Peanut Disease Control Field Trials
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ALABAMA AGRICULTURAL EXPERIMENT STATION

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PEANUT DISEASE CONTROL FIELD TRIALS, 2017

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

INTRODUCTION

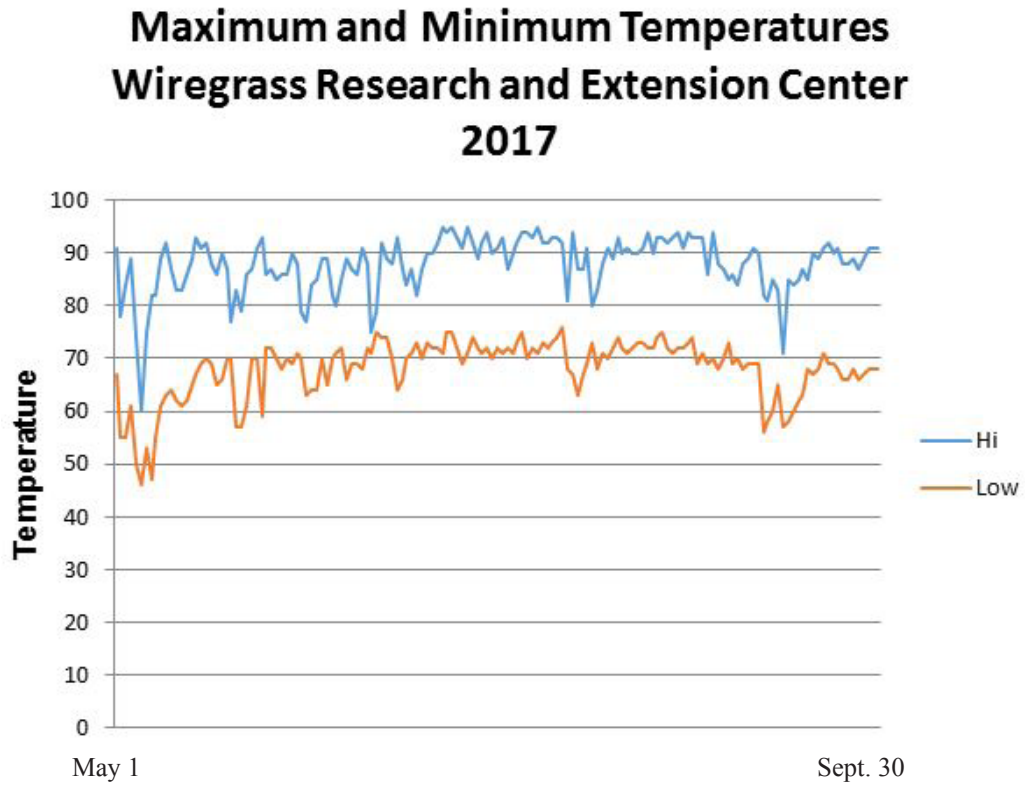
Fungicides, cultural practices, and resistant cultivars are available for the control of damaging diseases and nematode pests that can limit peanut yield. A management program that incorporates these practices can enhance the control of diseases and nematode pests and can increase crop yield and profit 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, Ala., at the Gulf Coast Research and Extension Center (GCREC) in Fairhope, Ala., at the Brewton Agricultural Research Unit in Brewton (BARU), Ala., and at the Chilton Research and Extension Center (CREC) in Clanton, Ala. This report summarizes the results of those trials.

During the 2017 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 above normal throughout the entire growing season (Fig. 2). Despite rainfall, rust never developed in the plots. Despite the high temperatures and rainfall, stem rot incidence was similar to that which had been previously observed and yield was not negatively impacted in most plots.

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



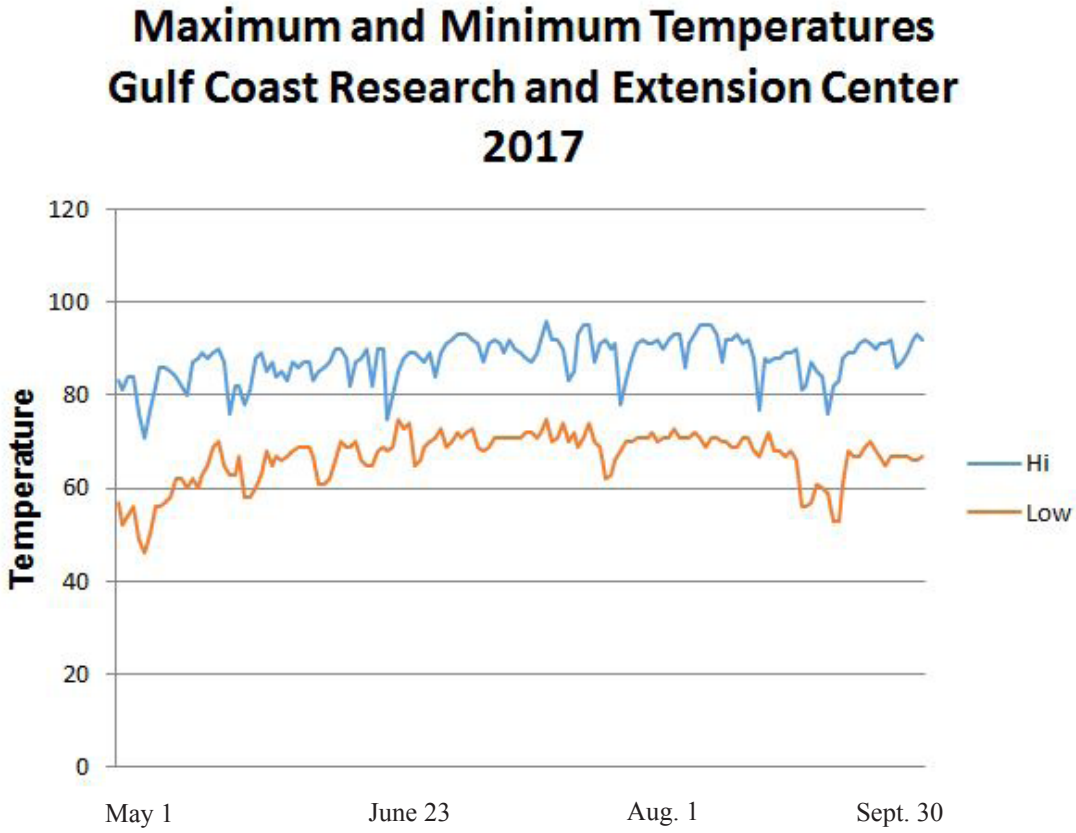
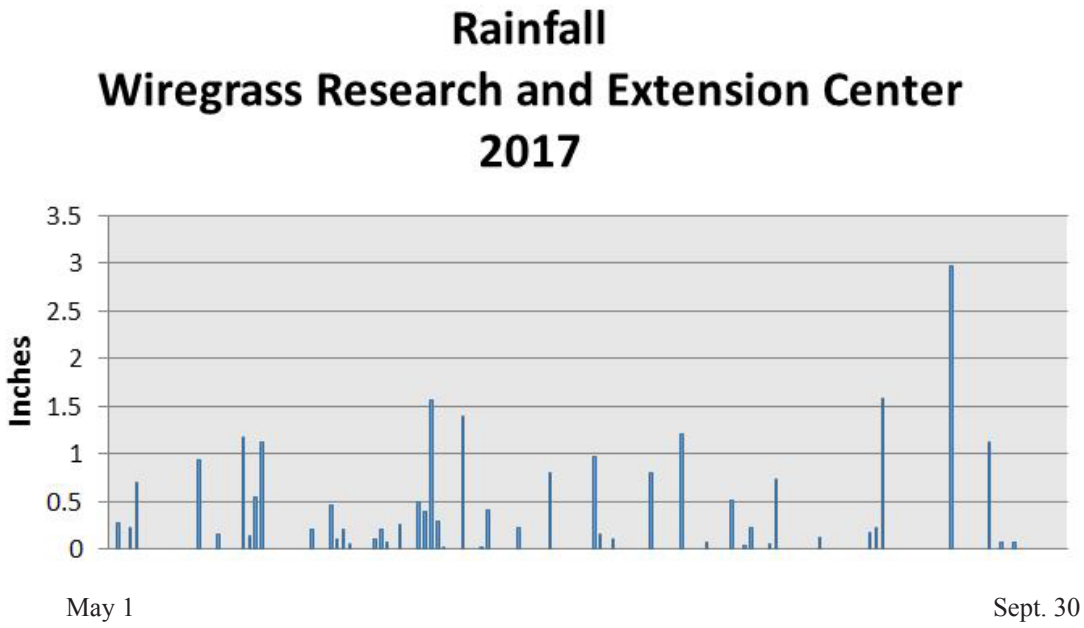
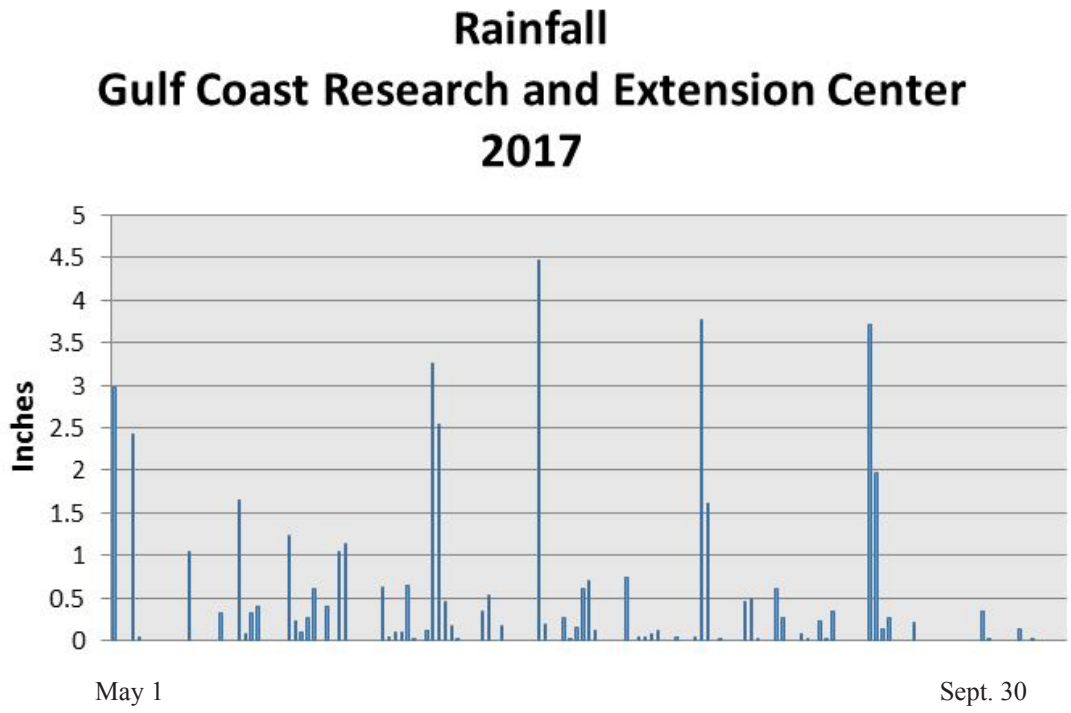


Figure 2. Daily precipitation (inches) from May 1 – Sept. 30.





EVALUATION OF APROACH PRIMA, FONTELIS, AND EXPERIMENTAL COMPOUNDS IR-920 FOR PEANUT DISEASE CONTROL IN SOUTHEAST ALABAMA, WREC

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

Objective: To evaluate Aproach Prima and Fontelis and the experimental product IR-920 and compare them against currently registered fungicides for their effectiveness in controlling foliar diseases and stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Georgia 09B' was planted at the Wiregrass Research and Extension Center in Headland, AL on May 30, in a field with a history peanut production in a peanut-cotton rotation. The experimental design was a randomized complete block. Individual plots consisted of four 30-foot rows spaced three feet apart with six replications. Seed were sown at a rate of approximately five seed per ft of row in a Dothan sandy loam (OM<1%). On May 24, 1 qt/A of Sonalan + 0.45 oz/A of Strongarm + 1 pt/A of Dual were applied and incorporated to the test area for pre-emergent weed control. On May 31, 3 oz/A of Valor were applied to test area after planting 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-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on July 26, Aug. 9, and Aug. 22. Rainfall recorded during the growing season was as follows (in inches): May – 3.70, June – 7.41, July – 3.18, August – 5.40 and September – 2.93. Foliar fungicides were applied on a 14-21 day schedule on 1) July 6, 1.5) July 11, 2) July 19, 3) Aug. 1, 4) Aug. 16, 5) Sept. 5, 6) Sept. 15, and 7) Sept. 26 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A per plot.

Early and late leaf spot were visually rated on Oct. 9 and 10 using the Florida 1-10 scale (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).

Stem rot incidence was assessed on Oct. 13 and Oct. 16 immediately after plot inversion by counting the number of disease loci with symptoms or signs. Plots were harvested on Oct. 17 and Oct. 19 and yields were reported at 8.49% and 8.53% moisture, respectively. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: In 2017, temperatures were near yearly averages and monthly rainfall totals were at or above yearly averages during June, July, August, and September. Early leaf spot appeared the first week of August and rapidly intensified until the first week of September when late leaf spot appeared and quickly became the dominant leaf spot disease at harvest. Stem rot incidence was lower than in previous years. Leaf spot intensity was lower for all fungicide programs than the untreated control, which suffered considerable premature defoliation. Percent defoliation for all fungicide programs was similar to the leaf spot control observed with the season-long Echo 720 standard. Stem rot incidence was lower for all fungicide programs than the untreated control. Of the programs tested, lowest incidence of stem rot was seen with the Priaxor/Fontelis/Muscle 3.6F/Echo 720, Priaxor(1.5)/Fontelis/Convoy + Echo 720(4)/Echo 720, Elatus 45WG 7 application treatment, and the Echo 720 + Alto/Elatus/Echo 720 programs. All fungicide programs increased yield when compared to the untreated control. With the exception of the Priaxor/Fontelis/Convoy + Echo 720(5)/Echo 720 program, all treatment programs including those that included IR-920 yielded similar to that obtained with the Echo 720 standard.

EVALUATION OF APROACH PRIMA, FONTELIS, AND EXPERIMENTAL COMPOUNDS IR-920 FOR PEANUT DISEASE CONTROL IN SOUTHEAST ALABAMA, WREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control		81.9 a[3]	6.4 a	3194 c
Aproach Prima 6.8 fl oz Fontelis 16.0 fl oz Muscle 3.6F 7.2 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	3.5 bc	1.5 bcd	4275 a
Priaxor 6.0 fl oz Fontelis 16.0 fl oz Muscle 3.6F 7.2 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	4.5 bc	0.2 d	4259 a
Priaxor 6.0 fl oz Fontelis 16.0 fl oz Convoy 16.0 fl oz + Echo 720 24.0 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	5.1 bc	0.3 d	4517 a
Priaxor 6.0 fl oz Fontelis 10.0 fl oz + Convoy 16.0 fl oz Echo 720 24.0 fl oz	1.5 3,5 4,6,7	3.5 bc	0.6 bcd	4482 a
Priaxor 6.0 fl oz Fontelis 16.0 fl oz Convoy 16.0 fl oz + Echo 720 24.0 fl oz Echo 720 24.0 fl oz	1.5 3,4 5 6,7	5.1 bc	1.0 bcd	3341 bc
Muscle ADV 32.0 fl oz Fontelis 16.0 fl oz Muscle 3.6F 7.2 fl oz Echo 720 24.0 fl oz	1,2 3,5 4 6,7	4.4 bc	1.1 bcd	4114 ab
Fontelis 16.0 fl oz	1-7	5.1 bc	1.0 bcd	4211 a
Elatus 45WG 7.3 oz	1-7	3.3 bc	0.4 cd	4366 a
Echo 720 24.0 fl oz + Convoy 16.0 fl oz	1-7	7.0 b	1.0 bcd	4178 a
Priaxor 6.0 fl oz	1-7	3.3 bc	1.8 bc	4171 a
Echo 720 24.0 fl oz + Alto 0.83SL Elatus 45WG 9.5 oz Echo 720 24.0 fl oz	1.5 3,5 4,6,7	5.1 bc	0.2 d	4203 a
Echo 720 24.0 fl oz Provost Opti 10.7 fl oz	1,2,7 3,4,5,6	2.1 c	1.5 bcd	4146 a
Echo 720 24.0 fl oz	1-7	5.4 bc	2.1 b	4219 a
IR-920 19.0 fl oz	1-7	4.1 bc	1.5 bcd	4308 a
IR-920 25.0 fl oz	1-7	3.8 bc	2.0 b	4211 a
LSD (P ≤ 0.05)		*0.4*	*1.6*	*793*

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

EVALUATION OF ELATUS AND NEW FUNGICIDE MIRAVIS FOR PEANUT DISEASE CONTROL IN SOUTHEAST ALABAMA, WREC

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

Objective: To evaluate Elatus 45WG and the new fungicide Miravis and compare them against currently registered fungicides for control of foliar diseases and stem rot and yield response 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, Ala., in a field cropped to peanut every other year. Seed were sown at a rate of approximately five seed per ft of row in a Dothan sandy loam (OM<1%) and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. On May 15, 1 qt/A of Sonalan + 0.45 oz/A of Strongarm + 1 pt/A of Dual 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. Thrips were controlled with an in-furrow application of 5.0 lb/A of Thimet 20G at planting.

Plots, which consisted of four 30-foot rows spaced 3-feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on July 28 and August 23. Rainfall recorded during the growing season was as follows (in inches): May – 3.70, June – 7.41, July – 3.18, August – 5.40 and September – 2.93. Foliar fungicides were applied on a 14-21 day schedule on 1) June 27, 1.5) July 5, 2) July 10, 2.5) July 18, 3) July 24, 4) Aug. 7, 4.5) Aug. 14, 5) Aug. 22, 6) Sept. 5, 6.5) Sept. 14, 7) Sept. 18 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A per plot.

Early and late leaf spot were visually rated on Sept. 27 using the Florida 1-10 scale (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).

Stem rot incidence was assessed on Oct. 5 immediately after plot inversion by counting the number of disease loci with symptoms or signs. Plots were harvested on Oct. 9 and yields were reported at 8.3% moisture, respectively. 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 2017 production season, temperatures were near yearly norms during June, July, August, and September, while monthly rainfall totals were at or above average during the same period. Early leaf spot appeared the first week of August and rapidly progressed throughout September. Stem rot incidence was lower than in previous years due to excessive early season rainfall with the untreated control only averaging 6 hits per 60 feet of planted row.

Leaf spot intensity was lower for all fungicide programs than the untreated control, which suffered considerable premature defoliation. The treatments that included either Elatus or Miravis gave equally effective early leaf spot control. With the exception of the Alto + Bravo WS(1)/Bravo WS(2,7)/Elatus-9.5 oz + Miravis(3,5), Alto + Bravo WS(1,6)/ Bravo WS(2,4,7)/Elatus-7.3 oz (3,5), and Alto + Bravo Weather Stik (1)/Elatus-9.5 oz + Miravis(3,5)/Bravo WS(7), all programs that included Elatus or Miravis had lower leaf spot severity than the full season Bravo WS standard. Lower incidence of stem rot was observed with all fungicide programs compared with the untreated control except for the Bravo WS/Muscle ADV and full season Bravo WS standard. Stem rot incidence was similar for all fungicide treatments that included either Elatus or Miravis. Yield for all fungicide treated plots was higher than that for the untreated control. High yields obtained with the Alto + BravoWS(1,6)/Bravo WS(2,4,7)/Elatus(-7.3 oz-(3,5) program were equaled by all Elatus and/or Miravis programs except for Alto + Bravo WS(1)/ Elatus-9.5 oz- + Miravis(2.5, 4.5)/Bravo WS (6.5) along with Priaxor/Bravo WS + Convoy/Bravo WS, Bravo WS/Fontelis, and Bravo WS/Alto + Abound. Similar yields were reported for all remaining fungicide programs and the Bravo WS season-long standard.

EVALUATION OF ELATUS AND NEW FUNGICIDE MIRAVIS FOR PEANUT DISEASE CONTROL IN SOUTHEAST ALABAMA, WREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control		62.8 a[3]	6.0 a	2775 e
Bravo WS 24.0 fl oz Fontelis 16.0 fl oz	1,2,6,7 3,4,5	3.6 bc	1.5 cd	4025 a-d
Bravo WS 24.0 fl oz Provost Opti 8.0 fl oz	1,2,7 3,4,5,6	4.6 bc	3.2 bcd	3815 bcd
Priaxor 6.0 fl oz Bravo WS 24.0 fl oz + Convoy 32.0 fl oz Bravo WS 24.0 fl oz	1.5 3,5 4,6,7	3.8 bc	1.8 bcd	4251 a-d
Priaxor 6.0 fl oz Bravo WS 24.0 fl oz Priaxor 8.0 fl oz Muscle ADV 32.0 fl oz	1.5 3,7 4 5,6	3.8 bc	2.7 bcd	3711 cde
Alto 0.83SL 5.5 fl oz + Bravo WS 16.0 fl oz Bravo WS 24.0 fl oz Elatus 45WG 9.5 oz + Miravis 3.4 fl oz	1 2,7 3,5	3.1 bc	2.3 bcd	4380 a-d
Alto 0.83SL 5.5 fl oz + Bravo WS 16.0 fl oz Elatus 45WG 9.5 oz + Miravis 3.4 fl oz Bravo WS 24.0 fl oz	1 2.5, 4.5 6,7	1.9 c	1.3 d	4517 a-d
Bravo WS 16.0 fl oz + Elatus 45WG 7.3 oz Elatus 45WG 7.3 oz + Miravis 3.4 fl oz Bravo WS 24.0 fl oz	1 2.5, 4.5 6,7	1.9 c	0.8 d	4687 ab
Alto 0.83SL 5.5 fl oz + Bravo WS 24.0 fl oz Elatus 45WG 9.5 oz + Miravis 3.4 fl oz Bravo WS 24.0 fl oz	1 2.5, 4.5 6.5	2.1 c	0.7 d	3799 bcd
Bravo WS 24.0 fl oz + Elatus 7.3 oz Elatus 45WG 7.3 oz + Miravis 3.4 fl oz Bravo WS 24.0 fl oz	1 2.5, 4.5 6.5	3.2 bc	2.2 bcd	4469 a-d
Alto 0.83SL 5.5 fl oz + Bravo WS 24.0 fl oz Bravo WS 24.0 fl oz Elatus 45WG 7.3 oz	1,6 2,4,7 3,5	1.9 c	1.0 d	4872 a
Alto 0.83SL 5.5 fl oz + Bravo WS 24.0 fl oz Elatus 45WG 7.3 oz + Miravis 3.4 fl oz Bravo WS 24.0 fl oz	1 3,5 7	2.9 bc	2.0 bcd	4646 a-d
Bravo WS 24.0 fl oz Muscle ADV 32.0 fl oz	1,2,7 3,4,5,6	2.9 bc	4.3 a	3606 de
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	5.2 bc	2.3 bcd	4364 a-d
Bravo WS 24.0 fl oz	1-7	6.3 b	4.2 abc	3856 bcd
LSD (P ≤ 0.05)		*3.4*	*2.8*	*941*

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

EVALUATION OF APPLICATION TIMING OF ELATUS AND MIRAVIS FOR PEANUT DISEASE CONTROL IN SOUTHEAST ALABAMA, WREC

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

Objective: To evaluate Elatus and Miravis at varying application rates and compare them against varying application rates of chlorothalonil for control of foliar diseases and stem rot and yield response 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, Ala., in a field cropped to peanut every other year. Seed were sown at a rate of approximately five seed per foot of row in a Dothan sandy loam (OM<1%) and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. On May 15, 1 qt/A of Sonalan + 0.45 oz/A of Strongarm + 1 pt/A of Dual 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. Thrips were controlled with an in-furrow application of 5.0 lb/A of Thimet 20G at planting.

