Peanut Disease Control
Field Trials
2013

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Table of Contents

Introduction

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

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

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

During the 2012 production season, at the WREC, temperatures were near normal historical averages (figure 1) and monthly rainfall totals were at or above normal historical averages throughout the entire growing season (figure 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 (figure 1) and rainfall totals were at or above normal throughout the entire growing season (figure 2). More consistent rainfall throughout the growing season increased leaf spot severity throughout the season. Despite rainfall, rust never developed in the plots. Due to the high temperatures and rainfall, stem rot incidence was higher than had been previously observed and yield decreases were observed in most plots.

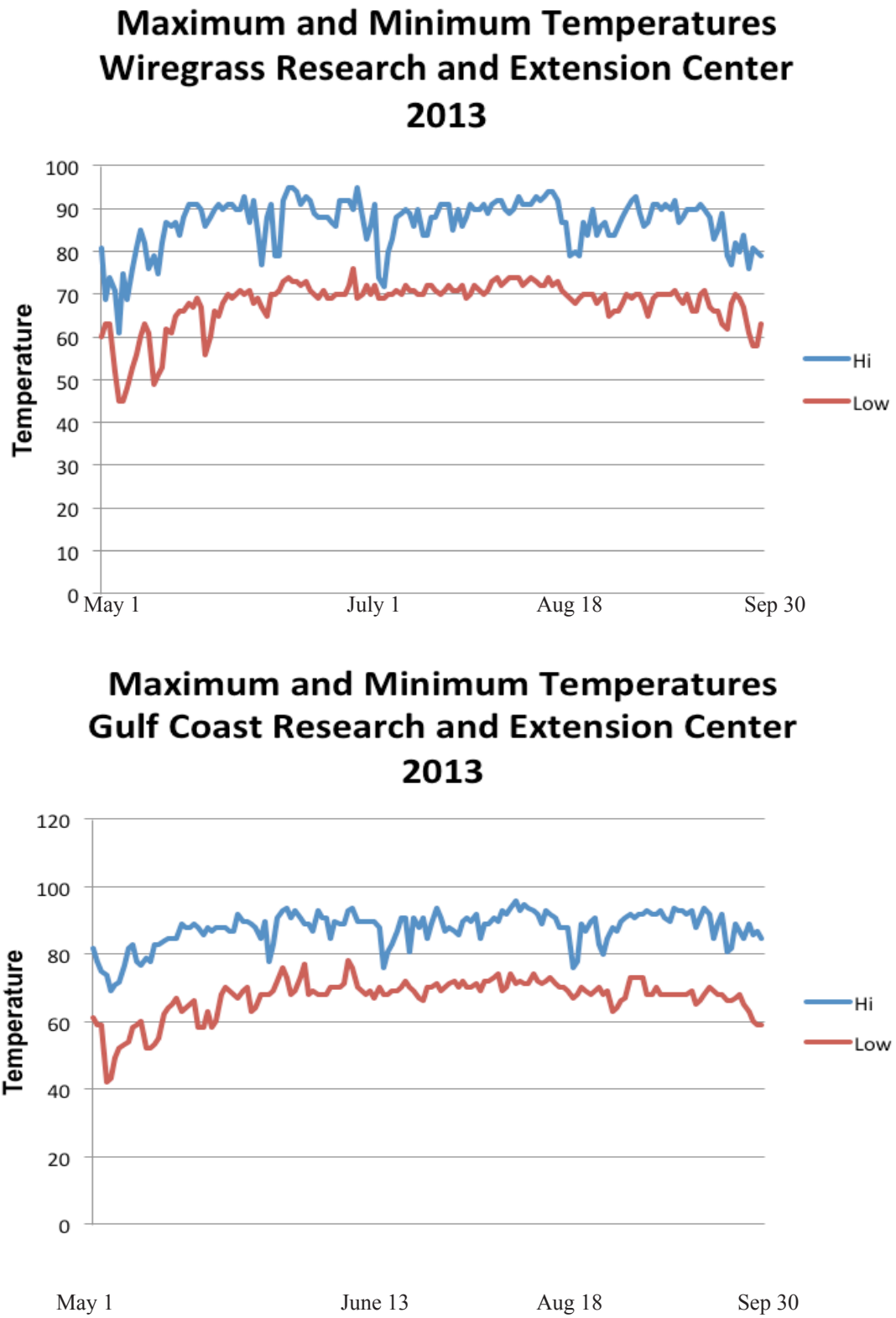
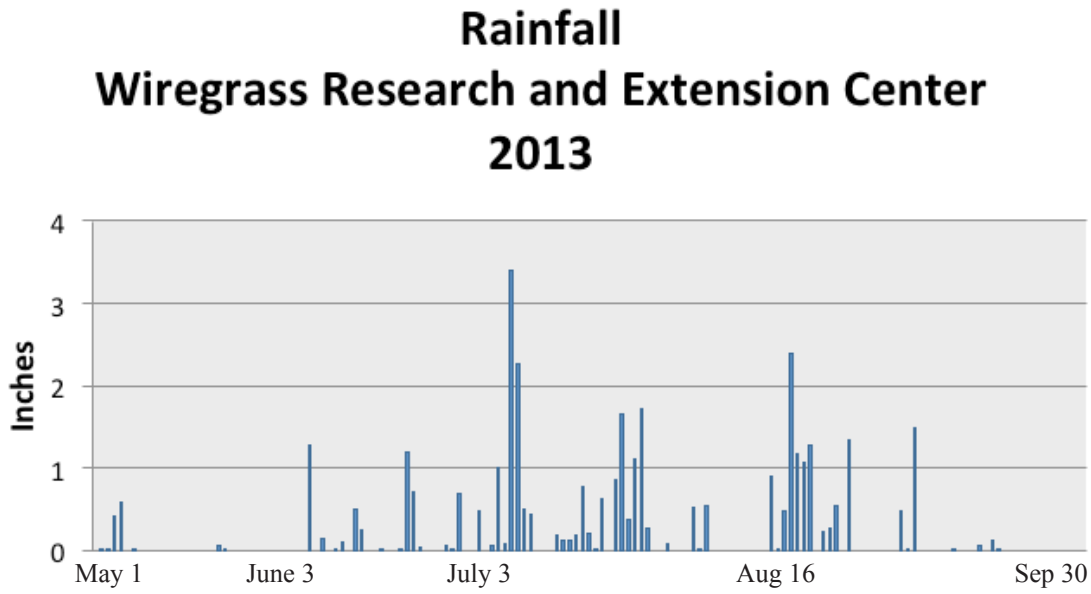


Figure 1. Daily maximum and minimum temperatures from May 1 – September 30



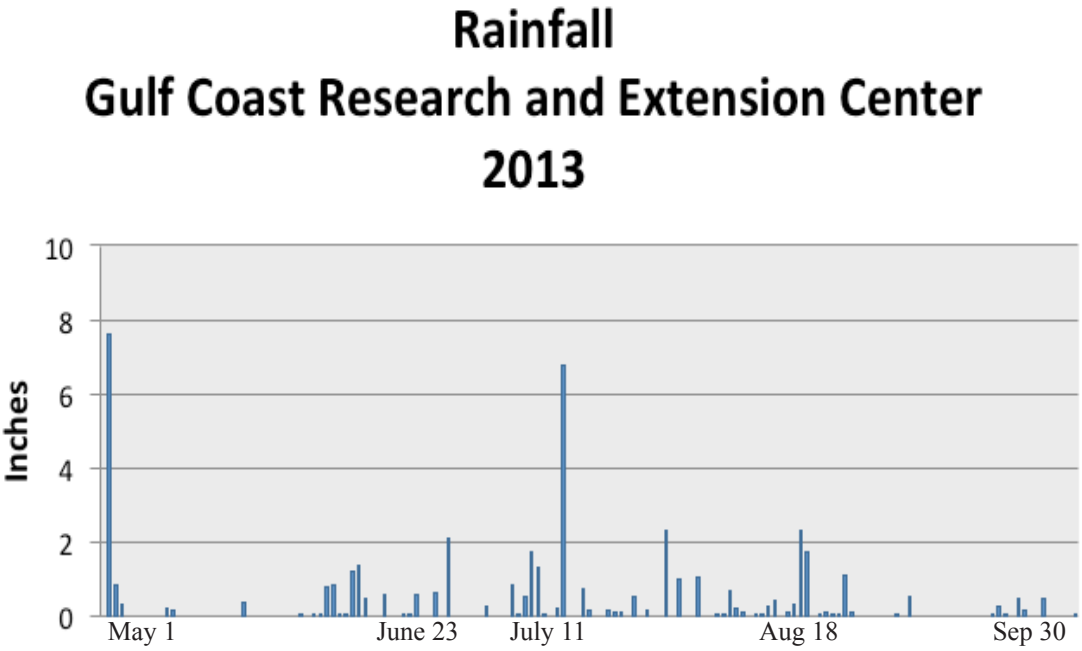


Figure 2. Daily precipitation (inches) from May 1 – September 30.

Evaluation of Propulse 400SC, Serenade Soil and Proline 480SC For Soil-Borne Disease Control of Peanuts in Southeast Alabama, WREC

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

Objective: To evaluate Propulse 400SC, Serenade Soil and Proline 480SC at varying intervals, for control of early and late leaf spot and stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Tifguard' was planted on May 21 at the Wiregrass Research and Extension Center in Headland, AL in a field with a history of peanut production. Seed were sown at a rate of approximately five seed per foot of row, and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed and nematode control were followed. The soil type was a Dothan sandy loam (OM<1%). On April 23, 1 quarts per acre of Sonalan + 0.45 ounces per acre of Strongarm + 1 quarts per acre of Dual Magnum were applied and incorporated for pre emergent weed control. On May 22, 3 ounces per acre of Valor were applied to test area for weed control. On June 14, 4 ounces per acre of Cadre was applied for weed control. Thrips were controlled with an in-furrow application of 5.0 pounds per acre of Thimet 20G at planting.

Plots, which consisted of four 30-ft rows spaced 3-ft apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on September 19. Rainfall recorded during the growing season was as follows: June – 5.08 in, July – 16.08 in, August – 10.8 in and September - 3.9 in. In-furrow fungicides were applied with a drop down nozzle directly over the furrow and was applied at a rate of 10 gallons per acre at planting. Fungicides were applied at 100% emergence using a drop nozzle placed directly over the row and were applied at a rate of 20 gallons per acre on June 12. Foliar fungicides were applied on a 14 day schedule on June 27, July 10, July 29, August 7, August 28, September 9 and September 27 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

Early and late leaf spot were visually rated on September 30 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).

Stem rot incidence was reported from above ground symptoms and signs of the disease on September 4 and September 27. Counts of stem rot (SR) loci (1 locus was defined as < 1 ft of consecutive symptoms and signs of the disease) were made on October 4 immediately after plot inversion. Plots were harvested on October 11 and yields were reported at 8.6% moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P < 0.05$).

Results: During the 2013 peanut production season, temperatures were near normal and monthly rainfall totals were above average throughout the season. Leaf spot severity progressed progressively during the season and intensity increased rapidly in August and September due to the higher rainfall and temperatures. All of the treatment programs controlled leaf spot significantly better than the non-treated control. Among the treatment programs the worst leaf spot severity was with the Echo 720 only full-season treatment. The best leaf spot control was with Serenade Soil + Propulse (IF)/Echo program. Among the other treatment programs, Propulse (IF)/Echo, Serenade Soil + Propulse (IF)/Serenade Soil + Propulse (100% emergence)/Echo, Proline (IF)/Echo and Serenade Soil + Proline (IF)/Serenade Soil(100% emrgence)/Echo controlled leaf spot significantly better the full-season Echo only treatment. No differences were observed among the other treatment programs. At the time of inversion most untreated plots were >90% defoliated (data not shown). Due to the higher rainfall stem rot incidence and severity was lower than in previous years. At the first observation, very little stem rot was observed in the treatment plots. Stem rot incidence had increased slightly at the second observation but still very little symptoms were observed. At the time of inversion, the highest incidence of stem rot was observed in the untreated control plots. Among the treatment programs, only the Propulse (100% emergence)/Echo had stem rot incidence that was not significantly better than the untreated control. Incidence observed among the other treatments was similar.

