off on 20 Apr with a KMC strip till rig with rolling baskets. On April 25 and May 30, the peanut varieties 'Georgia-06G', 'Georgia-09B', and 'Georgia-12Y' were planted at rates of 3, 4, 6, and 8 seed per foot of row on single rows using conventional tillage practices in a Dothan fine sandy loam (OM<1%) soil at the Wiregrass Research and Extension Center. Thimet 20G at 5 pounds per acre was applied in-furrow for thrips control. Weed control was obtained with a pre-plant, incorporated application of 1 quart per acre Sonalan HFP + 0.45 ounces per acre Strongarm followed by a broadcast application of 3 ounces per acre Valor on April 26. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The study area was not irrigated. A factorial design arranged in a split-split plot had planting date as whole plots, peanut cultivar as the split plot, and seeding rates as the split-split plot treatment. Whole plots were randomized in four complete blocks. Individual split-split plots, which consisted of four 30-foot rows spaced 3-feet apart, were randomized within each whole plot. Chlorothalonil at 1.5 pints per a was applied for leaf spot control on June 25, July 7, July 21, August 4, August 18, September 2, and September 18 with a tractor mounted boom sprayer with 3 TX-8 nozzles per row at 15 gallons of spray volume per acre at 45 psi. Stand counts were recorded on May 13 for the 1st date of planting (DOP) and June 13 for the 2nd DOP. Georgia-06G and Georgia-09B were inverted at the 1st and 2nd DOP on September 22 and October 22, respectively, while the 1st and 2nd DOP of Georgia-12Y were inverted on September 29 and October 22, respectively.

Insect and Disease Assessment: Thrips damage rating (TDR) on the leaves was assessed on a 0 to 10 scale where 0 = no visible leaf scarring, 1=10% leaf area scarred, 2=20% leaf

area scarred, 3=30% leaf area scarred, 4=40% leaf area scarred, to 10=100% leaf area affected and plants near death on May 28 for the 1st DOP and June 23 for the 2nd DOP. Final tomato spotted wilt (TSW) hit counts (one hit was defined a < 1 foot of consecutive symptomatic plants per row) were made on September 5 and October 21 for the 1st and 2nd DOP, respectively. Early and late leaf spot were rated together on September 5 and October 21 for the 1st and 2nd DOP, respectively, using the 1-10 Florida peanut leaf spot scoring system where 1 = no disease, 2 = very few leaf spots, 3 = few leaf spots in lower and upper canopy, 4 = some leaf spotting and ≤ 10% defoliation, 5 = leaf spots noticeable and ≤ 25% defoliation, 6 = leaf spots numerous and ≤ 50% defoliation, 7 = leaf spots very numerous and ≤ 75% defoliation, 8 = numerous leaf spots on few remaining leaves and ≤ 90% defoliation, 9 = very few remaining leaves covered with leaf spots and ≤ 95% defoliation, and 10 = plants defoliated or dead. White mold hit counts (1 hit was defined as ≤ 1 foot of consecutive white mold-damaged plants per row) were made immediately after plot inversion on for the 1st DOP for Georgia-06G and Georgia-09B on September 22 along with Georgia-12Y on October 22, and 2nd DOP on October 22 for all three cultivars. Yields for Georgia-06G and Georgia-09B are reported at 9.1% and 8.06% moisture for the 1st and 2nd, respectively, while the moisture levels for Georgia-12Y at the 1st and 2nd DOP are 7.45% and 8.06%, respectively. Significance of interactions was evaluated using PROC GLIMMIX procedure in SAS. Statistical analyses for thrips damage, stand density, leaf spot intensity, along with TSW and white mold incidence were done on rank transformations for non-normal data, which were back transformed for presentation. Means were separated using Fisher's least significant difference (LSD) test ($P \leq 0.05$) or at as otherwise indicated ($P \leq 0.10$).

Weather: Monthly rainfall totals for July and September were well below the 30 year mean for the study location, while those recorded for May, June, August, and October were near to above the historical average. Temperatures during the study period were at or above the 30 year historical average.

TABLE 1. F-VALUES FROM GENERALIZED LINEAR MIXED MODEL ANALYSIS FOR EFFECTS OF PLANTING DATE, PEANUT CULTIVAR, AND SEEDING RATE ON STAND DENSITY, THRIPS FEEDING DAMAGE, TSW INCIDENCE, LEAF SPOT INTENSITY, STEM ROT INCIDENCE, AND YIELD AT THE WGREC IN 2014

Source of Variation (*F* values)	Stand Density	Thrips Damage Rating	Tomato Spotted Wilt	Leaf Spot	White Mold	Yield
Planting Date	12.00***[1]	41.02***	1.00	243.99***	0.29	23.04**
Peanut Cultivar	14.92***	36.79***	1.72	7.75***	16.76***	0.87
Planting Date × Cultivar	3.70*	29.19***	0.76	15.51***	1.24	3.54*
Seeding Rate	498.23***	2.06	1.00	9.87***	2.33^	0.26
Planting Date × Seeding Rate	8.03***	1.36	0.15	4.72**	0.15	3.78*
Cultivar x Seeding Rate	1.14	2.13^	1.24	1.01	1.61	2.02^
Planting Date × Cultivar × Seeding Rate	0.44	2.00^	0.39	1.47	1.31	1.48

[1]Significance at the 0.10, 0.05, 0.01, and 0.001 levels is indicated by ^, *, **, or ***, respectively.

Results

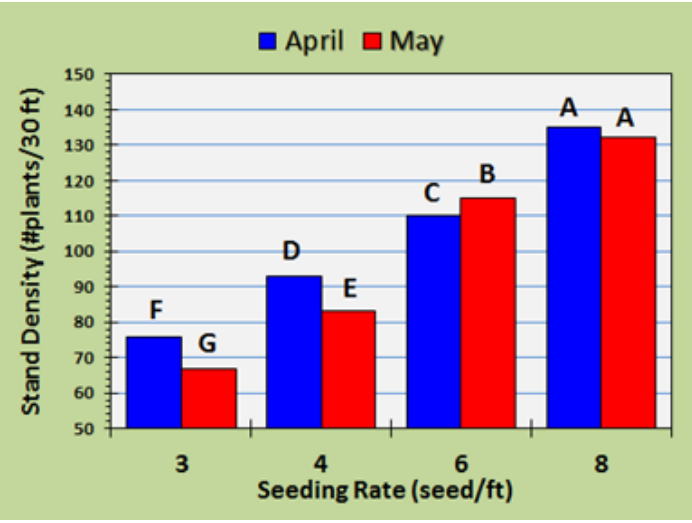
Seeding Rate: Georgia-12Y produced a denser stand than Georgia-09B and Georgia-06G with the latter having the lowest stand density of the three cultivars screened (Table 2). As indicated by a significant planting date × seeding rate interaction, stand density varied by planting date and seeding rate (Table 1). As expected, stand density rose when seeding rates increased from 3 to 8 seed/row ft (Fig. 1). At the 3, 4, and 6 seed/row ft seeding rates, stand density was higher at the 1st (April 28) than 2nd DOP (May 30). Similar stand density values were recorded at both planting dates at the 8 seed/row ft seeding rate.

TABLE 2. IMPACT OF PEANUT CULTIVAR SELECTION ON STAND DENSITY, INCIDENCE OF TSW AND WHITE MOLD AND ON POD YIELD

Peanut Cultivar	Stand Density[1]	Incidence[2]	
		TSW	White Mold
Georgia-06G	97 c[3]	0.2 a	1.7 a
Georgia-09B	102 b	0.2 a	1.8 a
Georgia-12Y	105 a	0.1 a	0.4 b

[1]Stand counts are expressed as the number of plants per 30 row feet.
[2]TSW (tomato spotted wilt) and white mold incidence is expressed as the number of hits per 60 ft of row.
[3]Means in each column that are followed by the same letter are not significantly different according to analysis of variance and the Fisher's least significant difference (LSD) test ($P \leq 0.05$).

Figure 1. Thrips damage ratings as impacted by row spacing and insecticide treatment.



Means in each column followed by the same letter are not significantly different according to Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Thrips Damage: Thrips feeding injury to the shoot terminals and juvenile leaves differed by planting date, peanut cultivar, and seeding rate (Table 1). Georgia-06G had higher thrips damage ratings at all seeding rates at the 1st than with 2nd planting date, while Georgia-12Y ratings did not greatly vary by planting date (Table 3). At the 1st DOP, Georgia-09B suffered higher thrips damage at the two lower than two higher seeding rates. In contrast, similarly low thrips damage ratings were recorded for Georgia-09B at the 2nd DOP. In addition, the low thrips damage ratings noted for Georgia-09B at the two higher seeding rates at the 1st DOP were similar to those reported at all seeding rates at the 2nd DOP. At the 1st DOP, Georgia-06G had higher thrips damage ratings than Georgia-12Y and Georgia-09B at the two higher seeding rates. At the 2nd DOP, thrips damage did not differ by cultivar or seeding rate.

TABLE 3. INTERACTION OF PLANTING DATE AND SEEDING RATE ON THE LEVEL OF THRIPS FEEDING INJURY TO THE SHOOT TERMINALS AND JUVENILE LEAVES ON THREE PEANUT CULTIVARS

Planting Date	Seeding Rate (# Seed / ft row)	Thrips Damage[1]		
April 25		Georgia-06G	Georgia-09B	Georgia-12Y
	3	8.2 a[2]	5.8 bc	4.4 d-g
	4	7.0 ab	5.4 cde	4.0 fgh
	6	7.4 ab	3.4 g	5.2 cd
	8	7.2 ab	3.8 gh	4.4 d-h
May 30				
	3	4.8 c-f	4.2 fgh	4.4 d-h
	4	4.4 d-h	4.4 d-g	4.8 c-f
	6	4.6 d-g	4.2 fgh	4.4 d-h
	8	4.4 d-h	4.2 e-h	4.4 d-h

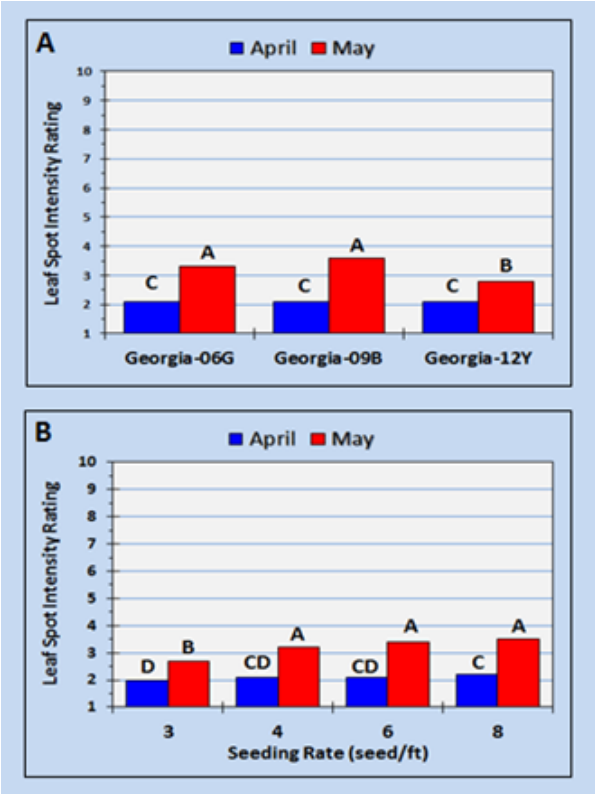
[1]Thrips damage was rated on a 0 to 10 scale on May 28 for the 1st DOP and June 23 for the 2nd DOP.
[2]Means in each column that are followed by the same letter are not significantly different according to analysis of variance and the Fisher's least significant difference (LSD) test ($P \leq 0.10$).