Plots, which consisted of four 30-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on July 28 and August 23. Rainfall recorded during the growing season was as follows (in inches): May – 3.70, June – 7.41, July – 3.18, August – 5.40 and September – 2.93. Foliar fungicides were applied on a 14-day schedule on 1) June 28, 2) July 10, 3) July 24, 4) Aug. 7, 5) Aug. 22, 6) Sept. 6, and 7) Sept. 18 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A per plot.

Early and late leaf spot were visually rated on Sept. 26 using the Florida 1-10 scale (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).

Stem rot incidence was assessed on Oct. 5 and 6 immediately after plot inversion by counting the number of disease loci with symptoms or signs. Plots were harvested on Oct. 10 and yields were reported at 8.39% 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 2017 June through September production season, temperatures were near yearly averages while monthly rainfall totals were at or above yearly norms. Early leaf spot appeared the first week of August and rapidly intensified throughout September. Stem rot incidence was lower than in previous years due to excessive early season rainfall. Leaf

spot intensity was lower for all fungicide programs than the untreated control, which suffered considerable premature defoliation. With the exception of the four application treatment program consisting of Alto + Bravo/Bravo/Elatus, all of the other programs that included Miravis gave comparable leaf spot control to the full-season Bravo only treatment. Although stem rot incidence was lower than previous years, all treatment programs reduced the number of stem rot hits compared with the non-treated control. Lowest incidence of stem rot was observed with the five application treatment program consisting of Bravo + Elatus/Elatus + Miravis/Bravo. This was similar to that observed with all remaining Elatus and Miravis treatment programs. All treatment programs increased yield when compared with the non-sprayed control. Highest yield was with the five application treatment program that included Alto + Bravo/Elatus + Miravis/Bravo. All of the remaining treatment programs yielded similarly to that observed with the full-season Bravo only treatment.

EVALUATION OF APPLICATION TIMING OF ELATUS AND MIRAVIS FOR PEANUT DISEASE CONTROL IN SOUTHEAST ALABAMA, WREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Rust[2]	
Untreated Control		82.0 a[3]	10.1 a	2936 e
Elatus 45WG 7.3 oz Bravo WS 24.0 fl oz	1,3,5 2,4,6,7	2.9 d	0.7 f	4453 abc
Alto 0.83SL 5.5 fl oz + Bravo WS 16.0 fl oz Bravo WS 24.0 fl oz Elatus 45WG 9.5 oz	1 2,4,6,7 3,5	3.3 c	1.7 def	4179 bcd
Alto 0.83SL 5.5 fl oz + Bravo WS 16.0 fl oz Bravo WS 24.0 fl oz Elatus 45WG 9.5 oz + Miravis 3.4 fl oz	1 2,7 3,5	8.2 b	3.0 b-e	4104 bcd
Alto 0.83SL 5.5 fl oz + Bravo WS 24.0 fl oz Elatus 45WG 9.5 oz + Miravis 3.4 fl oz Bravo WS 24.0 fl oz	1 2.5, 4.5 6,7	2.1 c	1.7 def	4898 a
Bravo WS 16.0 fl oz + Elatus 45WG 7.3 oz Elatus 45WG 7.3 oz + Miravis 3.4 fl oz Bravo WS 24.0 fl oz	1 2.5, 4.5 6,7	1.9 c	0.3 f	4588 ab
Alto 0.83SL 5.5 fl oz + Bravo WS 16.0 fl oz Bravo WS 24.0 fl oz Elatus 45WG 7.3 oz + Miravis 3.4 fl oz	1 2,7 3,5	1.9 c	2.0 c-f	3986 bcd
Alto 0.83SL 5.5 fl oz + Bravo WS 24.0 fl oz Elatus 45WG 9.5 oz + Miravis 3.4 fl oz Bravo WS 24.0 fl oz	1.5 3,5 7	1.9 c	2.0 c-f	4299 a-d
Bravo WS 16.0 fl oz + Elatus 45WG 7.3 oz Elatus 45WG 7.3 oz + Miravis 3.4 fl oz Bravo WS 24.0 fl oz	1.5 3,5 7	1.9 c	0.8 ef	4424 abc
Bravo WS 24.0 fl oz	1,3,5,7	11.0 b	4.0 bc	3719 d
Bravo WS 24.0 fl oz	1,2.5,4,5.5,7	7.8 b	4.3 b	3840 cd
Bravo WS 24.0 fl oz	1-7	2.9 c	3.8 bcd	4187 bcd
LSD (P ≤ 0.05)		*3.6*	*2.2*	*644*

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

EVALUATION OF VELUM TOTAL AND PROLINE APPLIED IN-FURROW AND PROPULSE AND PROVOST OPTI FOR PEANUT DISEASE CONTROL IN SOUTHEAST ALABAMA, WREC

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

Objective: To evaluate Velum Total and Proline applied in-furrow and Propulse and Provost Opti and compare them against other currently registered fungicides for control of foliar diseases and stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Georgia 09B' was planted on May 12 at the Wiregrass Research and Extension Center in Headland, Ala., in a field cropped to peanut every other year. Seed were sown at a rate of approximately five seed per foot of row in a Dothan sandy loam (OM<1%) and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. On May 1, 1 qt/A of Sonalan + 0.45 oz/A of Strongarm + 1 pt/A of Dual were applied and incorporated to the test area for pre-emergent weed control. On May 13, 3 oz/A of Valor were applied to test area after planting for weed control. On June 15, 1.5 pt/A of 2,4 DB 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-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on July 28 and Aug. 23. Rainfall recorded during the growing season was as follows (in inches): May – 3.70, June – 7.41, July – 3.18, August – 5.40 and September – 2.93. Foliar fungicides were applied on a 14 day schedule on 1) June 28, 2) July 10, 3) July 24, 4) Aug. 7, 5) Aug. 22, 6) Sept. 6, and 7) Sept. 18 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A per plot.

Early and late leaf spot were visually rated on Sept. 26 using the Florida 1-10 scale (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).

Stem rot incidence was assessed on Sept. 28 immediately after plot inversion by counting the number of disease loci with symptoms or signs. Plots were harvested on Oct. 2 and yields were reported at 8.39% 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 2017 June through September production season, temperatures were near yearly averages while monthly rainfall totals were at or above yearly norms. Early leaf spot appeared the first week of August and rapidly intensified throughout September. Stem rot incidence was lower than in previous years due to excessive early season rainfall. Leaf spot intensity was lower for all fungicide programs than the untreated control, which suffered considerable premature defoliation. Among the treatment programs, leaf spot control was similar and was similar to that observed with the full-season Echo 720 only treatment. While stem rot incidence was lower, all treatment programs reduced stem rot when compared with the non-treated control. Among the treatment programs, the Echo 720/ Abound + Alto and Echo 720/Fontelis treatment program reduced stem rot significantly when compared with the full-season Echo 720 only program. All of the treatment programs with the exception of the Echo 720 only program increased yield when compared with the non-treated control. The highest yield was with the Alto + Echo 720/Echo 720/Elatus program. All of the programs that included either Velum Total, Proline, Propulse, or Provost Opti increased yield when compared to Echo alone.

EVALUATION OF VELUM TOTAL AND PROLINE APPLIED IN-FURROW AND PROPULSE AND PROVOST OPTI FOR PEANUT DISEASE CONTROL IN SOUTHEAST ALABAMA, WREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control		60.3 a[3]	7.0 a	2452 e
Velum Total 18.0 fl oz Propulse 13.7 fl oz Provost Opti 10.7 fl oz Abound 2.08SC 18.2 fl oz + Echo 720 1.5 pt Echo 720 1.5 pt	IF 2 3,5 4,6 7	2.3 b	3.0 bc	3791 bc
Absolute 500SC 3.5 fl oz Propulse 13.7 fl oz Provost Opti 10.7 fl oz Abound 2.08SC 18.2 fl oz + Echo 720 1.5 pt Echo 720 1.5 pt	1 2 3,5 4,6 7	2.7 b	3.0 bc	3799 bc
Velum Total 18.0 fl oz Absloute 500SC Provost Opti 10.7 fl oz Abound 2.08SC 18.2 fl oz + Echo 720 1.5 pt Echo 720 1.5 pt	IF 2 3,5 4,6 7	2.3 b	3.0 bc	3977 bc
Absolute 500SC 3.5 fl oz Echo 720 1.5 pt Provost Opti 10.7 fl oz Abound 2.08SC 18.2 fl oz + Echo 720 1.5 pt	1 2,7 3,5 4,6	3.8 b	1.7 bc	3880 bc
Proline 480SC 5.7 fl oz Absolute 500SC 3.5 fl oz Echo 720 1.5 pt Provost Opti 10.7 fl oz Abound 2.08SC 18.2 fl oz + Echo 720 1.5 pt	IF 1 2,7 3,5 4,6	2.7 b	3.0 bc	3937 bc
Proline 480SC 5.7 fl oz Echo 720 1.5 pt Provost Opti 10.7 fl oz Abound 2.08SC 18.2 fl oz + Echo 720 1.5 pt	IF 1,2,7 3,5 4,6	2.3 b	2.1 bc	4122 abc
Echo 720 1.5 pt Provost Opti 10.7 fl oz	1,2,7 3,4,5,6	2.7 b	1.7 bc	3912 bc
Alto 0.83SL 5.5 fl oz + Echo 720 1.0 pt Echo 720 24.0 fl oz 2,4,7 Elatus 45WG 9.5 oz	1,6 2,4,7 3,5	2.9 b	1.1 bc	4695 a
Echo 720 1.5 pt Muscle ADV 32.0 fl oz	1,2,7 3,4,5,6	4.4 b	2.7 bc	3582 cd
Echo 720 1.5 pt Abound 2.08SC 18.2 fl oz + Alto 0.83SL 5.5 fl oz	1,2,4,6,7 3,5	3.8 b	1.1 c	4316 ab
Echo 720 1.5 pt Echo 720 1.5 pt + Convoy 32.0 fl oz	1,2,4,6,7 3,5	5.1 b	1.7 bc	3453 cd
Echo 720 1.5 pt Fontelis 1.0 pt	1,2,6,7 3,4,5	3.4 b	1.3 c	4162 abc
Echo 720 1.5 pt	1-7	4.9 b	4.0 b	3065 de
LSD (P ≤ 0.05)		*3.7*	*2.4*	*715*

[1]Early and late leaf spot were assessed using the Florida leaf spot scoring system then converted to % defoliation.
[2]Stem rot (SR) incidence is expressed as the number of disease loci per 60 foot of row.
[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. Wells

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

Methods: Peanut cultivar 'Georgia 09B' was planted on May 30 at the Wiregrass Research and Extension Center in Headland, Ala., in a field with a peanut-cotton rotation. Seed were sown at a rate of approximately five seed per foot of row in a Dothan sandy loam (OM<1%) and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. On May 24, 1 qt/A of Sonalan + 0.45 oz/A of Strongarm + 1 pt/A of Dual were applied and incorporated to the test area for pre-emergent weed control. On May 31, 3 oz/A of Valor were applied to test area after planting 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-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on July 26, Aug. 9 and Aug. 22. Rainfall recorded during the growing season was as follows (in inches): May – 3.70, June – 7.41, July – 3.18, August – 5.40 and September – 2.93. Foliar fungicides were applied on a 14-28 day schedule on 1) July 5, 1.5) July 11, 2) July 19, 2.5) July 25, 3) Aug. 1, 3.5) Aug. 7, 4) Aug. 15, 4.5) Aug. 21, 5) Aug. 29, 6) Sept. 15, and 7) Sept. 25 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A per plot.

Early and late leaf spot were visually rated on Oct. 9 using the Florida 1-10 scale (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).

Stem rot incidence was assessed on Oct. 13 immediately after plot inversion by counting the number of disease loci with symptoms or signs. Plots were harvested on Oct. 18 and yields were reported at 8.55% 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 June – September 2017 production season, temperatures were near

yearly averages while monthly rainfall totals were at or above yearly averages. Early leaf spot appeared the first week of August and rapidly intensified until the first week of September when late leaf spot predominated at harvest. Stem rot incidence was lower than in previous years. Leaf spot intensity was lower for all fungicide programs than the untreated control, which suffered considerable premature defoliation. Among the low impact treatments programs, the treatment program that included Mazinga and Provost had the lowest percent defoliation when compared with the Bravo only four spray program. Control among the other remaining programs was similar. Among the medium and high impact programs, there were no significant differences among any of the programs for leaf spot control when compared with the Bravo only five and seven spray programs. Stem rot incidence was low but when compared with the low and medium impact Bravo only treatments, none had significantly lower stem rot indices. Among the high impact programs, those that included Convoy, Mazinga, and Fontelis had lower number than the seven spray Bravo only program. Yield differences were observed among the treatment programs. Among the low impact programs, when compared with the four spray Bravo program, the programs that included Provost and Mazinga had higher yields. No significant differences were observed for yield among the medium and high impact programs when compared with the five and seven spray Bravo programs.

Results from this trial showed that the increased number of applications provided better leaf spot control in a year when rainfall was at or above average but had little impact on the incidence of stem rot. Along with an increased control of leaf spot yield also showed increases with increased number of applications.

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

Treatment and Rate/A	Application Timing	Spray Index	Disease ratings		
			Leaf Spot[1]	Stem Rot[2]	Pod Yield lb/a
Untreated Control			87.2a[3]	5.8 a	3114 e
Bravo WS 24.0 fl oz Provost Opti 10.7 fl oz	1,7 3,5	Low 4 appl	3.5 ef	1.8bcd	4541 abc
Proline 480SC 5.7 fl oz Provost Opti 10.7 fl oz Bravo WS 24.0 fl oz	1 2.5,4,5.5 7	Med 5 appl	7.3 def	1.3 bcd	4412 a-d
Proline 480SC 5.7 fl oz Provost Opti 10.7 fl oz Bravo WS 24.0 fl oz	1.5 3,4,5,6 7	High 6 appl	3.2 ef	1.1 bcd	4864 a
Priaxor 8.0 fl oz Convoy 21 fl oz + Bravo WS 24 fl oz + Topsin 5 fl oz Convoy 21 fl oz + Priaxor 8 fl oz Topsin + Bravo WS 5 fl oz + 16 fl oz	1 3 5 7	Low 4 appl	13.8 cde	0.7 cd	4428 a-d
Priaxor 8 fl oz Convoy 16 fl oz + Bravo 16 fl oz + Topsin 5 fl oz Convoy 16 fl oz + Priaxor 8 fl oz Convoy 16 fl oz + Bravo WS 24 fl oz Topsin 5 fl oz + Bravo WS 16 fl oz	1.5 2.5 4 5.5 7	Med 5 appl	6.4 def	0.7 cd	4566 abc
Priaxor 8 fl oz Convoy 13 fl oz + Bravo 16 fl oz + Topsin 5 fl oz Convoy 13 fl oz + Bravo 24 fl oz Convoy 13 fl oz + Priaxor 8 fl oz Bravo WS 24 fl oz	1.5 3,6 4 5 7	High 6 appl	2.7 f	0.7 cd	4776 ab
Mazinga 32 fl oz Muscle ADV 32 fl oz	1.5 3, 4.5, 6	Low 4 appl	5.4 def	1.3 bcd	4509 abc
Mazinga 32 fl oz Muscle ADV 32 oz Arius ADV 30 fl oz	1,7 2.5, 5.5 4	Med 5 appl	8.7 def	1.0 cd	4525 abc
Mazinga 32 fl oz Arius ADV 30 fl oz Muscle ADV 32 fl oz Echo 720 24.0 fl oz	1 2 3,4,5,6 7	High 7 appl	4.6 def	0.7 cd	4856 a
Muscle ADV 32.0 fl oz Fontelis 12.0 fl oz Bravo 24.0 fl oz	1 3,5 7	Low 4 appl	35.3 b	2.1 bcd	4171 cd
Muscle ADV 32.0 fl oz Fontelis 16.0 fl oz Bravo 24.0 fl oz	1, 4 2.5,5.5 7	Med 5 appl	20.7 c	1.3 bcd	4275 bcd
Muscle ADV 32.0 fl oz Fontelis 16.0 fl oz Bravo 24.0 fl oz	1,2 3,4,5 6,7	High 7 appl	5.4 def	0.5 d	4590 abc
Priaxor 6 fl oz Priaxor 6 floz + Bravo 24 fl oz Muscle ADV 32 fl oz	1 3 5,7	Low 4 appl	40.0 b	1.3 bcd	4114 cd
Priaxor 6 fl oz Muscle ADV 32 fl oz Priaxor 8 fl oz Bravo 24 fl oz	1 2.5, 5.5 4 7	Med 5 appl	23.6 c	2.0 bcd	4122 cd
Priaxor 6 fl oz Muscle ADV 32 fl oz Priaxor 8 fl oz Bravo 24 fl oz	1.5 3,5,6 4 7	High 6 appl	4.1 def	1.3 bcd	4614 abc
Bravo WS 24.0 fl oz	1,3,5,7	Low (4)	44.5 b	2.3 bc	3969 d
Bravo WS 24.0 fl oz	1,2.5,4,5.5,7	Med (5)	14.7 cd	2.0 bcd	4606 abc
Bravo WS 24.0 fl oz	1-7	High (7)	4.8 def	2.8 b	4461 a-d
LSD (P ≤ 0.05)			*10.9*	*1.7*	*538*

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

EVALUATION OF MAZINGA, ARIUS ADV, AND BRIXEN FOR PEANUT DISEASE CONTROL IN SOUTHEAST ALABAMA, WREC

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

Objective: To evaluate Mazinga and the new fungicide Arius ADV and Brixen and compare them against currently registered fungicides for control of foliar diseases and stem rot and yield response 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, Ala,, in a field cropped to peanut every other year. Seed were sown at a rate of approximately five seed per foot of row in a Dothan sandy loam (OM<1%) and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. On May 15, 1 qt/A of Sonalan + 0.45 oz/A of Strongarm + 1 pt/A of Dual 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, 1.5 pt/A of 2,4 DB 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-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on July 28 and August 23. Rainfall recorded during the growing season was as follows (in inches): May – 3.70, June – 7.41, July – 3.18, August – 5.40 and September – 2.93. Foliar fungicides were applied on a 14-day schedule on 1) June 28, 2) July 10, 3) July 24, 4) August 7, 5) August 22, 6) September 6, and 7) September 18 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A per plot.

Early and late leaf spot were visually rated on Sept. 26 using the Florida 1-10 scale (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).

Stem rot incidence was assessed on Oct. 5 and 6 immediately after plot inversion by counting the number of disease loci with symptoms or signs. Plots were harvested on Oct. 10 and yields were reported at 8.39% 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 2017 June through September production season, temperatures were near near yearly averages while monthly rainfall totals were at or above yearly norms. Early leaf spot appeared the first week of August and rapidly intensified throughout September. Stem rot incidence was lower than in previous years due to excessive early season rainfall. Leaf spot intensity was lower for all fungicide programs than the untreated control, which suffered considerable premature defoliation. All of the Mazinga, Arius ADV, or Brixen programs gave similar leaf spot control compared with the season-long Echo 720 standard. The high level of early leaf spot control with Echo 720/Provost was equaled by Mazinga/Muscle ADV, Echo 720, and Brixen/Muscle ADV/Echo 720. Stem rot was lower for all fungicide programs compared with the untreated control. The season-long Echo 720 standard had a higher stem rot index than Mazinga, Arius ADV, or Brixen programs, all of which gave equally effective control of this disease. Yield for Mazinga, Arius ADV, or Brixen treated plots was higher than the unsprayed control and the season-long Echo standard. Similar yields were recorded for Mazinga, Arius ADV, and Brixen programs.

EVALUATION OF MAZINGA, ARIUS ADV, AND BRIXEN FOR PEANUT DISEASE CONTROL IN SOUTHEAST ALABAMA, WREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control		74.1 a[3]	15 a	3049 b
Mazinga 32.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	11.4 b	5.5 c	4589 a
Arius ADV 25.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	11.6 b	5.3 c	4396 a
Brixen 16.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	10.5 bc	4.5 c	4566 a
Brixen 21.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	12.5 b	3.8 c	4792 a
Headline 2.09SC 6.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	11.0 b	6.0 c	4348 a
Mazinga 48.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	7.3 bc	3.5 c	5009 a
Echo 720 24.0 fl oz Provost Optima 10.7 fl oz	1,2,7 3,4,5,6	5.4 c	3.5 c	5130 a
Echo 720 24.0 fl oz	1-7	11.0 b	10.0 b	3501 b
LSD (P ≤ 0.05)		*5.2*	*3.3*	*807*

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

EVALUATION OF EXPERIMENTAL FUNGICIDE NNF-1681SC FOR PEANUT DISEASE CONTROL IN SOUTHEAST ALABAMA, WREC

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

Objective: To evaluate the experimental fungicide NNF-1681SC and compare it against currently registered fungicides for control of foliar diseases and stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Georgia 09B' was planted May 30 at the Wiregrass Research and Extension Center in Headland, Ala., in a field with a peanut-cotton rotation. Seed were sown at a rate of approximately five seed per ft of row in a Dothan sandy loam (OM<1%) and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. On May 24, 1 qt/A of Sonalan + 0.45 oz/A of Strongarm + 1 pt/A of Dual were applied and incorporated to the test area for pre-emergent weed control. On May 31, 3 oz/A of Valor were applied to test area after planting 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-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on July 26, Aug. 9 and Aug. 22. Rainfall recorded during the growing season was as follows (in inches): May – 3.70, June – 7.41, July – 3.18, August – 5.40 and September – 2.93. Foliar fungicides were applied on a 14-day schedule on 1) June 28, 2) July 10, 3) July 24, 4) Aug. 7, 5) Aug. 22, 6) Sept. 6, and 7) Sept. 18 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A per plot.