Evaluation Of Propulse 400Sc, Serenade Soil and Proline 480Sc For Soil-Borne Disease Control Of Peanuts In Southeast Alabama, Wrec

Treatment and Rate/ac	Application Timing	Disease Ratings				Pod Yield[3] pounds per acre
		SR[1]	SR	SR	LS[2]	
Untreated Control		0.0[4]	0.3	3.5	6.8	2662
Propulse 13.7 fl oz Echo 720 24.0 fl oz	IF 1-7	0.5	0.5	0.8	3.9	3339
Serenade Soil 64.0 fl oz Echo 720 24.0 fl oz	IF 1-7	0.3	1.0	1.2	4.4	3154
Propulse 13.7 fl oz Echo 720 24.0 fl oz	Banded 1-7	1.2	1.5	2.3	4.2	2981
Serenade Soil 64.0 fl oz Echo 720 24.0 fl oz	1-7 Banded	0.3	1.2	1.8	4.5	3025
Serenade Soil + Propulse 64.0 + 13.7 fl oz Echo 720 24.0 fl oz	IF 1-7	0.8	1.5	2.1	3.4	3146
Serenade Soil + Propulse 64.0 + 13.7 fl oz Echo 720 24.0 fl oz	Banded 1-7	0.5	1.2	1.3	4.2	3581
Serenade Soil + Propulse 64.0 + 13.7 fl oz Serenade Soil + Propulse 64.0 + 13.7 fl oz Echo 720 24.0 fl oz	IF Banded 1-7	0.3	1.7	1.2	3.8	3049
Proline 5.7 fl oz Echo 720 24.0 fl oz	IF 1-7	0.8	1.3	1.7	4.1	2879
Proline 5.7 fl oz Echo 24.0 fl oz	Banded 1-7	0.8	1.5	1.8	3.9	3412
Serenade Soil + Proline 64.0 + 5.7 fl oz Echo 720 24.0 fl oz	IF 1-7	0.5	0.8	1.3	4.1	2952
Serenade Soil + Proline 64.0 + 5.7 fl oz Echo 720 24.0 fl oz	Banded 1-7	0.3	0.7	1.2	4.2	3355
Serenade Soil + Proline 64.0 + 5.7 fl oz Serenade Soil + Proline 63.0 + 5.7 fl oz Echo 720 24.0 fl oz	IF Banded 1-7	0.3	0.8	1.3	3.9	2799
Echo 720 24.0 fl oz	1-7	0.5	0.8	1.8	4.7	3202
LSD (P = 0.05)		0.9	1.1	1.4	0.7	619

[1]Stem rot (SR) incidence is expressed as the number of disease loci per 60 ft of row.
[2]Early and late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease;…10 = completely dead plants).
[3]Yield was calculated from an area 6 x 30 ft.
[4]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05)

Evaluation of Propulse 400SC, Serenade Soil and Proline 480SC for Peanut Disease Control in Southeast Alabama, WREC

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

Objective: To evaluate Propulse 400SC, Serenade Soil and Proline 480SC at varying intervals and compare them against currently registered products for control of early and late leaf spot and stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Tifguard' was planted on May 21 at the Wiregrass Research and Extension Center in Headland, AL in a field with a history of peanut production. Seed were sown at a rate of approximately five seed per foot of row, and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed and nematode control were followed. The soil type was a Dothan sandy loam (OM<1%). On April 23, 1 quarts per acre of Sonalan + 0.45 ounces per acre of Strongarm + 1 quarts per acre of Dual Magnum were applied and incorporated for pre emergent weed control. On May 22, 3 ounces per acre of Valor were applied to test area for weed control. On June 14, 4 ounces per acre of Cadre were applied for weed control. Thrips were controlled with an in-furrow application of 5.0 pounds per acre of Thimet 20G at planting.

Plots, which consisted of four 30-ft rows spaced 3-ft apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on September 19. Rainfall recorded during the growing season was as follows: June – 5.08 in, July – 16.08 in, August – 10.8 in and September - 3.9 in. In-furrow fungicides were applied with a drop down nozzle directly over the furrow and was applied at a rate of 10 gallons per acre at planting. Fungicides were applied at 100% emergence using a drop nozzle placed directly over the row and were applied at a rate of 20 gallons per acre on June 12. Foliar fungicides were applied on a 14 day schedule on June 27, July 10, July 29, August 7, August 28, September 9 and September 27 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

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

Stem rot incidence was reported from above ground symptoms and signs of the disease on September 9 and October 1. Counts of stem rot (SR) loci (1 locus was defined as < 1 ft of consecutive symptoms and signs of the disease) were made on October 4 immediately after plot inversion. Plots were harvested on October 11 and yields were reported at 6.88% moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P < 0.05$).

Results: During the 2013 peanut production season, temperatures were near normal and monthly rainfall totals were above average during June, July and August. Leaf spot progressed rapidly during the season but intensity slowed in September due to dry and cooler weather. Stem rot incidence was lower than in previous years due to higher than normal rainfall and lower soil temperatures. Of the fungicide programs evaluated, all had lower stem rot indices than did the non-treated control. However, when compared to the season long Echo 720 standard, similar stem rot control was obtained with all fungicide programs. Leaf spot intensity was lower for all fungicide programs than the untreated control. With the exception of the Echo/Muscle, Echo/Abound + Alto and Echo/Convoy treatments, all other programs gave significantly better leaf spot control than the season-long Echo 720 standard. With the exception of Proline (IF)/Echo/Provost, Proline (Banded)/Echo/Provost, Echo/Muscle and Echo 720 only, all other fungicide programs had significantly higher yields than the untreated control. Yields for the season-long Echo 720 standard and other fungicide programs did not significantly differ.

Evaluation of Propulse 400SC, Serenade Soil and Proline 480SC for Peanut Disease Control In Southeast Alabama, WREC

Treatment and Rate/ac	Application Timing[z]	Disease ratings		Yield lbs/ac
		Stem Rot[1]	Leaf Spot[2]	
Untreated Control	---	4.7[4]	7.0	2968
Echo 720 24.0 fl oz Provost 433SC 8.0 fl oz	1,2,7 3,4,5,6	1.8	3.9	3533
Propulse 400SC 13.7 fl oz Echo 720 24.0 fl oz Provost 433SC 8.0 fl oz	IF 1,2,7 3,4,5,6	1.0	3.3	3751
Propulse 400 SC 13.7 fl oz Echo 720 24.0 fl oz Provost 433SC 8.0 fl oz	Banded 1,2,7 3,4,5,6	1.5	3.8	3638
Proline 480SC 5.7 fl oz Echo 720 24.0 fl oz Provost 433SC 8.0 fl oz	IF 1,2,7 3,4,5,6	1.5	3.6	3356
Proline 480SC 5.7 fl oz Echo 720 24.0 fl oz Provost 433SC 8.0 fl oz	Banded 1,2,7 3,4,5,6	2.7	3.8	3420
Serenade Soil 128.0 fl oz Proline 480SC 5.7 fl oz Echo 720 24.0 fl oz Provost 433SC 8.0 fl oz	IF Banded 1,2,7 3,4,5,6	2.5	3.9	3517
Echo 720 24.0 fl oz Muscle 3.6F 7.2 fl oz	1,2,7 3,4,5,6	1.8	4.7	3162
Echo 720 24.0 fl oz Abound 2.08SC + Alto 0.83SL 18.5 + 5.5 fl oz	1,2,4,6,7 3,5	3.0	4.2	3726
Echo 720 24.0 fl oz Echo 720 + Convoy 24.0 + 21.0 fl oz	1,2,7 3,4,5,6	2.7	4.7	3904
Headline 2.09EC 9.0 fl oz Provost 433SC 8.0 fl oz Headline 2.09EC 12.0 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	2.3	4.0	3759
Echo 720 24.0 fl oz	1-7	2.0	4.4	3453
LSD (P = 0.05)		1.4	0.3	492

[1]Stem rot (SR) incidence is expressed as the number of disease loci per 60 ft of row.
[2]Early and late leaf spot were assessed using the Florida leaf spot scoring (1 = no disease,…10 = completely dead plants).
[3]Yield calculated from area 6 x 30 ft.
[4]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05).

Evaluation of Artsan and Convoy for Peanut Disease Control in Southeast Alabama, WREC

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

Objective: To evaluate Artisan and to evaluate Convoy at varying application intervals and compare them against currently registered products for control of stem rot and also early and late leaf spot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Tifguard' was planted on May 14 at the Wiregrass Research and Extension Center in Headland, AL in a field with a history of peanut production. Seed were sown at a rate of approximately five seed per foot of row and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed and nematode control were followed. The soil type was a Dothan sandy loam (OM<1%). On May 3, 1 quarts per acre of Sonalan + 0.45 ounces per acre of Strongarm + 1 quarts per acre of Dual Magnum were applied and incorporated for pre emergent weed control. On May 4, 3 ounces per acre of Valor were applied to test area for weed control. On June 14, 4 ounces per acre of Cadre were applied for weed control. Thrips were controlled with an in-furrow application of 5.0 pounds per acre of Thimet 20G at planting.

Plots, which consisted of four 30-ft rows spaced 3-ft apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and no irrigation was applied during the season. Rainfall recorded during the growing season was as follows: June – 5.08 in, July – 16.08 in, August – 10.8 in and September - 3.9 in. In-furrow fungicides were applied with a drop down nozzle directly over the furrow and was applied at a rate of 10 gallons per acre at planting. Fungicides were applied at 40 days after planting (40 DAP) on June 21 and at 60 DAP on July 19 using a drop nozzle placed directly over the row at a rate of 20 gallons per acre. Foliar fungicides were applied on a 14 day schedule on June 27, July 9, July 10, July 26, August 7, August 28, September 9 and September 25 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

Early and late leaf spot were visually rated on September 26 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). Stem rot incidence was reported from above ground symptoms and signs of the disease on September 3 and September 26.

Counts of stem rot (SR) loci (1 locus was defined as < 1 ft of consecutive symptoms and signs of the disease) were made on October 30 immediately after plot inversion. Plots were harvested on October 4 and yields were reported at 8.3% moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P < 0.05$).

Results: During the 2013 peanut production season, temperatures were near normal and monthly rainfall totals were above average during June, July and August. Leaf spot progressed rapidly during the season but intensity slowed in September due to dry and cooler weather patterns. Stem rot incidence was lower than in previous years due to higher than normal rainfall and lower soil temperatures. Of the fungicide programs evaluated, all had lower stem rot indices than did the non-treated control. All fungicide programs significantly reduced stem rot incidence when compared to the season long Bravo WS standard. Leaf spot intensity was lower for all fungicide programs untreated control. Among the fungicide programs, no significant differences for leaf spot control were observed. All treatment programs yielded higher than the untreated control, however only Headline/Convoy(48 fl oz- 40DAP)/Bravo, Headline/Convoy (48 fl oz-60DAP)/ Bravo, Headline/Convoy + Bravo + Topsin/Convoy + Bravo/Convoy + Headline/Bravo, Bravo/Fontelis, Bravo/Bravo + Convoy were significantly better. Only Headline/Bravo + Convoy/Headline/Bravo yielded higher than the full-season Bravo WS standard.

Evaluation of Artsan and Convoy for Peanut Disease Control in Southeast Alabama, WREC

Treatment and Rate/ac	Application Timing	Disease Ratings		Yield lbs/ac[3]
		Stem Rot[1]	Leaf Spot[2]	
Untreated Control	---	7.8[4]	6.8	3339
Headline 2.09SC 9.0 fl oz Convoy + Bravo WS 32.0 fl oz + 24.0 fl oz Bravo WS 24.0 fl oz	1.5 3,5 4,6,7	1.7	3.5	3847
Headline 2.09SC 9.0 fl oz Convoy 48.0 fl oz Bravo WS 24.0 fl oz	1.5 40 DAP 3,4,5,6,7	2.7	3.8	3880
Headline 2.09SC 9.0 fl oz Convoy 64.0 fl oz Bravo WS 24.0 fl oz	1.5 40 DAP 3,4,5,6,7	2.8	3.6	3638
Headline 2.09SC 9.0 fl oz Convoy 48.0 fl oz Bravo WS 24.0 fl oz	1.5 60 DAP 3,4,5,6,7	2.0	3.6	3969
Headline 2.09SC 9.0 fl oz Convoy 64.0 fl oz Bravo WS 24.0 fl oz	1.5 60 DAP 3,4,5,6,7	2.1	3.7	3833
Headline 2.09SC 9.0 fl oz Convoy + Bravo WS + Topsin M 13.0 + 16.0 + 5.0 fl oz.. Convoy + Bravo WS 13.0 + 24.0 fl oz Convoy + Headline 2.09SC 13.0 + 6.0 fl oz Bravo WS 24.0 fl oz	1.5 3,5 4 6 7	2.0	3.5	3904
Headline 2.09SC 9.0 fl oz Artisan + Bravo WS 16.0 + 16.0 fl oz Artisan + Topsin M 16.0 + 5.0 fl oz Bravo WS 24.0 fl oz	1.5 3,5 4,6 7	2.1	3.8	3719
Bravo WS 24.0 fl oz Fontelis 16.0 fl oz	1,2,6,7 3,4,5	2.5	3.1	4046
Bravo WS 24.0 fl oz Provost 433SC 8.0 fl oz	1,2,7 3,4,5,6	2.8	3.1	3767
Bravo WS 24.0 fl oz Muscle 3.6F 7.2 fl oz	1,2,7 3,4,5,6	2.3	3.4	3461
Bravo WS 24.0 fl oz Abound 2.08SC + Alto 0.83SL 18.5 + 5.5 fl oz	1,2,4,6,7 3,5	2.0	3.3	3804
Bravo WS 24.0 fl oz Bravo WS 16.0 fl oz + Convoy 16.0 fl oz	1,2,7 3,4,5,6	1.0	3.6	4104
Headline 2.09EC 9.0 fl oz Bravo WS + Convoy 24.0 + 21.0 fl oz Headline 2.09EC 6.0 fl oz Bravo WS 24.0 fl oz	1.5 3,5 4,6 7	1.8	3.4	4221
Bravo WS 24.0 fl oz	1-7	5.2	3.6	3630
LSD (P = 0.05)		1.7	0.5	511

[1]Stem rot (SR) incidence is expressed as the number of disease loci per 60 ft of row.
[2]Early and late leaf spot were assessed using the Florida leaf spot scoring (1 = no disease,…10 = completely dead plants).
[3]Yield calculated from area 6 x 30 ft.
[4]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05).

Evaluation of Fontelis, Koverall and Topguard for Peanut Disease Control in Southeast Alabama, WREC

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

Objective: To evaluate Fontelis, Koverall and Topguard and compare them against currently registered products for control of early and late leaf spot, stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Tifguard' was planted on May 23 at the Wiregrass Research and Extension Center in Headland, AL in a field with a history of peanut production. Seed were sown at a rate of approximately five seed per foot of row and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed and nematode control were followed. The soil type was a Dothan sandy loam (OM<1%). On May 3, 1 quarts per acre of Sonalan + 0.45 ounces per acre of Strongarm + 1 quarts per acre of Dual Magnum were applied and incorporated for pre emergent weed control. On May 4, 3 ounces per acre of Valor were applied to test area for weed control. On June 14, 4 ounces per acre of Cadre were applied for weed control. On July 1, 1.5 pints per acre of 2,4 DB was applied for post- harvest weed control. Thrips were controlled with an in-furrow application of 5.0 pounds per acre of Thimet 20G at planting.