Tomato Spotted Wilt (TSW): Due to the very low TSW pressure, disease incidence was not influenced by planting date, cultivar selection, and seeding rate (Table 1). Overall TSW pressure was exceptionally low, even in the April-planted peanuts (Table 2). No differences in TSW incidence were noted between peanut cultivars.

Leaf Spot Diseases: The intensity of leaf spot diseases were differed by planting date and seeding rate as well as planting date and peanut cultivar (Table 1). Regardless of the planting date, overall leaf spot intensity was low. Leaf spot intensity was lower in peanut established at the 1st than 2nd planting date (Fig. 2A and Fig. 2B). While similarly low leaf spot incidence levels were noted for all cultivars at the 1st DOP, Georgia-12Y had lower leaf spot intensity ratings than Georgia-06G and Georgia-09, both of which had similarly high levels of leaf spotting and premature leaf shed at the 2nd DOP (Fig. 2A). At all seeding rates,

similarly low leaf spot intensity values were recorded for the 1st DOP (Fig. 2B). For the 2nd DOP, leaf spot intensity was higher at the three higher than the lowest seeding rate.

Figure 2. Leaf spot intensity as influenced by A) planting date and peanut cultivar and B) planting date and seeding rate.



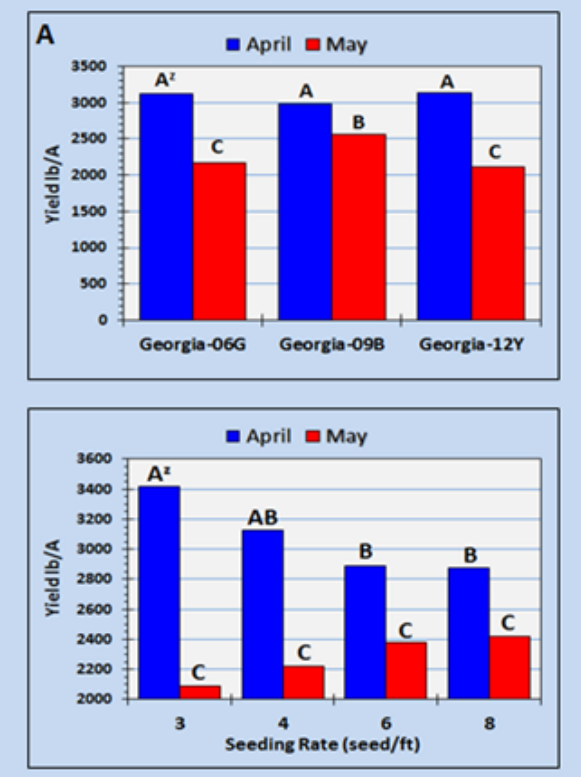
Means in each column followed by the same letter are not significantly different according to Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

White Mold: Cultivar and seeding rate but not planting date impacted white mold incidence (Table 1). Overall white mold incidence was low with no differences in disease activity noted between the 1st and 2nd DOP. Georgia-12Y suffered less white mold damage than Georgia-06G and Georgia-09B, both of which had similarly high ratings for this disease (Table 2). Seeding rate influenced white mold incidence on Georgia-06G but not Georgia-09B and Georgia-12Y (Table 4). On the former cultivar, higher disease indices were seen at the 8 than the three lower seeding rates.

Yield: Yield significantly differed by planting date and peanut cultivar, planting date and seeding rate, and peanut cultivar and seeding rate (Table 1). Yields of all peanut cultivars were lower at the 2nd than 1st DOP (Fig. 3A). At the 1st DOP, all peanut cultivars had similarly high yields, while Georgia-09B had higher yields at the 2nd DOP compared with Georgia-06G and Georgia-12Y. Both of the latter peanut cultivars produced similarly

low yields. Yield significantly differed by seeding rate at the 1st but was similar across all seeding rates at the 2nd DOP (Fig. 3B). At the 1st DOP, higher yields were noted at the 3 than 6 and 8 seed/row ft seeding rates. In addition, yields were consistently lower at the 2nd compared with the 1st DOP. For Georgia-06G and Georgia-09B, similar yields were recorded across all seeding rates (Table 4). Higher yields were noted for Georgia-12Y at the 3 than 6 and 8 seed/row ft seeding rates. Georgia-06G and Georgia-12Y had similar yields across all seeding rates. Higher yields were obtained with Georgia-09B at 6 seed/row ft than Georgia-12Y at the 6 and 8 seed/row ft seeding rates. Otherwise, yields for the latter two cultivars were similar.

Figure 3. Interaction of planting date with peanut cultivar and seeding on yield.



Means in each column followed by the same letter are not significantly different according to Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

TABLE 4. YIELD OF THREE PEANUT CULTIVARS AS INFLUENCED BY SEEDING RATE

Seeding Rate	White mold Incidence[1]			Yield (lb/A)		
	Georgia-06G	Georgia-09B	Georgia-12Y	Georgia-06G	Georgia-09B	Georgia-12Y
3	1.7 bc[2]	1.5 bc	0.6 de	2638 abc	2623 abc	2996 a
4	1.1 cd	1.4 bc	0.2 e	2599 abc	2623 abc	2798 abc
6	1.3 bc	2.3 ab	0.5 de	2623 abc	2943 a	2314 c
8	2.8 a	1.9 bc	0.4 e	2662 abc	2904 ab	2376 bc

[1]White mold incidence is expressed as the number of hits per 60 ft of row.
[2]Means in each column that are followed by the same letter are not significantly different according to analysis of variance and Fisher's least significant difference (LSD) test ($P \leq 0.10$).

Summary

Dry summer weather patterns are responsible for the low yields, particularly for the 2nd DOP (May 30), as well as generally low leaf spot and white mold activity. As expected, stand density (plant population) increased with rising seeding rates. Surprisingly, denser stands were noted in the earlier 1st than later 2nd DOP. Higher seeding rates, however, did not translate into higher yields for any of the cultivars screened. In fact, a decline in yield was seen with increasing seeding rates in Georgia-12Y but not Georgia-06G and Georgia-09B. Apparently, the former cultivar may have been more sensitive to drought at higher plant populations, which resulted in lower yields.

Planting date greatly impacted the level of thrips feeding injury on Georgia-06G and to a lesser extent Georgia-09B but not Georgia-12Y. With some exceptions, thrips feeding injury usually declines as planting date advance from mid-April through early June. On April-but not May-planted Georgia-09B, thrips feeding injury declined considerably with increasing seeding rates. Seeding rate did not influence thrips damage on Georgia-06G or Georgia-12Y, regardless of the planting date. Given current seed costs, doubling the seeding rate to suppress thrips damage would be much more costly than any insecticide program designed to control thrips in peanut.

Despite elevated thrips damage levels, particularly in the April-planted Georgia-06G, TSW incidence was very low in all cultivars regardless of the planting date. Similarly low TSW levels were seen in additional trials at multiple Alabama locations, though a damaging outbreak of this disease was reported in 2014 in Santa Rosa Co. in Florida. The near absence of this disease allows the peanut planting window to be advanced from May into April. Sowing a TSW resistant cultivar along with a twin row spacing and possibly strip tillage will minimize the risk of this disease in April-planted peanuts.

As has been shown in other field trails, leaf spot pressure was lower due to lower airborne inoculum levels at the 1st than 2nd planting date. While leaf spot ratings were too low at

either planting date to influence yield, Georgia-12Y had lower ratings for this disease than Georgia-06G and Georgia-09B. The increase in leaf spot intensity that was noted with rising seeding rates at the 2nd DOP has been seen in previous Alabama studies. The denser plant canopy resulting from higher plant populations observed at elevated seeding rates may create more favorable microclimate for the onset and development of leaf spot diseases in peanut.

While overall white mold incidence was low, disease incidence was lower Georgia-12Y than the other two cultivars, which suffered a similar damage level. This and several other studies indicate that Georgia-12Y likely has superior white mold resistance compared with other cultivars and would be a good fit in those fields with a history of severe white mold damage. Seeding rate influenced white mold incidence on Georgia-06G but not the other two cultivars. Previous studies have shown an increase in white mold at elevated seeding rates. Wider plant spacing obtained at lower seeding rates likely impedes disease spread down the row. This response is more likely to be seen on a more disease susceptible compared with a resistant cultivar like Georgia-12Y.

Overall, peanut seeding rates may be reduced below the recommended 6 seed/ row ft without jeopardizing pod yields even in a dryland production situation. Reducing seeding rates potential may also reduce leaf spot intensity and white mold incidence but does increase the risk of TSW damage.

YIELD RESPONSE AND REACTION OF COMMERCIAL PEANUT VARIETIES TO FOLIAR AND SOIL DISEASES IN SOUTHEAST ALABAMA, WREC

A. K. Hagan, H. L. Campbell, K. L. Bowen, B. Gamble

Objective: Compare the yields and reaction of commercial peanut varieties to leaf spot diseases, white mold, and TSW in an irrigated production system.

Production Methods: The study site was turned with a moldboard plow on April 3 and rows were laid off on May 12 with a KMC strip till rig with rolling baskets. Peanut cultivars were planted on May 13 at a rate of approximately 6 seed/ft of row in a field in a fine Dothan sandy loam (OM<1%) at the Wiregrass Research and Extension Center in Headland, AL. Gypsum, at a rate of 600 pounds per treated acre was applied, on a 14-inch band over the row middle on June 9. A pre-plant incorporated application of 1.0 quart per acre Sonalan + 0.45 ounce per acre Strongarm + 1 pint per acre Dual Magnum on April 25 was followed by a broadcast application of 3 ounces per acre Valor.

Escape weeds were plowed with flat sweeps or pulled by hand. Orthene 97S at 0.6 pounds per acre was broadcast for thrips control on May 30. The study site received between 0.4 and 1.0 acre inch of water on May 21, July 7, July 24, July 29, August 7, and August 25. Equus 720 at 1.5 pint per acre was applied on June 13, June 27, July 22, August 18, September 2, while 18.5 fl oz per acre Abound 2SC was broadcast on July 17 and August 4.

Plots consisted of two 20–foot rows, spaced 3 feet apart, arranged in a randomized complete block, with four replications. Tomato spotted wilt (TSW) hit counts (1 hit was defined as ≤ 1 foot of consecutive severely TSW-damaged plants per row) were made on September 15. Early and late leaf spot were rated together on September 30, October 7, and October 15 for the mid-season, late, and very late maturing cultivars, respectively, using the 1-10 Florida peanut leaf spot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions noticed in lower and upper canopy, 4 = some lesions and ≤ 10% defoliation, 5 = lesions noticeable and ≤ 25% defoliation, 6 = lesions numerous and ≤ 50% defoliation, 7 = lesions very numerous and ≤ 75% defoliation, 8 = numerous lesions on few remaining leaves and ≤ 90% defoliation, 9 = very few remaining leaves covered with lesions and ≤ 95% defoliation, and 10 = plants defoliated or dead.