Early and late leaf spot were visually rated on Oct. 9 using the Florida 1-10 scale (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).

Stem rot incidence was assessed on Oct. 13 immediately after plot inversion by counting the number of disease loci with symptoms or signs. Plots were harvested on Oct. 17 and yields were reported at 8.759% 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 June - September 2017 production season, temperatures were near yearly averages while monthly rainfall totals were at or above yearly averages. Early leaf spot appeared the first week of August and rapidly intensified until the first week of September when late leaf spot predominated at harvest. Stem rot incidence was lower than

in previous years. Leaf spot intensity was lower for all fungicide programs than the untreated control, which suffered considerable premature defoliation. Two application programs with the 18 and 36 fl oz/A rates of NNF-1681SC gave poorer leaf spot control than the season-long Bravo WS program while the NNF-1681SC combined with Bravo WS program proved as efficacious as the Bravo WS only program. All of the remaining fungicide programs gave similar leaf spot control as the season-long Bravo WS program. Stem rot incidence was lower with all treatment programs compared to the untreated control. Lower stem rot indices were noted for Bravo/Bravo + NNF-1681, Bravo/Elatus, Bravo/Fontelis, and Bravo/Abound + Alto than the season-long Bravo WS standard. All fungicide programs yielded higher than the untreated control and similar to the season-long Bravo WS program.

EVALUATION OF EXPERIMENTAL FUNGICIDE NNF-1681SC FOR PEANUT DISEASE CONTROL IN SOUTHEAST ALABAMA, WREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control		83.1 a[3]	8.5 a	2936 b
Bravo WS 24.0 fl oz Alto 0.83SL 5.5 fl oz + Bravo WS 16.0 fl oz	1,2,4,6,7 3,5	5.4 d	3.2 bc	3727 a
Bravo WS 24.0 fl oz Bravo WS 24.0 fl oz + Convoy 32.0 fl oz	1,2,4,6,7 3,5	5.1 d	2.1 bc	3977 a
Bravo WS 24.0 fl oz Bravo WS 16.0 fl oz + Topsin 10.0 fl oz + Convoy 32.0 fl oz Bravo WS 16.0 fl oz + Muscle 3.6F 7.2 fl oz	1,2,7 3,5 4,6	4.1 d	2.0 bc	4090 a
Bravo WS 24.0 fl oz Bravo WS 16.0 fl oz + Topsin 10.0 fl oz + Convoy 32.0 fl oz Bravo WS 16.0 fl oz + Convoy 16.0 fl oz	1,2,7 3,5 4,6	4.1 d	2.3 bc	3904 a
Bravo WS 24.0 fl oz NNF-1681SC 36.0 fl oz	1,2,4,6,7 3,5	9.6 c	2.1 bc	3896 a
Bravo WS 24.0 fl oz NNF-1681SC 18.0 fl oz	1,2,4,6,7 3,5	16.5 b	2.0 bc	3832 a
Bravo WS 24.0 fl oz Bravo WS 16.0 fl oz + NNF-1681SC 18.0 fl oz	1,2,4,6,7 3,5	4.6 d	1.5 c	4179 a
Bravo WS 24.0 fl oz Elatus 45WG 9.5 oz	1,2,4,6,7 3,5	3.3 d	1.3 c	3928 a
Bravo WS 24.0 fl oz Fontelis 16.0 fl oz	1,2,6,7 3,4,5	4.9 d	1.5 c	3962 a
Bravo WS 24.0 fl oz Provost Opti 8.0 fl oz	1,2,7 3,4,5,6	3.5 d	3.1 bc	3953 a
Bravo WS 24.0 fl oz Muscle ADV 32.0 fl oz	1,2,7 3,4,5,6	3.8 d	2.5 bc	3759 a
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	4.1 d	1.5 c	4025 a
Bravo WS 24.0 fl oz	1-7	4.1 d	3.5 b	3872 a
LSD (P ≤ 0.05)		*3.8*	*1.9*	*496*

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

EVALUATION OF ALTERNATIVES TO CHLORTHALONIL FOR PEANUT DISEASE CONTROL IN SOUTHEAST ALABAMA, WREC

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

Objective: To evaluate alternatives to chlorothalonil fungicides and compare them against chlorothalonil for their effectiveness in controlling foliar diseases and stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Georgia 09B' was planted on May 30 at the Wiregrass Research and Extension Center in Headland, Ala., in a field with a history of peanut production in a peanut-cotton rotation. The experimental design was a randomized complete block. Individual plots consisted of four 30-foot rows spaced three feet apart with six replications. Seed were sown at a rate of approximately five seed per ft of row in a Dothan sandy loam (OM<1%). On May 24, 1 qt/A of Sonalan + 0.45 oz/A of Strongarm + 1 pt/A of Dual were applied and incorporated to the test area for pre-emergent weed control. On May 31, 3 oz/A of Valor were applied to test area after planting 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-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on July 26, Aug. 9 and Aug. 22. Rainfall recorded during the growing season was as follows (in inches): May – 3.70, June – 7.41, July – 3.18, August – 5.40 and September – 2.93. Foliar fungicides were applied on a 14-day schedule on 1) June 28, 2) July 10, 3) July 24, 4) Aug. 7, 5) Aug. 22, 6) Sept. 6, and 7) Sept. 18 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A per plot.

Early and late leaf spot were visually rated on Oct. 10 using the Florida 1-10 scale (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).

Stem rot incidence was assessed on Oct. 17 immediately after plot inversion by counting the number of disease loci with symptoms or signs. Plots were harvested on Oct. 21 and yields were reported at 7.89% 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: In 2017, temperatures were near yearly averages and monthly rainfall totals were at or above yearly averages during June, July, August, and September. Early leaf spot appeared the first week of August and rapidly intensified until the first week of September when late leaf spot appeared and quickly became the dominant leaf spot disease at havest.

Stem rot incidence was lower than in previous years. Leaf spot intensity was lower for all fungicide programs than the untreated control, which suffered considerable premature defoliation. Fungicide programs that included either Elast, Mancozeb, Topsin, or CuproFix Ultra gave similar leaf spot control as the season-long Echo 720 standard. Greater final percent defoliation was observed with the full-season Mancozeb program compared with the season-long Echo 720 standard. All other programs gave similar leaf spot control as the season-long Echo 720 standard. Stem rot incidence was lower for all fungicide programs than the untreated control. Echo/Fontelis gave better stem rot control than all fungicide programs except for Mancozeb + Topsin/Mancozeb + Muscle, Mancozeb + Topsin, Elast season-long, and Elast/Elast + Custodia. The highest yields obtained with Mancozeb + Topsin/Mancozeb + Muscle were matched by all fungicide programs except for the season-long Elast and Absolute/Muscle ADV/Echo program while the untreated control had the lowest yield. Yields for all fungicide programs did not differ from the Echo 720 standard.

EVALUATION OF ALTERNATIVES TO CHLORTHALONIL FOR PEANUT DISEASE CONTROL IN SOUTHEAST ALABAMA, WREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control	---	84.6 a[3]	12.1 a	2412 d
Elast 15.0 fl oz	1-7	6.1 c	3.0 bc	3089 c
Elast 15.0 fl oz Elast 15.0 fl oz + Custodia 15.5 fl oz	1,2,4,6,7 3,5	5.4 cd	2.3 bc	3573 abc
Elast 15.0 fl oz Muscle ADV 32.0 fl oz	1,2,7 3,4,5,6	5.4 cd	5.0 b	3378 abc
Mancozeb 2.0 lb	1-7	14.2 b	4.7 b	3388 abc
Mancozeb 2.0 lb + Topsin 10.0 fl oz	1-7	3.3 cd	3.7 bc	3864 a
Mancozeb 2.0 lb + Topsin 10.0 fl oz Mancozeb 2.0 lb + Muscle 3.6F 7.2 fl oz	1,2,7 3,4,5,6	3.3 cd	3.3 bc	3928 a
CuproFix Ultra 2.0 lb + Topsin 10.0 fl oz	1-7	2.7 d	4.1 b	3404 abc
CuproFix Ultra 2.0 lb + Topsin 10.0 fl oz Mancozeb 2.0 lb + Muscle 3.6F 7.2 fl oz	1,2,7 3,4,5,6	3.8 cd	4.5 b	3557 abc
Liquid Sulfur 107 fl oz + Topsin 10.0 fl oz	1-7	3.3 cd	4.3 b	3485 abc
Absolute 500F 3.5 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	4.9 cd	4.2 b	3203 bc
Echo 720 24.0 fl oz Fontelis 16.0 fl oz	1,2,6,7 3,4,5	4.6 cd	1.1 c	3743 ab
Echo 720 24.0 fl oz	1-7	4.6 cd	4.8 b	3372 abc
LSD ($P \leq 0.05$)		*3.2*	*2.9*	*599*

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

EVALUATION OF EXPERIMENTAL FUNGICIDE ADA 641701 FOR PEANUT DISEASE CONTROL IN SOUTHEAST ALABAMA, WRECC

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

Objective: To evaluate experimental fungicide ADA 641701 and compare it against currently registered fungicides for control of foliar diseases and stem rot and yield response 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, Ala., in a field cropped to peanut in a peanut-cotton rotation. Seed were sown at a rate of approximately five seed per foot of row in a Dothan sandy loam (OM<1%). On May 12, 1 qt/A of Sonalan + 0.45 oz/A of Strongarm + 1 pt/A of Dual were applied and incorporated to the test area for pre-emergent weed control. On May 21, 3 oz/A of Valor were applied to test area after planting 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-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on July 26, Aug. 9 and Aug. 22. Rainfall recorded during the growing season was as follows (in inches): May – 3.70, June – 7.41, July – 3.18, August – 5.40 and September – 2.93. Foliar fungicides were applied on a 14-day schedule on 1) June 28, 2) July 10, 3) July 24, 4) Aug. 7, 5) Aug. 22, 6) Sept. 6, and 7) Sept. 18 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A per plot.

Early and late leaf spot were visually rated on Oct. 6 using the Florida 1-10 scale (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).

Stem rot incidence was assessed on Oct. 6 immediately after plot inversion by counting the number of disease loci with symptoms or signs. Plots were harvested on Oct. 10 and yields were reported at 8.39% 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: In 2017, temperatures were near yearly averages and monthly rainfall totals were at or above yearly averages during June, July, August, and September. Early leaf

spot appeared the first week of August and rapidly progressed until harvest. Stem rot incidence was lower than in previous years. Leaf spot intensity was lower for all fungicide programs than the untreated control, which suffered considerable premature defoliation. Programs that included four applications of 6.84 and 13.68 fl oz/A but not 3.42 fl oz/A rates of ADA 641701, gave poorer leaf spot control than the season-long Equus 720 (24.0 fl oz/A) standard. The ADA 641701 + Equus 720 tank mixtures along with the Equus 720 standard gave the same level of early leaf spot control. Even though stem rot incidence was lower for all fungicide programs than the untreated control, none reduced the incidence of stem rot compared with the Equus 720 (24.0 fl oz/A) standard. Yield for all treatment programs was higher than that for the untreated control. The high yield obtained by Equus 720/Fontelis was similar to yields from ADA 641701 (13.68 fl oz), Equus 720/Elatus, and Equus 720/Provost Opti programs. Only Equus 720 (16.0 fl oz) alone but not the remaining fungicide programs yielded less than the season-long Equus 720 (24.0 fl oz/A) standard.

EVALUATION OF EXPERIMENTAL FUNGICIDE ADA 641701 FOR PEANUT DISEASE CONTROL IN SOUTHEAST ALABAMA, WREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control	---	67.2 a[3]	10.0 a	3146 e
Equus 720 SST 24.0 fl oz ADA 641701 3.42 fl oz	1,2,7 3,4,5,6	7.7 cd	4.1 bcd	4703 c
Equus 720 SST 24.0 fl oz ADA 641701 6.84 fl oz	1,2,7 3,4,5,6	19.9 b	2.1 cd	4679 c
Equus 720 SST 24.0 fl oz ADA 641701 13.68 fl oz	1,2,7 3,4,5,6	13.9 bc	1.3 d	5308 ab
Equus 720 SST 16.0 fl oz	1-7	7.8 cd	7.0 ab	4178 d
Equus 720 SST 24.0 fl oz	1-7	4.4 d	4.1 bcd	4751 c
ADA 641701 6.84 fl oz + Equus 720 SST 16.0 fl oz	1-7	8.7 cd	3.8 bcd	4735 c
ADA 641701 13.68 fl oz + Equus 720 SST 24.0 fl oz	1-7	9.1 cd	4.5 bcd	4429 cd
Echo 720 24.0 fl oz Fontelis 16.0 fl oz	1,2,6,7 3,4,5	4.1 d	1.7 d	5453 a
Equus 720 SST 24.0 fl oz Provost Opti 10.7 fl oz	1,2,7 3,4,5,6	2.4 d	2.3 cd	5276 ab
Equus 720 SST 24.0 fl oz Elatus 45WG 9.5 oz	1,2,4,6,7 3,5	2.9 d	2.5 cd	5372 a
Equus 720 SST 24.0 fl oz Equus 720 SST 16.0 fl oz + Orius 3.6F 7.2 fl oz	1,2,7 3,4,5,6	5.1 d	5.1 bc	4848 bc
LSD (P ≤ 0.05)		*7.7*	*3.2*	*498*

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

EVALUATION OF NEW AND EXPERIMENTAL FUNGICIDES FOR PEANUT DISEASE CONTROL IN SOUTHEAST ALABAMA, WREC

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

Objective: To evaluate new and experimental fungicides and compare them against currently registered fungicides for their effectiveness in controlling foliar diseases and stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Production Methods: On May 19, peanut cultivar 'Georgia 09B' was planted at the Wiregrass Research and Extension Center in Headland, Ala., in a field previously cropped to peanut in a peanut-cotton rotation. Seed were sown at a rate of approximately five seed per ft of row in a Dothan sandy loam (OM<1%). On May 12, 1 qt/A of Sonalan + 0.45 oz/A of Strongarm + 1 pt/A of Dual were applied and incorporated to the test area for pre-emergent weed control. On May 21, 3 oz/A of Valor were applied to test area after planting 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-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on July 26, Aug. 9 and Aug. 22. Rainfall recorded during the growing season was as follows (in inches): May – 3.70, June – 7.41, July – 3.18, August – 5.40 and September – 2.93. Foliar fungicides were applied on a 14-day schedule on 1) June 28, 2) July 10, 3) July 24, 4) Aug. 7, 5) Aug. 22, 6) Sept. 6, and 7) Sept. 18 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gal/A per plot.

Early and late leaf spot were visually rated on Sept. 27 using the Florida 1-10 scale (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).

Stem rot incidence was assessed on Oct. 5 immediately after plot inversion by counting the number of disease loci with symptoms or signs. Plots were harvested on Oct. 9 and yields were reported at 8.39% 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: In 2017, temperatures were near normal monthly rainfall totals were at or above normal during June, July, August, and September. Early leaf spot appeared the first week of August and rapidly intensified throughout September. Stem rot incidence was lower than in previous years due to excessive rainfall. Leaf spot intensity was lower for all fungicide programs than the untreated control, which suffered considerable premature defoliation. All fungicide programs that included Helmstar Plus, Azoxy Star, AzoxyTeb, ALB 3003, ALB 3006, or Prevonil gave similar leaf spot control compared with the season-long Echo 720 program. Early leaf spot severity was significantly lower for Echo 720/Provost Opti than all programs

except Echo 720/Helmstar Plus, Echo 720/Echo 720+Convoy, AzoxyStar/Echo 720/AzoxyTeb/Muscle ADV, and Elatus/Echo 720. Lower stem rot indices were reported for all fungicide programs compared with the untreated control. Stem rot incidence was similar for all fungicide programs compared with the full-season Echo 720 standard. Yield for all fungicide treated plots was higher than that obtained for the unsprayed control. The highest yield recorded for Echo 720/Helmstar Plus did not significantly differ from Echo 720/Provost Opti, Elatus/Echo 720, Echo 720/Echo 720+Convoy, AzoxyStar/Echo 720/AzoxyTeb/Muscle ADV, AzoxyStar+Echo 720/Echo 720/AzoxyTeb/Muscle ADV, and Echo 720/Fontelis. The Echo 720 season-long standard yield reponse was similar to all fungicide programs except for Echo 720/Helmstar Plus, and Echo 720/Provost Opti.

EVALUATION OF NEW AND EXPERIMENTAL FUNGICIDES FOR PEANUT DISEASE CONTROL IN SOUTHEAST ALABAMA, WREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control	---	84.0 a[3]	13.5 a	2218 f
Echo 720 24.0 fl oz Helmstar Plus 13.0 fl oz	1,2,7 3,4,5,6	8.7 cd	3.3 b	4646 a
Echo 720 24.0 fl oz Custodia 15.5 fl oz	1,2,7 3,4,5,6	15.1 bc	2.3 b	3840 de
Echo 720 24.0 fl oz Provost Opti 10.7 fl oz	1,2,7 3,4,5,6	4.9 d	2.5 b	4517 ab
Echo 720 24.0 fl oz Echo 720 24.0 fl oz + Convoy	1,2,7 3,4,5,6	8.7 cd	2.8 b	4308 a-d
Echo 720 24.0 fl oz Muscle ADV 32.0 fl oz	1,2,7 3,4,5,6	11.9 bc	4.1 b	3638 e
AzoxyStar 7.5 fl oz Echo 720 24.0 fl oz AzoxyTeb 15.5 fl oz Muscle ADV 32.0 fl oz	1 2,7 3,5 4,6	10.1 bcd	2.8 b	4187 a-d
ALB 3003 15.5 fl oz Echo 720 24.0 fl oz ALB 3006 23.5 fl oz Muscle ADV 32.0 fl oz	1 2,7 3,5 4,6	13.1 bc	3.8 b	3977 b-e
AzoxyStar 7.5 fl oz + Echo 720 16.0 fl oz Echo 720 24.0 fl oz AzoxyTeb 15.5 fl oz Muscle ADV 32.0 fl oz	1 2,7 3,5 4,6	12.8 bc	3.3 b	4211 a-d
AzoxyStar 7.5 fl oz Echo 720 24.0 fl oz AzoxyTeb 15.5 fl oz	1 2,4,6,7 3,5	15.6 b	3.5 b	4066 b-e
Elatus 7.3 oz Echo720 24.0 fl oz	1,3,5 2,4,6,7	11.0 bcd	1.7 b	4388 abc
Echo 720 24.0 fl oz Fontelis 16.0 fl oz	1,2,6,7 3,4,5	13.3 bc	3.3 b	4316 a-d
Echo 720 24.0 fl oz	1-7	13.3 bc	3.5 b	3872 cde
Echo 720 24.0 fl oz Provonil 24.0 fl oz	1,2,3 4,5,6,7	16.5 b	4.1 b	3816 de
LSD ($P \leq 0.05$)		*6.6*	*3.1*	*547*

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

YIELD RESPONSE ALONG WITH LEAF SPOT AND WHITE MOLD CONTROL WITH RECOMMENDED FUNGICIDE PROGRAMS ON TWO PEANUT CULTIVARS IN SOUTHEAST ALABAMA

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

Objective: Recommended fungicide programs are compared for leaf spot and white mold control as well as yield response on two peanut cultivars at the Wiregrass Research and Extension Center in an irrigated production system.

Production Methods: The study area at the Wiregrass Research and Extension Center, which is maintained in a one-year out 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. Runner peanut cultivars 'Georgia-06G' (GA06G) and 'Georgia-09B' (GA09B) were planted on May 12 at 6 seed per foot of row in a Dothan sandy loam soil (OM<1%) at the Wiregrass Research and Extension Center in Headland, Ala. Thimet 20G at 5 pounds per acre was applied in-furrow for thrips control. A pre-plant incorporated application of 0.45 ounces per acre Strongarm + 1 pint per acre Dual Magnum II was followed by an application of 3 ounces per acre Valor on May 12. Escape weeds were plowed with flat sweeps or pulled by hand.

The study site received one inch of water on July 28 and Aug. 23 via a center pivot irrigation system. A factorial set of treatments were arranged in a split-plot with peanut cultivar as whole plots and fungicide programs as sub-plots. Whole plots were randomized in four complete blocks. Sub-plots consisted of four 30-foot rows spaced 3-feet apart that were randomized within each whole plot. Fungicides were applied on 1= June 27, 1.5 = June 27, 2 = July 5, 3 = July 18, 4 = Aug. 2, 5 = Aug. 14, 6 = Aug. 28, and 7 = Sept. 14 with a tractor mounted boom sprayer with three TX-8 nozzles per row calibrated to deliver 15 gallons of water per acre spray volume at 45 psi.

On Sept. 25, early and late leaf spot 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. Defoliation severity values were calculated.

On Sept. 28, 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. Plots were mechanically combined several days after inversion. Yields are reported at 7% moisture. Significance of factor effects and interactions was evaluated using PROC GLIMMIX in SAS. Statistical analyses were calculated on rank transformations for non-normal data for leaf spot intensity and white mold incidence. Non-transformed data are reported. Means were separated using Fisher's least significant difference (LSD) test ($P \leq 0.05$).

Results: While temperatures were near normal, monthly rainfall totals were near to well above the 30-year average from May through September for this study location. While early leaf spot was observed into early September, late leaf spot rapidly intensified through September and was the dominant foliar disease at plot inversion. The significant cultivar × fungicide program interaction highlighted differences in fungicide program efficacy on the two peanut cultivars. Since there were no significant cultivar × fungicide program interactions for white mold incidence or yield, data for each of these variables were pooled. Regardless of the fungicide program, including the non-fungicide treated control, % defoliation ratings were lower for 'Georgia-06G' than 'Georgia-09B'. Considerably higher % defoliation values were noted for the non-fungicide treated control than any of the recommended fungicide programs on either cultivar. In contrast to 'Georgia-06G', where no differences in % defoliation were noted between any recommended fungicide programs, Alto + Echo 720/Echo/Elatus gave significantly better leaf spot control on 'Georgia-09B' than Priaxor/Muscle ADV/Priaxor/Echo 720, Echo 720/Echo 720 + Convoy, and the season-long Echo 720 standard. White mold incidence was higher for the non-fungicide treated control than any of the recommended fungicide programs. The season-long Echo 720 standard had significantly higher white mold ratings than the remaining recommended fungicide programs. While similar yields were recorded for 'Georgia-06G' and 'Georgia-09B', significant differences in yield were noted between the fungicide programs with the non-fungicide treated control having the lowest yield. Among the remaining recommended fungicide programs, significant yield gains were obtained with Echo 720/Fontelis and Echo 720/Abound + Alto compared with the season-long Echo 720 standard.