Plots, which consisted of four 30-ft rows spaced 3-ft apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and no irrigation was applied during the season. Rainfall recorded during the growing season was as follows: June – 5.08 in, July – 16.08 in, August – 10.8 in and September - 3.9 in. In-furrow fungicides were applied with a drop down nozzle directly over the furrow and was applied at a rate of 10 gallons per acre at planting. Foliar fungicides were applied on a 14 day schedule on June 28, July 9, July 17, July 30, August 12, August 28, September 11 and September 27 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre. Early and late leaf spot were visually rated on September 26 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants).

Counts of stem rot (SR) loci (1 locus was defined as < 1 ft of consecutive symptoms and

signs of the disease) were made on October 14 immediately after plot inversion. Plots were harvested on October 18 and yields were reported at 7.56% moisture.

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

Results: During the 2013 peanut production season, temperatures were near normal and monthly rainfall totals were above average during June, July and August. Leaf spot progressed rapidly during the season but development slowed in September due to cooler and drier weather patterns. Stem rot incidence was lower than in previous years due to higher than normal rainfall and cooler soil temperatures. All fungicide programs had significantly lower leaf spot ratings than the untreated control. When compared to the season-long Echo 720 only standard, Echo + Muscle/Fontelis/Echo, Echo/Provost, and Koverall + Echo/Koverall + Topguard provided significantly better leaf spot control. No significant differences for leaf spot control were observed among the other treatment programs and Echo 720 standard. Of the fungicide programs evaluated, all had significantly lower stem rot indices than the non-treated control. The least stem rot was observed with the Koverall + Echo/Koverall + Topguard fungicide program. Stem rot indices for all of the other fungicide programs were similar to the season long Bravo WS standard. With the exception of the Echo/Echo + Convoy treatment, all treatment programs yielded higher than the untreated control. The Headline/Fontelis/Echo program was the highest yielding treatment. Among the remaining programs, none yielded significantly higher than the full-season Echo 720 standard.

Evaluation of Fontelis, Koverall and Topguard for Peanut Disease Control in Southeast Alabama, WREC

Treatment and Rate/ac	Application Timing	Disease ratings		Yield lbs/ac[3]
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control	---	7.8[4]	6.8	3339
Echo 720 + Muscle 3.6F 16.0 + 7.2 fl oz Fontelis 16.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5 6,7	3.5	1.3	5074
Echo 720 + Muscle 3.6F 16.0 + 7.2 fl oz Fontelis 16.0 fl oz Echo 720 24.0 fl oz	1,2,4 3,5 6,7	3.8	0.8	4772
Headline 2.09SC 9.0 fl oz Fontelis 16.0 fl oz Echo 720 24.0 fl oz	1.5 3,4,5 6,7	3.9	1.0	5259
Headline 2.09SC 9.0 fl oz Fontelis 16.0 fl oz Echo 720 + Muscle 3.6F 16.0 fl oz + 7.2 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	3.9	0.3	4921
Echo 720 + Muscle 3.6F 16.0 + 7.2 fl oz Echo 720 + Convoy 16.0 + 13.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5 6,7	4.1	0.8	4767
Echo 720 + Muscle 3.6F 16.0 + 7.2 fl oz Echo 720 + Convoy 16.0 + 13.0 fl oz Echo 720 24.0 fl oz	1,2,4 3,5 6,7	3.9	1.0	4734
Bravo WS 24.0 fl oz Abound 2.08SC + Alto 0.83SL 18.5 + 5.5 fl oz	1,2,4,6,7 3,5	3.6	1.1	5217
Bravo WS 24.0 fl oz Echo 720 + Muscle 3.6F 16.0 + 7.2 fl oz	1,2,7 3,4,5,6	3.8	1.1	4945
Bravo WS 24.0 fl oz Provost 433SC 8.0 fl oz	1,2,7 3,4,5,6	3.5	1.1	4549
Bravo WS 24.0 fl oz Bravo WS + Convoy 16.0 +13.0 fl oz	1,2,7 3,4,5,6	4.1	1.0	4453
Headline 2.09EC 9.0 fl oz Muscle 3.6F 7.2 fl oz Headline 2.09EC 12.0 fl oz Bravo WS 24.0 fl oz	1.5 3,5 4 6,7	4.1	1.3	4574
Koverall + Echo 720 2.0 lb + 16.0 fl oz Koverall + Topguard 2.0 lb + 14.0 fl oz	1,2,7 3,4,5,6	3.5	0.0	4687
Bravo WS 24.0 fl oz	1-7	4.1	1.8	4539
LSD (P = 0.05)		0.4	1.4	614

[1]Stem rot (SR) incidence is expressed as the number of disease loci per 60 ft of row.
[2]Early and late leaf spot were assessed using the Florida leaf spot scoring (1 = no disease,…10 = completely dead plants).
[3]Yield calculated from area 6 x 30 ft.
[4]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05).

Evaluation of Fontelis, Gos Neem 7-Way and Karanja Cake Granules for Peanut Disease Control in Southeast Alabama, WREC

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

Objective: To evaluate Fontelis, GOS Neem 7-Way oil and Karanja cake granules and compare them against currently registered products for control of early and late leaf spot, stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Tifguard' was planted on May 16 at the Wiregrass Research and Extension Center in Headland, AL in a field with a history of peanut production. Seed were sown at a rate of approximately five seed per ft of row and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed and nematode control were followed. The soil type was a Dothan sandy loam (OM<1%). On May 3, 1 quarts per acre of Sonalan + 0.45 ounces per acre of Strongarm + 1 quarts per acre of Dual Magnum were applied and incorporated for pre emergent weed control. On May 4, 3 ounces per acre of Valor were applied to test area for weed control. On June 14, 4 ounces per acre of Cadre were applied for weed control. Thrips were controlled with an in-furrow application of 5.0 pounds per acre of Thimet 20G at planting.

Plots, which consisted of four 30-ft rows spaced 3-ft apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and no irrigation was applied during the season. Rainfall recorded during the growing season was as follows: June – 5.08 in, July – 16.08 in, August – 10.8 in and September - 3.9 in. In-furrow fungicides were applied with a drop down nozzle directly over the furrow and was applied at a rate of 10 gallons per acre at planting. GOS Neem 7-Way was applied at 45 DAP on July 8 and at 75 DAP on August 6 using a drop nozzle directly over the row calibrated to deliver 20 gallons per acre. karnja cake granules were applied by hand on July 23 at 80 pounds per acre. Foliar fungicides were applied on a 14 day schedule on June 27, July 10, July 26, August 7, August 26, September 9 and September 27 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

Early and late leaf spot were visually rated on October 1 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few

remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants).

Counts of stem rot (SR) loci (1 locus was defined as < 1 ft of consecutive symptoms and signs of the disease) were made on September 9 and October 1 from above ground signs and symptoms of the disease. Stem rot counts were made on October 14 immediately after plot inversion. Plots were harvested on October 10 and yields were reported at 8.25% moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P < 0.05$).

Results: During the 2013 peanut production season, temperatures were near normal and monthly rainfall totals were above average during June, July, and August. Leaf spot progressed rapidly during the season but development slowed in September due to cooler and drier weather patterns. Stem rot incidence was lower than in previous years due to higher than normal rainfall and cooler soil temperatures. When stem rot was evaluated from above ground symptoms on September 9, very little stem rot was observed among the treated plots. All treatments had lower stem rot than the untreated control with the exception of the GOS Neem 7-Way/Bravo and GOS Neem 7-Way (IF/45/75 DAP)/ Bravo treated plots. When observations were made again on October 1, only the Fontelis/ Bravo/Fontelis, Proline(Banded)/Bravo/Fontelis, Proline/Bravo/Bravo + Convoy and Proline(IF)/Bravo/Fontelis had significantly lower stem rot than did the untreated control. None of the other treated plots were significantly lower than the untreated control and stem rot in the Bravo only plots were higher than the untreated control. When evaluated at inversion, all treatments decreased the incidence of stem rot significantly lower than the untreated control. When compared against the full-season Bravo only treatment, all treatments which included Fontelis had lower stem rot incidence. The Neem treatment applied at planting followed by Bravo full season had the lowest stem rot incidence among the remaining treatments. All treatment reduced leaf spot compared to the untreated control and among the treatments, all were comparable to the Bravo only treatment except for the Neem (IF)/Neem (45DAP)/Bravo and Karanja/Neem (60 DAP)/ Bravo treatment which were worse. All treatments, with the exception of the Karanja/ Bravo treatment yielded higher than the full-season Bravo treatment. Of the remaining treatments, all yields were similar.

Evaluation of Fontelis, Gos Neem 7-Way and Karanja Cake Grnules for Peanut Disease Control in Southeast Alabama, WREC

Treatment and Rate/ac	Application Timing	Disease Ratings				Pod Yield[3] lbs/ac
		SR[1]	SR	SR	LS[2]	
Untreated Control		1.7[4]	2.5	7.7	6.1	2589
Fontelis 20.0 fl oz Bravo WS 24.0 fl oz Fontelis 16.0 fl oz	Banded 1,2,4,6,7 3,5	0.7	1.0	1.7	3.3	3591
Fontelis 20.0 fl oz Bravo WS 24.0 fl oz	Banded 1-7	0.7	1.8	2.8	3.7	2981
Proline 480SC 5.7 fl oz Bravo WS 24.0 fl oz Fontelis 16.0 fl oz	Banded 1,2,4,6,7 3,5	0.3	1.2	2.3	3.7	3436
Proline 480SC 5.7 fl oz Bravo WS 24.0 fl oz Convoy + Bravo WS 26.0 + 24.0 fl oz	IF 1,2,4,6,7 3,5	0.2	0.5	0.5	3.6	3348
Proline 480SC 5.7 fl oz Bravo WS 24.0 fl oz Fontelis 16.0 fl oz	IF 1,2,4,6,7 3,5	0.3	1.2	2.1	3.8	3485
GOS Neem 7-Way 64.0 fl oz Bravo WS 24.0 fl oz	IF 1-7	1.2	1.8	3.3	3.8	3030
GOS Neem 7-Way 64.0 fl oz GOS Neem 7-Way 64.0 fl oz Bravo WS 24.0 fl oz	IF 45 DAP 1-7	0.7	1.8	4.3	4.0	3359
GOS Neem 7-Way 64.0 fl oz GOS Neem 7-Way 64.0 fl oz GOS Neem 7-Way 64.0 fl oz Bravo WS 24.0 fl oz	IF 45 DAP 75 DAP 1-7	1.0	2.1	3.7	3.7	3088
Karanja Cake Granules 80.0 lb Bravo WS 24.0 fl oz	IF 1-7	0.5	2.3	3.8	3.8	2872
Karanja Cake Granules 80.0 lb GOS Neem 7-Way 64.0 fl oz Bravo WS 24.0 fl oz	IF 60 DAP 1-7	0.8	2.3	4.8	4.1	3223
Echo 720 24.0 fl oz	1-7	0.5	2.8	4.8	3.5	2400
LSD (P = 0.05)		*0.8*	*1.3*	*2.1*	*0.5*	*515*

[1]Stem rot (SR) incidence is expressed as the number of disease loci per 60 ft of row.
[2]Early and late leaf spot were assessed using the Florida leaf spot scoring (1 = no disease,…10 = completely dead plants).
[3]Yield calculated from area 6 x 30 ft.
[4]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.0[5]).

Evaluation of Experimental Products A18126 and A18993 for Peanut Disease Control in Southeast Alabama, WREC

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

Objective: To evaluate experimental products A18126 and A18993 and compare them against currently registered products for control of early and late leaf spot, stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Tifguard' was planted on May 23 at the Wiregrass Research and Extension Center in Headland, AL in a field with a history of peanut production. Seed were sown at a rate of approximately five seed per foot of row and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed and nematode control were followed. The soil type was a Dothan sandy loam (OM<1%). On May 3, 1 quarts per acre of Sonalan + 0.45 ounces per acre of Strongarm + 1 quarts per acre of Dual Magnum were applied and incorporated for pre emergent weed control. On May 4, 3 ounces per acre of Valor were applied to test area for weed control. On July 1, 1.5 pints per acre of 2,4 DB was applied for weed control. Thrips were controlled with an in-furrow application of 5.0 pounds per acre of Thimet 20G at planting.

Plots, which consisted of four 30-ft rows spaced 3-ft apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and 1.0 inch of water was applied during the season on September 17. Rainfall recorded during the growing season was as follows: June – 5.08 in, July – 16.08 in, August – 10.8 in and September - 3.9 in. Early emergence applications were applied on June 12 using a drop nozzle directly over the row calibrated to deliver 20 gallons per acre. Foliar fungicides were applied on a 14 day schedule on June 28, July 9, July 17, July 30, August 5, August 28, September 11 and September 27 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

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

Counts of stem rot (SR) loci (1 locus was defined as < 1 ft of consecutive symptoms and signs of the disease) were made on October 15 immediately after plot inversion. Plots

were harvested on October 18 and yields were reported at 8.72% moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P < 0.05$).

Results: During the 2013 peanut production season, temperatures were near normal and monthly rainfall totals were above average during June, July and August. Leaf spot progressed rapidly during the season but slowed in September due to cool and dry weather patterns. Stem rot incidence was lower than in previous years due to higher than normal rainfall that resulted in lower soil temperatures. All fungicide programs provided significantly better leaf spot control than the untreated control. When compared to the season-long Bravo WS standard, Tilt-Bravo/A18126 (7.14 oz)/Bravo, Tilt-Bravo/A18126 (9.5 oz)/Bravo, Tilt-Bravo (2)/A18126 (7.14 oz)/Bravo, Tilt-Bravo/Abound + Alto/Bravo, Tilt-Bravo/Provost/Bravo and Bravo/Bravo + Muscle provided significantly better leaf spot control. No significant differences for leaf spot control were observed among the remaining treatment programs. All fungicide programs provided significantly better stem rot control than the non-treated control plots. All of the fungicide programs provided the same level of stem rot control as the season long Bravo WS standard. All treatment programs yielded higher than the untreated control. Tilt-Bravo/Fontelis/Bravo yielded highest. However, among the programs evaluated, the A18126(EE)/Tilt-Bravo/A18993/Bravo, A18126(EE)/Tilt-Bravo/A18126/Bravo, Tilt-Bravo/Provost/Bravo, Bravo/Provost, Bravo/Bravo + Convoy, and Headline/Muscle/Headline/Bravo were not significantly better that the untreated control. The remaining programs yielded the same as the full-season Bravo WS standard.