White mold hits counts (1 hit was defined as ≤ 1 foot of consecutive white mold damaged plants per row) were made immediately after plot inversion on September 30, October 7, and October 21 for the mid-season, late, and very late maturing cultivars, respectively. Plots were combined about 3 to 5 days after inversion. Yields are reported at 7% moisture. Statistical analysis on leaf spot intensity as well as TSW, leaf spot, and white mold incidence was done on rank transformations of data, which are back transformed for

presentation. Means were separated using Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

During the study period, monthly rainfall totals were below the 30 year historical average, while temperatures were at or above normal. Incidence of TSW was higher on TUFRunner 727 and Florida-07 than all varieties except for Georgia-09B and TUFRunner 511 (Table 1). Similarly low TSW indices as those recorded for Georgia-13M and C1805-2-9 were noted for Tifguard, Tif High O/L, Georgia Greener, Georgia-06G, Georgia-10T, and Georgia-11J. Higher leaf spot intensity ratings were observed for TUFRunner 727 compared with Georgia-13M, Georgia-07W, Georgia-08V, Georgia Greener, Georgia-09B, Georgia-10T, FloRun 107 and Florida-07. Georgia-06G had similar leaf spot intensity ratings to all but the former four peanut varieties. While overall stem rot incidence was low, higher ratings for this disease were recorded for Tifguard than all varieties except for Florida-07, Georgia-09B, Georgia-06G, and Georgia Greener. Low stem rot indices obtained for Georgia-11J, Tif High O/L and FloRun 107 were matched by nine additional peanut varieties. The high yields reported for Georgia-11J were similar to all varieties except for Tifguard, Florida-07, and Georgia-13M, which had similarly low yields as eleven other varieties.

Summary: Overall, pressure from TSW, leaf spot diseases, and white mold appeared relatively low. The new Florida released TUFRunner 727 proved more susceptible than the majority of other varieties except for Florida-07 and TUFRunner 511 to TSW. None of the varieties screened proved very susceptible to leaf spot diseases and white mold. Low yields for Georgia-13M were surprising as this variety has produced high yields in previous studies. Despite the previously noted issues with TSW, TUFRunner 727 yielded well.

TABLE 1. YIELDS AND REACTION OF COMMERCIAL PEANUT VARIETIES TO TSW, LEAF SPOT DISEASES, WHITE MOLD IN 2014 AT THE WREC

Peanut Variety	TSW[1] # loci/40 ft	Leaf Spot Intensity[2]	White Mold[3] # loci/40 ft	Yield lb/A
C1805-2-9[4]	0.0 f[5]	3.8 b-e	0.3 bc	6045 abc
FloRun 107	1.3 cd	4.2 a-e	0.0 c	6137 abc
Florida-07	5.0 a	4.1 a-e	1.0 a	5677 bc
Georgia-06G	0.8 def	3.4 e	0.5 abc	5832 abc
Georgia-07W	1.5 bcd	4.5 abc	0.0 c	6262 abc
Georgia-08V	1.5 de	4.5 abc	0.3 bc	6011 abc
Georgia-09B	3.5 ab	4.4 a-e	1.0 ab	5885 abc
Georgia-10T	0.8 def	4.3 a-e	0.3 bc	6347 abc
Georgia-11J	0.8 def	3.7 b-e	0.0 c	6600 a
Georgia-12Y	1.6 de	3.6 cde	0.2 bc	5938 abc
Georgia-13M	0.0 f	4.7 ab	0.3 bc	5509 c
Georgia Greener	0.8 def	4.4 a-d	0.8 abc	5867 abc
Tifguard	0.3 ef	3.9 b-e	1.3 a	5598 bc
Tif High O/L	0.5 def	3.9 b-e	0.0 c	5760 abc
TUFRunner 511	3.3 abc	4.9 a	0.5 bc	6316 abc
TUFRunner 727	7.0 a	3.5 de	0.3 bc	6442 ab

[1]Tomato spotted wilt (TSW) and white mold incidence is expressed as the number of disease loci per 40 ft of row.
[2]Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale.
[3]White mold rated as the number of disease loci per 40 ft of row
[4]All varieties are runner market types except for Georgia-08V, which is a Virginia-market type peanut variety.
[5]Means in each column that are followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test ($P \leq 0.05$).

EVALUATION OF VELUM TOTAL FOR PEANUT DISEASE AND NEMATODE CONTROL IN SOUTHEAST ALABAMA, WREC

H.L. Campbell, A.K. Hagan, K.L. Bowen, and L.W. Wells

Objective: To evaluate Velum Total and compare it against other labeled products for control of nematodes and also to evaluate its effect on early and late leaf spot, stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'GA 06G' was planted in a field with a history of peanut production on June 4 at the Wiregrass Research and Extension Center in Headland, AL. Seed were sown at a rate of approximately five seed per ft of row, and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. The soil type was a Dothan sandy loam (OM<1%). On May 29, 1 qt/A of Sonalan + 0.45 oz/A of Strongarm were applied to the test area and incorporated for pre-emergent weed control. On June 6, 1.5 qt/A of Gramoxone + 3 oz/A of Valor were applied to test area for weed control. On June 30, 2 oz/A of Cadre + 1 pt/A of Poast + 1 qt/A of Crop Oil concentrate was applied to the test area for weed control.

Plots, which consisted of four 30-ft rows spaced 3-ft apart, were arranged in a randomized complete block with four replicates. Plots were located under a central pivot irrigation system and 0.75 inch of water was applied during the season on July 30 and 1.0 inch of water was applied on September 4 and 05 inch on September 23. Rainfall recorded during the growing season was as follows: June – 2.82 in, July – 1.44 in, August – 4.3 in and September – 1.16 in. In-furrow fungicides were applied with a drop down nozzle directly over the furrow and was applied at a rate of 10 gal/A at planting. At pegging applications were applied on July 31using a drop nozzle directly over the row calibrated to deliver 20 gal/A. Material was washed off the plants and into the soil immediately after application by applying 1 inch of water to the test. Echo 720 at 24.0 fl oz/A was applied on July 1, July 14, and September 24 and Provost 433 at 10.7 fl oz/A was applied on July 29, August 11, August 25, and September 10 for disease control using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A.

Vigor was rated on July 28 and again prior to harvest on October 22 where 1 = least vigorous and 5 = most vigorous. Early and late leaf spot were visually rated on October 22 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants).

Counts of stem rot (SR) loci (1 locus was defined as ≤ 1 ft of consecutive symptoms and signs of the disease) were made on October 18 immediately after plot inversion. Plots were harvested on October 24 and yields were reported at 7.56% moisture. Nematode disease ratings were made on October 24 immediately after plot inversion (1 = no damage, 2= 1-25% of roots and/or pods damaged, 3 = 26-50% damage, 4 = 51-75% damage, and 5 = >76% damage. Nematode assays were made from random sampling of soil near the plants in the treated area. Soil samples were then taken to be assayed at the Nematode Lab in Auburn where nematode soil counts were made where numbers represent the number of root knot nematodes per 50 cc of soil. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the 2014 peanut production season, temperatures were near normal and monthly rainfall totals were near average during June and August but below average during July and September. Vigor ratings taken prior to harvest showed that the application of Velum Total and Propulse affected the vigor of the plants in the test. Those treated with either Velum Total of Propulse had higher vigor ratings than did the Thimet only treatment at planting. Although stem rot incidence was low, stem rot incidence in the treated plots was similar except for those that received an in-furrow treatment of Temik 15G. The plots treated with Temik 15G at planting had a higher incidence of stem rot than did any of the other treated plots. Among the treated plots, theTemik treated plots had lower nematode damage than the non-treated control and all other treated plots except for those which received Velum Total at planting followed by an at pegging application of Propulse. Root knot nematode assays showed that those that received Velum Total at 14.0 fl oz/A at planting had lower numbers than all other plots except those that received Propulse at planting. Highest yields were from plots that received Velum Total followed by Propulse and were significantly higher than the non-treated plots. Yields from all other plots were similar.

EVALUATION OF VELUM TOTAL FOR PEANUT DISEASE AND NEMATODE CONTROL IN SOUTHEAST ALABAMA, WREC

Treatment and Rate/A	Application Timing	Vigor	Disease ratings			RK Assay[4]	Yield lb/A
			Leaf Spot[1]	Stem Rot[2]	RK[3]		
Untreated Control	---	2.8 b[5]	3.0 a	1.0 b	3.2 ab	861 ab	2795 b
Temik 15G 10.0 lb	In-furrow at planting	3.8 ab	3.0 a	3.2 a	2.0 c	853 ab	3473 ab
Velum Total 14.0 fl oz	In-furrow at planting	4.0 a	3.0 a	1.5 ab	3.0 ab	545 b	3412 ab
Velum Total 18.0 fl oz	In-furrow at planting	3.2 ab	3.0 a	1.2 b	2.5 bc	1005 ab	3569 ab
Propulse 13.7 fl oz	In-furrow at planting	3.2 ab	3.0 a	1.2 b	3.0 ab	1310 a	2868 ab
Velum Total 18.0 fl oz + Propulse 13.7 fl oz	In-furrow at planting Pegging	4.2 a	3.0 a	1.0 b	2.5 bc	1027 ab	3945 a
Thimet 20G 5.0 lb	In-furrow at planting	2.8 b	3.0 a	1.8 ab	3.5 a	849 ab	2928 ab

[1]Early and late leaf spot were assessed using the Florida leaf spot scoring system.
[2]Stem rot (SR) incidence is expressed as the number of disease loci per 60 ft of row.
[3]Root knot ratings were rated as 1 = no damage, 2 = 1-25% damage, 3 = 26-50% damage, 4 = 51-75% damage, 5 = >76% damage to roots and/or pods.
[4]Root knot assay numbers calculated from numbers from 50cc of soil.
[5]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test ($P = 0.05$).

DISEASE REACTION AND YIELD RESPONSE OF EXPERIMENTAL PEANUT LINES IN SOUTHEAST ALABAMA, WREC

A. K. Hagan and B. Gamble

Objective: Compare the yield response and reaction of advanced breeding lines with those of selected commercial standards in an irrigated production system to TSW, leaf spot diseases, and white mold.

Production Methods: The study site was turned with a moldboard plow on April 3 and rows were laid off on May 12 with a KMC strip till rig with rolling baskets. Peanuts were planted on May 13 at a rate of approximately 6 seed/ft of row in a field in a fine Dothan sandy loam (OM<1%) at the Wiregrass Research and Extension Center in Headland, AL. Gypsum, at a rate of 600 pounds per treated acre was applied, on a 14-inch band over the row middle on June 9. A pre-plant incorporated application of 1.0 quart per acre Sonalan + 0.45 ounces per acre Strongarm + 1 pint per acre Dual Magnum on April 25 was followed by a broadcast application of 3 ounces per acre Valor. Escape weeds were plowed with flat sweeps or pulled by hand. Orthene 97S at 0.6 pounds per acre was broadcast for thrips control on May 30. The study site received between 0.4 and 1.0 acre inches of water on May 21, July 7, July 24, July 29, August 7, and August 25. Equus 720 at 1.5 pint per acre was applied on June 13, June 27, July 22, August 18, September 2, while 18.5 fl oz per acre Abound 2SC was broadcast on July 17 and August 4.

Plots consisted of two 20–foot rows, spaced 3 feet apart, arranged in a randomized complete block of four replications. Tomato spotted wilt (TSW) hit counts (1 hit was defined as ≤ 1 foot of consecutive severely TSW-damaged plants per row) were made on September 15. Early and late leaf spot were rated together on September 15, September 30, October 7, and October 15 for the early, mid-season, late, and very late maturing cultivars, respectively, using the 1-10 Florida peanut leaf spot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions noticed in lower and upper canopy, 4 = some lesions and ≤ 10% defoliation, 5 = lesions noticeable and ≤ 25% defoliation, 6 = lesions numerous and ≤ 50% defoliation, 7 = lesions very numerous and ≤ 75% defoliation, 8 = numerous lesions on few remaining leaves and ≤ 90% defoliation, 9 = very few remaining leaves covered with lesions and ≤ 95% defoliation, and 10 = plants defoliated or dead.