YIELD RESPONSE ALONG WITH LEAF SPOT AND WHITE MOLD CONTROL WITH RECOMMENDED FUNGICIDE PROGRAMS ON TWO PEANUT CULTIVARS IN SOUTHEAST ALABAMA

Source of Variation	Application schedule	Leaf spot diseases %defoliation[1]	White mold[2]	Yield lb/A
Cultivar	---	26.14*** [3]	0.34	0.07
Fungicide Program	---	182.20***	22.23***	3.82***
Cultivar x fungicide program	---	12.93***	0.72	0.34
Peanut cultivar				
Georgia-06G	---	---	2.4 a[4]	3062 a
Georgia-09B	---	---	2.6 a	3032 a

Fungicide Program		GA06G	GA09B		
Non-fungicide treated control	---	38.9 a	67.2 a	8.4 a	2450 c
Echo 720 6F 1.5 pt	1-7	1.4 f	3.2 b	4.4 b	2846 b
Priaxor 4.17SC 6 fl oz Muscle ADV 3.84SC 2 pt Priaxor 4.17SC 6 fl oz Echo 720 6F 1.5 pt	1,5 3,5 4,6 7	1.8 def	3.2 b	2.2 c	3295 a
Echo 720 6F 1.5 pt Provost Opti 433SC 10.7 fl oz	1,2,7 3-6	1.4 f	2.4 bcd	1.5 c	2921 ab
Echo 720 6F 1.5 pt Echo 720 6F 1.5 pt + Convoy 3.8F 26 fl oz	1,2,4,6,7 3,5	1.7 def	3.7 b	1.4 c	3080 ab
Echo 720 6F 1.5 pt Muscle ADV 3.84SC 2 pt	1,2,7 3-6	1.9 def	3.2 bc	1.7 c	3119 ab
Echo 720 6F 1.5 pt Fontelis 1.67SC 1 pt	1,2,6,7 3,4,5	1.6 ef	2.4 bcd	1.2 c	3290 a
Echo 720 6F 1.5 pt Abound 2.08SC 18.2 fl oz + Alto 0.83SC 5.5 fl oz	1,2,4,6,7 3,5	1.4 f	2.4 bcd	1.0 c	3267 a
Alto 0.83SC 5.5 fl oz + Echo 720 6F 1.0 pt Echo 720 6F 1.5 pt Elatus 45W 9.5 oz	1,6 2,4,7 3,5	1.3 f	2.1 cde	0.8 c	3154 ab

[1] Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale and converted to % defoliation values.
[2] White mold incidence is expressed as the number of disease loci (≤ 1 foot white mold damaged plants) per 60 foot of row.
[3] Significance of F values at the 0.05, 0.01, and 0.001 levels is indicated by *, **, and ***, respectively.
[4] Means in each column followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test ($P \leq 0.05$).

YIELD AND DISEASE RESPONSE OF RECOMMENDED PEANUT CULTIVARS TO FUNGICIDE INPUTS IN SOUTHEAST ALABAMA, WREC

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

Objective: Yield response and disease reaction of commercial runner market type peanut cultivars as influenced by fungicide input level in an irrigated production system at the Wiregrass Research and Extension Center.

Production Methods: The study area at the Wiregrass Research and Extension Center, which is maintained in a one-year out 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. Twelve (12) runner peanut cultivars were planted on May 17 at 6 seed per row foot in a Dothan sandy loam soil (OM<1%) on at the Wiregrass Research and Extension Center in Headland, Ala. Thimet 20G at 5 pounds per acre was applied in-furrow for thrips control. A pre-plant incorporated application of 0.45 ounces per acre Strongarm + 1 pint per acre Dual Magnum II was followed by an application of 3 ounces per acre Valor on May 12. Escape weeds were plowed with flat sweeps or pulled by hand. The study site received 1.0 inches of water on July 28 and Aug. 23 via a center pivot irrigation system.

A factorial set of treatments were arranged as a split-plot with peanut cultivar as whole plots and fungicide program as sub-plots. Whole plots were randomized in four complete blocks. Sub-plots consisted of four 30-foot rows spaced 3-feet apart that were randomized within each whole plot. While the standard fungicide program consisted of seven (7) applications of 1.5 pints per acre Bravo WeatherStik 6F, the intensive fungicide program included two initial applications of 5.5 fluid ounces per acre Alto 0.83SC + 1.5 pints per acre Bravo WeatherStik 6F followed by 9.5 ounces per acre Elatus 45W at application timing 3 and 5 and 1.5 pint per acre Bravo Weather Stik 6F at application timing 4, 6, and 7. Fungicides were applied on 1= June 27, 2 = July 12, 3 = July 27, 4 = Aug. 8, 5 = Aug. 25, 6 = Sept. 6, and 7 = Sept. 21 with a tractor mounted boom sprayer with three TX-8 nozzles per row calibrated to deliver 15 gallons per acre spray volume at 45 psi.

Tomato spotted wilt (TSW) hit counts (1 hit was defined as ≤ 1 foot of consecutive TSW-damaged plants per row) were made on Sept. 13. On Sept. 25, early and late leaf spot 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. Defoliation severities were calculated.

On Oct. 2, 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 mechanically combined on Oct. 10. Yields are reported at 7% moisture. Significance of factor effects and interactions was evaluated using PROC GLIMMIX in SAS. Statistical analyses were calculated

on rank transformations for non-normal data for leaf spot severity, white mold incidence, and yield. Non-transformed data are reported. Means were separated using Fisher's least significant difference (LSD) test ($P \leq 0.05$).

Results: While temperatures were near normal, monthly rainfall totals were near to above the 30-year average from May, June, and September but below average for July and August. While early leaf spot was observed into early September, late leaf spot rapidly intensified throughout September and was the dominant foliar disease at plot inversion. Since the cultivar × fungicide program interactions were not significant for % defoliation, white mold incidence and yield, data for each of these variables were pooled. While significant differences in TSW incidence were noted between cultivars, overall disease levels were low. Incidence of TSW was higher in 'FloRun 157' than all other varieties except for 'Florida 07', while equally low disease levels were recorded for 'AU-NPL 17', 'FloRun 331', 'Georgia-13M', 'Georgia-16HO', 'TUFRunner 297', 'Georgia-09B', and 'Georgia-14N'. Leaf spot defoliation, which significantly differed across varieties, did not exceed 10% for any of the 12 cultivars screened. 'Georgia-13M' and 'FloRun 157' had greater % leaf spot defoliation values than all cultivars except for 'Georgia-09B' and 'Georgia-16HO'. The defoliation value recorded for 'AU-NPL 17' was below those of the latter four and similar to the remaining seven cultivars. Differences in white mold incidence were not observed between peanut cultivars. Yield response for 'FloRun 157', the cultivar with the highest TSW, leaf spot defoliation, and stem rot ratings, was significantly lower than 'TUFRunner 511', 'Georgia-16HO', 'TUFRunner 297', 'FloRun 331', and 'AU-NPL 17' with all the latter cultivars having similarly high yields. Fungicide program significantly impacted white mold but not TSW incidence, % leaf spot defoliation, or yield. White mold intensity, which was lower for the intensive than the standard fungicide program, did not result in a significant yield gain.

YIELD AND DISEASE RESPONSE OF RECOMMENDED PEANUT CULTIVARS TO FUNGICIDE INPUTS IN SOUTHEAST ALABAMA

Source of Variation	TSW Incidence[1]	Leaf spot disease % defoliation[2]	White mold incidence	Yield lb/A
Cultivar	4.17** [3]	3.45**	1.48	5.26***
Fungicide program	0.13	0.75	36.90***	1.59
Cultivar × fungicide program	0.95	0.59	1.39	0.75
Cultivar				
AU-NPL 17	0.0 d[4]	2.3 d	1.0 a	5516 a-d
Florida 07	0.8 ab	3.8 bcd	1.5 a	4684 ef
FloRun 107	0.5 bc	4.6 bcd	2.4 a	4947 def
FloRun 157	1.0 a	7.1 a	3.9 a	4289 f
FloRun 331	0.0 d	3.4 cd	0.3 a	5755 abc
Georgia-06G	0.3 d	3.5 cd	3.0 a	5396 b-e
Georgia-09B	0.2 cd	6.2 ab	2.9 a	5001 c-f
Georgia-13M	0.0 d	7.7 a	1.6 a	4684 ef
Georgia-14N	0.4 bcd	3.8 bcd	0.6 a	4918 def
Georgia-16HO	0.0 d	5.4 abc	2.0 a	6051 ab
TUFRunner 297	0.0 d	4.0 bcd	1.3 a	5869 ab
TUFRunner 511	0.5 bc	4.6 bcd	1.6 a	6168 a
Fungicide Program				
Standard	0.3 a	4.9 a	3.2 a	5203 a
Intensive	0.3 a	4.5 a	0.5 b	5353 a

[1] Incidence of TSW and white mold, which is expressed as the number of hits (≤ 1 foot of TSW or white mold damaged plants) per 60 foot of row were recorded on Sept. 13 and Oct. 2, respectively.
[2] Leaf spot diseases were rated on Sept. 25 using the Florida 1 to 10 leaf spot rating scale and converted to % defoliation values.
[3] Significance of F values at the 0.05, 0.01, and 0.001 levels is indicated by *, **, and ***, respectively.
[4] Means in each column followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test ($P \leq 0.05$).

NEMATICIDE PROGRAMS COMPARED FOR ROOT-KNOT NEMATODE CONTROL AND YIELD RESPONSE ON THE GEORGIA-06G PEANUT CULTIVAR, WREC

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

Objective: Compare the efficacy of Velum Total, AgLogic 15G and Propulse nematicides for the control of root-knot nematode and yield response of the peanut cultivar 'Georgia-06G' in an irrigated production system.

Production Methods: The study site was subsoiled, disked and turned with a moldboard plow, and rows were laid off with a KMC strip till rig with rolling baskets. The peanut cultivar 'Georgia-06G' was planted on May 2 at a rate of approximately 6 seed per foot of row in a Dothan sandy loam (OM<1%) at the Wiregrass Research and Extension Center in Headland, Ala. Weed control was according to the recommendations of the Alabama Cooperative System. Escape weeds were plowed with flat sweeps or pulled by hand. The study site received one inch of water via a lateral irrigation system on Aug. 4, Aug. 8 and Aug 28.

Plots consisted of two 30 foot rows, spaced 3 feet apart, arranged in a randomized complete block, with six replications. Admire Pro at 8.5 fluid ounces per acre and Velum Total at 18 fluid ounces per acre was applied over the seed in the open seed furrow in 10 gallons per acre spray volume at 31 psi with a single drop nozzle. AgLogic 15G at 7 pounds per acre applied in-furrow was included as a standard and/or at pegging at 10 pounds per acre. On July 20, Propulse at 13.7 fluid ounces per acre was applied at-pegging directly over the row middle with a single drop nozzle calibrated to deliver 20 gallons of water per acre and was immediately washed from the canopy to the soil with 0.4 inches of water per acre delivered with a lateral irrigation system. A non-treated control was also included.

Four fungicides were used to control leaf spot diseases and white mold: 3.5 fluid ounces per acre, applied on June 28 and July 11; 10.7 fluid ounces per acre Provost Optimum 433SC applied on July 14 and Aug. 7; 18.2 fluid ounces per acre Abound 2.08SC on July 26 and Aug. 21; and 1.5 pints per acre Echo 720 on Sept. 6. Fungicides were applied as specified above with a tractor mounted boom sprayer with three TX-8 nozzles per row calibrated to deliver 15 gallons per acre of spray volume at 45 psi. Plant vigor was rated on Sept. 15 on a 1 to 5 scale where 1 = least vigorous to 5 = most vigorous plants. Early and late leaf spot (LS) were rated together on Oct. 15, using the Florida 1 to 10 scale 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. Defoliation severity values were calculated.

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 Sept. 18. The level of galling to the pods and roots attributed to the root-knot nematode was rated on a 1 to 5 scale with 1 = no damage and 5 = 75 to 100% of roots and pods damaged. Plots were combined on Sept. 21.

Soil samples for a nematode assay taken on May 16 ($P^{initial}$) and Aug. 25 (P^{final}) were processed using the sugar flotation method. The root-knot nematode reproduction index was calculated by dividing P^{final}/ $P^{initial}$. Yields are reported at 7% moisture. Statistical analysis on vigor, leaf spot defoliation, stem rot incidence, and root/pod damage was done on rank transformations of data. Non-transformed data are presented. Means were separated using Fisher's protected least significant difference (LSD) test ($P \leq 0.05$) unless otherwise indicated.

Results: Monthly rainfall totals were below the 30-year average for July and August but average for May, June, and September, while temperatures were near the 30-year average for the production season. When compared with the non-treated control, year-end plant vigor was greater for Velum Total alone, AgLogic 15G in-furrow (IF) alone or when combined with an at-peg (Peg) application of Propulse. Admire Pro in-furrow, Velum Total followed by Propulse at-peg, and 7 pounds per acre AgLogic in-furrow followed by 10 pounds per acre AgLogic failed to improve plant vigor ratings compared with the non-treated control. While overall % defoliation attributed to leaf spot diseases was low across all nematicide treatments, defoliation levels were greater for AgLogic 15G alone or when followed by an at-peg application of 10 pounds per acre of AgLogic 15G compared with either Velum Total program or AgLogic in-furrow followed by Propulse at-peg. White mold pressure was low but significant differences in disease incidence were noted with fewer hits noted for Velum Total and AgLogic in-furrow followed by Propulse at-peg. Similar root-knot damage ratings were noted for all nematicide treatments and the non-treated control. The root knot reproduction ratio was higher for Velum Total fb Propulse at-peg compared with AgLogic followed by Propulse at-peg. When compared with the non-treated control, a significant yield gain was recorded only for AgLogic followed by Propulse at-peg. Also, lower yields were noted for Admire Pro in-furrow than all Velum Total and AgLogic nematicide programs.

NEMATICIDE PROGRAMS COMPARED FOR ROOT-KNOT NEMATODE CONTROL AND YIELD RESPONSE ON THE GEORGIA-06G PEANUT CULTIVAR

Nematicide and rate/A	Plant vigor [1]	Leaf Spot % defoliation[2]	White mold[3]	Damage rating[4]	Root-knot reproduction[5]	Yield lb/A
Non-treated Control	2.8 c[6]	3.5 ab	1.2 ab	2.4 a	19.6 ab	4550 bc
Admire Pro 8.5 fl oz IF	3.3 bc	3.2 ab	2.5 a	2.7 a	16.5 ab	4438 c
Velum Total 18 fl oz IF	4.7 a	2.4 c	1.5 ab	2.5 a	25.3 a	5066 ab
Velum Total 18 fl oz IF						
Propulse 13.7 fl oz Peg	3.2 bc	2.1 c	0.8 b	2.2 a	27.7 a	4977 ab
AgLogic 15G 7 lb IF	4.0 ab	3.6 a	2.3 a	2.5 a	15.3 ab	4856 ab
AgLogic 15G 7 lb IF						4087 ab
AgLogic 15G 10 lb Peg	3.3 bc	3.8 a	1.3 ab	2.0 a	24.5 ab	4550 ab
AgLogic 15G 7 lb IF						
Propulse 13.7 fl oz Peg	4.5 a	2.7 bc	0.8 b	2.3 a	9.8 b	5219 a

[1] Plant vigor was assessed on Sept. 15 on a 1 to 5 scale with 1 = least vigorous and 5 = most vigorous.
[2] Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale and converted to % defoliation values.
[3] Incidence of white mold is expressed as the number of hits (≤ 1 foot white mold damaged plants) per 60 foot of row.
[4] Pod damage was rated immediately after plot inversion on a 1 to 5 scale with 1 = no damage and 5 = 75 to 100% of roots and pods damaged.
[5] Root-knot reproductive index = $(P^{final})/(P^{initial})$.
[6] Means followed by the same letter do not differ significantly.

IMPACT OF CULTIVAR SELECTION AND NEMATICIDE TREATMENT ON ROOT-KNOT AND DISEASE CONTROL ALONG WITH PEANUT YIELD, WREC

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

Objective: Assess the impact of nematicide treatments on the control of root-knot nematode (*Meloidogyne arenaria*) and other diseases as well as yield response of root-knot susceptible and resistant peanut cultivars.

Production Methods: The study site was subsoiled, disked and turned with a moldboard plow, and rows were laid off with a KMC strip till rig with rolling baskets. Peanut cultivars 'Georgia-06G' (GA06G), 'Georgia-14N'(GA14N), and 'TIF NV High O/L' (TIF NV) were planted on May 2 at a rate of approximately 6 seed per foot of row in a Dothan sandy loam (OM<1%) at the Wiregrass Research and Extension Center in Headland, Ala. The latter two peanut varieties are resistant to the peanut root-knot nematode, while former variety is susceptible. Weed control was according to the recommendations of the Alabama Cooperative System. Escape weeds were plowed with flat sweeps or pulled by hand.

The study site received one inch of water via a lateral irrigation system on Aug. 4, Aug. 8, and Aug. 28. A factorial design arranged as a split-plot was used with peanut cultivar as whole plots and nematicide treatments as sub-plots. Whole plots were randomized in four complete blocks. Sub-plots consisted of four 30-foot rows spaced 3-feet apart that were randomized within each whole plot. Velum Total at 18 fluid ounces per acre was applied over the seed in the open seed furrow in 10 gallons per acre spray volume at 31 psi with a single drop nozzle. AgLogic 15G at 7 pounds per acre applied in-furrow was included as a standard. A non-treated control was also included.

Four fungicides were used to control leaf spot diseases and white mold: 3.5 fluid ounces per acre, applied on June 28 and July 11; 10.7 fluid ounces per acre Provost Optimum 433SC applied on July 14 and Aug. 7; 18.2 fluid ounces per acre Abound 2.08SC on July 26 and Aug. 21; and 1.5 pints per acre Echo 720 on Sept. 6. Fungicides were applied as specified above with a tractor mounted boom sprayer with three TX-8 nozzles per row calibrated to deliver 15 gallons per acre of spray volume at 45 psi. Plant vigor was rated on Sept. 15 on a 1 to 5 scale where 1 = least vigorous to 5 = most vigorous plants. Early and late leaf spot (LS) were rated together on Oct. 15, using the Florida 1 to 10 scale 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. Defoliation values were calculated.

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 Sept. 18. Plots were combined on Sept. 22. Soil samples for a nematode assay taken on May 16 ($P^{initial}$) and Aug. 25 (P^{final}) were processed using the sugar flotation method. The root-knot nematode reproduction index was calculated by dividing Pfinal/ Pinitial. Yields are reported at 7% moisture.

Significance of factor effects and interactions was evaluated using PROC GLIMMIX in SAS. Statistical analysis on vigor, leaf spot defoliation and stem rot incidence was done on rank transformations of data. Non-transformed data are presented. Means were separated using Fisher's protected least significant difference (LSD) test ($P \leq 0.05$) unless otherwise indicated.

Results: Monthly rainfall totals were below the 30-year average for July and August but average for May, June, and September, while temperatures were near the 30-year average for the May to early October production season. A significant cultivar × nematicide interaction for root knot reproductive index but not plant vigor, leaf spot defoliation, stem rot, or yield was observed. Plant vigor was significantly influenced by cultivar but not nematicide treatment. The root-knot susceptible 'Georgia-06G' had a significantly lower vigor rating than the root-knot resistant 'Georgia-14N' and 'TIF NV High O/L' with the highest rating recorded for the latter cultivar. While leaf spot defoliation levels were similarly low for all cultivars, a reduction in defoliation was obtained with Velum Total compared with the non-nematicide treated control ($P \leq 0.10$). White mold incidence was higher in 'Georgia-06G' than 'TIF NV High O/L' and 'Georgia-14N' with the latter cultivar having the least damage. Similarly low white mold indices were recorded for all three nematicide treatments. With the exception of the Velum Total on 'TIF NV High O/L', root-knot nematode reproduction rate was higher for all nematicide treatments on 'Georgia-06G'. The root knot reproduction index for the Velum Total was lower on 'Georgia-14N' than 'TIF NV High O/L'; otherwise, the reproductive index for the non-nematicide treated control and AgLogic 15G were similar on the two root-knot resistant cultivars. Yield for 'TIF NV High O/L' was high than 'Georgia-14N', while intermediate yield was recorded for the root-knot susceptible 'Georgia-06G'. Similar yields were obtained for both nematicidal treatments and then non-nematicide-treated control.

IMPACT OF CULTIVAR SELECTION AND NEMATICIDE TREATMENT ON ROOT-KNOT AND DISEASE CONTROL ALONG WITH PEANUT YIELD

Source of Variance		Plant Vigor[1]	Leaf Spot defoliation[2]	White mold incidence[3]
Cultivar		25.83***[4]	0.08	26.29***
Nematicide		0.48	2.50^	0.02
Cultivar × nematicide		1.00	0.69	0.19
Cultivar				
Georgia-06G		2.7 c[7]	2.8 a	2.7 a
Georgia-14N		3.8 b	2.7 a	0.2 c
TIF NV High O/L		4.5 a	2.7 a	1.0 b
Nematicide and rate/A				
Non-treated control		3.6 b	3.1 a	1.3 a
Velum Total 18 fl oz		3.8 a	2.5 b	1.3 a
AgLogic 15G 7 lb		3.7 a	2.6 ab	1.3 a
		Root Knot nematode reproductive index[5]		**Yield lb/A**
Cultivar		20.74***[6]		11.91***
Nematicide		2.25		0.26
Cultivar × nematicide		3.42*		0.81
Cultivar				
Georgia-06G		---		4058 ab
Georgia-14N		---		3756 b
TIF NV High O/L		---		4515 a
Nematicide and rate/A	**GA06G**	**GA14N**	**TIF NV**	
Non-treated control	383 a	4 d	15 cd	3988 a
Velum Total 18 fl oz	83 ab	15 d	46 bc	4200 a
AgLogic 15G 7 lb	353 a	3 d	23 d	4141 a

[1] Plant vigor was rated on a 1 to 5 scale on Sept. 15.
[2] Leaf spot diseases were rated using the Florida 1 to 10 scale on Sept. 15.
[3] Stem rot incidence is expressed as the number of disease loci (≤ 1 ft stem rot damage) per 60 ft of row.
[4] Ratings of root-knot damage to the pods and roots were made on 18 Sep on a 1 to 5 scale.
[5] Root-knot reproductive index = $(P^{final})/(P^{initial})$.
[6] Significance of F values at the 0.10, 0.05, 0.01, and 0.001 levels is indicated by ^, *, **, or ***, respectively.
[7] Means in each column followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test ($P \leq 0.05$).