Evaluation of Experimental Products A18126 and A18993 for Peanut Disease Control in Southeast Alabama, WREC

Treatment and Rate/ac	Application Timing	Disease Ratings		Pod Yield lbs/ac
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control	---	7.8[4]	5.5	3513
Tilt-Bravo 4.3SE 24.0 fl oz A18126 7.14 oz Bravo WS 24.0 fl oz	1,2 3,5 4,6,7	3.6	0.8	4462
Tilt-Bravo 4.3SE 24.0 fl oz A18126 9.5 oz Bravo WS 24.0 fl oz	1,2 3,5 4,6,7	3.4	1.3	4656
Tilt-Bravo 4.3SE 24.0 fl oz A18126 7.14 oz Bravo WS 24.0 fl oz	2 1,3,5 4,6,7	3.6	0.7	5091
A18993 18.3 fl oz A18126 9.5 oz Bravo WS 24.0 fl oz	1.5 3,5 4,6,7	4.3	0.5	4821
A18126 7.26 oz Tilt-Bravo 4.3SE 24.0 fl oz A18993 18.3 fl oz Bravo WS 24.0 fl oz	EE 1.5 3,5 4,6,7	3.9	0.7	4424
A18126 7.26 fl oz Tilt-Bravo 4.3SE 24.0 fl oz A18126 9.5 oz Bravo WS 24.0 fl oz	EE 1.5 3,5 4,6,7	4.0	0.7	4007
Headline 2.09SC 9.0 fl oz A18993 18.3 fl oz Bravo WS 24.0 fl oz	1.5 3,5 4,6,7	4.1	0.8	4936
A18126 7.26 oz Headline 2.09SC 9.0 fl oz A18993 18.3 fl oz Bravo WS 24.0 fl oz	EE 125 3,5 4,6,7	3.7	0.8	4878
Tilt-Bravo 4.3SE 24.0 fl oz Abound 2.08SC + Alto 0.83SL 18.3 + 5.5 fl oz Bravo WS 24.0 fl oz	1,2 3,5 4,6,7	3.4	1.0	4656
Tilt-Bravo 4.3SE 24.0 fl oz Provost 433SC 8.0 fl oz Bravo WS 24.0 fl oz	1,2 3,4,5,6 7	3.6	1.7	4452
Tilt-Bravo 4.3SE 24.0 fl oz Fontelis 16.0 fl oz Bravo WS 24.0 fl oz	1,2 3,4,5 6,7	3.8	2.0	5432
Bravo WS Bravo WS + Muscle 3.6F 16.0 + 7.2 fl oz	1,2,7 3,4,5,6	3.6	1.0	4610
Bravo WS 24.0 fl oz Provost 433SC 10.7 fl oz	1,2,7 3,4,5,6	3.4	1.1	4162
Bravo WS 24.0 fl oz Bravo WS + Convoy 24.0 + 21.0 fl oz	1,2,4,6,7 3,5	4.2	1.5	4395
Headline 2.09SC 9.0 fl oz Muscle 3.6 F 7.2 fl oz Headline 2.09SC 12.0 fl oz Bravo WS 24.0 fl oz	1.5 3,5 4 6,7	3.8	1.0	4346
Bravo WS 24.0 fl oz	1-7	4.1	1.8	4539
LSD (P = 0.05)		*0.4*	*1.5*	*944*

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

Evaluation of Experimental Products Sa-0310101, Sa-0040304 and New Product Muscle ADV for Peanut Disease Control in Southeast Alabama, WREC

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

Objective: To evaluate experimental products SA-0310101 and SA-0040304 and compare them with the new product Muscle ADV and other currently registered products for control of early and late leaf spot, stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Tifguard' was planted on May 23 at the Wiregrass Research and Extension Center in Headland, AL in a field with a history of peanut production. Seed were sown at a rate of approximately five seed per ft of row and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed and nematode control were followed. The soil type was a Dothan sandy loam (OM<1 percent). On May 3, 1 quarts per acre of Sonalan + 0.45 ounces per acre of Strongarm + 1 quart per acre of Dual Magnum were applied and incorporated for pre emergent weed control. On May 4, 3 ounces per acre of Valor were applied to test area for weed control. On July 1, 1.5 pints per acre of 2,4 DB was applied for weed control. Thrips were controlled with an in-furrow application of 5.0 pounds per acre of Thimet 20G at planting.

Plots, which consisted of four 30-ft rows spaced 3-ft apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and 1.0 inch of water was applied during the season on September 17. Rainfall recorded during the growing season was as follows: June – 5.08 in, July – 16.08 in, August – 10.8 in and September - 3.9 in. Early emergence applications were applied on June 12 using a drop nozzle directly over the row calibrated to deliver 20 gallons per acre. Foliar fungicides were applied on a 14 day schedule on 1) July 1, July 8, July 17, July 31, August 12, August 26, September 11 and September 27.using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

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

Counts of stem rot (SR) loci (1 locus was defined as < 1 ft of consecutive symptoms and signs of the disease) were made on October 14 immediately after plot inversion. Plots were harvested on October 18 and yields were reported at 8.93 percent moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P < 0.05$).

Results: During the 2013 peanut production season, temperatures were near normal and monthly rainfall totals were above average during June, July and August. Leaf spot progressed rapidly during the season but development slowed in Sep due to cooler and drier weather patterns. Stem rot incidence was lower than in previous years due to higher than normal rainfall and cooler soil temperatures. All fungicide programs had significantly lower leaf spot ratings than the untreated control. When compared to the season-long Echo 720 standard, all fungicide programs gave similar leaf spot control. All of the fungicide programs evaluated had significantly lower stem rot indices than the non-treated control. The least stem rot damage was observed with the SA-0310101 + Echo/ Muscle ADV/Echo fungicide program. Stem rot indices for all of the other fungicide programs were similar to the season long Bravo WS standard. All fungicide programs yielded higher than the untreated control. With the exception of the SA-0310101/Muscle ADV/Echo fungicide program, all other programs yielded higher than the untreated control. Among the remaining programs, none yielded significantly higher than the season-long Echo 720 standard.

Evaluation of Experimental Products Sa-0310101, Sa-0040304 and New Product Muscle ADV for Peanut Disease Control in Southeast Alabama, WREC

Treatment and Rate/ac	Application Timing	Disease Ratings		Yield lbs/ac
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control	---	7.7[3]	7.3	3275
SA-0310101 + Echo 720 10.0 oz + 16.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	3.8	0.3	4714
SA-0310101 + Echo 720 10.0 oz + 13.0 fl oz SA-0310101 + Echo 720 10.0 oz + 16.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1 2 3,4,5,6 7	3.9	1.7	4283
SA-0310101 10.0 oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	3.9	1.7	4089
Echo 720 16.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	4.0	1.5	4170
SA-0040304 32.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	3.9	0.7	4412
SA-0040304 32.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1.5 3,4,5,6 7	4.1	1.7	4243
Headline 2.09SC 9.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1.5 3,4,5,6 7	3.9	1.3	4782
Bravo WS 24.0 fl oz Muscle 3.6F 7.2 fl oz	1,2,7 3,4,5,6	4.0	1.8	4395
Bravo WS 24.0 fl oz Provost 433SC 8.0 fl oz	1,2,7 3,4,5,6	3.8	1.7	4607
Bravo WS 24.0 fl oz Abound 2.08SC 18.5 fl oz	1,2,4,6,7 3,5	3.9	2.3	4428
Bravo WS 24.0 fl oz Bravo WS + Convoy 24.0 +13.0 fl oz	1,2,7 3,4,5,6	4.2	1.2	4469
Bravo WS 24.0 fl oz	1-7	4.0	1.2	4759
LSD (P = 0.05)		*0.3*	*1.5*	*631*

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

Evaluation of Experimental Products IRF 169, IR 14360 and ISA 010F for Peanut Disease Control in Southeast Alabama, WREC

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

Objective: To evaluate experimental products IRF 169, IR 14360 and ISA 010F and compare them currently registered products for control of early and late leaf spot, stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Tifguard' was planted on May 23 at the Wiregrass Research and Extension Center in Headland, AL in a field with a history of peanut production. Seed were sown at a rate of approximately five seed per ft of row and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed and nematode control were followed. The soil type was a Dothan sandy loam (OM<1 percent). On May 3, 1 quarts per acre of Sonalan + 0.45 ounces per acre of Strongarm + 1 quarts per acre of Dual Magnum were applied and incorporated for pre emergent weed control. On May 4, 3 ounces per acre of Valor were applied to test area for weed control. On July 1, 1.5 pints per acre of 2,4 DB was applied for weed control. Thrips were controlled with an in-furrow application of 5.0 pounds per acre of Thimet 20G at planting.

Plots, which consisted of four 30-foot rows, spaced 3-ft apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and 1.0 inch of water was applied during the season on September 17. Rainfall recorded during the growing season was as follows: June – 5.08 in, July – 16.08 in, August – 10.8 in and September - 3.9 in. Early emergence applications were applied on June 12 using a drop nozzle directly over the row calibrated to deliver 20 gallons per acre. Foliar fungicides were applied on a 14 day schedule on 1) July 1, July 9, July 19, July 31, August 12, August 28, September 11 and September 27.using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

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

Counts of stem rot (SR) loci (1 locus was defined as < 1 ft of consecutive symptoms and signs of the disease) were made on October 15 immediately after plot inversion.

Plots were harvested on October 20 and yields were reported at 8.8 percent moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P < 0.05$).

Results: During the 2013 peanut production season, temperatures were near normal and monthly rainfall totals were above average during June, July and August. Leaf spot progressed rapidly during the season but development slowed in Sep due to cooler and drier weather patterns. Stem rot incidence was lower than in previous years due to higher than normal rainfall and cooler soil temperatures. Severity of leaf spot among all treatments was reduced when compared with the untreated control. Among the treatment regimes, all gave comparable control as that observed with the Bravo only full season treatment. Among the treatments, IRF 169/Abound/Bravo, Bavo/Abound, Bravo/ISA 010F(19 fl oz), Bravo/Provost, anf Bravo/ISA 010F(19 fl oz) gave significantly better control of leaf spot than did the Bravo only treatment. No statistical differences were observed for control of stem rot among the treatment programs however all reduced the incidence of stem rot when compared with the untreated control. Yield increased significantly for all treatment programs when compared with the untreated control. Among the treatment programs, only Bravo/Abound showed a significant increase over that observed with the Bravo only treatment. All of the experimental products tested had yields that were similar to the full season Bravo only treatment.

Evaluation of Experimental Products IRF 169, IR 14360 and ISA 010f for Peanut Disease Control in Southeast Alabama, WREC

Treatment and Rate/ac	Application Timing	Disease Ratings		Yield lbs/ac
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control	---	7.6[3]	3.7	3856
Tilt-Bravo 4.3SE 24.0 fl oz Abound 2.08SC 18.2 fl oz Bravo WS 24.0 fl oz	1,2 3,5 4,6,7	3.8	1.1	5507
IRF 169 25.0 fl oz Abound 2.08SC 18.2 fl oz Bravo WS 24.0 fl oz	1,2 3,5 4,6,7	3.5	1.5	5211
IR 14360 8.0 fl oz Abound 2.08SC 18.2 fl oz Bravo WS 24.0 fl oz	1,2 3,5 4,6,7	3.9	0.8	5385
IR 14360 10.0 fl oz Abound 2.08SC 18.2 fl oz Bravo WS 24.0 fl oz	1,2 3,5 4,6,7	3.8	0.7	5401
IR 14360 13.0 fl oz Abound 2.08SC 18.2 fl oz Bravo WS 24.0 fl oz	1,2 3,5 4,6,7	3.9	0.0	5130
Bravo WS 24.0 fl oz Abound 2.08SC 18.2 fl oz	1,2,4,6,7 3,5	3.3	0.7	5943
Bravo WS 24.0 fl oz ISA 010F 19.0 fl oz	1,2,4,6,7 3,5	3.6	1.5	5488
Bravo WS 24.0 fl oz ISA 010F 16.5 fl oz	1,2,4,6,7 3,5	3.8	1.0	4872
Bravo WS 24.0 fl oz ISA 010F 14.0 fl oz	1,2,4,6,7 3,5	3.8	0.5	5287
Bravo WS 24.0 fl oz Muscle 3.6F 7.2 fl oz	1,2,7 3,4,5,6	4.1	1.1	4762
Bravo WS 24.0 fl oz Provost 433SC 10.7 fl oz	1,2,7 3,4,5,6	3.4	1.3	5431
Bravo WS 24.0 fl oz ISA 010F 19.0 fl oz	1,2,7 3,4,5,6	3.5	0.3	5633
Bravo WS 24.0 fl oz ISA 010F 16.5 fl oz	1,2,7 3,4,5,6	3.8	1.3	5449
Bravo WS 24.0 fl oz ISA 010F 14.0 fl oz	1,2,7 3,4,5,6	4.1	1.1	5332
Proline 480SC 5.7 fl oz Provost 433SC 10.7 fl oz Bravo WS 24.0 fl oz	1.5 3,4,5,6 7	4.1	1.0	5043
LSD (P = 0.05)		*0.4*	*1.1*	*826*

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

Comparison of Fungicide Rx Programs for Peanut Disease Control in Southeast Alabama, WREC

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

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

Methods: Peanut cultivar 'Tifguard' was planted on May 23 at the Wiregrass Research and Extension Center in Headland, AL in a field with a history of peanut production. Seed were sown at a rate of approximately five seed per foot of row and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed and nematode control were followed. The soil type was a Dothan sandy loam (OM<1 percent). On May 3, 1 quarts per acre of Sonalan + 0.45 ounces per acre of Strongarm + 1 quarts per acre of Dual Magnum were applied and incorporated for pre emergent weed control. On May 4, 3 ounces per acre of Valor were applied to test area for weed control. On July 1, 1.5 pints per acre of 2,4 DB was applied for weed control. Thrips were controlled with an in-furrow application of 5.0 pounds per acre of Thimet 20G at planting.