White mold hit counts (1 hit was defined as ≤ 1 foot of consecutive white mold damaged plants per row) were made immediately after plot inversion on September 25, September 30, October 7, and October 21 for the early, mid-season, late, and very late maturing cultivars, respectively. Plots were combined about 3 to 5 days after inversion. Yields are reported at 7% moisture. Statistical analysis on leaf spot intensity as well as TSW, leaf spot, and white mold incidence was done on rank transformations of data, which are back transformed for presentation. Means were separated using Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the study period, monthly rainfall totals were below the 30 year historical average, while temperatures were at or above normal. Incidence of TSW higher in the experimental line TXL 080212-02 than all commercial varieties and experimental lines except for TXL 080243-06, TXL 080244-03, and ARSOK-V30B as well as susceptible Florunner and NC-7 standards, while an additional five selections, including the commercial standard Georgia-06G had TSW indices as low as GA112719 and N10046o1 (Table 1). Late leaf spot was the primary leaf spot disease, particularly on the later maturing varieties and experimental lines with the higher leaf spot ratings. Significant differences in leaf spot intensity were noted with 13AU-02 and ARSOK-V31 having higher disease ratings than all varieties and experimental lines except for 13AU-10, GA092709, GA112720, and Florunner susceptible standard. The low leaf spot intensity rating recorded for UF 14302 was matched by an additional nine selections, including the Georgia-06G commercial standard. Equally high stem rot indices were observed for GA092709, TXL 080212-02, ARSOK-V31, TXL 080244-03, 13AU-02, and susceptible NC-7 and Florunner standards. When compared with 13AU-03 and N10046o1, an additional ten varieties and experimental lines, including the Georgia-06G commercial standard, had similarly low stem rot indices. Yield for the highest yielding experimental line UF 14301 was significantly higher than the Georgia-06G commercial standard and an additional fifteen selections, including the susceptible NC-7 and Florunner standards. Similarly low yields to those obtained with TXL 080244-03 were reported for ASUS 25-22, ARSOK R35, ARSOK-V30B, and ARSOK-V31, along with the susceptible NC-7 and Florunner standards.

Summary: Yield of UF 14301 significantly outyielded the current commercial standard Georgia-06G, while an additional experimental lines had yields that numerically matched or exceed that recorded for the above commercial standard. Equally important, a number of experimental lines demonstrated excellent TSW resistance as well as reduced damage attributed to leaf spot diseases and white mold.

TABLE 1. YIELD RESPONSE AND REACTION OF ADVANCED BREEDING LINES TO TOMATO SPOTTED WILT (TSW), LATE LEAF SPOT, AND WHITE MOLD IN 2014 AT THE WREC

Peanut Variety [1]	Market Type	Maturity Group	TSW # Loci/40 ft[2]	Leaf Spot Intensity[3]	White Mold # Hits/40 ft[4]	Yield lb/A
NC-7	V	Early	7.8 a-d[5]	3.7 e-i	2.3 a-d	4556 d-h
Florunner	R	Mid	11.0 a-e	4.7 a-e	2.8 a-d	4535 d-h
ASUS 25-22	R	V Late	4.0 e-i	3.7 efghi	1.0 d-h	4961 b-h
UF 14301	R	Mid	3.0 g-i	4.3 c-g	0.8 e-h	6450 a
UF 14302	R	Mid	1.8 hijk	3.0 i	1.0 d-h	5764 abc
UF 14303	R	Mid	1.3 ilk	3.4 fghi	0.8 e-h	5782 abc
GA092709	R	Early	4.0 d-h	5.2 abc	5.8 a	5540 a-d
GA112719	R	Late	0.3 k	4.4 b-g	0.5 gh	5337 b-e
GA112720	R	Late	1.3 ijk	4.8 a-d	0.5 gh	5988 ab
N09042o1F	V	Mid	4.5 d-i	4.9 a-d	1.3 c-g	5131 b-g
N10046o1	V	Mid	0.3 k	3.4 ghi	0.0 h	5168 b-f
N10078o1JC	V	Mid	6.5 b-f	3.8 d-i	0.5 gh	5185 b-f
TXL 080212-02	R	Early	17.3 a	4.4 b-g	4.0 ab	4046 gh
TXL 080243-06	R	Early	15.8 ab	3.8 d-i	1.8 b-f	4243 e-h
TXL 080244-03	R	Early	13.0 ab	4.4 b-g	2.5 a-d	3991 h
ARSOK R35	R	Early	7.8 a-e	3.2 hi	1.0 d-h	4775 c-h
ARSOK-V30B	V	Early	11.8 abc	5.3 abc	1.0 d-h	4720 c-h
ARSOK-V31	V	Early	5.0 c-g	5.6 a	3.3 abc	4173 fgh
13AU-02	R	Mid	1.3 ijk	5.6 a	2.3 a-e	5312 b-e
13AU-03	R	Mid	3.3 f-j	4.4 b-f	0.0 h	5945 ab
13AU-10	R	Mid	4.3 d-h	5.3 ab	1.8 b-f	5619 a-d
13AU-12	R	Mid	0.5 jk	4.1 d-h	1.5 c-g	5511 a-d
Georgia-06G	R	Mid	1.5 ijk	3.6 fghi	0.8 fgh	5222 b-f

[1]Peanut Market Types: V = Virginia, R = runner.
[2]Tomato spotted wilt (TSW) and white mold incidence is expressed as the number of disease hits per 40 ft of row.
[3]Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale.
[4]White mold assessed as the number of hits per 40 ft of row.
[5]Means in each column that are followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test ($P \leq 0.05$).

PERFORMANCE OF RECOMMENDED FUNGICIDE PROGRAMS FOR THE CONTROL OF LATE LEAF SPOT AND WHITE MOLD ON TWO VARIETIES IN SOUTHWEST ALABAMA, GCREC

A. K. Hagan, H. L. Campbell, K. L. Bowen, M. Pegues, and J. Jones

Objective: Compare the effectiveness of recommended fungicide programs for the control of late leaf spot and white mold on peanut and yield response on two commercial peanut varieties.

Production Methods: After rows were laid off with a KMC strip till rig with rolling baskets, the runner-market type peanut varieties 'Georgia-06G' and 'Georgia-09B' were planted on May 23 at a rate of 6 seed/row ft in a Malbis fine sandy loam (OM≤1%) soil in a field cropped to peanut every third year at the Gulf Coast Research and Extension Center. Weed control was obtained with an at-plant broadcast application of 1 qt/A Roundup WeatherMAX + 1 qt/A Prowl H_2O on May 22 followed by 8 fl oz/A Gramoxone + 1.5 pt/A Storm on June 16, 2 oz/A Cadre + 0.45 oz/A Strongarm at 0.45 on July 8, and 1.5 pt/A Poast Plus on July 22. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The study area was not irrigated. A split plot design with peanut variety as whole plots and fungicide programs as sub-plots was used.

Whole plots were randomized in four complete blocks. Individual sub-plots consisted of four 30-foot rows spaced 3.2-feet apart. Thimet 20G at 5 lb/A was applied in-furrow for thrips control. Fungicides were applied on 1) July 8, 1.5) July 15, 2) July 21, 3) August 5, 4) August 19, 5) September 3, 6) September 18, and 7) September 30 with an ATV mounted boom sprayer with three TX-8 nozzles per row calibrated to deliver 15 gal/A of spray volume at 45 psi. Late leaf spot was rated on October 8 using the 1-10 Florida peanut leaf spot scoring system where 1 = no disease, 2 = very few leaf spots, 3 = few leaf spots in lower and upper canopy, 4 = some leaf spotting and ≤ 10% defoliation, 5 = leaf spots noticeable and ≤ 25% defoliation, 6 = leaf spots numerous and ≤ 50% defoliation, 7 = leaf spots very numerous and ≤ 75% defoliation, 8 = numerous leaf spots on few remaining leaves and ≤ 90% defoliation, 9 = very few remaining leaves covered with leaf spots and ≤ 95% defoliation, and 10 = plants defoliated or dead. White mold hit counts (1 hit was defined as ≤ 1 foot of consecutive white mold-damaged plants per row) were made immediately after plot inversion on October 12. Plots were mechanically harvested on October 17. Significance of interactions was evaluated using PROC GLIMMIX procedure in SAS. Statistical analyses were done on rank transformations for non-normal data for leaf spot intensity, stem rot and yield, which were back transformed for presentation. Means were separated using the least significant difference (LSD) test ($P \leq 0.05$).

Rainfall totals reached or exceeded the 30-year average for June, July, and September but were well below average for August and October. Peanut variety x fungicide treatment interactions for leaf spot intensity, stem rot incidence, and yield were not significant, so pooled data for each variable is presented. Overall, leaf spot symptoms were limited to light to moderate leaf spotting with minimal premature defoliation. While leaf spot intensity on both peanut varieties was similar, the Echo 720/Provost 433SC program provided better leaf spot control compared with all other fungicide programs, all of which had similar disease intensity ratings. White mold incidence, which was similarly low for both peanut varieties and all fungicide programs, had minimal impact on yield.

Despite low leaf spot and white mold pressure, significant differences in yield were noted between fungicide programs. Yield response with the Headline 2.09SC/ Muscle ADV/Headline 2.09SC/Echo 720, Echo 720/Abound 2.08SC + Alto 0.83SC, Priaxor/Muscle ADV/Priaxor/Echo 720, Echo 720/Artisan 3.6E + Echo 720, and Echo 720/Convoy + Echo 720 programs matched the high yields obtained with the Echo 720/Provost 433SC program. Low yields recorded for the Echo 720 standard, which were below those noted for Echo 720/Provost 433SC, Headline 2.09SC/Muscle ADV/ Headline 2.09SC/Echo, and Echo 720/Abound 2.08SC + Alto 0.83SC, were similar to the remaining fungicide programs.

PERFORMANCE OF RECOMMENDED FUNGICIDE PROGRAMS FOR THE CONTROL OF LATE LEAF SPOT AND WHITE MOLD ON TWO VARIETIES IN SOUTHWEST ALABAMA

Factorial Analysis (*F* values)	Application Timing[1]	Leaf Spot Intensity [2]	White Mold # Hits/60 ft[3]	Yield lb/A
Variety	--	1.02	0.02	0.01
Fungicide program	--	2.55*[4]	0.65	2.15*
Variety x fungicide program	--	0.85	0.67	0.77
Peanut variety				
Georgia-06G	--	3.6 a[5]	1.1 a	5016 a
Georgia-09B	--	3.4 a	1.0 a	5030 a
Fungicide program				
Echo 720 1.5 pt	1-7	3.6 a	1.0 a	4611 c
Priaxor 6 fl oz Muscle ADV 1 qt Priaxor 6 fl oz Echo 720 1.5 pt	1.5 3,5 4,6 7	3.4 a	0.4 a	5121 a-c
Echo 720 1.5 pt Provost 433SC 10.7 fl oz	1,2,7 3-6	2.6 b	1.1 a	5451 a
Echo 720 1.5 pt Convoy 26 fl oz + Echo 720 1.5 pt	1,2,4,6,7 3,5	3.7 a	1.0 a	4886 a-c
Echo 720 1.5 pt Artisan 3.6E 26 fl oz + Echo 720 1.5 pt	1,2,4,6,7 3,5	3.6 a	1.1 a	5001 a-c
Echo 720 1.5 pt Muscle ADV 1 qt	1,2,7 3,4,5,6	3.8 a	1.1 a	4668 c
Headline 2.09SC 9 fl oz Muscle ADV 1 qt Headline 2.09SC 9 fl oz Echo 720 1.5 pt	1.5 3,5 4 6,7	3.5 a	0.9 a	5377 ab
Echo 720 1.5 pt Fontelis	1,2,6,7 3,4,5	3.6 a	1.4 a	4849 bc
Echo 720 1.5 pt Abound 2.08SC + Alto 0.83SL 5.5 fl oz	1,2,4,6,7 3,5	3.7 a	1.5 a	5245 ab

[1] Fungicide application dates were 1) 8 July, 1.5) 15 July, 2) 21 July, 3) 5 August, 4) 19 August, 5) 3 September, 6) 18 September, 7) 30 September.