IMPACT OF INSECTICIDES PROGRAMS ON THRIPS POPULATIONS, THRIPS FEEDING INJURY, DISEASE ACTIVITY, AND YIELD OF TWO PEANUT CULTIVARS IN SOUTHEAST ALABAMA, WREC

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

Objective: Compare the efficacy of in-furrow spray and granular insecticides for the control of thrips, impact on thrips feeding injury to the leaves and shoot terminals, occurrence of TSW, leaf spot diseases, and white mold as well as the yield of two peanut cultivars.

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. The peanut varieties 'Georgia-06G' and 'Flavorunner 458' were planted at the rate of 6 seed per foot of row using conventional tillage practices on April 26, in a Dothan fine sandy loam (OM<1%) soil at the Wiregrass Research and Extension Center. Weed control and soil fertility recommendations were according to the recommendations of the Alabama Cooperative Extension System. Escape weeds were plowed with flat sweeps or pulled by hand.

The study site received one inch of water on July 28 and Aug. 23 via a center pivot irrigation system. A split split-plot design with peanut cultivar as whole plots and seed treatment or at-plant insecticide treatments as the split plot was used. The at-plant insecticide programs included a 4 oz/cwt seed Dynasty PD negative control, 5 lb/A Thimet 15G, 18 fl oz/A Velum Total, 10 fl oz/A Admire Pro, 7 lb/A of AgLogic 15G. An additional insecticide/nematicide program included an at-plant application of 7 lb/A AgLogic 15G followed by an at-peg application of 10 lb/A AgLogic 15G. While Thimet 15G and AgLogic 15G were applied in-furrow over the open seed furrow, Velum Total at 18 fluid ounces per acre was applied over the seed in the open seed furrow in 10 gallons per acre spray volume at 31 psi with a single drop nozzle. Individual subplots, which consisted of four 30-foot rows spaced 3 feet apart were randomized within each plot. Chlorothalonil at 1.5 pt/A was applied for leaf spot control on June 28, July 11, July 25, Aug. 7, Aug. 21, Sept. 3, and Sept. 12 using 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 25 from the second row of each plot as the actual number of plants emerged.

Tomato spotted wilt (TSW) hit counts (1 hit was defined as ≤ 1 foot of consecutive severely TSW-damaged plants per row) were made on Sept. 5. On Sept. 5, early and late leaf spot were rated together using the Florida 1 to 10 scale 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. Defoliation severity values were calculated.

On Sept. 15, 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. Plots were inverted on Sept. 15 and mechanically harvested on Sept. 19. Yields are reported at 8.48% moisture. Significance of factor effects and interactions was evaluated using PROC GLIMMIX in SAS. Statistical analyses were calculated on rank transformations for non-normal data for thrips counts, thrips damage ratings, leaf spot intensity, and white mold incidence. Non-transformed data are reported. Means were separated using Fisher's least significant difference (LSD) test ($P \leq 0.05$) unless otherwise indicated.

Results: While temperatures were near normal, monthly rainfall totals were near to well above the 30-year average from May through August but below average for September at this study location.

At the May 25 sampling date, which was approximately 30 days after planting, total adult and juvenile thrips counts were higher for the Dynasty PD negative control as compared with all insecticide programs (Fig. 1). AgLogic 15G gave significantly better suppression of thrips populations than Thimet 20G, Admire Pro, and Velum Total, all of which had similar adult and juvenile thrips counts. At the June 2 sampling dates, both AgLogic 15G treatments continued to provide thrips control compared with the Dynasty PD control and Thimet 20G but not Admire Pro or Velum Total. For the final June 9 sampling date, Admire Pro and Velum Total provided superior thrips protection compared with the Dynasty PD control and Thimet 20G, while the adult and juvenile thrips counts recorded for both AgLogic 15G treatments were similar to the former and latter insecticide programs.

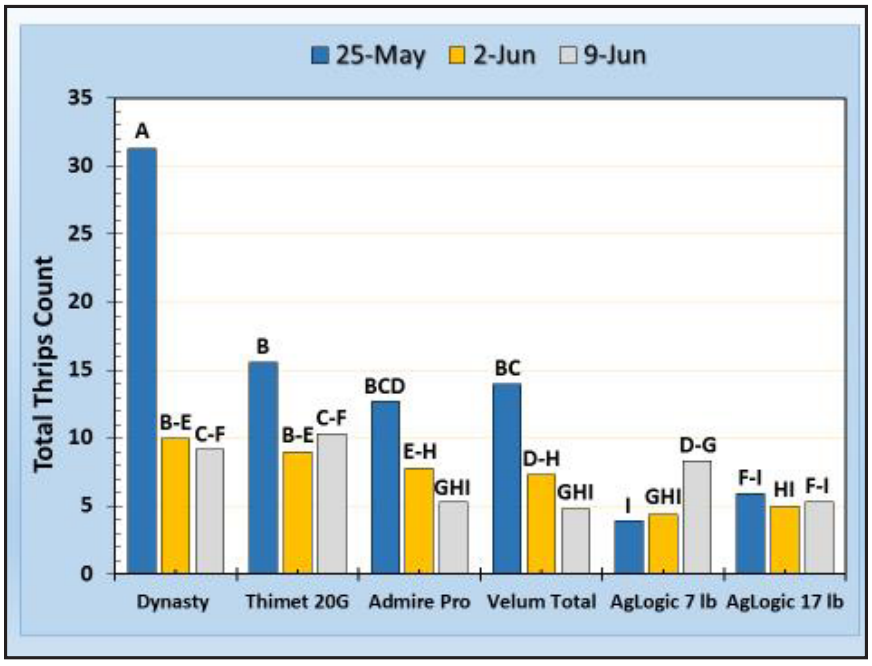


Figure 1. Thrips adult and juvenile populations as impacted by insecticide program over a two-week sampling period.

Thrips feeding damage ratings differed by rating date and insecticide program. For the Dynasty PD control along with Thimet 20G and both AgLogic 15G programs, the thrips damage ratings, which were similarly high at the May 25 and June 2 rating dates, were significantly lower at the June 9 rating date (Figure 2). For Admire Pro and Velum Total, higher thrips damage ratings were noted at the June 2 rating date compared with the May 25 and June 9 rating dates where similarly lower damage ratings were recorded. At the May 25 and June 2 rating dates, higher thrips damage ratings were recorded for Dynasty PD control than all insecticides programs. Among all insecticide programs, Thimet 20G had higher damage ratings than Admire Pro, Velum Total, and both AgLogic 15G programs. While the latter four insecticide programs had similarly low thrips damage ratings at the first rating date, both AgLogic 15G treatments suffered less thrips damage than Admire Pro or Velum Total. On June 9, similar thrips damage ratings were noted for the Dynasty PD control, Thimet 20G, and Admire Pro, while least thrips damage to the leaves and bud terminals was observed on the AgLogic 15G-treated peanuts.

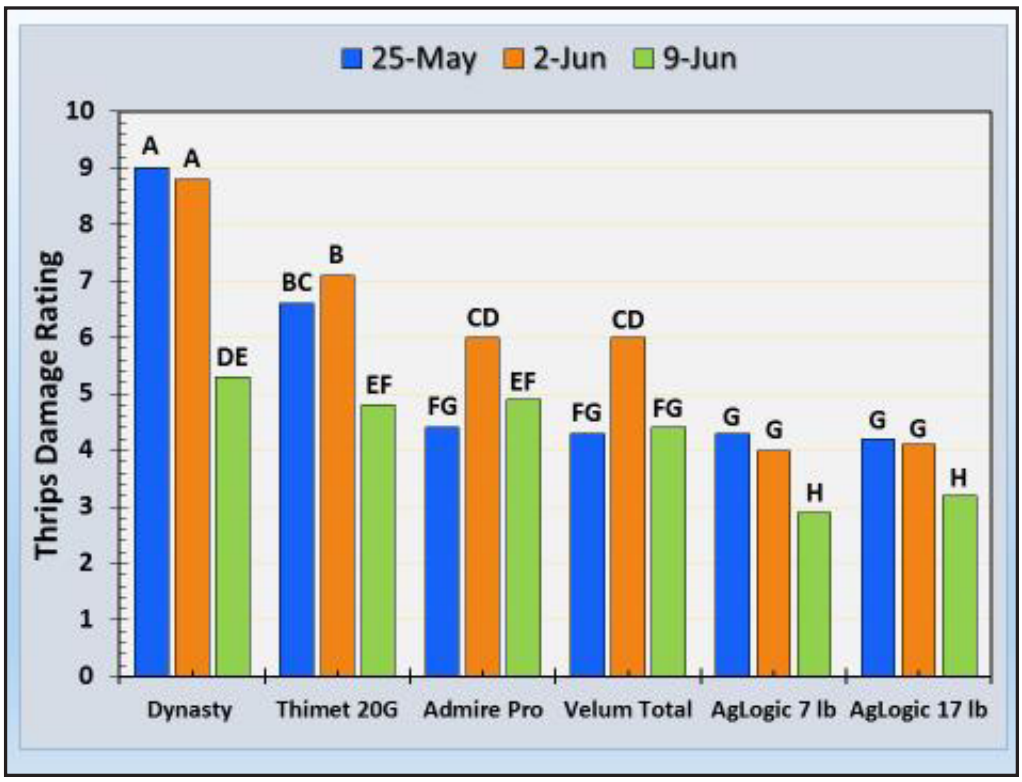


Figure 2. Thrips damage ratings for leaves and bud terminals as impacted by insecticide treatment over time.

Thrips damage ratings to the leaves and bud terminals decline for some but not all treatments over the two week assessment period. For the Dynasty PD control along with Thimet 20G and both AgLogic 15G programs, the thrips damage ratings, which were similarly high at the May 25 and June 2 rating dates, were significantly lower at the June 9 rating date (Figure 2). For Admire Pro and Velum Total, higher thrips damage ratings were noted at the June 2 rating date compared with the May 25 and June 9 rating dates where similarly lower damage ratings were recorded.

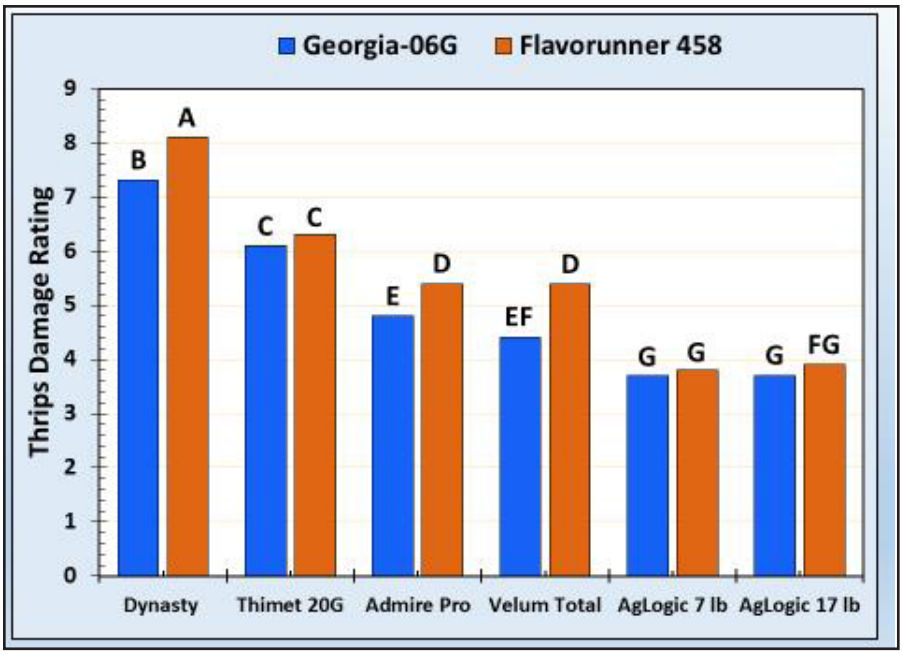


Figure 3. Thrips damage as impacted by peanut cultivar selection.

Cultivar	% Defoliation	White Mold hit count	Yield lb/A
Georgia-06G	2.0 b	2.5 b	4052 a
Flavorunner 458	4.2 a	3.9 a	3465 b
Treatment and rate/A			
Dynasty Control	3.2 a	2.3 b	3469 c
Thimet 20G 5 lb	2.6 a	1.8 b	3561 bc
Admire Pro 10 fl oz	3.4 a	3.8 a	3473 c
Velum Total 18 fl oz	2.8 a	4.5 a	4041 ab
AgLogic 15G 7 lb	3.1 a	4.1 ab	3933 abc
AgLogic 15G 17 lb	3.4 a	2.9 ab	4074 a

Figure 4. Leaf spot defoliation, white mold hit counts, and yield by cultivar and insecticide program.

At the May 25 and June 2 rating dates, higher thrips damage ratings were recorded for Dynasty PD control than all insecticides programs. Among the insecticide programs, Thimet 20G had higher damage ratings than Admire Pro, Velum Total, and both AgLogic 15G programs. While the latter four insecticide programs had similarly low thrips damage ratings at the first rating date, both AgLogic 15G treatments suffered less thrips damage than Admire Pro or Velum Total. On June 9, similar thrips damage ratings were noted for the Dynasty PD control, Thimet 20G, and Admire Pro, while least damage to the leaves and bud terminals was observed on the AgLogic 15G-treated peanuts.

Thrips damage ratings for the Dynasty PD control, Admire Pro, and Velum Total, but not Thimet 20G and AgLogic 15G, were higher for 'Flavorunner 458' than 'Georgia-06G' (Figure 3). The Dynasty PD control had higher thrips damage ratings than all insecticide programs. Over both cultivars, AgLogic 15G provided significantly better thrips protection compared with the other insecticide programs. In addition, Admire Pro and Velum Total were equally more effective in protecting both cultivars from thrips feeding injury than Thimet 20G.

While overall disease pressure was low across both cultivars, 'Georgia-06G' had less leaf spot-incited defoliation and white mold hit counts compared with 'Flavorunner 458' (Figure 4). In addition, yield was higher for the former than the latter peanut cultivar.

The thrips treatment programs, including Velum Total which contains the fungicide fluopyram, did not impact leaf spot incited defoliation. White mold hit counts were higher for Velum Total and Admire Pro, both of which contain imidacloprid, than the Dynasty PD control and Thimet 20G. When compared with the Dynasty PD control, significantly higher yield was recorded for 17 lb/A AgLogic and Velum Total programs. The 17 lb/A AgLogic program also outyielded Admire Pro and Thimet 20G, while Velum Total also produced higher yields than Admire Pro. The elevated yields recorded for the 17 lb/A AgLogic and Velum Total program, both of which have nematicidal activity, suggest that damaging root-knot nematode populations were present at the study site.

DISEASE AND YIELD RESPONSE OF RUNNER-MARKET TYPE PEANUT CULTIVARS IN A RAINFED PRODUCTION SYSTEM IN ALABAMA, WREC

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

Objective: Assess the yield response and reaction of commercial runner market type peanut cultivars to tomato spotted wilt, leaf spot diseases, and white mold in a rainfed (non-irrigated) production system at the Wiregrass Research and Extension Center.

Production Methods: The study site was subsoiled, disked and turned with a moldboard plow on March 7, and rows were laid off on May 11 with a KMC strip till rig with rolling baskets. Peanut cultivars were planted on May 11 at a rate of approximately 6 seed per foot of row in a fine Dothan sandy loam (OM<1%) at the Wiregrass Research and Extension Center in Headland, Ala. Gypsum, at a rate of 600 pounds per acre, was applied on a 14-inch band over the row middle on June 27. Weed control was according to the recommendations of the Alabama Cooperative Extension System. Escape weeds were plowed with flat sweeps or pulled by hand.

The study was not irrigated. Three fungicides were used: 1.5 pint per acre Chlorothalonil 720, applied on 1) June 12, 2) June 27, 7) Sept. 5, and 8) Sept. 21 (very late maturing cultivar only), while 9 ounces per acre Elatus was applied on 3) July 10 and 5) Aug. 7 and 7 fluid ounces per acre Provost Optimum on 4) July 24 and 5) Aug. 21. Fungicides were broadcast with a four-row tractor mounted sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre. 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 Sept. 15. Early and late leaf spot (LS) were rated together on Sept. 21, Sept. 27, and Oct. 5 for the mid-season, late, and very late maturing cultivars, respectively, using the Florida 1 to 10 scale 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. Defoliation severities were calculated.

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 Sept. 22, Sept. 28, and Oct. 5 for the mid-season, late, and very late maturing cultivars, respectively. Plots were combined 3 to 5 days after inversion. Yields are reported at 7% moisture. Statistical analysis on leaf spot intensity as well as TSW and white mold incidences along with leaf spot defoliation was done on rank transformations of data. Non-transformed data are presented. Means were separated using Fisher's protected least significant difference (LSD) test ($P \leq 0.05$) .

Results: Monthly rainfall totals were below the 30-year average for July and August but average for May, June, and September, while temperatures were near the 30-year average for the May to early October production season. Overall, TSW incidence was considerably lower for susceptible cultivars like 'FloRun 157' and 'TUFRunner 511' compared with recent years. When compared with 'TUFRunner 511' and 'FloRun 157', 'TIF NV-High O/L', 'AU-NPL 17', 'Georgia-07W', and 'Georgia-13M' had significantly lower TSW indices. Late leaf spot was the primary leaf spot disease observed. When compared with 'Georgia-13M', similarly high defoliation levels were observed for 'TUFRunner 297', 'TUFRunner 511', and 'FloRun 107'. The low defoliation levels recorded for 'Georgia-06G' were matched by 'Georgia Greener', 'TIF NV-High O/L', 'Tifguard', and 'Georgia-16HO'. White mold incidence was at or near zero for all peanut cultivars (data not shown). The breeding line 'M14 1233' produced higher yields than all cultivars except for 'FloRun 331', 'Georgia-12Y', 'AU-NPL 17', 'Georgia Greener', 'Georgia-09B', 'TUFRunner 511', 'TUFRunner 297', 'Georgia-07W' and the breeding line 'ACI 789'. 'Georgia-14N', 'Georgia-13M', 'FloRun 107', 'FloRun 157', and 'Tifguard' had similarly low yields.

DISEASE AND YIELD RESPONSE OF RUNNER-MARKET TYPE PEANUT CULTIVARS IN A RAINFED PRODUCTION SYSTEM IN ALABAMA

Peanut cultivar	Maturity group	TSW incidence[1]	Leaf spot disease % defoliation[2]	Yield lb/A
ACI 789	Mid-season	3.5 ab[3]	3.8 cde	5980 a-e
AU-NPL 17	Mid-season	1.0 bc	0.4 g	6124 a-d
FloRun 107	Mid-season	2.3 abc	6.1 abc	5627 def
FloRun 157	Mid-season	4.5 a	1.3 de	5710 c-f
FloRun 331	Late	2.3 abc	2.5 bcd	6514 ab
Georgia-06G	Mid-season	2.0 abc	0.4 g	6305 abc
Georgia-07W	Late	0.8 bc	1.5 def	6035 a-e
Georgia-09B	Mid-season	2.5 abc	0.9 def	6125 a-d
Georgia-12Y	Very late	0.5 bc	1.6 cde	6368 abc
Georgia-13M	Late	0.3 c	11.6 a	5432 ef
Georgia-14N	Late	2.3 abc	3.1 bcd	5183 f
Georgia-16HO	Mid-season	3.8 ab	1.5 fg	6503 ab
Georgia Greener	Mid-season	2.0 abc	0.5 fg	6143 a-d
M14 1233	Late	1.3 abc	1.9 cde	6621 a
Tifguard	Mid-season	1.3 abc	1.3 efg	5746 c-f
TIF NV-High O/L	Mid-season	1.3 bc	0.9 efg	5872 b-e
TUFRunner 297	Late	1.5 abc	6.5 ab	6106 a-d
TUFRunner 511	Late	5.3 a	5.2 abc	6266 a-d

[1] Incidence of TSW is expressed as the number of hits (≤ 1 ft TSW damaged plants) per 60 foot of row.
[2] Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale and converted to % defoliation values.
[3] Means in each column followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test ($P \leq 0.05$).

LATE LEAF SPOT DEFOLIATION AND YIELD DIFFER AMONG IRRIGATED RUNNER MARKET TYPE PEANUT CULTIVARS, WREC

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

Objective: Assess the yield response and reaction of commercial runner market type peanut cultivars to tomato spotted wilt, leaf spot diseases, and white mold in a rainfed (non-irrigated) production system at the Wiregrass Research and Extension Center.

Production Methods: The study site was subsoiled, disked and turned with a moldboard plow on March 7, and rows were laid off on May 11 with a KMC strip till rig with rolling baskets. Peanut cultivars were planted on May 11 at a rate of approximately 6 seed per foot of row in a fine Dothan sandy loam (OM<1%) at the Wiregrass Research and Extension Center in Headland, Ala. Gypsum, at a rate of 600 pounds per acre, was applied on a 14-inch band over the row middle on June 27. A pre-plant incorporated application of 1.0 quart per acre Sonalan + 0.45 ounces per acre Strongarm + 1 pint per acre Dual Magnum II on May 4 was followed by an early-post broadcast application of 3 ounces per acre Valor on May 12 for weed control. Escape weeds were plowed with flat sweeps or pulled by hand.

The study site received 0.35, 0.8, 0.7, 0.7, 0.7, and 0.5 and 1.0 inches of water on May 12, July 25, Aug. 9, Aug. 23, Aug. 30, and Oct. 3, respectively via a lateral irrigation unit. The fungicides used: 1.5 pint per acre Chlorothalonil 720, applied on 1) June 12, 2) June 27, and 7) Sept. 5 (two later maturity dates only), while 9 ounces per acre Elatus was applied on 3) July 10 and 5) Aug. 7 and 7 fluid ounces per acre Provost Optimum on 4) July 24 and 5) Aug. 21. Fungicides were broadcast with a four-row tractor mounted sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre. Plots consisted of two 20–foot rows, spaced 3 feet apart, arranged in a randomized complete block, with four replications.

Tomato spotted wilt (TSW) loci counts (1 locus was defined as ≤ 1 foot of consecutive severely TSW-damaged plants per row) were made on Sept. 15. Early and late leaf spot (LS) were rated together on Sept. 21, Sept. 27, and Oct. 5 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 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. Defoliation severities were calculated.

White mold counts (1 locus was defined as ≤ 1 foot of consecutive white mold damaged plants per row) were made immediately after plot inversion on Sept. 22, Sept. 28, and Oct. 5 for the mid-season, late, and very late maturing cultivars, respectively. Plots were combined 3 to 5 days after inversion. Yields are reported at 7% moisture. Statistical analysis on leaf spot intensity as well as TSW and white mold incidences along with leaf spot defoliation was done on

rank transformations of data. Non-transformed data are presented. Means were separated using Fisher's protected least significant difference (LSD) test ($P \leq 0.05$) .