Plots, which consisted of four 30-ft rows spaced 3-ft apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and 1.0 inch of water was applied during the season on September 17. Rainfall recorded during the growing season was as follows: June – 5.08 in, July – 16.08 in, August – 10.8 inches and September - 3.9 inches Early emergence applications were applied on June 12 using a drop nozzle directly over the row calibrated to deliver 20 gallons per acre. Foliar fungicides were applied on a 14-28 day schedule on July 1, July 2, July 17, July 24, August 7, August 13, August 27, September 10, September 11, September 14 and October 1using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

Early and late leaf spot were visually rated on August 6, August 20, September 4, September 17, October 1 and October 8 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants). AUDPC (Area Under the Disease Progress Curve) was calculated to determine the severity of leaf spot as it progresses over the growing season.
Counts of stem rot (SR) loci (1 locus was defined as < 1 foot of consecutive symptoms and signs of the disease) were made on October 16 immediately after plot inversion. Plots

were harvested on October 20 and yields were reported at 6.92% moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P < 0.05$).

Results: During the 2013 peanut production season, temperatures were near normal and monthly rainfall totals were above average during June, July and August. Leaf spot progressed rapidly during the season but development slowed in Sep due to cooler and drier weather patterns. Stem rot incidence was lower than in previous years due to higher than normal rainfall and cooler soil temperatures. Severity of leaf spot among all treatments regardless of input was reduced when compared with the untreated control. Among the low risk index programs, when compared with Bravo WS alone, gave better leaf spot control. Control among the high risk programs was similar to that observed with the Bravo full season treatment program. When looking at AUDPC to determine disease severity only the Tilt-Bravo/Abound/Bravo (low and medium risk programs) were not significantly different from the Bravo low risk program. All other treatment indices were not different from the high risk Bravo treatment program. Even though stem rot incidence was lower than in previous years, all risk programs had significantly lower stem rot incidence than did the untreated control. No differences were observed among any of the treatment programs. Yields for all treatment programs were significantly higher than the untreated control with the exception of the Bravo low risk program. Yield among the other index programs was similar.

Comparison of Fungicide R_x Programs for Peanut Disease Control in Southeast Alabama, WREC

Treatment and Rate/ac	Application Timing	Risk Index	Disease Ratings			Yield lbs/ac
			Leaf Spot[1]	AUDPC	Stem Rot[2]	
Untreated control			8.0	293	7.0	3605
Bravo WS 24.0 fl oz Provost 433SC 10.7 fl oz	1,7 3,5	low	3.8	199	1.5	4469
Proline 480SC 5.7 fl oz Provost 433 SC 10.7 fl oz Bravo WS 24.0 fl oz	1.5 3,4.5,6 7	medium	4.1	206	1.3	4219
Proline 480SC 5.7 fl oz Provost 433 SC 10.7 fl oz Convoy + Bravo WS 13.0 + 24.0 fl oz Bravo WS 24.0 fl oz	1.5 3,4,5 6 7	high	4.1	211	1.8	4566
Headline 2.09SC 9.0 fl oz Convoy + Bravo + Topsin 21 + 16 + 5 fl oz Convoy + Headline 21 + 9 fl oz Topsin + Bravo WS 5 + 16 fl oz	2 3.5 5 6.5	low	4.0	205	0.8	4348
Headline 2.09SC 9.0 fl oz Convoy + Bravo + Topsin 16 + 16 + 5 fl oz Convoy + Headline 16 + 9 fl oz Convoy + Bravo 16 + 24 fl oz Topsin + Bravo WS 5 + 16 fl oz	1.5 3 4.5 6 7	medium	4.3	216	2.3	4509
Headline 2.09SC 9.0 fl oz Convoy + Bravo + Topsin 13 + 16 + 5 fl oz Convoy + Bravo 13 + 24 fl oz Convoy + Headline 13 + 9 fl oz Bravo WS 24.0 fl oz	1.5 3,6 4 5 7	high	4.0	212	1.5	4703
Tilt-Bravo 36.0 fl oz Abound 2SC + Bravo WS 18.2 + 24 fl oz Bravo WS 24.0 fl oz	2 3.5,5 6.5	low	4.7	217	2.3	4138
Tilt-Bravo 24.0 fl oz Abound 2SC 18.2 fl oz Bravo WS 24.0 fl oz	1.5,4 3,5 6.5	medium	4.5	221	1.8	4412
Tilt-Bravo 24.0 fl oz Abound 2SC 18.2 fl oz Bravo WS 24.0 fl oz	1,2,4 3,5 6,7	high	3.7	193	1.5	4966
Headline 2.09SC Headline + Bravo WS 12.0 + 16.0 fl oz Muscle 3.6F + Bravo WS 7.2 + 16.0 fl oz...	2 3.5 5,6.5	low	3.9	201	1.0	4711
Headline 2.09SC Muscle 3.6F + Bravo WS 7.2 + 16.0 fl oz Headline 12.0 fl oz Bravo WS 24.0 fl oz	1.5 3,5.5 4 6.5	medium	4.1	206	1.8	4574
Headline 2.09SC Muscle 3.6F + Bravo WS 7.2 + 16.0 fl oz Headline 12.0 fl oz Bravo WS 24.0 fl oz	1.5 3,5 4 6,7	high	3.8	207	2.2	4525
Bravo WS 24.0 fl oz	1,3,5,7	low	5.3	229	1.7	4025
Bravo WS 24.0 fl oz	1,2.5,4,5.5,7	medium	4.1	209	0.8	4493
Bravo WS 24.0 fl oz	1-7	high	3.3	200	1.3	4840
LSD (P = 0.05)			*0.6*	*13.0*	*1.6*	*479*

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

Evaluation of Experimental Fungicide MCW 710-SC for Peanut Disease Control in Southeast Alabama, WREC

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

Objective: To evaluate the experimental fungicide MCW 710-SC and compare it against currently registered fungicides for control of early and late leaf spot, stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Tifguard' was planted on May 23 at the Wiregrass Research and Extension Center in Headland, AL in a field with a history of peanut production. Seed were sown at a rate of approximately five seed per foot of row and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed and nematode control were followed. The soil type was a Dothan sandy loam (OM<1 percent). On May 3, 1 quarts per acre of Sonalan + 0.45 ounces per acre of Strongarm + 1 quarts per acre of Dual Magnum were applied and incorporated for pre emergent weed control. On May 4, 3 ounces per acre of Valor were applied to test area for weed control. On July 1, 1.5 pints per acre of 2,4 DB was applied for weed control. Thrips were controlled with an in-furrow application of 5.0 pounds per acre of Thimet 20G at planting.

Plots, which consisted of four 30-ft rows spaced 3-ft apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and 1.0 inch of water was applied during the season on September 17. Rainfall recorded during the growing season was as follows: June – 5.08 in, July – 16.08 in, August – 10.8 in and September - 3.9 in. Early emergence applications were applied on June 12 using a drop nozzle directly over the row calibrated to deliver 20 gallons per acre. Foliar fungicides were applied on a 14 day schedule on June 28, July 17, July 31, August 13, August 27, September 11 and September 27 using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre. Early and late leaf spot were visually rated on August 28, September 18 and October 7 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants).

Counts of stem rot (SR) loci (1 locus was defined as < 1 ft of consecutive symptoms and signs of the disease) were made on October 14 immediately after plot inversion. Plots were harvested on October 18 and yields were reported at 7.56% moisture. Significance

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

Results: During the 2013 peanut production season, temperatures were near normal and monthly rainfall totals were above average during June, July and August. Leaf spot progressed rapidly during the season but development slowed in Sep due to cooler and drier weather patterns. Stem rot incidence was lower than in previous years due to higher than normal rainfall and cooler soil temperatures. All of the treatment programs reduced leaf significantly when compared with the untreated control. No significant differences were observed among the treatment programs and all programs that included MCW 710-SC gave leaf spot control that was similar to that observed with the Equus only full-season treatment. Reduction in incidence of stem rot was observed among the treated plots when compared with the untreated control. Among the treatment programs no differences in stem rot severity was observed. All treatment programs increased yield over that seen in the untreated control. However of the programs tested, only the Equus/Abound and Equus 720 only programs had yields that were significantly higher than the untreated control. All other treatment programs had similar yields and did not differ significantly from the untreated plots.

Evaluation of Experimental Fungicide MCW 710-SC for Peanut Disease Control in Southeast Alabama, WREC

Treatment and Rate/ac	Application Timing	Disease Ratings		Yield lbs/ac
		Leaf Spot[1]	Stem Rot[2]	
Untreated Control	---	7.5[3]	6.0	3815
Equus 720 24.0 fl oz MCW 710-SC 8.0 fl oz	1,2,7 3,4,5,6	3.9	1.2	4187
Equus 720 24.0 fl oz MCW 710-SC 8.0 fl oz	1,2,7 3,4,5,6	4.0	1.5	4283
Equus 720 24.0 fl oz MCW 710-SC 8.0 fl oz	1,2,7 3,4,5,6	4.1	1.0	4275
Equus 720 24.0 fl oz MCW 710-SC 8.0 fl oz	1,2,7 3,4,5,6	4.0	1.0	4219
Equus 720 24.0 fl oz Provost 433SC 8.0 fl oz	1,2,7 3,4,5,6	3.8	1.8	4364
Equus 720 24.0 fl oz Artisan 3.6E 26.0 fl oz	1,2,7 3,4,5,6	4.2	1.5	4436
Equus 720 24.0 fl oz Orius 3.6F 7.2 fl oz	1,2,7 3,4,5,6	4.1	1.7	4195
Equus 720 24.0 fl oz Abound 2.08SC 18.2 fl oz	1,2,4,6,7 3,5	3.8	0.8	4678
Equus 720 24.0 fl oz	1-7	4.0	1.5	4630
LSD (P = 0.05)		0.4	1.5	654

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

Evaluation of Serenade Optimum, Koverall and Topguard for Peanut Disease Control in Southwest Alabama, GCREC

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

Objective: To evaluate the biological fungicide Serenade Optimum, Koverall and Topguard and compare them with currently registered fungicides for control of early and late leaf spot, rust and yield response in a dry-land peanut production system in southwest Alabama.

Methods: Peanut cultivar 'Georgia 06G' was planted on May 20 at the Gulf Coast Research and Extension Center near Fairhope, AL at a rate of five to six seed per ft of row in a field that had previously cropped to peanut production. The soil type was a Malbis fine sandy loam (Organic matter <1%). Recommendations of the Alabama Cooperative Extension System for fertility and weed control were followed. Thrips were controlled with an in-furrow application of 6-7 pounds per acre of Thimet 20G at planting. 5.0 pounds per acre of Rhizobium innoculant was also applied at planting. On May 20, after planting, 1 quarts per acre Roundup + 1.5 pints per acre of Dual + 1 pt/25 gal of H2O were applied to the test area for weed control. On June 14, 8 ounces per acre Gramoxone + 1.5 pints per acre of Storm + 1.0 pints per acre 2,4 DB+ 1 qt/100 gal H2O of Induce was applied for post emergent weed control. On June 27, 2 ounces per acre of Cadre + 0.45 ounces per acre of Strongarm + 1 pt/25 gal H2O of Induce was applied for weed control.

Plots, which consisted of four 30-ft rows on 38-in. centers, were arranged in a randomized complete block with six replications. Plots were not irrigated. Foliar fungicides were applied as a full canopy spray at 14-day intervals on June 27, July 2, July 10, July 24, August 5, August 21, September 3 and September 18 using a four-row ATV mounted CO2 sprayer with three TX8 nozzles per row spaced 19-in apart calibrated to deliver 15 gallons per acre at 30 lb psi.

Leaf spot diseases were visually rated on September 25 using the Florida leaf spot scoring system where 1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation(<10%); 5 = lesions noticeable in upper canopy with some defoliation(<25%); 6 = lesions numerous with significant defoliation(<50%); 7 = lesions numerous with heavy defoliation(<75%); 8 = very numerous lesions on few remaining leaves with heavy defoliation(<90%); 9 = very few remaining leaves covered with lesions(<95%); and 10 = plants completely defoliated or dead and the ICRISAT rust rating scale where 1 = no disease, ...9 = plants severely affected, 80-100% leaves withering.

Counts of stem rot (SR) loci were made on October 9 immediately after plot inversion (1 locus is defined as < 1 ft of consecutive stem rot damaged plants per row). Plots were harvested on October 15 and yields were reported at 8.15 percent moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test (P = 0.05).

Results: During the 2013 peanut production season, temperatures were near normal and monthly rainfall totals were above average during June, July and August. Leaf spot progressed rapidly during the season but development slowed in September due to cooler and drier weather patterns. Rust appeared in late Aug and developed rapidly during Sep. Stem rot incidence was lower than in previous years due to higher than normal rainfall and cooler soil temperatures. When compared with the untreated control, all fungicide programs had significantly lower leaf spot ratings. Provost full-season, Serenade Optimum/Provost and Echo/Provost gave better leaf spot control than the season-long Echo 720 standard. All fungicide programs had lower rust severity than did the untreated control. Among the fungicide programs, Serenade Optimum (24 ounces) had poorer leaf spot and rust control than the Echo 720 full-season standard and Echo/Provost and Headline/Provost/Headline/Echo had significantly better control than the Echo 720 standard. With the exception of the Serenade Optimum (24 ounces) program, all remaining fungicide programs had significantly lower stem rot indices than the non-treated control. All fungicide programs except Serenade Optimum (14 ounces) and Serenade Optimum (24 ounces), yielded higher than the untreated control. Yield among the remaining programs was similar to the full-season Echo 720 standard.