[2] Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale on 8 October.

[3]White mold mold incidence is expressed as the number of hits per 60 ft of row.

[4]Significance of *F* values at the 0.05, 0.01, and 0.001 levels is indicated by *, **, or ***, respectively.

[5]Means in each column that are followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test ($P \leq 0.05$).

YIELD RESPONSE AND DISEASE CONTROL AS IMPACTED FUNGICIDE PROGRAM ON COMMERCIAL RUNNER PEANUT CULTIVARS IN 2014 IN SOUTHWEST ALABAMA, GCREC

A. K. Hagan, H. L. Campbell, M. Pegues, and J. Jones

Objective: Compare the yields and level of leaf spot and white mold control obtained with a standard and high input fungicide program on selected commercial peanut cultivars at the at the Gulf Coast Research and Extension Center in Southwest Alabama.

Production Methods: On October 22, 2013, the study site was planted to 90 pounds per acre of the rye cv Agri-AFC 2020. A November 22 application of 301 pounds per acre of 20-13-13 analysis fertilizer + 10 lb/A sulfur (60-40-40-10S) was followed with a January 23 top dress application of 125 pounds per acre of 32-0-0 (40-0-0). A burndown application of 1 quart per acre Roundup WeatherMAX was made on April 11. After the rows were laid off with a KMC strip till rig with rolling baskets on May 7, 11 runner-market type peanut varieties were planted on May 22 at a rate of 6 seed per row foot in a Malbis fine sandy loam (OM≤1%) soil in a field cropped to peanut every third year at the Gulf Coast Research and Extension Center in Fairhope, AL. Weed control was obtained with an at-plant broadcast application of 1 quart per acre Roundup WeatherMAX + 1 quart per acre Prowl H_2O on May 22 followed by 8 fluid ounces Gramoxone + 1.5 pint per acre Storm on June 16, 2 ounces per acre Cadre + 0.45 ounces per acre Strongarm on June 8, and 1.5 pints per acre Poast Plus on July 22. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The study area was not irrigated. A split plot design with peanut variety as whole plots and fungicide programs as sub-plots was used.

Whole plots were randomized in four complete blocks. Individual sub-plots consisted of four 30-foot rows spaced 3.2-feet apart. Thimet 20G at 5 pounds per acre was applied in-furrow for thrips control. While the standard fungicide program consisted of seven applications of 1.5 pints per acre Bravo WeatherStik 6F, the high input program included two initial applications of 1.5 pints per acre Bravo WeatherStik followed by 1.1 pints per acre Abound 2SC, 1.5 pints per acre Bravo Weather Stik + 21 fluid ounces per acre Convoy, 1.1 pints per acre Abound 2SC, 1.5 pints per acre Bravo Weather Stik 6F + 21 fluid ounces per acre Convoy, and a final application of 1.5 pints per acre Bravo Weather Stik 6F. Fungicides were applied on 1) July 8, 2) July 21, 3) August 5, 4) August 19, 5) September 3, 6) September 18, and September 30 with an ATV mounted boom sprayer with three TX-8 nozzles per row calibrated to deliver 15 gallons per acre of spray volume at 45 psi. Thrips damage rating (TDR) on the leaves was assessed on a 0 to 10 scale where 0 = no visible leaf scarring, 1=10% leaf area scarred, 2=20% leaf area scarred, 3=30% leaf area scarred, 4=40% leaf area scarred, to 10=100% leaf area affected

and plants near death on June 24. Final TSW hit counts (one hit was defined a < 1 foot of consecutive symptomatic plants per row) were made on July 29. Late leaf spot were rated together on October 8 using the 1-10 Florida peanut leaf spot scoring system where 1 = no disease, 2 = very few leaf spots, 3 = few leaf spots in lower and upper canopy, 4 = some leaf spotting and ≤ 10% defoliation, 5 = leaf spots noticeable and ≤ 25% defoliation, 6 = leaf spots numerous and ≤ 50% defoliation, 7 = leaf spots very numerous and ≤ 75% defoliation, 8 = numerous leaf spots on few remaining leaves and ≤ 90% defoliation, 9 = very few remaining leaves covered with leaf spots and ≤ 95% defoliation, and 10 = plants defoliated or dead.

White mold hit counts (1 hit was defined as ≤ 1 foot of consecutive white mold-damaged plants per row) were made immediately after plot inversion on October 9. Plots were inverted on October 9 and combined on October 22. Significance of interactions was evaluated using PROC GLIMMIX procedure in SAS. Statistical analyses were done on rank transformations for non-normal data for leaf spot intensity, stem rot and yield, which were back transformed for presentation. Means were separated using the least significant difference (LSD) test ($P \leq 0.05$ or as indicated otherwise).

Rainfall totals reached or exceeded the 30-year average for June, July, and September but were well below average for August and October. Temperatures were at or above normal for much of the production season.

Results: The variety × fungicide program interaction for thrips damage, leaf spot intensity and AUDPC values, and yield were not significant, so pooled data are shown in the table. Similar thrips damage rating values were recorded for all peanut varieties and fungicide programs (Table 1). Ratings for TSW were similarly low across all peanut varieties and fungicide programs. The variety TUFRunner 511 had a higher late leaf spot intensity rating than all other varieties except for Flavorunner 458, while similarly low ratings for this disease were recorded for TUFRunner 727, Florida-07, Georgia-07W, Georgia Green, Georgia-06G and Tifguard. Season-long late leaf spot AUDPC values largely mirrored leaf spot intensity ratings with Georgia-09B having a higher ($P \leq 0.10$) AUDPC rating than all other varieties except for TUFRunner 511 and Flavorunner 458. Similarly low leaf spot AUDPC values were recorded for all varieties except for the latter three varieties and FloRun 107. While leaf spot intensity ratings were lower for the standard as compared with the hi-input fungicide program, season-long AUDPC values were similar. While some significant differences in white mold incidence were noted between varieties, overall disease pressure was low. When compared with the highest yielding variety Georgia-06G, only Flavorunner 458 and Tifguard had significantly lower yields. Pod yield was not impacted by fungicide program.

Summary: With the notable exception of TUFRunner 511, leaf spot damage ratings were relatively low on all widely planted runner market-type peanut varieties and likely had little or no impact on yield response. Flavorunner 458, a variety that is susceptible to leaf spot and white mold, is no longer planted commercially in the U.S and was not distributed for use in the Southeastern peanut production region. Similarly high yields

were recorded for nearly all varieties planted except for Flavorunner 458 and Tifguard. In a year when peanut prices are likely to be low, no improvement in disease control or yields were obtained across all peanut varieties with the costly hi-input as compared with the less costly fungicide program. Additional savings could be realized if the Bravo WeatherStik 6F were replaced with a generic formulation of chlorothalonil. Overall, if significant white mold pressure is not expected, grower may reduce fungicide program costs with the seven-application generic chlorothalonil program.

IMPACT OF A STANDARD AND HI-INPUT FUNGICIDE PROGRAM ON DISEASE CONTROL AND YIELD RESPONSE OF COMMERCIAL RUNNER PEANUT VARIETIES IN SOUTHWEST ALABAMA IN 2014

Source (*F* Values)	Thrips Damage Rating[1]	Late Leaf Spot[2]	Leaf Spot AUDPC	White Mold # Hits/60 ft[3]		Yield lb/A
Variety	**0.53**	**7.84***[4]	**2.86***	**1.33**		1.48
Fungicide program	**1.00**	**7.73*****	**3.76^**	**0.57**		0.05
Variety x program	1.00	1.29	1.18	2.34*		0.86
Peanut Variety				*Standard*	*Hi-Input*	
Flavorunner 458	4.9 a	4.6 ab[5]	125 ab	2.0 ab	1.3 a-d	4669 bc
Florida-07	4.8 a	3.3 e	113 cd	1.3 a-d	0.0 d	5070 abc
FloRun 107	5.0 a	4.1 bc	119 bc	0.5 bcd	0.5 bcd	5075 abc
Georgia-06G	4.5 a	3.5 cde	112 cd	0.3 cd	1.0 a-d	5419 a
Georgia-07W	4.5 a	3.4 de	112 cd	0.3 cd	1.0 a-d	4892 abc
Georgia-09B	4.3 a	4.3 b	129 a	0.8 bcd	0.3 cd	4972 abc
Georgia-12Y	4.5 a	3.8 bcd	118 bcd	1.3 a-d	1.5 abc	4932 abc
Georgia Green	4.8 a	3.6 cde	113 cd	1.8 ab	0.8 bcd	4674 bc
Tifguard	4.8 a	3.4 de	118 bcd	0.0 d	1.3 a-d	4507 c
TUFRunner 511	5.3 a	5.3 a	126 ab	1.3 abc	2.8 a	5345 ab
TUFRunner 727	4.8 a	3.3 e	111 d	1.3 a-d	1.8 ab	5276 ab
Fungicide program						
Standard	4.7 a	3.7 b	116 a	--		5000 a
Hi-Input	4.7 a	4.0 a	119 a	--		4970 a

[1] Thrips feeding damage (TDR) on juvenile leaves and shoot terminals was rated on a 1 to 10 scale on June 24.
[2] Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale on October 8.
[3] Stem rot incidence is expressed as the number of disease loci per 60 ft of row on October 9.
[4] Significance of *F* values at the 0.10 0.05, 0.01, and 0.001 levels is indicated by ^, *, **, or ***, respectively.
[5] Means in each column that are followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test ($P \leq 0.05$).

INFLUENCE OF PLANTING DATE, CULTIVAR, AND SEEDING RATE ON THRIPS DAMAGE, TSW AND WHITE MOLD, LEAF SPOT INTENSITY, RUST SEVERITY, AND YIELD OF THREE PEANUT TYPES IN A DRYLAND PRODUCTION SYSTEM, GCREC

A. K. Hagan, H. L. Campbell, M. Pegues, and J. Jones

Objective: Determine the impact of seeding rate on stand density, thrips feeding damage, occurrence of tomato spotted wilt (TSW), leaf spot, white mold, as well as the yield of selected commercial peanut cultivars in a dryland production system at the Gulf Coast Research and Extension Center in Fairhope, AL.