Results: Monthly rainfall totals were below the 30-year average for July and August but average for May, June, and September, while temperatures were near the 30-year average for the May to early October production season. Overall, incidence of TSW was down considerably from previous years on susceptible cultivars like 'FloRun 157' and 'TUFRunner 511'. Higher TSW indices were recorded for 'FloRun 157' than 'FloRun 107', 'Tifguard', 'TIF NV-High O/L', 'TUFRunner 297', 'Georgia-13M', and the current industry standard 'Georgia-06G', all of which had similarly low TSW incidence. In contrast to TSW, defoliation attributed to leaf spot diseases was greater in 2017 than in previous years. Late leaf spot was the primary leaf spot disease observed. Equally high defoliation ratings are reported for 'TUFRunner 511', 'TUFRunner 297', 'Georgia 13M', and 'FloRun 157'. Low leaf spot rating similar to 'TIF NV-High O/L were obtained for 'Georgia Greener', 'Tifguard', 'Georgia-09B', 'Georgia-06G', and 'FloRun 107'. White mold incidence was near zero for all peanut cultivars (data not shown). 'Georgia-12Y' produced greater yields than all cultivars except for the breeding line 'M14 233' and 'Georgia-06G', while 'Georgia-14N' had the lowest yields of all cultivars screened.

LATE LEAF SPOT DEFOLIATION AND YIELD DIFFER AMONG IRRIGATED RUNNER MARKET TYPE PEANUT CULTIVARS

Peanut cultivar	Maturity group	TSW incidence[1]	Leaf spot disease % defoliation[2]	Yield lb/A
ACI 789	Mid-season	1.3 ab[3]	15.5 cd	4756 d
AU-NPL 17	Mid-season	1.8 ab	16.0 cde	5207 bcd
FloRun 107	Mid-season	0.8 b	41.2 a	4736 d
FloRun 157	Mid-season	4.5 a	11.3 ef	5081 cd
FloRun 331	Late	1.3 ab	22.1 bc	4968 d
Georgia-06G	Mid-season	0.3 b	10.9 ef	5570 abc
Georgia-07W	Late	1.5 ab	15.3 cde	4774 d
Georgia-09B	Mid-season	1.3 ab	11.8 ef	4666 d
Georgia-12Y	Very late	1.3 ab	22.8 bc	6037 a
Georgia-13M	Late	0.3 b	51.8 a	4950 d
Georgia-14N	Late	2.0 ab	21.1 bc	3985 e
Georgia-16HO	Mid-season	1.5 ab	15.9 cd	5099 cd
Georgia Greener	Mid-season	2.0 ab	8.5 f	5135 cd
M14 1233	Late	2.3 ab	24.8 bc	5701 ab
Tifguard	Mid-season	0.8 b	11.4 ef	4846 d
TIF NV-High O/L	Mid-season	1.0 b	8.3 f	4756 d
TUFRunner 297	Late	1.0 b	57.4 a	5075 cd
TUFRunner 511	Late	2.8 ab	57.8 a	4932 d

[1] Incidence of TSW is expressed as the number of hits (≤ 1 foot TSW damaged plants) per 60 foot of row.
[2] Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale and converted to % defoliation values.
[3] Means in each column followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test ($P \leq 0.05$).

TSW INCIDENCE, LEAF SPOT DEFOLIATION, AND YIELD OF RUNNER- AND VIRGINIA MARKET TYPE PEANUT CULTIVARS, WREC

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

Objective: Compare the yields and reaction of runner and Virginia market type breeding lines to tomato spotted wilt, leaf spot diseases, and white mold at the Wiregrass Research and Extension Center.

Production Methods: The study site was subsoiled, disked and turned with a moldboard plow on March 7, and rows were laid off on May 11 with a KMC strip till rig with rolling baskets. Peanut cultivars were planted on May 11 at a rate of approximately 6 seed per foot of row in a fine Dothan sandy loam (OM<1%) at the Wiregrass Research and Extension Center in Headland, Ala. Gypsum, at a rate of 600 pounds per acre, was applied on a 14-inch band over the row middle on June 27. A pre-plant incorporated application of 1.0 quart per acre Sonalan + 0.45 ounces per acre Strongarm + 1 pint per acre Dual Magnum II on May 4 was followed by an early-post broadcast application of 3 ounces per acre Valor on May 12 for weed control. Escape weeds were plowed with flat sweeps or pulled by hand.

The study was not irrigated. Three fungicides were used: 1.5 pint per acre Chlorothalonil 720, applied on 1) June 12, 2) June 27, 7) Sept. 5, and 8) Sept. 21 (very late maturing cultivar only), while 9 ounces per acre Elatus was applied on 3) July 10 and 5) Aug. 7 and 7 fluid ounces per acre Provost Opti on 4) July 24 and 5) Aug. 21. Fungicides were broadcast with a four-row tractor mounted sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre. 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 Sept. 15. Early and late leaf spot (LS) were rated together on Sept. 15, Sept. 21, and Sept. 27 for the early, mid-season and late cultivars, respectively, using the Florida 1 to 10 scale 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. Defoliation severities were calculated.

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 Sept. 20, Sept. 26, and Oct. 2 for the early, mid-season and late cultivars, respectively. Plots were mechanically combined 3 to 5 days after inversion. Yields are reported at 7% moisture. Statistical analysis on leaf spot intensity as well as TSW and white mold incidences along with leaf spot defoliation was done on rank transformations of data. Non-transformed data are presented. Means were separated using Fisher's protected least significant difference (LSD) test ($P \leq 0.05$) .

Results: Monthly rainfall totals were below the 30-year average for July and August but average for May, June, and September, while temperatures were near the 30-year average for the May to early October production season. Significant differences in TSW incidence and late leaf spot-incited defoliation were noted among the advanced breeding lines along with the runner market-type standard 'Georgia-06G' and Virginia-market-type standard 'Bailey'. While TSW incidence was reduced compared with previous study years, the breeding lines 'ARSOK-V85-377', 'ARSOK-R47A', 'TXL 090206-41', 'TXL 080256-02', and 'ARSOK-V85-7' had significantly higher disease indices than 'Bailey' and 'Georgia-06G'. Incidence of TSW in the remaining breeding lines was similar to the levels observed in the former Virginia- and runner-market type standards 'Bailey' and 'Georgia-06G', respectively. The level of late leaf spot-incited defoliation also differed among the breeding lines and industry standard cultivars. High late leaf spot defoliation levels recorded for 'TXL 090206-41' were matched by 'ARSOK-V85-7' and 'ARSOK V85-377'. When compared with Virginia market type standard 'Bailey', only the Virginia breeding lines 'N 13048+o1', 'N 12009o1CLSmT', and 'TXL 090105-07' had equally low late leaf spot defoliation levels. Among the runner market type breeding lines, none suffered less premature late leaf spot-incited defoliation than the 'Georgia-06G' standard, while 'UF 10X09-3-4-1-1' and 'GA122540' displayed heavier defoliation due to this disease. White mold incidence was at or near zero for all peanut cultivars (data not shown). Yield was significantly higher for 'Georgia-06G' compared with any of the Virginia- and runner-market type breeding lines except for 'UF10X09-3-4-1-1', 'GA122540', and 'UF07024-2-10-1'. The Virginia market type standard 'Bailey' and the majority of other Virginia breeding lines, except for 'TXL 090105-07' produced similar yields.

TSW INCIDENCE, LEAF SPOT DEFOLIATION, AND YIELD OF RUNNER- AND VIRGINIA MARKET TYPE PEANUT CULTIVARS

Peanut cultivar	Market Type[1]	Maturity group	TSW incidence[2]	Leaf spot disease % defoliation[3]	Yield lb/A
Bailey	V	Early	3.0 c[4]	4.2 hi	4283 efg
Georgia-06G	R	Mid-season	2.3 c	12.4 def	5683 a
UF09X58-3-3-2	R	Mid-season	4.0 bc	10.2 fg	4923 b-e
UF10X09-3-4-1-1	R	Mid-season	0.8 c	17.9 cd	5321 ab
UF07024-2-10-1	R	Mid-season	3.0 bc	10.5 fg	4959 a-d
GA122540	R	Late	3.5 bc	20.7 bc	5027 abc
GA122544	R	Late	1.0 c	19.5 c	4777 b-f
GA132724	R	Mid-season	0.8 c	9.7 fg	4760 b-f
N 12009o1CLSmT	V	Early	2.0 c	2.8 hi	4301 fg
N 13048+o1	V	Early	1.0 c	1.3 i	4319 c-f
TXL 080256-02	R	Early	9.8 a	12.5 ef	4453 c-f
TXL 090206-41	V	Early	11.5 a	41.8 a	3638 gh
TXL 090105-07	V	Early	---	8.0 gh	2115 h
ARSOK-R47A	R	Mid-season	14.5 a	14.2 cde	4434 efg
ARSOK-V85-7	V	Early	7.8 ab	36.5 ab	4444 efg
ARSOK-V85-377	V	Early	16.5 a	22.9 abc	4301 d-g

[1] R = runner and V = Virginia market-type peanut varieties and breeding lines.

[2] Incidence of TSW is expressed as the number of hits (≤ 1 foot damaged plants) per 60 foot of row.

[3] Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale and converted to % defoliation values.

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

EVALUATION OF APROACH PRIMA AND FONTELIS FOR PEANUT DISEASE CONTROL IN SOUTHWEST ALABAMA, GCREC

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

Objective: To evaluate Aproach Prima and Fontelis and compare them against other currently registered products for control of late leaf spot, rust, and stem rot and yield response in a dry-land peanut production system in southwest Alabama.

Production Methods: Peanut cultivar 'Tufrunner 511' was planted on May 26 at the Gulf Coast Research and Extension Center near Fairhope, Ala., at a rate of five seed per foot 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 lb/A of Thimet 20G at planting. In addition, 5.0 lb/A of Rhizobium inoculant was applied at planting. On May 26, after planting, 1 qt/A of Makazie + 1 pt/A of Dual + 3 oz/A of Valor were applied to the test area for weed control. On June 6, 0.45 oz/A of Strongarm + 2 oz/A of Cadre + LI700 at 1 qt/100 gal of water were applied for post-emergent weed control. On Aug. 2, 1.5 ptA of Intensity + 1 qt/A of Herbimax were applied to test area for post-emergent weed control and 0.75 oz/A of Classic + 1 qt/50 gal of water of L1700 were applied to alleys for morning glory control.

Plots, which consisted of four 30-foot rows on 38-inch centers, were arranged in a randomized complete block with six replications. Rainfall recorded during the growing season was as follows (in inches): May – 10.83, June – 12.41, July – 7.78, August – 13.68, September – 0.87, and October (through Oct. 18) – 9.28. Foliar fungicides were applied at 14-21 day intervals on 1) July 3, 1.5) July 11, 2) July 17, 2.5) July 25, 3) Aug. 1, 4) Aug. 14, 4.5) Aug. 22, 5) Aug. 28, 6) Sept. 12, 6.5) Sept. 18, and 7) Sept. 26 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 per plot.

Late leaf spot was visually rated on Oct. 18 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 loci (SR) were made on Oct. 20 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 Oct. 30 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 ($P \leq 0.05$).

Results: In 2017, temperatures were near average and monthly rainfall totals were above average during June, July, August and October but below normal in September. Due to frequent

late summer rain events, late leaf spot severity and defoliation levels were higher in 2017 than had been observed in previous years. Late leaf spot appeared the last week of August and rapidly intensified until harvest. Stem rot incidence was similar to that observed in previous years. All fungicide programs had significantly lower late leaf spot ratings than the untreated control which were 97% defoliated at harvest. Defoliation among all the treatment programs was similar with none having significantly better control than that observed with the full-season Echo 720 program. All treatment programs reduced the number of stem rot hits when compared with the non-treated control. However, among the treatment programs, Priaxor/ Fontelis + Convoy/Echo 720, Muscle ADV/Fontelis/Muscle 3.6F/Echo, Echo 720 + Convoy, Priaxor, and Echo 720/Provost Opti had significantly lower stem rot indices than the full season Echo only treatment. All treatment programs yielded higher than the non-treated control. Among the treatment programs, lowest yield was with Aproach Prima/Fontelis/Muscle 3.6F/ Echo 720. Yield for all other fungicide programs were similar.

EVALUATION OF APROACH PRIMA AND FONTELIS FOR PEANUT DISEASE CONTROL IN SOUTHWEST ALABAMA, GCREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control		96.8 a[3]	10.6 a	3322 c
Aproach Prima 6.8 fl oz Fontelis 16.0 fl oz Muscle 3.6F 7.2 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	33.1 b	3.0 bc	4129 bc
Priaxor 6.0 fl oz Fontelis 16.0 fl oz Muscle 3.6F 7.2 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	36.1 b	1.2 bc	5019 ab
Priaxor 6.0 fl oz Fontelis 16.0 fl oz Convoy 16.0 fl oz + Echo 720 24.0 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	27.1 bc	2.3 bc	5269 a
Priaxor 6.0 fl oz Fontelis 10.0 fl oz + Convoy 16.0 fl oz Echo 720 24.0 fl oz	1.5 3,5 4,6,7	7.6 c	0.3 c	5727 a
Priaxor 6.0 fl oz Fontelis 16.0 fl oz Convoy 16.0 fl oz + Echo 720 24.0 fl oz Echo 720 24.0 fl oz	1.5 3,4 5 6,7	19.9 bc	1.5 bc	5360 a
Muscle ADV 32.0 fl oz Fontelis 16.0 fl oz Muscle 3.6F 7.2 fl oz Echo 720 24.0 fl oz	1,2 3,5 4 6,7	13.6 bc	0.5 c	5873 a
Fontelis 16.0 fl oz	1-7	35.3 b	2.0 bc	5148 ab
Elatus 45WG 7.3 oz	1-7	15.1 bc	1.2 bc	5579 a
Echo 720 24.0 fl oz + Convoy 16.0 fl oz	1-7	13.6 bc	0.0 c	5750 a
Priaxor 6.0 fl oz	1-7	12.8 bc	0.7 c	5368 a
Echo 720 24.0 fl oz + Alto 0.83SL Elatus 45WG 9.5 oz Echo 720 24.0 fl oz	1.5 3,5 4,6,7	21.8 bc	1.3 bc	4963 ab
Echo 720 24.0 fl oz Provost Opti 10.7 fl oz	1,2,7 3,4,5,6	21.7 bc	0.2 c	5203 a
Echo 720 24.0 fl oz	1-7	27.9 bc	4.3 b	5475 a
LSD (P ≤ 0.05)	---	*26.3 bc*	*3.6 b*	*1035 a*

[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 foot of row.
[3] Numbers followed by the same letter do not differ significantly.

EEVALUATION OF ELATUS 45WG AND MIRAVIS FOR PEANUT DISEASE CONTROL IN SOUTHWEST ALABAMA, GCRECC

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

Objective: To evaluate Elatus 45WG and the new fungicide Miravis and compare them against other currently registered products for control of late leaf spot, rust, and stem rot and yield response in a dry-land peanut production system in southwest Alabama.

Production Methods: Peanut cultivar 'Tufrunner 511' was planted on May 26 at the Gulf Coast Research and Extension Center near Fairhope, Ala., at a rate of five seed per foot 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 lb/A of Thimet 20G at planting. In addition, 5.0 lb/A of Rhizobium inoculant was applied at planting. On May 26, after planting, 1 qt/A of Makazie + 1 pt/A of Dual + 3 oz/A of Valor were applied to the test area for weed control. On June 6, 0.45 oz/A of Strongarm + 2 oz/A of Cadre + LI700 at 1 qt/100 gal of water were applied for post-emergent weed control. On Aug. 2, 1.5 ptA of Intensity + 1 qt/A of Herbimax were applied to test area for post-emergent weed control and 0.75 oz/A of Classic + 1 qt/50 gal of water of L1700 were applied to alleys for morning glory control.

Plots, which consisted of four 30-foot rows on 38-inch centers, were arranged in a randomized complete block with six replications. Rainfall recorded during the growing season was as follows (in inches): May – 10.83, June – 12.41, July – 7.78, August – 13.68, September – 0.87, and October (through Oct. 18) – 9.28. Foliar fungicides were applied at 14-28 day intervals on 1) July 3, 1.5) July 11, 2) July 17, 2.5) July 25, 3) Aug. 1, 4) Aug. 14, 4.5) Aug. 22, 5) Aug. 28, 6) Sept. 12, 6.5) Sept. 18, and 7) Sept. 26 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 per plot.

Late leaf spot was visually rated on Oct. 18 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 loci (SR) were made on Oct. 20 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 Oct. 30 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 ($P \leq 0.05$).

Results: In 2017, temperatures were near average and monthly rainfall totals were above average during June, July, August and October but below normal in September. Due to frequent late summer rain events, late leaf spot severity and defoliation levels were higher in 2017 than had been observed in previous years. Late leaf spot appeared the last week of August and rapidly intensified until harvest. Stem rot incidence was similar to that observed in previous years. All fungicide programs had significantly lower late leaf spot ratings than the untreated control which were 98% defoliated at harvest (data not shown). Among the fungicide programs, equally high late leaf spot defoliation was observed with the seven application Bravo WS/Provost Opti and Bravo WS/Muscle ADV, six application Priaxor/Bravo WS/Priaxor/Muscle ADV, five application Alto + Bravo WS/Bravo WS/Elatus (9.5 oz) + Miravis, and four application Alto + Bravo WS/Elatus (9.5 oz) + Miravis/Bravo WS programs. In contrast, low defoliation levels were recorded for the five application Bravo WS + Elatus (7.3 oz)/Elatus (7.3 oz) + Miravis/Bravo WS. The five application Alto + Bravo WS/Elatus (9.5 oz) +Miravis/Bravo WS programs were matched by Prizxor/Bravo WS + Convoy/Bravo WS, Bravo WS/Fontelis, Alto + Bravo WS/Bravo WS/Elatus (7.3 oz), and Bravo WS season-long standard.

Overall, all programs that included either Elatus or Miravis had late leaf spot control similar to the season-long Bravo WS season-long standard. All fungicide programs reduced stem rot compared with the untreated control (data not shown). With the exception of the Alto + Bravo/Bravo/Elatus (7.3 oz) and Alto+Bravo/Elatus (9.5 oz)/Bravo programs, all other treatment programs that included Elatus or Miravis had lower stem incidence than the season-long Bravo WS standard. In addition, Bravo WS/ Fontelis but not Bravo WS/Muscle ADV., and Bravo WS/Provost Opti had significantly lower stem rot indices than the season-long Bravo WS standard. Yields were higher for all fungicide programs compared to the untreated control (data not shown). Bravo WS/ Fontelis, Alto+Bravo WS/Elatus (9.5 oz) + Miravis/Bravo WS, Bravo WS + Elatus (7.3 oz) /Elatus(7.3 oz) + Miravis, and Alto+Bravo WS/Elatus (9.5 oz) + Miravis/Bravo WS yielded significantly higher than the full-season Bravo WS standard. Yield for all other fungicide programs were similar.

EVALUATION OF ELATUS 45WG AND MIRAVIS FOR PEANUT DISEASE CONTROL IN SOUTHWEST ALABAMA, GCREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Bravo WS 24.0 fl oz Fontelis 16.0 fl oz	1,2,6,7 3,4,5	15.6 cde[3]	1.7 bcd	6484 abc
Bravo WS 24.0 fl oz Provost Opti 8.0 fl oz	1,2,7 3,4,5,6	53.3 ab	4.0 ab	6194 cd
Priaxor 6.0 fl oz Bravo WS 24.0 fl oz + Convoy 32.0 fl oz Bravo WS 24.0 fl oz	1.5 3,5 4,6,7	10.0 de	2.0 a-d	6377 a-d
Priaxor 6.0 fl oz Bravo WS 24.0 fl oz Priaxor 8.0 fl oz Muscle ADV 32.0 fl oz	1.5 3,7 4 5,6	60.2 a	3.7 abc	6498 d
Alto 0.83SL 5.5 fl oz + Bravo WS 16.0 fl oz Bravo WS 24.0 fl oz Elatus 45WG 9.5 oz + Miravis 3.4 fl oz	1 2,7 3,5	34.5 a-d	1.3 cd	6217 cd
Alto 0.83SL 5.5 fl oz + Bravo WS 16.0 fl oz Elatus 45WG 9.5 oz + Miravis 3.4 fl oz Bravo WS 24.0 fl oz	1 2.5,4.5 6,7	4.6 e	1.7 bcd	7111 ab
Bravo WS 16.0 fl oz + Elatus 7.3 oz Elatus 45WG 7.3 oz + Miravis 3.4 fl oz Bravo WS 24.0 fl oz	1 2.5, 4.5 6,7	2.8 e	1.0 d	7239 a
Alto 0.83SL 5.5 fl oz + Bravo WS 16.0 fl oz Bravo WS 24.0 fl oz Elatus 45WG 7.3 oz	1,6 2,4,7 3,5	24.4 b-e	2.5 a-d	6270 bcd
Alto 0.83SL 5.5 fl oz + Bravo WS 24.0 fl oz Elatus 45WG 9.5 oz + Miravis 3.4 fl oz Bravo WS 24.0 fl oz	1 3,5 7	39.1 a-d	3.1 a-d	6597 abc
Bravo WS 24.0 fl oz Muscle ADV 32.0 fl oz	1,2,7 3,4,5,6	42.1 abc	3.3 a-d	6048 cd
Bravo WS 24.0 fl oz	1-7	23.6 cde	4.5 a	5552 d
LSD (P ≤ 0.05)	---	*29.5*	*2.6*	*894*

[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 foot of row.
[3] Numbers followed by the same letter do not differ significantly.

EVALUATION OF ELATUS 45WG AND MIRAVIS AT VARYING APPLICATION TIMINGS FOR PEANUT DISEASE CONTROL IN SOUTHWEST ALABAMA, GCREC

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

Objective: To evaluate Elatus 45WG and the new fungicide Miravis at varying application timings and compare them against Bravo Weather Stik at four, five, and seven applications for control of late leaf spot, rust, and stem rot and yield response in a dry-land peanut production system in southwest Alabama.

Production Methods: Peanut cultivar 'Tufrunner 511' was planted on May 26 at the Gulf Coast Research and Extension Center near Fairhope, Ala., at a rate of five seed per foot 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 lb/A of Thimet 20G at planting. In addition, 5.0 lb/A of Rhizobium inoculant was applied at planting. On May 26, after planting, 1 qt/A of Makazie + 1 pt/A of Dual + 3 oz/A of Valor were applied to the test area for weed control. On June 6, 0.45 oz/A of Strongarm + 2 oz/A of Cadre + LI700 at 1 qt/100 gal of water were applied for post-emergent weed control. On Aug. 2, 1.5 ptA of Intensity + 1 qt/A of Herbimax were applied to test area for post-emergent weed control and 0.75 oz/A of Classic + 1 qt/50 gal of water of L1700 were applied to alleys for morning glory control.