Evaluation of Serenade Optimum, Koverall and Topguard for Peanut Disease Control in Southwest Alabama, GCREC

Treatment and Rate/ac	Application Timing	Disease Ratings			Yield lbs/ac
		Leaf Spot[1]	Rust[2]	Stem Rot[3]	
Untreated Control	---	6.5[4]	6.8	4.8	4400
Provost 433SC 10.7 fl oz	1-7	3.1	3..0	0.8	5413
Serenade Optimum 14.0 oz	1-7	4.2	4.8	1.3	4485
Serenade Optimum 24.0 oz	1-7	4.4	5.5	3.2	4355
Serenade Optimum 24.0 oz Provost 433SC 10.7 fl oz	1,2,7 3,4,5,6	3.1	3.3	0.7	5265
Echo 720 24.0 fl oz Provost 433SC 8.0 fl oz	1,2,7 3,4,5,6	3.1	2.7	1.0	5314
Echo720 24.0 fl oz Abound 2.08SC + Alto 0.83SL 18.5 + 5.5 fl oz	1,2,4,6,7 3,5	3.6	3.2	1.1	5456
Echo 720 24.0 fl oz Muscle ADV 32 fl oz	1,2,7 3,4,5,6	3.2	3.0	0.8	5395
Echo 720 24.0 fl oz Echo 720 + Artisan 16.0 +13.0 fl oz	1,2,4,6,7 3,5	3.7	3.8	2.0	5192
Headline 2.09SC 9.0 fl oz Provost 433SC 8.0 fl oz Headline 2.09SC 12.0 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	3.3	2.5	0.7	5295
Koverall + Echo 720 2.0 lb + 16.0 fl oz Koverall + Topguard 2.0 lb + 14.0 fl oz	1,2,7 3,4,5,6	3.8	3.5	1.5	5158
Echo 720 24.0 fl oz	1-7	3.7	4.2	1.5	4939
LSD (P = 0.05)		*0.5*	*1.3*	*1.7*	*623*

[1]Early and late leaf spot were assessed using the Florida leaf spot scoring 1-10 system.
[2]Rust rated using the ICRISAT 1-9 rust rating scale.
[3]White mold hits assessed at inversion as the number of disease loci per total row ft.
[4]Mean separation within columns was according to Fisher's protected least significant difference (LSD)test (P = 0.05).

Evaluation of Fontelis for Peanut Disease Control in Southwest Alabama, GCREC

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

Objective: To evaluate Fontelis and compare it with other currently registered fungicides for control of early and late leaf spot, rust, stem rot and yield response in a dry-land peanut production system in southwest Alabama.

Methods: Peanut cultivar 'Georgia 06G' was planted on May 20 at the Gulf Coast Research and Extension Center near Fairhope, AL at a rate of five to six seed per ft of row in a field that had previously cropped to peanut production. The soil type was a Malbis fine sandy loam (Organic matter <1%). Recommendations of the Alabama Cooperative Extension System for fertility and weed control were followed. Thrips were controlled with an in-furrow application of 6-7 pounds per acre of Thimet 20G at planting. 5.0 pounds per acre of Rhizobium innoculant was also applied at planting. On May 20, after planting, 1 quarts per acre Roundup + 1.5 pints per acre of Dual + 1 pt/25 gal of H2O were applied to the test area for weed control. On June 14, 8 ounces per acre Gramoxone + 1.5 pints per acre of Storm + 1.0 pints per acre 2,4 DB+ 1 qt/100 gal H2O of Induce was applied for post emergent weed control. On June 27, 2 ounces per acre of Cadre + 0.45 ounces per acre of Strongarm + 1 pt/25 gal H2O of Induce was applied for weed control.

Plots, which consisted of four 30-ft rows on 38-in. centers, were arranged in a randomized complete block with six replications. Plots were not irrigated. Foliar fungicides were applied as a full canopy spray at 14-day intervals on June 21, June 28, July 2, July 20, July 30, August 13, August 27 and September 10 using a four-row ATV mounted CO2 sprayer with three TX8 nozzles per row spaced 19-in apart calibrated to deliver 15 gallons per acre at 30 lb psi.

Leaf spot diseases were visually rated on September 25 using the Florida leaf spot scoring system where 1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation(<10%); 5 = lesions noticeable in upper canopy with some defoliation(<25%); 6 = lesions numerous with significant defoliation(<50%); 7 = lesions numerous with heavy defoliation(<75%); 8 = very numerous lesions on few remaining leaves with heavy defoliation(<90%); 9 = very few remaining leaves covered with lesions(<95%); and 10 = plants completely defoliated or dead and the ICRISAT rust rating scale where 1 = no disease, ...9 = plants severely affected, 80-100% leaves withering.

Counts of stem rot (SR) loci were made on October 9 immediately after plot inversion (1 locus is defined as < 1 ft of consecutive stem rot damaged plants per row). Plots

were harvested on October 15 and yields were reported at 8.65% moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test (P = 0.05).

Results: During the 2013 peanut production season, temperatures were near normal and monthly rainfall totals were above average during June, July and August. Leaf spot progressed rapidly during the season but development slowed in September due to cooler and drier weather patterns. Rust appeared in late Aug and developed rapidly during Sep. Stem rot incidence was lower than in previous years due to higher than normal rainfall and cooler soil temperatures. All fungicide programs had significantly lower leaf spot ratings than the untreated control. Among the fungicide programs, only Headline/Fontelis/Echo + Muscle/Echo had significantly poorer leaf spot control than did the season-long Echo 720 standard. All other fungicide programs gave similar leaf spot control. All fungicide programs, with the exception of the Headline/Fontelis/Echo + Muscle/Echo program, had lower rust severity than the untreated control. Control with the remaining treatments was similar to the Echo 720 standard. All of the fungicide programs evaluated had significantly lower stem rot indices than the untreated control. No differences in stem rot control were observed among any of the treatment programs compared with the season-long Echo 720 standard. All fungicide programs yielded higher than the untreated control. With the exception of Headline/Fontelis/Echo + Muscle/Echo, yield among the remaining programs was similar to the full-season Echo 720 standard.

Evaluation of Fontelis for Peanut Disease Control in Southwest Alabama, GCREC

Treatment and Rate/ac	Application Timing	Disease Ratings			Yield lbs/ac
		Leaf Spot[1]	Rust[2]	Stem Rot[3]	
Untreated Control	---	6.8[4]	2.5	6.8	3712
Echo 720 + Muscle 3.6F 16.0 + 7.2 fl oz Fontelis 16.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5 6,7	3.0	2.0	2.5	4993
Echo 720 + Muscle 3.6F 16.0 + 7.2 fl oz Fontelis 16.0 fl oz Echo 720 24.0 fl oz	1,2,4 3,5 6,7	3.3	2.0	2.3	4538
Headline 2.09SC 9.0 fl oz Fontelis 16.0 fl oz Echo 720 24.0 fl oz	1.5 3,4,5 6,7	3.2	2.0	1.6	4955
Headline 2.09SC 9.0 fl oz Fontelis 16.0 fl oz Echo 720 + Muscle 3.6F 16.0 + 7.2 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	4.5	2.3	3.3	4351
Echo 720 + Muscle 3.6F 16.0 + 7.2 fl oz Echo 720 + Convoy 16.0 + 13.0 fl oz Echo 720 24.0 fl oz	1,2 3,5 6,7	3.0	2.0	1.6	5066
Echo 720 + Muscle 3.6F 16.0 + 7.2 fl oz Echo 720 + Convoy 16.0 + 13.0 fl oz Echo 720 24.0 fl oz	1,2,4 3,4,5 6,7	3.5	2.0	1.5	4687
Echo720 24.0 fl oz Abound 2.08SC + Alto 0.83SL 18.5 + 5.5 fl oz	1,2,4,6,7 3,5	3.0	2.0	3.3	4710
Echo 720 24.0 fl oz Echo 720 + Muscle 3.6F 16.0 + 7.2 fl oz	1,2,7 3,4,5,6	3.5	2.0	3.8	4809
Echo 720 24.0 fl oz Provost 433SC 10.7 fl oz	1,2,7 3,4,5,6	3.0	2.0	3.0	5165
Echo 720 24.0 fl oz Echo 720 + Convoy 16.0 +13.0 fl oz	1,2,7 3,4,5,6	3.1	2.0	1.8	4890
Headline 2.09SC 9.0 fl oz Muscle 3.6F 7.2 fl oz Headline 2.09SC 12.0 fl oz Echo 720 24.0 fl oz	1.5 3,5 4 6,7	3.3	2.0	2.8	5054
Echo 720 24.0 fl oz	1-7	3.1	2.0	2.3	4947
LSD (P = 0.05)		0.5	0.2	1.9	518

[1]Early and late leaf spot were assessed using the Florida leaf spot scoring 1-10 system.
[2]Rust rated using the ICRISAT 1-9 rust rating scale.
[3]White mold hits assessed at inversion as the number of disease loci per total row ft.
[4]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05).

Evaluation of Experimental Products A18126 and A18993 for Peanut Disease Control in Southwest Alabama, GCREC

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

Objective: To evaluate experimental products A18126 and A18993 and compare them against currently registered products for control of early and late leaf spot, stem rot and yield response in a dry-land peanut production system in southwest Alabama.

Methods: Peanut cultivar 'Georgia 06G' was planted on May 20 at the Gulf Coast Research and Extension Center near Fairhope, AL at a rate of five to six seed per ft of row in a field that had previously cropped to peanut production. The soil type was a Malbis fine sandy loam (Organic matter <1%). Recommendations of the Alabama Cooperative Extension System for fertility and weed control were followed. Thrips were controlled with an in-furrow application of 6-7 pounds per acre of Thimet 20G at planting. 5.0 pounds per acre of Rhizobium innoculant was also applied at planting. On May 20, after planting, 1 quart per acre Roundup + 1.5 pints per acre of Dual + 1 pints per 25 gallons of H2O were applied to the test area for weed control. On June 14, 8 ounces per acre Gramoxone + 1.5 pints per acre of Storm + 1.0 pints per acre 2,4 DB+ 1 quart/100 gal H2O of Induce was applied for post emergent weed control. On June 27, 2 ounces per acre of Cadre + 0.45 ounces per acre of Strongarm + 1 pt/25 gallons H2O of Induce was applied for weed control.

Plots, which consisted of four 30-foot rows on 38-inch centers, were arranged in a randomized complete block with six replications. Plots were not irrigated. Foliar fungicides were applied as a full canopy spray at 14-day intervals on June 27, July 2, July 10, July 24, August 5, August 21, September 3 and September 18 using a four-row ATV mounted CO2 sprayer with three TX8 nozzles per row spaced 19-in apart calibrated to deliver 15 gallons per acre at 30 pounds psi.

Leaf spot diseases were visually rated on September 25 using the Florida leaf spot scoring system where 1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation(<10%); 5 = lesions noticeable in upper canopy with some defoliation(<25%); 6 = lesions numerous with significant defoliation (<50 percent) 7 = lesions numerous with heavy defoliation(<75 percent); 8 = very numerous lesions on few remaining leaves with heavy defoliation(<90 percent); 9 = very few remaining leaves covered with lesions(<95 percent); and 10 = plants completely defoliated or dead and the ICRISAT rust rating scale where 1 = no disease, ...9 = plants severely affected, 80-100 percent leaves withering.

Counts of stem rot (SR) loci were made on October 9 immediately after plot inversion (1 locus is defined as < 1 ft of consecutive stem rot damaged plants per row). Plots were harvested on October 16 and yields were reported at 7.85% moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test (P = 0.05).

Results: During the 2013 peanut production season, temperatures were near normal and monthly rainfall totals were above average during June, July and August. Leaf spot progressed rapidly during the season but development slowed in September due to cooler and drier weather patterns. Rust appeared in late Aug and developed rapidly during Sep. Stem rot incidence was lower than in previous years due to higher than normal rainfall and cooler soil temperatures. When compared with the untreated control, all fungicide programs had significantly lower leaf spot ratings. Leaf spot control among the treatment programs was similar to that observed with the Bravo only full-season treatment. At the time of inversion on October 9, considerable defoliation had occurred and the unsprayed control plots were approximately 75 percent defoliated across all six replications. Rust control was greater in all of the treated plots than that observed with the untreated control. Among the treated plots none all rust control was similar and there were no differences in control from that observed in the Bravo only treatment. Stem rot incidence was low and all of the treated plots decreased the number of stem rot hits compared to the non-treated control. Yields for all treated plots were higher than that obtained with the non-treated plots. Among the treated plots, the A18126/Tilt-Bravo/A18993/Bravo treated plot yielded the highest. Yield among all the other treated plots was similar.