Production Methods: On October 22, 2013, the study site was planted to 90 pounds per acre of the rye cv Agri-AFC 2020. A November 22 application of 301 pounds per acre of 20-13-13 analysis fertilizer + 10 lb/A sulfur (60-40-40-10S) was followed with a January 23 top dress application of 125 pounds per acre of 32-0-0 (40-0-0). A burndown application of 1 quart per acre Roundup WeatherMAX was made on April 11. Rows were laid off with a KMC strip till rig with rolling baskets on April 14 for the first date of planting (1st DOP) and May 7 for the 2nd DOP. The peanut cultivars Georgia-06G, Georgia-09B, and Georgia-12Y were planted on April 25 (1st DOP) and May 22 (2nd DOP) at a rate of 6 seed per row foot in a Malbis fine sandy loam (OM≤1%) soil in a field cropped to peanut every third year at the Gulf Coast Research and Extension Center in Fairhope, AL. Weed control was obtained with an at-plant broadcast application of 1 quart per acre Roundup WeatherMAX + 1 quart per acre Prowl H_2O on May 22 followed by 8 fluid ounces per acre Gramoxone + 1.5 pint per acre Storm on June 16, 2 ounces per acre Cadre + 0.45 ounces per acre Strongarm on July 8, and 1.5 pints per acre Poast Plus + 1 quart per acre Herbimax on July 22. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The study area was not irrigated. A factorial design arranged in a split-split plot with planting date as the whole plot, peanut cultivar as the split-plot and seeding rate of 3, 4, 6, and 8 seed per row foot as split-split plots treatments was used. Whole plots were randomized in four complete blocks. Individual subplots consisted of four 30-foot rows spaced 3.2-feet apart. Plots were not irrigated. Thimet 20G at 5 pounds per acre were applied in-furrow. Chlorothalonil was applied for leaf spot control on June 6, June 16, July 2, July 8, July 21, August 4, August 19, and September 3 for the 1st DOP and July 8, July 21, August 4, August 19, September 3, September 18, and September 30 for the 2nd DOP with a tractor mounted boom sprayer with three TX-8 nozzles per row calibrated to deliver 15 gal/A of spray volume 45 psi. Stand counts were made on May 14 and June 3 for the 1st and 2nd DOP, respectively.

Insect and Disease Assessment: Thrips damage rating (TDR) on the leaves was assessed on a

0 to 10 scale where 0 = no visible leaf scarring, 1=10% leaf area scarred, 2=20% leaf area scarred, 3=30% leaf area scarred, 4=40% leaf area scarred, to 10=100% leaf area affected and plants near death on June 3, June 19 for the 1st and 2nd DOP, respectively. Final TSW hit counts (one hit was defined a < 1 foot of consecutive symptomatic plants per row) were made on August 12 and October 7 for the 1st and 2nd DOP, respectively. Late leaf spot were rated together on September 9 and October 7 for the 1st and 2nd DOP, respectively, using the 1-10 Florida peanut leaf spot scoring system where 1 = no disease, 2 = very few leaf spots, 3 = few leaf spots in lower and upper canopy, 4 = some leaf spotting and ≤ 10% defoliation, 5 = leaf spots noticeable and ≤ 25% defoliation, 6 = leaf spots numerous and ≤ 50% defoliation, 7 = leaf spots very numerous and ≤ 75% defoliation, 8 = numerous leaf spots on few remaining leaves and ≤ 90% defoliation, 9 = very few remaining leaves covered with leaf spots and ≤ 95% defoliation, and 10 = plants defoliated or dead. Rust severity was assessed using the ICRISAT 1-9 rating scale where 1 = no disease and 9 = 80 to 100% of leaves withered on September 9 and October 7 for the 1st and 2nd DOP, respectively. White mold hit counts (1 hit was defined as ≤ 1 foot of consecutive white mold-damaged plants per row) were made immediately after plot inversion on September 22 and October 8 for the 1st and 2nd DOP, respectively the plots were combined several days later. Significance of interactions was evaluated using PROC GLIMMIX procedure in SAS. Statistical analyses were done on rank transformations for non-normal data for thrips damage ratings, leaf spot intensity, TSW and white mold incidence, and rust, which were back transformed for presentation. Means were separated using the least significant difference (LSD) test ($P \leq 0.05$ or as indicated otherwise).

Results

Significant planting date × seeding rate interactions were noted for stand density, leaf spot intensity, white mold incidence and rust severity (Table 1).

TABLE 1. F-VALUES FROM GENERALIZED LINEAR MIXED MODEL ANALYSIS FOR EFFECTS OF PLANTING DATE, PEANUT VARIETY, AND SEEDING RATE ON STAND, THRIPS DAMAGE, LEAF SPOT INTENSITY, TSW AND WHITE MOLD INCIDENCE, RUST SEVERITY, AND YIELD AT THE GCREC IN 2014

Source of Variation (*F* values)	Stand Density	Thrips Damage Rating	TSW[1]	Leaf Spot	White Mold	Rust	Yield
Planting Date	2.14[2]	0.10	10.97*	27.50*	2.16	141.67***	1.85
Variety	1.15	3.30*	7.24**	5.51**	3.29*	15.32***	1.21
Planting Date × Variety	5.02**	1.55	1.27	4.57*	2.83^	15.32***	1.19
Seeding Rate	366.68***	0.48	0.49	1.33	0.07	0.24	0.22
Planting Date × Seeding Rate	1.35	0.40	1.04	0.88	0.20	0.24	0.15
Variety x Seeding Rate	0.32	0.35	1.65	1.45	0.69	0.53	0.33
Planting Date × Variety × Seeding Rate	2.23^	0.18	1.26	1.52	0.11	0.53	0.19

[1]TSW = tomato spotted wilt

[2]Significance at the 0.10, 0.05, 0.01, and 0.001 levels is indicated by ^, *, **, or ***, respectively.

Seeding Rate: Similar stand densities were observed at the 1st and 2nd DOP (Table 2). Mean stand density for Georgia-06G, Georgia-9B, and Georgia-12Y were similar (Table 3). As expected, stand density increased incrementally with as seeding rate rose from 3 to 8 seed per row ft (Table 5).

TABLE 2. IMPACT OF PLANTING DATE ON STAND DENSITY, THRIPS FEEDING DAMAGE, TSW INCIDENCE AND YIELD

Planting Date	Stand Density[1]	Thrips Damage Rating[2]	TSW Incidence[3]	Yield lb/A
April 25	102 a[4]	5.3 a	0.7 a	3810 b
May 22	98 a	5.2 a	0.2 b	4271 a

[1]Number of plants per 30 foot of row was determined on May 13 and June 3 for the 1st and 2nd DOP.
[2]Thrips damage to the juvenile leaves and shoot terminals was assessed on a 0 to 10 scale on June 3 and June 19 for the 1st and 2nd DOP, respectively.
[3]Tomato spotted wilt (TSW) incidence is expressed as the number of hits of each disease per 60 ft of row.
[4]Means in each column that are followed by the same letter are not significantly different according to analysis of variance and the Fisher's least significant difference (LSD) test ($P \leq 0.05$).

Thrips Damage: The level of thrips feeding damage to the shoot terminals and juveniles leaves was similar at the 1st and 2nd DOP (Table 2). Thrips damage ratings were higher for Georgia-06G than Georgia-12Y, while the ratings for Georgia-09B were intermediate between the former two cultivars (Table 3). In addition, seeding rate did not impact thrips feeding damage levels (Table 5).

Tomato Spotted Wilt: While TSW pressure was very low, incidence of this disease was lower at the 2nd than 1st DOP (Table 2). Incidence of TSW was lower in Georgia-06G and Georgia-12Y than Georgia-09B (Table 3). Similarly low TSW indices were seen across all seeding rates (Table 5).

TABLE 3. INFLUENCE OF CULTIVAR ON STAND DENSITY, THRIPS FEEDING DAMAGE, TSW INCIDENCE AND YIELD

Cultivar	Stand Density[1]	Thrips Damage Rating[2]	TSW Incidence[3]	Yield lb/A
Georgia-06G	99 a[4]	5.6 a	0.5 b	4163 a
Georgia-09B	101 a	5.2 ab	0.8 a	3789 b
Georgia-12Y	101 a	5.0 b	0.2 b	4048 ab

[1]Number of plants per 30 foot of row was determined on May 13 and June 3 for the 1st and 2nd DOP.
[2]Thrips damage to the juvenile leaves and shoot terminals was assessed on a 0 to 10 scale on June 3 and June 19 for the 1st and 2nd DOP, respectively.
[3]Tomato spotted wilt (TSW) incidence is expressed as the number of hits of each disease per 60 ft of row.
[4]Means in each column that are followed by the same letter are not significantly different according to analysis of variance and the Fisher's least significant difference (LSD) test ($P \leq 0.05$).

Leaf Spot Diseases: Late leaf spot was the primary leaf spot disease observed. Overall leaf spot pressure was low with symptoms being restricted to light leaf spotting in the lower and mid-canopy with no premature defoliation. Leaf spot intensity differed by planting date and peanut cultivar (Table 1). Lower leaf spot ratings were noted at the 1st

than 2nd DOP for Georgia-06G and Georgia-12Y but not for Georgia-09B which had similarly lower leaf spot intensity ratings at both planting dates (Table 4). At the 1st DOP, Georgia-09B had higher leaf spot intensity ratings than Georgia-06G and Georgia-12Y, while disease intensity was lower on the latter cultivar than Georgia-06G but not Georgia-09B. Seeding rate did not significantly impact leaf spot intensity (Table 3).

TABLE 4. INFLUENCE OF CULTIVAR ON LEAF SPOT INTENSITY, WHITE MOLD INCIDENCE, AND RUST SEVERITY

	Leaf Spot Intensity[1]		White Mold Incidence[2]		Rust Severity[3]	
Cultivar	*April*	*May*	*April*	*May*	*April*	*May*
Georgia-06G	2.0 C[4]	2.8 A	1.5 A	0.5 B	1.0 D	3.4 B
Georgia-09B	2.4 B	2.7 AB	1.0 AB	1.0 AB	1.0 D	5.4 A
Georgia-12Y	2.0 C	2.5 B	0.4 B	0.5 B	1.0 D	2.2 C

[1] Leaf spot intensity was rated on the Florida 1 to 11 leaf spot rating scale.
[2] White mold incidence is expressed as the number of hits per 60 ft of row.
[3] Rust severity was assessed using the ICRISAT 1-9 rating scale.
[4] Means in each column that are followed by the same letter are not significantly different according to analysis of variance and the Fisher's least significant difference (LSD) test ($P \leq 0.05$) or ($P \leq 0.10$).

White Mold: While white mold incidence was low, disease incidence differed by planting date and peanut cultivar (Table 4). Georgia-06G suffered higher white mold damage than Georgia-12Y but not Georgia-09B at the 1st DOP, while similar disease indices were recorded at the 2nd DOP for all cultivars ($P \leq 0.10$) (Table 4). A decline in white mold incidence from the 1st to the 2nd DOP for Georgia-12Y but not the other two cultivars was noted. Due largely due to low disease pressure, seeding rate did not impact white mold incidence (Table 3).

TABLE 5. INFLUENCE OF SEEDING RATE ON STAND DENSITY, THRIPS FEEDING DAMAGE, TSW AND WHITE MOLD INCIDENCE, LEAF SPOT INTENSITY, RUST SEVERITY, AND YIELD

Seeding Rate (# Seed/ft row)	Stand Density[1]	Thrips Damage Rating [2]	TSW Incidence[3]	Leaf Spot Intensity[4]	White Mold Incidence[3]	Rust Severity[5]	Yield lb/A
3	69 d[6]	5.3 a	0.5 a	2.4 a	0.9 a	2.2 a	3947 a
4	84 c	5.3 a	0.5 a	2.3 a	0.8 a	2.2 a	3957 a
6	113 b	5.4 a	0.5 a	2.5 a	0.8 a	2.3 a	4149 a
8	134 a	5.0 a	0.3 a	2.4 a	0.8 a	2.4 a	3988 a

[1]Number of plants per 30 foot of row was determined on May 13 and June 3 for the 1st and 2nd DOP.
[2]Thrips damage to the juvenile leaves and shoot terminals was assessed on a 0 to 10 scale on June 3 and June 19 for the 1st and 2nd DOP, respectively.
[3]TSW and white mold incidence is expressed as the number of hits of each disease per 60 ft of row.
[4]Leaf spot intensity was rated on the Florida 1 to 11 leaf spot rating scale.
[5]Rust severity was assessed using the ICRISAT 1-9 rating scale.
[6]Means in each column that are followed by the same letter are not significantly different according to analysis of variance and the Fisher's least significant difference (LSD) test ($P \leq 0.05$).