Plots, which consisted of four 30-foot rows on 38-inch centers, were arranged in a randomized complete block with six replications. Rainfall recorded during the growing season was as follows (in inches): May – 10.83, June – 12.41, July – 7.78, August – 13.68, September – 0.87, and October (through Oct. 18) – 9.28. Foliar fungicides were applied at 14-28 day intervals on 1) July 3, 1.5) July 11, 2) July 17, 2.5) July 25, 3) Aug. 1, 4) Aug. 14, 4.5) Aug. 22, 5) Aug. 28, 6) Sept. 12, 6.5) Sept. 18, and 7) Sept. 26 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 per plot.

Late leaf spot was visually rated on Oct. 18 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 loci (SR) were made on Oct. 20 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 Oct. 30 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 ($P \leq 0.05$).

Results: In 2017, temperatures were near average and monthly rainfall totals were above average during June, July, August, and October but below normal in September. Due to frequent late summer rain events, late leaf spot severity and defoliation levels were higher in 2017 than had been observed in previous years. Late leaf spot appeared the last week of August and rapidly intensified until harvest. Stem rot incidence was similar to that observed in previous years. All fungicide programs had significantly lower late leaf spot ratings than the untreated control which had 91% defoliation at harvest. When compared with the Bravo WS four, five, and seven application treatment timings, no significant differences were observed for leaf spot control. All fungicide programs reduced stem rot indices when compared with the non-treated control. However, none reduced incidence significantly when compared with Bravo alone. Application of fungicides significantly increased yield when compared with the non-sprayed control. Among the treatment programs, highest yield was with the Alto + Bravo/Bravo/Elatus (9.5 oz) + Miravis five application program and the Alto + Bravo/Bravo/Elatus (7.3 oz) + Miravis five application program. Yield among the remaining programs was similar to the Bravo four, five, and seven application programs.

EVALUATION OF ELATUS 45WG AND MIRAVIS AT VARYING APPLICATION TIMINGS FOR PEANUT DISEASE CONTROL IN SOUTHWEST ALABAMA, GCREC

Treatment and Rate/A	Application Timing	Application #	Disease ratings		Yield lb/A
			Leaf Spot[1]	Stem Rot[2]	
Untreated control	---		90.8 a[3]	6.5 a	4160 c
Elatus 45WG 7.3 oz Bravo WS 24 fl oz	1,3,5 2,4,6,7	7	7.0 b	0.2 b	6056 ab
Alto 0.83SL 5.5 fl oz + Bravo WS 16 fl oz Bravo WS 24 fl oz Elatus 45WG 9.5 oz	1 2,4,6,7 3,5	7	6.8 a	0.3 b	6086 ab
Alto 0.83SL 5.5 fl oz + Bravo WS 16 fl oz Bravo WS 24 fl oz Elatus 45WG 9.5 oz + Miravis 3.4 fl oz	1 2,7 3,5	5	2.4 b	0.3 b	6572 a
Alto 0.83SL 5.5 fl oz + Bravo WS 24 fl oz Elatus 45WG 9.5 oz + Miravis 3.4 fl oz Bravo WS 24 fl oz	1 2.5, 4.5 6,7	5	8.3 b	1.1 b	5796 ab
Bravo WS 16 fl oz + Elatus 7.3 oz Elatus 45WG 7.3 oz + Mirais 3.4 fl oz Bravo WS 24.0 fl oz	1 2.5, 4.5 6,7	5	3.2 b	1.3 b	6392 ab
Alto 0.83SL 5.5 fl oz + Bravo WS 16 fl oz Bravo WS 24 fl oz Elatus 45WG 7.3 oz + Miravis 3.4 fl oz	1 2,7 3,5	5	2.1 b	0.0 b	6630 a
Alto 0.83SL 5.5 fl oz + Bravo WS 24 fl oz Elatus 45WG 9.5 oz + Miravis 3.4 fl oz Bravo WS 24 fl oz	1.5 3,5 7	4	5.5 b	0.0 b	5909 ab
Bravo WS 16 fl oz + Elatus 7.3 oz Elatus 45WG 7.3 oz + Mirais 3.4 fl oz Bravo WS 24.0 fl oz	1.5 3,5 7	4	4.1 b	0.5 b	6446 ab
Bravo WS 24.0 fl oz	1,3,5,7	4	7.3 b	0.3 b	5682 b
Bravo WS 24.0 fl oz	1,2.5,4,5.5,7	5	5.6 b	1.1 b	6018 ab
Bravo WS 24.0 fl oz	1-7	7	6.4 b	1.5 b	5689 b
LSD (P ≤ 0.05)	---		*7.0*	*1.8*	*847*

[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 foot of row.
[3] Numbers followed by the same letter do not differ significantly.

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

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

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

Production Methods: Peanut cultivar 'Tufrunner 511' was planted on May 26 at the Gulf Coast Research and Extension Center near Fairhope, Ala., at a rate of five seed per foot 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 lb/A of Thimet 20G at planting. In addition, 5.0 lb/A of Rhizobium inoculant was applied at planting. On May 26, after planting, 1 qt/A of Makazie + 1 pt/A of Dual + 3 oz/A of Valor were applied to the test area for weed control. On June 6, 0.45 oz/A of Strongarm + 2 oz/A of Cadre + LI700 at 1 qt/100 gal of water were applied for post-emergent weed control. On Aug. 2, 1.5 ptA of Intensity + 1 qt/A of Herbimax were applied to test area for post-emergent weed control and 0.75 oz/A of Classic + 1 qt/50 gal of water of L1700 were applied to alleys for morning glory control.

Plots, which consisted of four 30-foot rows on 38-inch centers, were arranged in a randomized complete block with six replications. Rainfall recorded during the growing season was as follows (in inches): May – 10.83, June – 12.41, July – 7.78, August – 13.68, September – 0.87, and October (through Oct. 18) – 9.28. Foliar fungicides were applied at 14-28 day intervals on 1) July 3, 1.5) July 11, 2) July 17, 2.5) July 25, 3) Aug. 1, 4) Aug. 14, 4.5) Aug. 22, 5) Aug. 28, 6) Sept. 12, 6.5) Sept. 18, and 7) Sept. 26 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 per plot.

Late leaf spot was visually rated on Oct. 18 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 loci (SR) were made on Oct. 20 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 Oct. 30 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 ($P \leq 0.05$).

Results: In 2017, temperatures were near average and monthly rainfall totals were above average during June, July, August, and October but below normal in September. Due to

frequent late summer rain events, late leaf spot severity and defoliation levels were higher in 2017 than had been observed in previous years. Late leaf spot appeared the last week of August and rapidly intensified until harvest. Stem rot incidence was similar to that observed in previous years.

All fungicide programs had significantly lower late leaf spot ratings than the untreated control which were >98% defoliated at harvest. Leaf spot defoliation among all low impact programs was very high. When the low and medium impact programs were compared for leaf spot control, those that included Mazinga had lower leaf spot defoliation than that observed with the four and five application Bravo only programs. Leaf spot defoliation among the other treatment programs was similar. When the high impact programs were compared, all reduced leaf spot compared to the untreated control however none were significantly different than that observed with the 7 spray Bravo program. Despite high rainfall, stem rot pressure was lower than previously seen. However, among the low impact programs, those that included Convoy or Priaxor had higher stem rot indices than the four spray Bravo program. No differences were observed among the medium and high impact programs for stem rot control when compared with the five and seven spray Bravo programs. When yield was compared, differences were observed with the low impact programs. The program that included Mazinga had the highest yield and the Priaxor program had the lowest yield when compared with the four spray Bravo program. No differences were observed in the medium and high impact programs compared with the Bravo only programs.

High rainfall totals in 2017 resulted in increased disease pressure. When the risk programs were compared, those with the fewest applications had the highest disease resulting in considerable yield losses. With increased applications came higher disease control, resulting in increased yield.

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

Treatment and Rate/A	Application Timing	Spray index	Disease ratings		
			Leaf Spot[1]	Stem Rot[2]	Pod Yield lb/A
Untreated Control	---	---	98.5 a[3]	12.7 a	4045 g
Bravo WS 24.0 fl oz Provost Opti 10.7 fl oz	1,7 3,5	Low 4 appl	55.3 cde	2.3 c-f	5253 def
Proline 480SC 5.7 fl oz Provost Opti 10.7 fl oz Bravo WS 24.0 fl oz	1 2.5,4,5.5 7	Med 5 appl	32.5 e-h	0.8 def	5788 bcd
Proline 480SC 5.7 fl oz Provost Opti 10.7 fl oz Bravo WS 24.0 fl oz	1.5 3,4,5,6 7	High 6 appl	13.9 h	0.6 ef	6469 ab
Priaxor 8.0 fl oz Convoy 21 fl oz + Bravo WS 24 fl oz + Topsin 5 fl oz Convoy 21 fl oz + Priaxor 8 fl oz Topsin + Bravo WS 5 fl oz + 16 fl oz	1 3 5 7	Low 4 appl	71.0 bc	5.2 bc	4809 fg
Priaxor 8 fl oz Convoy 16 fl oz + Bravo 16 fl oz + Topsin 5 fl oz Convoy 16 fl oz + Priaxor 8 fl oz Convoy 16 fl oz + Bravo WS 24 fl oz Topsin 5 fl oz + Bravo WS 16 fl oz	1.5 2.5 4 5.5 7	Med 5 appl	41.5 efg	2.2 c-f	5613 cde
Priaxor 8 fl oz Convoy 13 fl oz + Bravo 16 fl oz + Topsin 5 fl oz Convoy 13 fl oz + Bravo 24 fl oz Convoy 13 fl oz + Priaxor 8 fl oz Bravo WS 24 fl oz	1.5 3,6 4 5 7	High 6 appl	11.9 h	0.5 ef	5674 cd
Mazinga 32 fl oz Muscle ADV 32 fl oz	1.5 3, 4.5, 6	Low 4 appl	21.5 fgh	0.8 def	6469 ab
Mazinga 32 fl oz Muscle ADV 32 oz Arius ADV 30 fl oz	1,7 2.5, 5.5 4	Med 5 appl	18.1 gh	0.6 ef	5697 bcd
Mazinga 32 fl oz Arius ADV 30 fl oz Muscle ADV 32 fl oz Echo 720 24.0 fl oz	1 2 3,4,5,6 7	High 7 appl	22.2 fgh	1.0 def	5842 bcd
Muscle ADV 32.0 fl oz Fontelis 12.0 fl oz Bravo 24.0 fl oz	1 3,5 7	Low 4 appl	85.1 ab	2.2 c-f	4894 ef
Muscle ADV 32.0 fl oz Fontelis 16.0 fl oz Bravo 24.0 fl oz	1, 4 2.5,5.5 7	Med 5 appl	50.7 cde	2.0 c-f	5834 bcd
Muscle ADV 32.0 fl oz Fontelis 16.0 fl oz Bravo 24.0 fl oz	1,2 3,4,5 6,7	High 7 appl	10.1 h	0.5 ef	6201 abc
Priaxor 6 fl oz Priaxor 6 floz + Bravo 24 fl oz Muscle ADV 32 fl oz	1 3 5,7	Low 4 appl	89.9 ab	6.7 b	4099 g
Priaxor 6 fl oz Muscle ADV 32 fl oz Priaxor 8 fl oz Bravo 24 fl oz	1 2.5, 5.5 4 7	Med 5 appl	66.3 bcd	3.8 bcd	5093 def
Priaxor 6 fl oz Muscle ADV 32 fl oz Priaxor 8 fl oz Bravo 24 fl oz	1.5 3,5,6 4 7	High 6 appl	17.2 h	0.0 f	6653 a
Bravo WS 24.0 fl oz	1,3,5,7	Low (4)	66.3 bcd	1.3 def	5108 def
Bravo WS 24.0 fl oz	1,2.5,4,5.5,7	Med (5)	42.5 def	3.7 b-e	5169 def
Bravo WS 24.0 fl oz	1-7	High (7)	11.7 h	0.6 ef	6293 abc
LSD (P ≤0.05)			*24.1*	*3.2*	*778*

[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 MAZINGA, ARIUS ADV, AND BRIXEN FOR PEANUT DISEASE CONTROL IN SOUTHWEST ALABAMA, GCREC

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

Objective: To evaluate the new fungicides Mazinga, Arius ADV, and Brixen and compare them against other currently registered products for control of late leaf spot, rust, and stem rot and yield response in a dry-land peanut production system in southwest Alabama.

Production Methods: Peanut cultivar 'Tufrunner 511' was planted on May 26 at the Gulf Coast Research and Extension Center near Fairhope, Ala., at a rate of five seed per foot 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 lb/A of Thimet 20G at planting. In addition, 5.0 lb/A of Rhizobium inoculant was applied at planting. On May 26, after planting, 1 qt/A of Makazie + 1 pt/A of Dual + 3 oz/A of Valor were applied to the test area for weed control. On June 6, 0.45 oz/A of Strongarm + 2 oz/A of Cadre + LI700 at 1 qt/100 gal of water were applied for post-emergent weed control. On Aug. 2, 1.5 ptA of Intensity + 1 qt/A of Herbimax were applied to test area for post-emergent weed control and 0.75 oz/A of Classic + 1 qt/50 gal of water of L1700 were applied to alleys for morning glory control.

Plots, which consisted of four 30-foot rows on 38-inch centers, were arranged in a randomized complete block with six replications. Rainfall recorded during the growing season was as follows (in inches): May – 10.83, June – 12.41, July – 7.78, August – 13.68, September – 0.87, and October (through Oct. 18) – 9.28. Foliar fungicides were applied at 14-day intervals on 1) July 5, 2) July 17, 3) Aug. 2, 4) Aug. 16, 5) Aug. 29, 6) Sept. 13, and 7) Sept. 27 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 per plot.

Late leaf spot was visually rated on Oct. 18 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 loci (SR) were made on Oct. 20 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 Oct. 30 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 ($P \leq 0.05$).

Results: In 2017, temperatures were near average and monthly rainfall totals were above average during June, July, August, and October but below normal in September. Late leaf spot severity and defoliation levels were higher than had been observed in previous years. Late leaf spot appeared the last week of August and rapidly intensified until harvest due to frequent late summer and early fall rain events. Stem rot incidence was similar to that observed in previous years. All fungicide programs had significantly lower leaf spot ratings than the untreated control. Among the fungicide programs, the highest leaf spot defoliation was observed for the Headline/Muscle ADV/Bravo WS program. All programs that included Mazinga, Arius ADV, or Brixen provided late leaf spot control similar to the season-long Echo 720 standard. Stem rot incidence was lower and yields were higher for all fungicide programs compared with the untreated control. Stem incidence and yields were similar across all fungicide programs including the season-long Echo 720 standard.

EVALUATION OF MAZINGA, ARIUS ADV, AND BRIXEN FOR PEANUT DISEASE CONTROL IN SOUTHWEST ALABAMA, GCREC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated control		98.3 a[3]	16.0 a	3242 b
Mazinga 32.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	35.7 bc	2.3 b	5597 a
Arius ADV 25.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	38.1 bc	2.0 b	5283 a
Brixen 16.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	31.5 bc	2.7 b	5933 a
Brixen 21.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	31.9 bc	3.7 b	5139 a
Headline 2.09SC 6.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	50.6 b	4.3 b	5131 a
Mazinga 48.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	27.2 bc	1.0 b	5987 a
Echo 720 24.0 fl oz Provost Opti 10.7 fl oz	1,2,7 3,4,5,6	30.5 bc	2.0 b	6109 a
Echo 720 24.0 fl oz	1-7	12.2 c	0.7 b	5919 a
LSD (P ≤ 0.05)	---	*37.0*	*4.0*	*1009*

[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 foot of row.
[3] Numbers followed by the same letter do not differ significantly.

EVALUATION OF ALTERNATIVES TO CHLOROTHALONIL FOR PEANUT DISEASE CONTROL IN SOUTHWEST ALABAMA, GCREC

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

Objective: To evaluate alternatives to chlorothalonil including dodine, mancozeb, copper and sulfur and compare them against chlorothalonil for control of late leaf spot, rust, and stem rot and yield response in a dry-land peanut production system in southwest Alabama.

Production Methods: Peanut cultivar 'Tufrunner 511' was planted on May 26 at the Gulf Coast Research and Extension Center near Fairhope, Ala., at a rate of five seed per foot 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 lb/A of Thimet 20G at planting. In addition, 5.0 lb/A of Rhizobium inoculant was applied at planting. On May 26, after planting, 1 qt/A of Makazie + 1 pt/A of Dual + 3 oz/A of Valor were applied to the test area for weed control. On June 6, 0.45 oz/A of Strongarm + 2 oz/A of Cadre + LI700 at 1 qt/100 gal of water were applied for post-emergent weed control. On Aug. 2, 1.5 ptA of Intensity + 1 qt/A of Herbimax were applied to test area for post-emergent weed control and 0.75 oz/A of Classic + 1 qt/50 gal of water of L1700 were applied to alleys for morning glory control.

Plots, which consisted of four 30-foot rows on 38-inch centers, were arranged in a randomized complete block with six replications. Rainfall recorded during the growing season was as follows (in inches): May – 10.83, June – 12.41, July – 7.78, August – 13.68, September – 0.87, and October (through Oct. 18) – 9.28. Foliar fungicides were applied at 14-28 day intervals on 1) July 5, 2) July 18, 3) Aug. 2, 4) Aug. 16, 5) Aug. 29, 6) Sept. 13, and 7) Sept. 27 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 per plot.

Late leaf spot was visually rated on Oct. 18 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 loci (SR) were made on Oct. 20 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 Oct. 30 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 ($P \leq 0.05$).

Results: In 2017, temperatures were near average for June, July, August, September, and

October while monthly rainfall totals were above average during June, July, August, and October but below normal in September. Late leaf spot defoliation was higher than had been observed in previous years. Late leaf spot appeared the last week of August and continued to intensify through mid-October. Stem rot incidence was similar to levels observed in previous years. All fungicide programs had significantly lower premature defoliation than the untreated control, which were nearly completely defoliated. The high level of premature defoliation observed for the full-season Elast program was equaled by Mancozeb alone along with CuproFix Ultra + Topsin, CuproFix Ultra + Topsin/ Mancozeb + Muscle, and Liquid Sulfur + Topsin. Mancozeb (full-season), CuproFix Ultra + Topsin, CuproFix Ultra + Topsin/Mancozeb + Muscle, and Liquid Sulfur + Topsin had higher defoliation levels compared with the full-season Echo 720 standard. All remaining programs gave similar leaf spot control as the full-season Echo 720 standard. Stem rot incidence was significantly lower for all fungicide programs compared with the untreated control. With the exception of the CuproFix Ultra + Topsin and Liquid Sulfur + Topsin programs, stem incidence for the season-long Echo 720 standard and remaining programs was similar. Yields were significantly higher for all fungicide programs compared to the untreated control. The high yield obtained with CuproFix Ultra + Topsin/Mancozeb + Muscle was equaled by Echo 720/Fontelis, Absolute/Muscle ADV/ Echo 720, Mancozeb + Topsin/mancozeb + muscle, Elast/Elast + Custodia, and season-long Echo 720 standard and all remaining fungicide programs.

EEVALUATION OF ALTERNATIVES TO CHLOROTHALONIL FOR PEANUT DISEASE CONTROL IN SOUTHWEST ALABAMA, GCRECC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated control		98.7 a[3]	15.0 a	3249
Elast 15.0 fl oz	1-7	69.2 b	3.7 b-e	5398 a-d
Elast 15.0 fl oz Elast 15.0 fl oz + Custodia 15.5 fl oz	1,2,4,6,7 3,5	42.2 cd	1.0 e	5398 a-d
Elast 15.0 fl oz Muscle ADV 32.0 fl oz	1,2,7 3,4,5,6	40.2 cd	2.0 cde	4496 d
Mancozeb 2.0 lb	1-7	62.7 bc	3.8 bcd	4672 bcd
Mancozeb 2.0 lb + Topsin 10.0 fl oz	1-7	44.6 cd	1.8 cde	5024 a-d
Mancozeb 2.0 lb + Topsin 10.0 fl oz Mancozeb 2.0 lb + Muscle 3.6F 7.2 fl oz	1,2,7 3,4,5,6	26.2 d	1.1 de	5414 a-d
CuproFix Ultra 2.0 lb + Topsin 10.0 fl oz	1-7	57.6 bc	5.0 b	4557 cd
CuproFix Ultra 2.0 lb + Topsin 10.0 fl oz Mancozeb 2.0 lb + Muscle 3.6F 7.2 fl oz	1,2,7 3,4,5,6	59.1 bc	2.7 b-e	5811 a
Liquid Sulfur 107 fl oz + Topsin 10.0 fl oz	1-7	53.3 bc	4.5 bc	4779 bcd
Absolute 500F 3.5 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	27.1 d	1.7 de	5513 abc
Echo 720 24.0 fl oz Fontelis 16.0 fl oz	1,2,6,7 3,4,5	22.5 d	2.1 cde	5620 ab
Echo 720 24.0 fl oz	1-7	23.3 d	1.5 de	4718 bcd
LSD (P ≤ 0.05)	---	*23.7*	*2.7*	*956*

[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 EXPERIMENTAL FUNGICIDE ADA 641701 FOR PEANUT DISEASE CONTROL IN SOUTHWEST ALABAMA, GCREC

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

Objective: To evaluate the experimental fungicide ADA 641701 and compare them against currently registered fungicides for control of late leaf spot, rust, and stem rot and yield response in a dry-land peanut production system in southwest Alabama.

Production Methods: Peanut cultivar 'Georgia 06G' was planted on May 26 at the Gulf Coast Research and Extension Center near Fairhope, Ala., at a rate of five seed per foot 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 lb/A of Thimet 20G at planting. In addition, 5.0 lb/A of Rhizobium inoculant was applied at planting. On May 26, after planting, 1 qt/A of Makazie + 1 pt/A of Dual + 3 oz/A of Valor were applied to the test area for weed control. On June 6, 0.45 oz/A of Strongarm + 2 oz/A of Cadre + LI700 at 1 qt/100 gal of water were applied for post-emergent weed control. On Aug. 2, 1.5 ptA of Intensity + 1 qt/A of Herbimax were applied to test area for post-emergent weed control.

Plots, which consisted of four 30-foot rows on 38-inch centers, were arranged in a randomized complete block with six replications. Rainfall recorded during the growing season was as follows (in inches): May – 10.83, June – 12.41, July – 7.78, August – 13.68, September – 0.87, and October (through Oct. 18) – 9.28. Foliar fungicides were applied at 14-28 day intervals on 1) July 5, 2) July 18, 3) Aug. 2, 4) Aug. 16, 5) Aug. 29, 6) Sept. 13, and 7) Sept. 27 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 per plot.