Evaluation of Experimental Products A18126 And A18993 for Peanut Disease Control in Southwest Alabama, WREC

Treatment and rate/A	Application timing	Disease ratings			Pod Yield per acre
		Leaf Spot[1]	Rust[2]	Stem rot[3]	
Untreated Control	---	6.5[4]	4.2	2.8	4572
Tilt-Bravo 4.3SE 24.0 fl oz A18126 7.14 oz Bravo WS 24.0 fl oz	1,2 3,5 4,6,7	3.2	2.3	0.8	5199
Tilt-Bravo 4.3SE 24.0 fl oz A18126 9.5 oz Bravo WS 24.0 fl oz	1,2 3,5 4,6,7	3.1	2.2	0.8	5096
Tilt-Bravo 4.3SE 24.0 fl oz A18126 7.14 oz Bravo WS 24.0 fl oz	2 1,3,5 4,6,7	3.0	2.2	1.5	5352
A18993 18.3 fl oz A18126 9.5 oz Bravo WS 24.0 fl oz	1.5 3,5 4,6,7	3.3	2.8	1.2	5120
A18126 7.26 oz Tilt-Bravo 4.3SE 24.0 fl oz A18993 18.3 fl oz Bravo WS 24.0 fl oz	EE 1.5 3,5 4,6,7	3.3	2.3	0.2	5459
A18126 7.26 fl oz Tilt-Bravo 4.3SE 24.0 fl oz A18126 9.5 oz Bravo WS 24.0 fl oz	EE 1.5 3,5 4,6,7	3.4	2.5	0.3	5376
Headline 2.09SC 9.0 fl oz A18993 18.3 fl oz Bravo WS 24.0 fl oz	1.5 3,5 4,6,7	3.3	2.5	0.8	5050
A18126 7.26 oz Headline 2.09SC 9.0 fl oz A18993 18.3 fl oz Bravo WS 24.0 fl oz	EE 125 3,5 4,6,7	3.3	2.5	0.8	5184
Tilt-Bravo 4.3SE 24.0 fl oz Abound 2.08SC + Alto 0.83SL 18.3 + 5.5 fl oz Bravo WS 24.0 fl oz	1,2 3,5 4,6,7	3.1	2.7	1.2	5294
Tilt-Bravo 4.3SE 24.0 fl oz Provost 433SC 8.0 fl oz Bravo WS 24.0 fl oz	1,2 3,4,5,6 7	2.9	2.2	0.8	5391
Tilt-Bravo 4.3SE 24.0 fl oz Fontelis 16.0 fl oz Bravo WS 24.0 fl oz	1,2 3,4,5 6,7	3.2	2.3	1.3	5345
Bravo WS Bravo WS + Muscle 3.6F 16.0 + 7.2 fl oz	1,2,7 3,4,5,6	2.9	2.0	0.0	5276
Bravo WS 24.0 fl oz Provost 433SC 10.7 fl oz	1,2,7 3,4,5,6	2.8	2.0	0.2	5578
Bravo WS 24.0 fl oz Bravo WS + Artisan 26.0 + 21.0 fl oz	1,2,4,6,7 3,5	3.0	2.2	0.8	4951
Headline 2.09SC 9.0 fl oz Muscle 3.6 F 7.2 fl oz Headline 2.09SC 12.0 fl oz Bravo WS 24.0 fl oz	1.5 3,5 4 6,7	3.3	2.3	1.2	5203
Bravo WS 24.0 fl oz	1-7	3.2	2.5	1.0	4974
LSD (P = 0.05)		*0.4*	*0.8*	*1.4*	*774*

[1]Early and late leaf spot were assessed using the Florida leaf spot scoring 1-10 system.
[2]Rust rated using the ICRISAT 1-9 rust rating scale.
[3]White mold hits assessed at inversion as the number of disease loci per total row ft.
[4]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05).

Evaluation of Experimental Products IRF 169, IR 14360 and ISA 010F for Peanut Disease Control in Southwest Alabama, GCREC

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

Objective: To evaluate experimental products A18126 and A18993 and compare them against currently registered products for control of early and late leaf spot, stem rot and yield response in a dry-land peanut production system in southwest Alabama.

Methods: Peanut cultivar 'Georgia 06G' was planted on May 20 at the Gulf Coast Research and Extension Center near Fairhope, AL at a rate of five to six seed per ft of row in a field that had previously cropped to peanut production. The soil type was a Malbis fine sandy loam (Organic matter <1 percent). Recommendations of the Alabama Cooperative Extension System for fertility and weed control were followed. Thrips were controlled with an in-furrow application of 6-7 pounds per acre of Thimet 20G at planting. 5.0 pounds per acre of Rhizobium innoculant was also applied at planting. On May 20, after planting, 1 quarts per acre Roundup + 1.5 pints per acre of Dual + 1 pints per 25 gallons of H2O were applied to the test area for weed control. On June 14, 8 ounces per acre Gramoxone + 1.5 pints per acre of Storm + 1.0 pints per acre 2,4 DB+ 1 quarts per 100 gallons H2O of Induce was applied for post emergent weed control. On June 27, 2 ounces per acre of Cadre + 0.45 ounces per acre of Strongarm + 1 pints per 25 gallons H2O of Induce was applied for weed control.

Plots, which consisted of four 30-foot rows on 38-inch centers, were arranged in a randomized complete block with six replications. Plots were not irrigated. Foliar fungicides were applied as a full canopy spray at 14-day intervals on June 27, July 10, July 24, August 5, August 21, September 3 and September 18 using a four-row ATV mounted CO2 sprayer with three TX8 nozzles per row spaced 19-inches apart calibrated to deliver 15 gallons per acre at 30 pounds psi.

Leaf spot diseases were visually rated on September 25 using the Florida leaf spot scoring system where 1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation(<10%); 5 = lesions noticeable in upper canopy with some defoliation(<25 percent); 6 = lesions numerous with significant defoliation(<50 percent); 7 = lesions numerous with heavy defoliation(<75 percent); 8 = very numerous lesions on few remaining leaves with heavy defoliation(<90 percent); 9 = very few remaining leaves covered with lesions(<95 percent); and 10 = plants completely defoliated or dead and the ICRISAT rust rating scale where 1 = no disease, ...9 = plants severely affected, 80-100% leaves withering.

Counts of stem rot (SR) loci were made on October 9 immediately after plot inversion (1 locus is defined as < 1 foot of consecutive stem rot damaged plants per row). Plots were harvested on October 15 and yields were reported at 8.25 percent moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test (P = 0.05).

Results: During the 2013 peanut production season, temperatures were near normal and monthly rainfall totals were above average during June, July and August. Rainfall totals for May, June, July and August were respectively: 9.43 inches, 8.94 inches, 16.67 inches and 8.70 inches. Leaf spot progressed rapidly during the season but development slowed in September due to cooler and drier weather patterns. Rust appeared in late Aug and developed rapidly during Sep. Stem rot incidence was lower than in previous years due to higher than normal rainfall and cooler soil temperatures. All treatments had leaf spot severity that was lower than the untreated control. Among the treatments, IRF 169/Abound/Bravo, Bravo/ISA 010F [(14 fl oz)3,5], Bravo/ISA 010F [19 fl oz)3,4,5,6], Bravo/ISA 010F(16.5 fl oz) 3,4,5,6] and Bravo/ISA 010F(14 fl oz) 3,4,5,6] controlled leaf spot similar to that observed with the Bravo/Provost standard treatment. All treated plots had rust severity that was lower than the untreated control. All the treatments had rust control that was similar to that observed with the Bravo/Provost treatement. Although stem rot incidence was low, the number of stem rot loci observed in the treated plots was lower than that observed in the untreated control. Among the treatments, only the Tilt-Bravo/Abound/Bravo and Bravo/ISA 010F [(14 fl oz) 3,4,5,6] treatments had significantly higher average stem rot loci than did the Bravo/Provost treatment program. All treatments yielded higher than the untreated control. However, among the treatment programs the lowest yield was with the Bravo/Muscle program and the highest yield was with the Bravo/ISA 010F [(16.5 fl oz) 3,4,5,6] program. Yield among all the other treatments was similar.

Evaluation of Experimental Products IRF 169, IR 14360 and ISA 010F for Peanut Disease Control in Southwest Alabama, GCREC

Treatment and Rate/ac	Application Timing	Disease Ratings			Yield lbs/ac
		Leaf Spot[1]	Rust[2]	Stem Rot[2]	
Untreated Control	---	6.5[3]	5.0	4.8	4163
Tilt-Bravo 4.3SE 24.0 fl oz Abound 2.08SC 18.2 fl oz Bravo WS 24.0 fl oz	1,2 3,5 4,6,7	3.8	2.3	2.0	5096
IRF 169 25.0 fl oz Abound 2.08SC 18.2 fl oz Bravo WS 24.0 fl oz	1,2 3,5 4,6,7	3.5	2.2	1.0	5383
IR 14360 8.0 fl oz Abound 2.08SC 18.2 fl oz Bravo WS 24.0 fl oz	1,2 3,5 4,6,7	3.8	2.3	1.1	4963
IR 14360 10.0 fl oz Abound 2.08SC 18.2 fl oz Bravo WS 24.0 fl oz	1,2 3,5 4,6,7	3.8	2.2	0.3	5314
IR 14360 13.0 fl oz Abound 2.08SC 18.2 fl oz Bravo WS 24.0 fl oz	1,2 3,5 4,6,7	4.2	2.7	1.0	5486
Bravo WS 24.0 fl oz Abound 2.08SC 18.2 fl oz	1,2,4,6,7 3,5	3.8	2.7	0.7	5475
Bravo WS 24.0 fl oz ISA 010F 19.0 fl oz	1,2,4,6,7 3,5	3.5	2.2	0.8	5246
Bravo WS 24.0 fl oz ISA 010F 16.5 fl oz	1,2,4,6,7 3,5	3.6	2.5	1.0	5326
Bravo WS 24.0 fl oz ISA 010F 14.0 fl oz	1,2,4,6,7 3,5	3.5	2.3	1.3	5372
Bravo WS 24.0 fl oz Muscle 3.6F 7.2 fl oz	1,2,7 3,4,5,6	4.0	2.7	0.8	4618
Bravo WS 24.0 fl oz Provost 433SC 10.7 fl oz	1,2,7 3,4,5,6	3.1	2.3	0.5	5387
Bravo WS 24.0 fl oz ISA 010F 19.0 fl oz	1,2,7 3,4,5,6	3.3	2.0	1.1	5654
Bravo WS 24.0 fl oz ISA 010F 16.5 fl oz	1,2,7 3,4,5,6	3.5	2.2	2.5	5471
Bravo WS 24.0 fl oz ISA 010F 14.0 fl oz	1,2,7 3,4,5,6	3.2	2.5	1.0	5303
LSD (P = 0.05)		*0.5*	*0.7*	*1.3*	*621*

[1]Early and late leaf spot were assessed using the Florida leaf spot scoring 1-10 system.
[2]Rust rated using the ICRISAT 1-9 rust rating scale.
[3]White mold hits assessed at inversion as the number of disease loci per total row ft.
[4]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05).

Comparison of Peanut Rx Programs for Peanut Disease Control in Southwest Alabama, GCREC

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

Objective: To evaluate peanut Rx programs and compare them against each other for control of early and late leaf spot, rust, stem rot and yield response in a dry-land peanut production system in southwest Alabama.

Methods: Peanut cultivar 'Georgia 06G' was planted on May 20 at the Gulf Coast Research and Extension Center near Fairhope, AL at a rate of five to six seed per ft of row in a field that had previously cropped to peanut production. The soil type was a Malbis fine sandy loam (Organic matter <1 percent). Recommendations of the Alabama Cooperative Extension System for fertility and weed control were followed. Thrips were controlled with an in-furrow application of 6-7 pound per acre of Thimet 20G at planting. 5.0 pounds per acre of Rhizobium innoculant was also applied at planting. On May 20, after planting, 1 quarts per acre Roundup + 1.5 pints per acre of Dual + 1 pints per 25 gallons of H_2O were applied to the test area for weed control. On June 14, 8 ounces per acre Gramoxone + 1.5 pints per acre of Storm + 1.0 pint per acre 2,4 DB+ 1 quart per 100 gallons H_2O of Induce was applied for post emergent weed control. On June 27, 2 ounces per acre of Cadre + 0.45 ounces per acre of Strongarm + 1 pint per 25 gallons H_2O of Induce was applied for weed control.

Plots, which consisted of four 30-foot rows on 38-in. centers, were arranged in a randomized complete block with six replications. Plots were not irrigated. Foliar fungicides were applied as a full canopy spray at 14-day intervals on June 27, July 10, July 24, August 5, August 21, September 3 and September 18 using a four-row ATV mounted CO_2 sprayer with three TX8 nozzles per row spaced 19 inches apart calibrated to deliver 15 gallons per acre at 30 pounds psi.

Leaf spot diseases were visually rated on October 9 using the Florida leaf spot scoring system where 1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation(<10 percent); 5 = lesions noticeable in upper canopy with some defoliation(<25%); 6 = lesions numerous with significant defoliation(<50 percent); 7 = lesions numerous with heavy defoliation(<75 percent); 8 = very numerous lesions on few remaining leaves with heavy defoliation(<90 percent); 9 = very few remaining leaves covered with lesions(<95 percent); and 10 = plants completely defoliated or dead and the ICRISAT rust rating scale where 1 = no disease, ...9 = plants severely affected, 80-100 percent leaves withering.

Counts of stem rot (SR) loci were made on October 10 immediately after plot inversion

(1 locus is defined as < 1 ft of consecutive stem rot damaged plants per row). Plots were harvested on October 16 and yields were reported at 7.75 percent moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test (P = 0.05).

Results: During the 2013 peanut production season, temperatures were near normal and monthly rainfall totals were above average during June, July and August. Rainfall totals for May, June, July and August were respectively: 9.43 inches, 8.94 inches, 16.67 inches and 8.70 inches. Leaf spot progressed rapidly during the season but development slowed in September due to cooler and drier weather patterns. Rust appeared in late Aug and developed rapidly during Sep. Stem rot incidence was lower than in previous years due to higher than normal rainfall and cooler soil temperatures. All of the risk indices had better leaf spot control than did the untreated plots. Leaf spot control among all treatments was best with the Headline/Artisan + Bravo/Topsin + Bravo (medium) treatment program. The worst leaf spot control was with the Tilt-Bravo/Abound/Bravo (medium) and Bravo only (medium) programs. Among the low risk treatments, best control was with the Headline/Artisan + Bravo/Topsin + Bravo and Tilt-Bravo/Abound + Bravo/Bravo programs. Among the medium risk programs, the best leaf spot control was with the Headline/Artisan + Bravo/Topsin + Bravo program. Among the high risk programs the best leaf spot control was with the Headline/Artisan + Bravo/Topsin + Bravo program. Area Under the Disease Progress Curve showed that all risk indices had lower disease than did the non-treated plots. The best overall leaf spot control was with the Prolien/Provost/Convoy + Bravo/Bravo high risk program. Rust severity was highest in the non-treated plots. Control of rust was similar among all of the risk indices. Stem rot was low, however all the risk indices had less stem rot incidence than did the non-treated plot. With the exception of the Bravo/Provost (low) program all other risk indices yielded higher than the untreated control. Although the yields were higher in the Tilt-Bravo/Abound/Bravo (high) and Bravo WS (high) programs, they were not significantly better.