Peanut Rust: Rust severity differed significantly by planting date and peanut cultivar (Table 1). While rust was not observed on any cultivars at the 1st DOP, noticeable rust development was

observed in the later-planted peanuts (Table 4). At the 2nd DOP, highest rust severity was noted on Georgia-09B, while Georgia-06G had a higher rust severity rating than Georgia-12Y. Rust severity was not influenced by seeding rate (Table 5).

Yield: Higher yields were noted for May than April-planted peanuts (Table 2). Higher yields were recorded for Georgia-06G than Georgia-09B (Table 4). Yields reported for Georgia-12Y were similar to those noted for the former two peanut cultivars. Seeding rate did not impact pod yield (Table 5).

Summary: Other than expected differences in stand density, seeding rate had little to no impact on thrips damage, damage attributed to several diseases, and most notably on yield, which did not differ over a seeding rate ranging from 3 to 8 seed per row foot. For the second consecutive year, results of this study indicate that seeding rates could be reduced below the currently recommended 6 seed per row foot without jeopardizing yields. Currently, seed is the single most costly input in a peanut production budget. Reducing seeding rates by one to two seed per row ft could result in a savings of $15 to $30 per acre.

Earlier planting dates for peanut give growers' added flexibility for scheduling harvesting operations for all field crops in late summer and earlier fall. Lower yields noted for the April than May-planted peanuts were due to an extended period of dry weather in August, which was the time frame when the earlier-planted peanuts matured. In contrast, the May-planted peanuts caught some late rains that resulted in higher yields. Irrigation would have negated the dry weather stress that limited the yield of April-planted peanuts. Planting date had a noticeable impact on leaf spot intensity and rust severity. Symptoms of both diseases were much more noticeable on the May- than April-planted peanuts. Similar results have been seen at this and a second Alabama location where foliar disease activity intensifies as planting dates advance from April through May and into early June. Early planting is an effective tool for reducing the risk of leaf spot diseases and apparently peanut rust.

Thrips damage levels, TSW and white mold incidence, leaf spot intensity, rust severity and yield were influenced by variety selection. Leaf spot intensity, white mold incidence, and rust severity differed by peanut cultivar and planting date. Despite low pressure from nearly all of the above diseases, Georgia-12Y and to a lesser extent, Georgia-06G suffered less disease related damage, particularly rust, than did Georgia-09B. Georgia-06G but not Georgia-12Y also had higher yields than Georgia-09B. For growers planning to plant early, reduced disease levels along with high yield potential make Georgia-06G and Georgia-12Y excellent choices.

In summary, an April planting date for peanut is a viable option for peanut producers interested in spacing out harvesting operations as well as minimizing the activity of some foliar diseases in peanut. Reduced seeding rates are also an option on the table, particularly for those growers that have no issues with seeding emergence and plant after soil temperatures exceed 65°F. Georgia-06G and to a lesser extent Georgia-12Y demonstrated their superiority when compared with Georgia-09B.

EARLY LEAF SPOT AND WHITE MOLD CONTROL ON PEANUT WITH RECOMMENDED FUNGICIDES, PBU

H. L. Campbell, A. K. Hagan, and J. Burkett

Objective: Compare the effectiveness of recommended fungicide programs for the control of early leaf spot and white mold as well as impact on the yield of two peanut cultivars in central Alabama.

Production Methods: Round-up was applied to the test area for burn down on May 2. The test site was disked and chiseled prior to sowing each peanut cultivar at a rate of 6 seed/ft of row in an Independence (Cahaba) loamy fine sand (OM<1%) on May 27. Weed control was obtained with a post-plant application of Dual Magnum II at 1.5 pt/A on May 29. Thrips control was obtained with an early post application of Orthene 90S at 0.5 lb/A. A center pivot irrigation system was used to apply water as needed. Plots, which contained four 30-ft rows spaced 3-ft apart, were arranged in a randomized complete block with four replications. Fungicides were applied on July 2, July 9, July 16, July 30, August 14, August 28, September 11, September 24, and October 8 with a four-row tractor mounted sprayer.

Disease Assessment: Early leaf spot (ELS) was rated on September 17, October 2, and October 15 using the 1-10 Florida peanut leaf spot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions noticed in lower and upper canopy, 4 = some lesions in canopy and ≤ 10% defoliation, 5 = lesions noticeable and ≤ 25% defoliation, 6 = lesions numerous and ≤ 50% defoliation, 7 = lesions very numerous and ≤ 75% defoliation, 8 = numerous lesions on few remaining leaves and ≤90% defoliation, 9 = very few remaining leaves covered with lesions and < 95% defoliation, and 10 = plants defoliated or dead. White mold hit counts (1 hit was defined as ≤ 1 ft of consecutive white mold-damaged plants per row) were made immediately after plot inversion on October 20. Plots were combined on 5 days after inversion. Yields are reported at ≤10% moisture. Statistical analysis on leaf spot intensity and white mold incidence was done on rank transformations of data, which are back transformed for presentation. Means were separated using Fisher's protected least significant difference (LSD) test (P<0.05).

Results: Monthly rainfall totals for June, July, August, and August were near the 30 year historical average while temperatures were near normal for each month during the entire production season. Weather patterns were favorable for leaf spot diseases but not white mold development. Fungicide treatment x peanut variety interactions for leaf spot intensity and yield were not noted, so pooled data are presented (Table 1). While leaf spot intensity was slightly higher on Georgia-09B than Georgia-06G, no statistical differences were noted and yield response with the two peanut varieties was similar. Higher leaf spot intensity

ratings were recorded for Equus 720-season long than for all other fungicide programs except for Equus 720/Convoy + Equus 720. The lowest leaf spot intensity ratings were recorded with Equus/Provost. Equally effective leaf spot control was obtained with the Cupro Fix Ultra Fix Disperse at 2.0 lb per acre. All other programs gave similar levels of early leaf spot control. White mold pressure was relatively low therefore disease ratings were not include in Table 1. Low leaf spot ratings translated into the highest yields being noted for the Priaxor/Muscle ADV/Priaxor/Equus program which was similar to the yield obtained with all other fungicide programs except for the Equus only and Equus 720/ Convoy + Equus 720 programs.

TABLE 1. RECOMMENDED FUNGICIDE PROGRAMS IMPACT EARLY LEAF SPOT CONTROL AS WELL AS YIELD RESPONSE OF TWO PEANUT VARIETIES, PBU

Peanut cultivar mean	Application Schedule	ELS[1]	ELS	ELS	Yield lb/A
Georgia-06G	--	2.5 a[2]	3.4 a	4.1 a	5358 a
Tifguard	--	2.7 a	3.7 a	4.3 a	5054 a
Fungicide mean (rate per A)					
Equus 720 1.5 pt	1–7	3.4 a	4.7 a	5.6 a	4721 bc
Priaxor 6.0 fl oz Muscle ADV 32.0 fl oz Priaxor 6.0 fl oz Equus 720 1.5 pt	1.5 3,5 4,6 7	2.2 cd	2.6 f	3.3 de	5842 a
Equus 720 1.5 pt Provost 433SC 10.7 fl oz	1,2,7 3,4,5,6	2.1 d	2.7 ef	3.1 e	5437 ab
Equus 720 1.5 pt Convoy 26.0 fl oz + Equus 720 1.5 pt	1,2,4,6,7 3,5	3.2 a	4.4 ab	5.4 ab	4425 c
Equus 720 1.5 pt Muscle 3.6F 7.2 fl oz + Topsin M 10 fl oz	1,2,7 3,4,5,6	2.7 bc	3.8 bcd	4.3 c	5096
Equus 720 1.5 pt Muscle ADV 32.0 fl oz	1,2,7 3,4,5,6	2.4 cd	3.2 def	3.9 cd	5306 abc
Cupro Fix Ultra Disperse 2.0 lb	1-7	2.5 cd	3.1 def	3.4 de	5495 ab
Equus 720 1.5 pt Fontelis 1 pt	1,2,6,7 3,4,5	3.1 ab	4.0 abc	4.6 bc	5203 abc
Equus 720 1.5 pt Abound 2SC 18.2 fl oz + Alto 0.83SL 5.5 fl oz	1,2,4,6,7 3,5	2.2 cd	3.4 cde	3.8 cde	5330 abc

[1]Early leaf spot (ELS) intensity was rated using the Florida 1 to 10 peanut leaf spot rating scale.
[2]Means in each column that were followed by the same letter are not significantly different according to Fisher's least significant difference (LSD) test ($P \leq 0.05$).

Summary: Significant differences in fungicide program performance were noted in 2014. Equus 720 applied full season appeared to break down as the season progressed as was noted by the high leaf spot intensity in the Equus only and the Equus/Equus + Convoy treatments. Copper (Cupro Fix Ultra Disperse) gave similar response to leaf spot as did the other standard programs. The new fungicide also provided excellent leaf spot control. The relatively low incidence of white mold had little impact on yield response obtained with some fungicide programs.

YIELD RESPONSE AND REACTION OF COMMERCIAL PEANUT VARIETIES TO LEAF SPOT AND WHITE MOLD IN SOUTHWEST ALABAMA, BARU

A. K. Hagan, H. L. Campbell, and H. B. Miller

Objective: Assess the yield potential and reaction to leaf spot diseases and white mold of commercial runner market type commercial peanut varieties and selected Virginia-market type varieties in an irrigated production system at the Brewton Agricultural Research Unit.

Production Methods: The study site was prepared for planting with a moldboard plot and disk harrow. On June 5, runner and Virginia-market type peanut varieties were planted at a rate of 6 seed per row foot in a Benndale sandy loam (OM<1%) soil at the Brewton Agricultural Research Unit. Thimet 20G at 5pounds per acre was applied in-furrow for thrips control. Weed control was obtained with a June 5 at-plant, incorporated broadcast application of 1.5 pint per acre Dual Magnum II followed by a broadcast application of 2 ounces per acre Shadow. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The experimental design was a randomized complete block consisting of 4 rows 30 foot in length and spaced 3 feet apart. Plots were randomized in four complete blocks. Bravo WeatherStik at 1.5 pints per acre was broadcast on July 24, August 7, August 21, and September 5, and September 18 with a high-boy mounted boom sprayer with three TX-8 nozzles per row calibrated to deliver 15 gallons per acre of spray volume 45 psi. Early and late leaf spot diseases were rated together using the 1-10 Florida peanut leaf spot scoring system where 1 = no disease, 2 = very few leaf spots, 3 = few leaf spots in lower and upper canopy, 4 = some leaf spotting and ≤ 10% defoliation, 5 = leaf spots noticeable and ≤ 25% defoliation, 6 = leaf spots numerous and ≤ 50% defoliation, 7 = leaf spots very numerous and ≤ 75% defoliation, 8 = numerous leaf spots on few remaining leaves and ≤ 90% defoliation, 9 = very few remaining leaves covered with leaf spots and ≤ 95% defoliation, and 10 = plants defoliated or dead on October 9. On October 20, white mold hit counts (1 hit was defined as ≤ 1 foot of consecutive white mold-damaged plants per row) were made immediately after plot inversion. Plots were combined several days after inversion. Means were separated using Fisher's least significant difference (LSD) test ($P \leq 0.05$).