Late leaf spot was visually rated on Oct. 17 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 loci (SR) were made on Oct. 20 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 Oct. 27 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 ($P \leq 0.05$).

Results: In 2017, temperatures were near average for June, July, August, September and October. Monthly rainfall totals were above average during June, July, August, and October but below average in September. Leaf spot severity and defoliation levels were higher than had been observed in previous years. Late leaf spot appeared the last week of August and progressed in September due to continued rainfall throughout the month. Stem rot incidence was similar to that observed in previous years. When compared with the untreated control, all fungicide programs had significantly less late leaf spot defoliation. Leaf spot defoliation among the treatment programs that included ADA 641701 were similar to defoliation observed with the full-season Equus 720 (24.0 fl oz) standard. Defoliation among the remaining programs was similar. None of the treatment programs significantly reduced stem rot compared with the untreated control. When compared with the Equus 720 (24.0 fl oz) standard, all programs except ADA 641701 (6.8 fl oz) + Equus 720 (16 fl oz) and Equus/ Elatus significantly reduced stem rot. All programs significantly increased yield compared to the untreated control. With the exception of the ADA 641701 (6.8 fl oz) + Equus 720 9 (16 fl oz) program, all other fungicide programs that included ADA 641701 increased yield when compared with the full-season Equus 720 (24.0 fl oz) standard. Yield among the remaining fungicide programs was similar.

EEVALUATION OF EXPERIMENTAL FUNGICIDE ADA 641701 FOR PEANUT DISEASE CONTROL IN SOUTHWEST ALABAMA, GCRECEC

Treatment and Rate/A	Application Timing	Disease ratings		Yield lb/A
		Leaf Spot[1]	Stem Rot[2]	
Untreated control		70.4 a[3]	3.3 ab	3869 f
Equus 720 SST 24.0 fl oz ADA 641701 3.42 fl oz	1,2,7 3,4,5,6	25.5 bc	0.5 c	6048 ab
Equus 720 SST 24.0 fl oz ADA 641701 6.84 fl oz	1,2,7 3,4,5,6	17.8 c	1.5 bc	5651 a-d
Equus 720 SST 24.0 fl oz ADA 641701 13.68 fl oz	1,2,7 3,4,5,6	22.9 bc	1.0 bc	6201 a
Equus 720 SST 16.0 fl oz	1-7	24.5 bc	1.0 bc	5506 b-e
Equus 720 SST 24.0 fl oz	1-7	25.3 bc	5.0 a	4978 e
ADA 641701 6.84 fl oz + Equus 720 SST 16.0 fl oz	1-7	25.3 bc	3.0 ab	5108 de
ADA 641701 13.68 fl oz + Equus 720 SST 24.0 fl oz	1-7	18.2 c	1.3 bc	5750 a-d
Echo 720 24.0 fl oz Fontelis 16.0 fl oz	1,2,6,7 3,4,5	26.6 bc	2.0 bc	5406 b-e
Equus 720 SST 24.0 fl oz Provost Opti 10.7 fl oz	1,2,7 3,4,5,6	22.9 bc	0.5 c	5918 abc
Equus 720 SST 24.0 fl oz Elatus 45WG 9.5 oz	1,2,4,6,7 3,5	30.7 b	3.0 ab	5284 cde
Equus 720 SST 24.0 fl oz Equus 720 SST 16.0 fl oz + Orius 3.6F 7.2 fl oz	1,2,7 3,4,5,6	26.9 bc	1.3 bc	5551 a-e
LSD (P ≤ 0.05)	---	*10.9*	*2.3*	*667*

[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.

DISEASE AND YIELD RESPONSE OF TWO PEANUT CULTIVARS TO RECOMMENDED FUNGICIDE PROGRAMS IN SOUTHWEST ALABAMA, GCREC

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

Objective: Compare the yield response and the efficacy of recommended fungicide programs for the control of leaf spot and white mold on two peanut cultivars in a rainfed production system at the Gulf Coast Research and Extension Center.

Production Methods: A burndown application of 1 qt/A Roundup WeatherMAX was made on March 23 to the winter rye cover crop. After the rows were laid off with a KMC strip till rig with rolling baskets, the runner-market type peanut cultivars 'Georgia-06G' (GA06G) and 'TUFRunner 511' (TUF511) were planted on May 26 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, Ala. Weed control was obtained with an at-plant broadcast application of 1 qt/A Makazie + 1 pt/A Dual Magnum II + 3 oz/A Valor on May 26 followed by 0.45 oz/A Strongarm + 2 oz/A Cadre + 1 quart per 100 gallons LI700 surfactant on July 6. Thimet 20G at 5 lb/A was applied in-furrow for thrips control.

Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The study site was not irrigated. A factorial design arranged in a split plot with peanut cultivar as whole plots and fungicide program 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. Fungicides were applied on 1) July 3, 1.5) July 11, 2) July 17, 3) July 31, 4) Aug. 14, 5) Aug. 28, 6) Sept. 12, and 7) Sept. 26 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.

Late leaf spot was rated on Oct. 14 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. Defoliation values were calculated.

White mold hit counts (1 hit was defined as ≤ 1 foot of consecutive stem rot-damaged plants per row) were made immediately after plot inversion on Oct. 20. Plots were mechanically combined on Nov. 1. Significance of interactions was evaluated using PROC GLIMMIX procedure in SAS. Statistical analyses were done on rank transformations for non-normal data for late leaf spot defoliation percentage and white mold incidence, but back transformed data are presented. Means were separated using Fisher's least significant difference (LSD) test ($P \leq 0.05$).

Results: While temperatures were near normal throughout the production season, monthly rainfall totals were above to well above the 30-year average for May, June, July, August and October, but below average for September. A significant cultivar × fungicide program interaction was recorded for yield but not late leaf spot defoliation or white mold incidence. Due to the heavy and frequent rainfall through much of the growing season, late leaf spot pressure was exceptionally high. Greater late leaf spot incited defoliation and stem rot loci counts were noted for 'TUFRunner 511' than 'Georgia-06G'. Differences in late leaf spot defoliation and stem rot incidence were not recorded between any fungicide programs. Yields were higher on 'Georgia-06G' than 'TUFRunner 511' for the season-long Echo 720 standard along with Echo 720/Muscle ADV, Echo 720/Abound + Alto, and Alto + Echo 720/Echo 720/Elatus programs, while similar yields were recorded for the remaining fungicide programs on both cultivars. On 'Georgia-06G', the season-long Echo 720 standard produced higher yields than Echo 720/Fontelis, Echo 720/Abound + Alto, and Echo/Provost Opti with Echo 720/Muscle ADV having higher yields than the latter two fungicide programs. For 'TUFRunner 511', yields were higher for Echo 720/Provost Opti than Echo 720/Abound + Alto. Similar yields were noted for the latter two and remaining fungicide programs.

DISEASE AND YIELD RESPONSE OF TWO PEANUT CULTIVARS TO RECOMMENDED FUNGICIDE PROGRAMS IN SOUTHWEST ALABAMA

Source of Variation	Leaf spot %defoliation[1]	White mold incidence[2]	Yield lb/A	
Cultivar	23.24**[3]	13.28*	25.58***	
Fungicide Program	0.87	1.15	1.34	
Cultivar × fungicide program	0.36	0.97	2.50*	
Cultivar				
Georgia-06G	32 b[v]	0.8 b	---	
TUFRunner 511	73 a	5.8 a	---	
Fungicide Program and Rate per acre			**GA06G**	**TUF511**
Echo 720 6F 1.5 pt	42.3 a	4.7 a	6584 a	5035 ef
Priaxor 4.17SC 6 fl oz Muscle ADV 3.84SC 2 pt Priaxor 4.17SC 6 fl oz Echo 720 6F 1.5 pt	54.0 a	4.3 a	5953 a-d	5425 def
Echo 720 6F 1.5 pt Provost Opti 43SC 10.7 fl oz	46.4 a	2.1 a	5288 def	5850 a-e
Echo 720 6F 1.5 pt Echo 720 6F 1.5 pt + Convoy 3.8F 26 fl oz	50.8 a	1.5 a	6033 a-d	5230 def
Echo 720 6F 1.5 pt Muscle ADV 3.84SC 2 pt	56.5 a	2.7 a	6515 ab	5471 def
Echo 720 6F 1.5 pt Fontelis 1.67SC 1 pt	54.4 a	3.2 a	5747 b-e	5368 def
Echo 720 6F Abound 2.08SC 18.2 fl oz + Alto 0.83SC 5.5 fl oz	62.6 a	4.2 a	5632 cde	4737 f
Alto 0.83SC 5.5 fl oz +Echo 720 6F 1 pt Echo 720 6F 1.5 pt Elatus 45W 9.5 oz	55.2 a	3.8 a	6343 abc	5127 ef

[1] Late leaf spot was rated on Oct. 14 using the Florida 1 to 10 leaf spot rating scale and converted to % defoliation values.
[2] White mold incidence is expressed as the number of hits (≤ 1 foot of white mold damaged plants) per 60 foot of row.
[3] Significance of F values at the 0.05, 0.01, and 0.001 levels is indicated by *, **, or ***, respectively.
[v] Means in each column followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test ($P \leq 0.05$).

DISEASE AND YIELD RESPONSE OF RUNNER PEANUT CULTIVARS TO FUNGICIDE INPUT LEVEL IN SOUTHWEST ALABAMA

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

Objective: Assess the reaction of commercial runner peanut cultivars to differing fungicide input levels in a dryland production system at the Gulf Coast Research and Extension Center.

Production Methods: A burndown application of 1 qt/A Roundup WeatherMAX was made on March 23 to the winter rye cover crop. After the rows were laid off with a KMC strip till rig with rolling baskets, twelve (12) runner-market type peanut cultivars were planted on May 26 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, Ala. Weed control was obtained with an at-plant broadcast application of 1 qt/A Makazie + 1 pt/A Dual Magnum II + 3 oz/A Valor on May 26 followed by 0.45 oz/A Strongarm + 2 oz/A Cadre + 1 qt/100 gallons LI700 surfactant on July 6. Thimet 20G at 5 lb/A was applied in-furrow for thrips control.

Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The study area was not irrigated. A factorial set of treatments was arranged in a split plot with peanut cultivar as whole plots and fungicide program as sub-plots. Whole plots were randomized in four complete blocks. Individual sub-plots consisted of four 30-foot rows spaced 3.2-feet apart. While the standard fungicide program consisted of seven (7) applications of 1.5 pt/A Bravo WeatherStik 6F, the intensive fungicide program included two initial applications of 5.5 oz/A Alto 0.83SC + 1.5 pt/A Bravo WeatherStik 6F followed by 9.5 oz/A Elatus 45W at application timing 3 and 5 and 1.5 pt/A Bravo Weather Stik 6F at application timing 4, 6, and 7. Fungicides were applied on 1) July 5, 2) July 18, 3) Aug. 2, 4) Aug. 16, 5) Aug. 29, 6) Sept. 13, and 7) Sept. 26 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.

Tomato spotted wilt (TSW) hit counts (1 hit was defined as ≤ 1 foot of consecutive severely TSW-damaged plants per row) were made on Sept. 7. Late leaf spot was rated on Oct. 17 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. Defoliation severities were calculated.

White mold hit counts (1 hit was defined as ≤ 1 foot of consecutive stem rot-damaged plants per row) were made immediately after plot inversion on Oct. 20. Plots were mechanically combined on Nov. 1. Significance of factor effects and interactions was

evaluated using PROC GLIMMIX procedure in SAS. Statistical analyses were done on rank transformations for non-normal data for late leaf spot defoliation percentage along with TSW and white mold incidence. Non-transformed data are presented. Means were separated using Fisher's least significant difference (LSD) test ($P \leq 0.05$).

Results: While temperatures were near normal throughout the production season, monthly rainfall totals were above to well above the 30-year average for May, June, July, August, and October but well below average for September. Since the cultivar × fungicide program interaction was not significant for % leaf spot defoliation, TSW and white mold incidence as well as yield, data for each of these variables were pooled. While TSW incidence was low across all cultivars, higher ratings for this disease were recorded for 'Florida 07', 'FloRun 157', and 'TUFRunner 511' than the remaining cultivars except for 'FloRun 107' and 'AU-NPL 17'. As a result of frequent and often heavy rain events throughout much of the production season, late leaf spot defoliation levels were unusually high. The equally low % defoliation levels observed for 'Georgia-14N' and 'Georgia-09B' were matched by 'Georgia-06G', 'FloRun 157', 'AU-NPL 17', 'Florida 07', 'FloRun 107', and 'FloRun 331'. In contrast, 'Georgia-13M' and 'TUFRunner 297' suffered equally high levels of late leaf spot-incited premature defoliation. 'Georgia-06G', 'FloRun 331', and 'Georgia-09B' out-yielded 'FloRun 157' and 'TUFRunner 297', which had lower yields than eight of the eleven remaining cultivars. Fungicide programs had no impact on TSW incidence. While less % defoliation and higher stem rot incidence was reported for the standard, when compared to the intensive fungicide program, yield response for the two fungicide programs was similar.

DISEASE AND YIELD RESPONSE OF RUNNER PEANUT CULTIVARS TO FUNGICIDE INPUT LEVEL IN SOUTHWEST ALABAMA

Source of Variation	TSW incidence[1]	Leaf spot %defoliation[2]	White mold incidence[1]	Yield lb/A
Cultivar	2.62**[3]	6.49***	1.22	2.25*
Fungicide Program	0.22	5.17*	16.57***	0.20
Cultivar × fungicide program	1.17	1.67	1.36	1.30
Cultivar				
AU-NPL 17	0.3 ab[4]	19 de	0.8 a	5993 ab
Florida 07	0.6 a	24 cde	0.9 a	5672 abc
FloRun 107	0.4 ab	25 cde	1.5 a	5706 abc
FloRun 157	0.6 a	17 de	1.5 a	5517 bc
FloRun 331	0.0 b	25 cde	1.1 a	6240 a
Georgia-06G	0.1 b	16 de	1.0 a	6331 a
Georgia-09B	0.0 b	11 e	2.6 a	6222 a
Georgia-13M	0.0 b	67 a	0.4 a	5781 ab
Georgia-14N	0.1 b	11 e	0.6 a	6079 ab
Georgia-16HO	0.1 b	34 bcd	1.8 a	6114 ab
TUFRunner 297	0.0 b	51 ab	1.8 a	5098 c
TUFRunner 511	0.6 a	42 bc	0.4 a	5767 ab
Fungicide Program				
Standard	0.2 a	26 b	1.9 a	5853 a
Intensive	0.3 a	31 a	0.5 b	5904 a

[1] Incidence of TSW and white mold, which is expressed as the number of disease hits (≤ 1 foot of TSW or white mold damaged plants) per 60 foot of row were recorded on Sept. 7 and Oct. 20, respectively.
[2] Late leaf spot was rated on Oct. 17 using the Florida 1 to 10 leaf spot rating scale and converted to % defoliation values.
[3] Significance of F values at the 0.05, 0.01, and 0.001 levels is indicated by *, **, and ***, respectively.
[4] Means in each column followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test ($P \leq 0.05$).

YIELDS AND DISEASE REACTION OF SELECTED COMMERCIAL RUNNER AND VIRGINIA-MARKET TYPE PEANUTS IN SOUTH ALABAMA, BARU

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

Objective: Assess the yield response and reaction of commercial runner- and Virginia-market type peanuts to diseases in a dry-land production setting.

Production Methods: Peanut cultivars were planted on May 19 at a rate of approximately 6 seed/ft in a Benndale sandy loam soil (≤ 1% organic material) at the Brewton Agricultural Research Unit (USDA Hardiness Zone 8a). A pre-plant application of 1 qt/A Dual Magnum on May 17 was followed by an early-post broadcast applications of 1.7 fl oz/A Strongarm + 2 fl oz/A Cadre + 16 fl oz/A Select on June 12 for weed control. On July 15, 12 fl oz/A of 2,4,DB + 16 fl oz/A Select were applied to test area for weed control. The study was not irrigated. Equus 720 SST at 1.5 pt/A was applied on June 29, July 14, July 28, Aug. 17, Aug. 24, Sept. 7, and Sept. 21. Plots consisted of four 20–foot rows, spaced 3 feet apart, arranged in a randomized complete block, with four replications.

Disease Assessment: TSW hit counts were made on Sept. 21 by counting the number of infected loci (1 hit was defined as ≤ 1 ft of consecutive white mold damaged plants per row). Late leaf spot was rated on Oct. 4 using the Florida 1 to 10 scale 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 and the ICRISAT 1-9 rating scale where 1 = no disease and 9 = >80% of leaves withering or dying. White mold (1 hit was defined as ≤ 1 ft of consecutive white mold damaged plants per row) were made immediately after plot inversion on Oct. 4. Plots were combined on Oct. 4. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Weather: The study site received 10.3 inches of rain in May, 13.8 inches in June, 5.63 inches in July, 7.71 inches in August, and 2.86 inches in September. Temperatures were at to slightly above the seasonal average for the study location.

Results: The pressure from TSW was moderate at this site and differences in variety reaction to this disease were observed. The highest number of TSW hits was observed in 'Georgia 11J' followed closely by 'TUFrunner 297'. Number of TSW hits in the remaining varieties was similar. While the majority of peanut varieties had similar leaf spot ratings, 'TUFRunner 511' and 'Georgia-13M' had higher leaf spot ratings than all other varieties while 'Georgia 11J' had the lowest. Leaf spot severity was similar all remaining varieties. Rust appeared at this location late in the growing season. While all varieties had similar

levels of rust intensity, 'Georgia 09B' had the highest severity. White mold incidence was low at this location and no differences were observed among any of the varieties. Among the Virginia market type varieties yield was low. Among the runner type varieties, highest yields were recorded with 'Florunner 331'. Yield among the remaining varieties was similar with the exception of 'Georgia 09B' which had similar yields to 'Flrounner 331'. Yield among the remaining varieties was similar.

YIELD AND DISEASE REACTION OF SELECTED COMMERCIAL RUNNER AND VIRGINIA-MARKET TYPE PEANUTS IN SOUTH ALABAMA, BARU

Cultivar	TSW[1]	Leaf Spot[2]	Rust[3]	Stem Rot[4]	Yield lb/A[5]
Florida 07	1.3 ab[6]	2.8 de	1.3 c	1.0 ab	2222 cde
Flrounner 107	1.8 ab	3.1 cde	1.8 bc	1.3 a	2514 bcde
Florunner 157	1.3 ab	2.8 de	2.0 bc	0.5 ab	2717 bcd
Florunner 331	1.0 ab	3.4 abcd	1.8 bc	0.3 ab	3933 a
Florida Fancy	1.5 ab	2.8 de	2.8 abc	0.5 ab	1882 de
Georgia-11J	2.3 a	2.5 e	1.3 e	1.0 ab	1555 e
Georgia-06G	1.8 ab	2.8 de	2.5 abc	0.0 b	2623 bcd
Georgia-09B	1.5 ab	3.3 bcde	4.0 a	0.5 ab	2891 ab
Georgia-13M	0.5 b	4.0 ab	1.3 c	0.8 ab	2064 cde
Georgia-14N	0.5 b	2.5 e	1.0 c	0.0 b	1900 de
Georgia 16HO	0.5 b	3.8 abc	2.0 bc	0.8 b	3267 ab
TUFRunner 297	2.0 a	3.0 cde	2.3 abc	0.3 ab	2732 bcd
TUFRunner 511	1.5 ab	4.1 a	3.3 ab	0.3 ab	2655 bcd
AU-NPL 17	1.0 ab	2.5 e	1.5 bc	0.0 b	2073 cde
LSD ($P \leq 0.05$)	1.4	0.8	1.7	1.1	971

[1]TSW is expressed as the number of hits per 40 ft of row.
[2]Leaf spot diseases were rated using the Florida 1 to 10 scale.
[3]Rust rated using the ICRISAT 1-9 rust rating scale.
[4]White mold incidence is expressed as the number of hits per 60 ft of row.
[5]Yield calculated from area 6 x 20 ft
[6]Means in each column 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 TOMATO SPOTTED WILT VIRUS, LEAF SPOT AND WHITE MOLD IN CENTRAL ALABAMA, CREC

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 a 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 31, 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 pt/A Dual Magnum II. On June 7, Aug. 3, Aug. 14, and Aug. 27, a foliar application of Orthene 90S + Bravo WS was applied for insect control and leaf spot 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 four complete blocks.

Disease Assessment: Early leaf spot disease was rated 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 on Oct. 16 just prior to inversion. TSWV hits were also made on Oct. 16 as the number of diseased plants per foot of row. On Oct. 16, 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 and was higher than that observed the previous year. Differences were observed between the cultivars for leaf spot intensity. Highest number of TSW hits was observed with the 'Valencia' cultivar. Remaining cultivars had similar disease. Among the cultivars evaluated, the highest leaf spot ratings were observed by 'Georgia 13M' while 'Georgia 06G' and 'Florida Fancy' had the lowest leaf spot severity. Leaf spot rating among the remaining cultivars was similar. Incidence of white mold was also lower than the previous year, however after inversion, the 'Valencia' cultivar had the highest incidence of white mold hits compared with the other cultivars. The number of stem rot hits was similar among the remaining cultivars. Green peanut yield weights were recorded for the CREC study. Among the cultivars evaluated, 'Bailey' had the highest overall yield. Yield among all the cultivars was similar with the exception of 'Valencia' which had significantly low yields.

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

Peanut Variety	Market type	TSW[1]	Leaf Spot intensity[2]	White mold # hits / 40ft[3]	Yield lb/A
Sugg	Virginia	0.0 b[4]	4.0 abc	0.8 d	5045 ab
Bailey	Virginia	0.3 b	3.6 bc	1.2 cd	5788 a
Wynne	Virginia	0.3 b	4.1 ab	2.2 bcd	6092 a
Florida Fancy	Virginia	0.0 b	3.1 c	3.5 abc	5261 ab
Georgia-11J	Virginia	0.3 b	3.6 bc	3.5 abc	6004 a
Valencia	Valencia	3.0 a	4.0 abc	5.5 a	2422 c
Georgia-06G	Runner	0.3 b	3.1 c	2.5 bcd	5309 ab
Georgia-13M	Runner	0.0 b	4.6 a	2.8 bcd	5469 ab
FloRun 107	Runner	0.8 ab	3.4 bc	2.8 bcd	4781 ab
FloRun 157	Runner	0.5 b	4.1 ab	4.2 ab	3446 bc
TUF 511	Runner	0.0 b	3.6 bc	3.0 a-d	5844 a
AU-NPL-17	Runner	0.8 b	3.2 bc	2.8 bcd	4901
LSD ($P \leq 0.05$)	--	1.2	0.9	2.7	2082

[1]TSW hits are expressed as the number of diseased plant per row.
[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 40 ft of row.
[4]Means in each column followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test ($P \leq 0.05$).