Results: While overall leaf spot intensity levels were low, significant differences were noted between varieties. Flavorunner 458 had higher leaf spot intensity levels than all other peanut varieties. The low leaf spot intensity levels noted on Florida Fancy and Georgia-06G were matched by those recorded for Florida-07, FloRun 107, Sugg, and Tifguard. Highest stem rot incidence was seen in Flavorunner 458. Of the remaining varieties, higher stem rot indices were observed for Sugg than Georgia-06G, Georgia-07W, Georgia-12Y, and Sugg.

Georgia-07W and Georgia-12Y had higher yields than all varieties except for FloRun 107, Georgia-09B, and Sugg. Similarly low yields were reported for Georgia-06G, Tifguard, and Florida-07.

Summary: Equally high yields and no exception disease issues were recorded for nearly all commercial runner-market type peanut varieties. Lower yields recorded for Georgia-06G was a surprise as this variety is typically among the highest yielding varieties. In contrast, Georgia-12Y yielded very well and seed of this variety should be widely available in 2015. FloRun107 was another new release that produced high yields that matched Georgia-12Y.

YIELD RESPONSE AND DISEASE REACTION OF RUNNER AND VIRGINIA MARKET TYPE PEANUTS AT THE BREWTON AGRICULTURAL RESEARCH UNIT IN 2014

Peanut Variety	Market Type	Leaf Spot Intensity[1]	White mold # Hits/40 ft[2]	Yield lb/A
Flavorunner 458	Runner	3.4 a[3]	4.8 a	4225 d
Florida Fancy	Virginia	2.1 c	2.5 b	5111 bc
Florida-07	Runner	2.5 bc	1.3 bc	5254 abc
FloRun 107	Runner	2.5 bc	1.5 bc	5415 ab
Georgia-06G	Runner	2.1 c	1.0 c	4805 c
Georgia-07W	Runner	2.7 b	1.0 c	5344 a
Georgia-09B	Runner	2.7 b	2.0 bc	5298 abc
Georgia-12Y	Runner	2.8 b	0.7 c	5645 a
Sugg	Virginia	2.6 bc	0.7 c	5228 abc
Tifguard	Runner	2.3 bc	1.0 c	4804 c

[1]Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale.
[2]White mold incidence is expressed as the number of disease hits per 40 ft of row.
[3]Means in each column that are followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test ($P \leq 0.05$).

YIELD RESPONSE AND REACTION OF COMMERCIAL PEANUT VARIETIES TO LEAF SPOT AND WHITE MOLD IN CENTRAL ALABAMA, CRES

H. L. Campbell, A. K. Hagan, and J.A. Pitts

Objective: Assess the yield potential and reaction to leaf spot diseases and white mold of commercial runner market type commercial peanut varieties and selected Virginia-market type varieties in an rain-fed production system at the Chilton Research and Extension Center.

Production Methods: The study site was prepared for planting with a moldboard plot and disk harrow. On May 21, runner and Virginia-market type peanut varieties were planted at a rate of 6 seed per row foot in a Ruston fine sandy loam (OM<1%) soil at the Chilton Research and Extension Center. Weed control was obtained with a May 21 at-plant, incorporated broadcast application of 1.5 pint per acre Dual Magnum II. On June 19, a foliar application of Orhtene 90S was applied for thrips control. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The experimental design was a randomized complete block consisting of 4 rows 20 foot in length and spaced 42 inches apart. Plots were randomized in six complete blocks. Bravo WeatherStik at 1.5 pints per acre was broadcast on July 14, August 14, and August 14 with a high-boy mounted boom sprayer with three TX-8 nozzles per row calibrated to deliver 15 gallons per acre of spray volume 45 psi. Early leaf spot disease was rated using the 1-10 Florida peanut leaf spot scoring system where 1 = no disease, 2 = very few leaf spots, 3 = few leaf spots in lower and upper canopy, 4 = some leaf spotting and ≤ 10% defoliation, 5 = leaf spots noticeable and ≤ 25% defoliation, 6 = leaf spots numerous and ≤ 50% defoliation, 7 = leaf spots very numerous and ≤ 75% defoliation, 8 = numerous leaf spots on few remaining leaves and ≤ 90% defoliation, 9 = very few remaining leaves covered with leaf spots and ≤ 95% defoliation, and 10 = plants defoliated or dead on October 7 just prior to inversion. On October 7, white mold hit counts (1 hit was defined as ≤ 1 foot of consecutive white mold-damaged plants per row) were made immediately after plot inversion. Plots were combined after inversion and green weight was taken. Means were separated using Fisher's least significant difference (LSD) test ($P \leq 0.05$).

Results: Early leaf spot was the primary foliar disease observed. Among the cultivars evaluated, the lowest leaf spot ratings were observed by Florida Fancy, FloRun 107, Tifguard, and Georgia-12Y. Leaf spot rating among the remaining cultivars was similar. While Flavorunner 458 had the highest incidence of stem rot, the lowest disease incidence was observed with Sugg and Georgia-12Y. Incidence among the remaining

cultivars was similar. Green peanut yield weights were recorded for the CRES study. Among the cultivars evaluated, Flavorunner 458 had the lowest yield. Among the Virginia market type cultivars, Sugg yielded higher than Florida Fancy while Georgia-12Y yielded highest among the runner market-type cultivars, which had similar yields.

Summary: Early leaf spot was worse at this location than had been observed in previous years and impacted yields. Lower yields recorded for Georgia-06G was a surprise as this variety is typically among the highest yielding varieties. In contrast, Georgia-12Y yielded very well and seed of this variety should be widely available in 2015. Georgia-07W was another runner cultivar that produced high yields that matched Georgia-12Y.

YIELD RESPONSE AND DISEASE REACTION OF RUNNER AND VIRGINIA MARKET TYPE PEANUTS AT THE CHILTON RESEARCH AND EXTENSION CENTER IN 2014

Peanut Variety	Market Type	Leaf Spot Intensity[1]	White mold # Hits/40 ft[2]	Yield lb/A
Sugg	Virginia	3.8 abc[3]	1.0 c	5357 ab
Florida Fancy	Virginia	3.4 bcd	2.5 abc	4375 bcd
Georgia-06G	Runner	4.1 ab	2.8 ab	4061 cd
Georgia-09B	Runner	4.0 abc	1.3 bc	5090 abc
Florida 07	Runner	3.9 abc	1.7 abc	4424 bcd
FloRun 107	Runner	3.3 cd	2.0 abc	4679 abcd
Georgia-07W	Runner	3.8 abc	1.5 bc	5255 ab
Tifguard	Runner	3.0 d	1.3 bc	4802 abcd
Georgia-12Y	Runner	3.4 bcd	1.0 c	5735 a
Flavorunner 458	Runner	4.2 a	3.3 a	3875 d

[1]Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale.
[2]White mold incidence is expressed as the number of disease hits per 40 ft of row.
[3]Means in each column that are followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test ($P \leq 0.05$).

YIELD RESPONSE AND REACTION OF COMMERCIAL PEANUT VARIETIES TO EARLY LEAF SPOT IN NORTH ALABAMA, NAHRC

H. L. Campbell, A. K. Hagan, and A. Caylor

Objective: Assess the yield potential and reaction to leaf spot diseases and white mold of commercial runner market type commercial peanut varieties and selected Virginia-market type varieties in a rain-fed production system at the North Alabama Horticulture Research Center.

Production Methods: The study site was prepared for planting with a moldboard plot and disk harrow. On May 27, runner and Virginia-market type peanut varieties were planted at a rate of 6 seed per row foot in a Hartselle fine sandy loam (OM<1%) soil at the North Alabama Horticulture Research Center. Weed control was obtained with a May 26 pre-plant, incorporated broadcast application of 1.5 pint per acre Dual Magnum II and Sonalan. Weeds were controlled with a post plant application of Cadre + Storm. Select was applied later to control volunteer sorghum not controlled by pre-emergence herbicides. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The experimental design was a randomized complete block consisting of 4 rows 20 foot in length and spaced 36 inches apart. Plots were randomized in four complete blocks. Bravo WeatherStik at 1.5 pints per acre was broadcast on July 11, Bravo WeatherStik+ Convoy on July 23, Abound 2.08SC on August 2, and Bravo WeatherStik on August 23 with a high-boy mounted boom sprayer with three TX-8 nozzles per row calibrated to deliver 15 gallons per acre of spray volume 45 psi. Early leaf spot disease was rated using the 1-10 Florida peanut leaf spot scoring system where 1 = no disease, 2 = very few leaf spots, 3 = few leaf spots in lower and upper canopy, 4 = some leaf spotting and ≤ 10% defoliation, 5 = leaf spots noticeable and ≤ 25% defoliation, 6 = leaf spots numerous and ≤ 50% defoliation, 7 = leaf spots very numerous and ≤ 75% defoliation, 8 = numerous leaf spots on few remaining leaves and ≤ 90% defoliation, 9 = very few remaining leaves covered with leaf spots and ≤ 95% defoliation, and 10 = plants defoliated or dead on October 14 prior to inversion. Peanuts were inverted on October 17. White mold was not present and white mold hits were not made. Plots were combined after inversion and green weight was taken. After drying to a moisture content on <10%, dry weights were taken. Means were separated using Fisher's least significant difference (LSD) test ($P \leq 0.05$).

Results: Early leaf spot was the primary disease observed. Disease progressed throughout the growing season and intensified prior to inversion, where leaf spot induced defoliation the highest leaf spot induced defoliation was observed on Georgia-09B, FloRun 107, and Georgia-06G. The least leaf spotting and premature defoliation was

noted on Sugg with the remaining cultivars having similar leaf spot ratings. Stem rot was absent so no counts were made. Yield was obtained from both green peanuts and again after they were dried to a moisture content of <10%. High yields recorded for Florida-07 were matched by the two Virginia market-type cultivars along with Georgia-07W and Georgia-12Y. Lowest yield was recorded for Georgia-09B and Flavorunner 458.

Summary: Early leaf spot was worse at this location than had been observed in previous years and impacted yields of some cultivars worse than others. Lower yields recorded for Georgia-06G was a surprise as this variety is typically among the highest yielding varieties. In contrast, Georgia-12Y yielded very well and seed of this variety should be widely available in 2015. Florida 07 and Georgia-07W yielded well despite heavy disease pressure as well as both Virginia market-type cultivars.

YIELD RESPONSE AND DISEASE REACTION OF RUNNER AND VIRGINIA MARKET TYPE PEANUTS AT THE NORTH ALABAMA HORTICULTURE RESEARCH CENTER IN 2014

Peanut Variety	Market Type	Leaf Spot Intensity[1]	Yield lb/A	
			Green	Dry
Sugg	Virginia	7.1 d[2]	6353 bc	5763 ab
Florida Fancy	Virginia	7.3 cd	7714 ab	5717 ab
Georgia-06G	Runner	8.8 ab	5127 cd	4084 cde
Georgia-09B	Runner	9.4 a	3857 d	3131 e
Florida 07	Runner	7.5 cd	7804 a	6080 a
FloRun 107	Runner	9.0 ab	5127 cd	3948 de
Georgia-07W	Runner	7.2 cd	6670 ab	5263 ab
Tifguard	Runner	7.4 cd	6398 bc	4855 bcd
Georgia-12Y	Runner	8.2 bc	6761 ab	5127 abc
Flavorunner 458	Runner	8.1 bcd	4628 d	3494 e

[1]Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale.
[2]Means in each column that are followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test ($P \leq 0.05$).