Comparison of Fungicide R_x Programs for Peanut Disease Control in Southwest Alabama, GCREC

Treatment and Rate/ac	Application Timing	Risk Index	Leaf Spot[1]	Disease Ratings			Yield lbs/ac
				AUDPC	Rust[2]	Stem Rot[3]	
Untreated control			6.8[4]	234	5.8	3.3	4974
Bravo WS 24.0 fl oz Provost 433SC 10.7 fl oz	1,7 3,5	low	4.4	166	2.7	0.5	4383
Proline 480SC 5.7 fl oz Provost 433 SC 10.7 fl oz Bravo WS 24.0 fl oz	1.5 3,4.5,6 7	medium	4.2	165	3.0	0.5	5498
Proline 480SC 5.7 fl oz Provost 433 SC 10.7 fl oz Convoy + Bravo WS 13.0 + 24.0 fl oz Bravo WS 24.0 fl oz	1.5 3,4,5 6 7	high	4.1	158	2.7	1.5	5681
Headline 2.09SC 9.0 fl oz Artisan + Bravo WS 26.0 + 16.0 fl oz Topsin + Bravo WS 5 + 16 fl oz	2 3.5, 5 6.5	low	4.0	163	3.2	0.5	6014
Headline 2.09SC 9.0 fl oz Artisan + Bravo WS 21.0 + 16.0 fl oz Topsin + Bravo WS 5 + 16 fl oz	1.5 3, 4.5, 6 7	medium	3.7	161	2.5	0.8	5972
Headline 2.09SC 9.0 fl oz Artisan + Bravo WS 16.0 + 16.0 fl oz Bravo WS 24.0 fl oz	1.5 3,4,5,6 7	high	4.0	159	2.8	0.8	5647
Tilt-Bravo 36.0 fl oz Abound 2SC + Bravo WS 18.2 + 24 fl oz Bravo WS 24.0 fl oz	2 3.5,5 6.5	low	4.0	159	2.7	1.1	5532
Tilt-Bravo 24.0 fl oz Abound 2SC 18.2 fl oz Bravo WS 24.0 fl oz	1.5,4 3,5 6.5	medium	5.3	181	3.3	1.1	5429
Tilt-Bravo 24.0 fl oz Abound 2SC 18.2 fl oz Bravo WS 24.0 fl oz	1,2,4 3,5 6,7	high	4.9	170	3.8	1.8	5242
Headline 2.09SC Headline + Bravo WS 12.0 + 16.0 fl oz Muscle 3.6F + Bravo WS 7.2 + 16.0 fl oz...	2 3.5 5,6.5	low	4.8	170	2.8	1.0	5540
Headline 2.09SC Muscle 3.6F + Bravo WS 7.2 + 16.0 fl oz Headline 12.0 fl oz Bravo WS 24.0 fl oz	1.5 3,5.5 4 6.5	medium	4.2	168	2.5	1.5	5918
Headline 2.09SC Muscle 3.6F + Bravo WS 7.2 + 16.0 fl oz Headline 12.0 fl oz Bravo WS 24.0 fl oz	1.5 3,5 4 6,7	high	4.7	167	2.8	0.8	5636
Bravo WS 24.0 fl oz	1,3,5,7	low	5.3	188	4.2	1.1	5304
Bravo WS 24.0 fl oz	1,2.5,4,5.5,7	medium	4.1	163	2.8	0.5	5639
Bravo WS 24.0 fl oz	1-7	high	4.8	173	3.8	0.5	5127
LSD (P = 0.05)			*0.8*	*11.8*	*1.0*	*1.2*	*506*

[1]Early and late leaf spot were assessed using the Florida leaf spot scoring 1-10 system.
[2]Rust rated using the ICRISAT 1-9 rust rating scale.
[3]White mold hits assessed at inversion as the number of disease loci per total row ft.
[4]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05).

Evaluation of SA-0310101, Muscle ADV and SA-0040304 for Peanut Disease Control in Southwest Alabama, GCREC

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

Objective: To evaluate the experimental products SA-0310101 and SA-0040304 and the new product Muscle ADV and compare them against other registered products for control of early and late leaf spot, rust, stem rot and yield response in a dry-land peanut production system in southwest Alabama.

Methods: Peanut cultivar 'Georgia 06G' was planted at the Gulf Coast Research and Extension Center near Fairhope, AL at a rate of five to six seed per ft of row on May 20 in a field that had been previously cropped to peanut production. The soil type was a Malbis fine sandy loam (Organic matter <1 percent). Recommendations of the Alabama Cooperative Extension System for fertility and weed control were followed. Thrips were controlled with an in-furrow application of 6-7 pounds per acre of Thimet 20G at planting. 5.0 pounds per acre of Rhizobium innoculant was also applied at planting. On May 20, after planting, 1 quart per acre Roundup + 1.5 pints per acre of Dual + 1 pint per 25 gallons of H_2O were applied to the test area for weed control. On June 14, 8 ounces per acre Gramoxone + 1.5 pints per acre of Storm + 1.0 pint per acre 2,4 DB+ 1 quart per100 gallons H_2O of Induce was applied for post emergent weed control. On June 27, 2 ounces per acre of Cadre + 0.45 ounces per acre of Strongarm + 1 pint per 25 gal H_2O of Induce was applied for weed control.

Plots, which consisted of four 30-foot rows on 38-inch centers, were arranged in a randomized complete block with six replications. Plots were not irrigated. Foliar fungicides were applied as a full canopy spray at 14-day intervals on June 27, July 2, July 10, July 24, August 5, August 21, September 3 and September 18 using a four-row ATV mounted CO2 sprayer with three TX8 nozzles per row spaced 19 inches apart calibrated to deliver 15 gallons per acre at 30 pounds psi.

Leaf spot diseases were visually rated on September 24 using the the Florida leaf spot scoring system where 1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation(<10 percent); 5 = lesions noticeable in upper canopy with some defoliation(<25%); 6 = lesions numerous with significant defoliation(<50 percent); 7 = lesions numerous with heavy defoliation(<75 percent); 8 = very numerous lesions on few remaining leaves with heavy defoliation(<90 percent); 9 = very few remaining leaves covered with lesions(<95 percent); and 10 = plants completely defoliated or dead and the ICRISAT rust rating scale where 1 = no disease, ...9 = plants severely affected, 80-100 percent leaves withering.

Counts of stem rot (SR) loci were made on October 10 immediately after plot inversion (1 locus is defined as < 1 foot of consecutive stem rot damaged plants per row). Plots were harvested on October 23 and yields were reported at 7.55 percent moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test (P = 0.05).

Results: During the 2013 peanut production season, temperatures were near normal and monthly rainfall totals were above average during June, July and August. Rainfall totals for May, June, July and August were respectively: 9.43 inches, 8.94 inches, 16.67 inches and 8.70 inches. Leaf spot progressed rapidly during the season but development slowed in September due to cooler and drier weather patterns. Rust appeared in late August and developed rapidly during September. Stem rot incidence was lower than in previous years due to higher than normal rainfall and cooler soil temperatures. All fungicide programs had significantly lower leaf spot ratings than the untreated control. Among the fungicide programs, only Echo/Echo + Convoy had significantly worse leaf spot control than did the season-long Echo 720 standard. All other fungicide programs, including those with SA-0310101 and SA-0040304, gave similar leaf spot control. Rust severity was highest in the untreated control. Control of rust with all the fungicide programs was similar to the Echo 720 standard. All of the fungicide programs evaluated had significantly lower stem rot indices than the untreated control. No differences in stem rot control were observed among any of the treatment programs compared with the season-long Echo 720 standard. With the exception of the Echo/Echo + Convoy treatment program, all other fungicide programs yielded higher than the untreated control. Yield among the remaining programs was similar to the full-season Echo 720 standard.

Evaluation of SA-0310101, Muscle ADV and SA-0040304 for Peanut Disease Control in Southwest Alabama, GCREC

Treatment and Rate/ac	Application Timing	Disease Ratings			Yield lbs/ac
		Leaf spot[1]	Rust[2]	Stem Rot[3]	
Untreated Control	---	6.3[4]	2.5	4.0	3991
SA-0310101 + Echo 720 10.0 oz + 16.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6, 7	3.7	2.1	1.3	4526
SA-0310101 + Echo 720 10.0 oz + 13.0 fl oz SA-0310101 + Echo 720 10.0 oz + 16.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1 2 3,4,5,6 7	3.7	2.0	1.1	4714
SA-0310101 10.0 oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	3.4	2.0	1.8	4546
Echo 720 16.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	3.5	2.0	1.7	4641
SA-0040304 32.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1,2 3,4,5,6 7	3.6	2.0	1.3	4802
SA-0040304 32.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1.5 3,4,5,6 7	3.7	2.1	1.7	4786
Headline 2.09SC 9.0 fl oz Muscle ADV 32.0 fl oz Echo 720 24.0 fl oz	1.5 3,4,5,6 7	3.5	2.1	0.7	4859
Echo 720 24.0 fl oz Muscle 3.6F 7.2 fl oz	1,2,7 3,4,5,6	3.4	2.0	1.8	4551
Echo 720 24.0 fl oz Provost 433SC 8.0 fl oz	1,2,7 3,4,5,6	3.6	2.0	1.8	4744
Echo720 24.0 fl oz Abound 2.08SC 18.5 fl o	1,2,4,6,7 3,5	3.5	2.0	1.3	4921
Echo 720 24.0 fl oz Echo 720 + Convoy 16.0 +13.0 fl oz	1,2,7 3,4,5,6	3.8	2.1	1.8	4033
Echo 720 24.0 fl oz	1-7	3.3	2.1	1.0	4821
LSD (P = 0.05)		*0.5*	*0.3*	*1.4*	*494*

[1]Early and late leaf spot were assessed using the Florida leaf spot scoring 1-10 system.
[2]Rust rated using the ICRISAT 1-9 rust rating scale.
[3]White mold hits assessed at inversion as the number of disease loci per total row ft.
[4]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05).

Evaluation of Experimental Fungicide MCW 710-SC for Peanut Disease Control in Southwest Alabama, GCREC

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

Objective: To evaluate the experimental product MCW 710-SC and compare it against other registered products for control of early and late leaf spot, rust, stem rot and yield response in a dry-land peanut production system in southwest Alabama.

Methods: Peanut cultivar 'Georgia 06G' was planted at the Gulf Coast Research and Extension Center near Fairhope, AL at a rate of five to six seed per ft of row on May 20 in a field that had been previously cropped to peanut production. The soil type was a Malbis fine sandy loam (Organic matter <1 percent). Recommendations of the Alabama Cooperative Extension System for fertility and weed control were followed. Thrips were controlled with an in-furrow application of 6-7 pounds per acre of Thimet 20G at planting. 5.0 pounds per acre of Rhizobium innoculant was also applied at planting. On May 20, after planting, 1 quart per acre Roundup + 1.5 pint per acre of Dual + 1 pint per 25 gallons of H_2O were applied to the test area for weed control. On June 14, 8 ounces per acre Gramoxone + 1.5 pints per acre of Storm + 1.0 pint per acre 2,4 DB+ 1 quart per 100 gallons H_2O of Induce was applied for post emergent weed control. On June 27, 2 ounces per acre of Cadre + 0.45 ounces per acre of Strongarm + 1 pint per 25 gallons H_2O of Induce was applied for weed control.

Plots, which consisted of four 30-fot rows on 38-inch centers, were arranged in a randomized complete block with six replications. Plots were not irrigated. Foliar fungicides were applied as a full canopy spray at 14-day intervals on June 27, July 2, July 10, July 24, August 5, August 21, September 3 and September 18 using a four-row ATV mounted CO_2 sprayer with three TX8 nozzles per row spaced 19 inches apart calibrated to deliver 15 gallons per acre at 30 pounds psi.

Leaf spot diseases were visually rated on September 24 using the Florida leaf spot scoring system where 1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation(<10 percent); 5 = lesions noticeable in upper canopy with some defoliation(<25 percent); 6 = lesions numerous with significant defoliation(<50 percent); 7 = lesions numerous with heavy defoliation(<75 percent); 8 = very numerous lesions on few remaining leaves with heavy defoliation(<90 percent); 9 = very few remaining leaves covered with lesions(<95 percent); and 10 = plants completely defoliated or dead and the ICRISAT rust rating scale where 1 = no disease, ...9 = plants severely affected, 80-100 percent leaves withering.

Counts of stem rot (SR) loci were made on October 10 immediately after plot inversion

(1 locus is defined as < 1 foot of consecutive stem rot damaged plants per row). Plots were harvested on October 23 and yields were reported at 8.55 percent moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test (P = 0.05).

Results: During the 2013 peanut production season, temperatures were near normal and monthly rainfall totals were above average during June, July and August. Rainfall totals for May, June, July and August were respectively: 9.43 inches, 8.94 inches, 16.67 inches and 8.70 inches. Leaf spot progressed rapidly during the season but development slowed in September due to cooler and drier weather patterns. Rust appeared in late August and developed rapidly during September. Stem rot incidence was lower than in previous years due to higher than normal rainfall and cooler soil temperatures. All fungicide programs had significantly lower leaf spot ratings than the untreated control. Among the fungicide programs, all gave similar leaf spot control when compared with full-season Equus 720 treatment. Rust control was lower among the treated plots when compared with the untreated control. Among the treatment programs, all which included MCW 710-SC, as well as the Equus/Orius program, gave better rust control than did the full season Equus only treatment. All treatment programs reduced the incidence of stem rot when compared with the untreated control. Among the treatment programs, none had significantly different levels of stem rot control from the Equus only treatment. All treatment programs yielded higher than the untreated control. Among the treatment programs, yields were similar among the programs. However, the Equus/MCW 710-SC (12 fluid ounces) treatment yielded significantly higher than the Equus only treatment.

Evaluation of Experimental Fungicide MCW 710-SC for Peanut Disease Control in Southwest Alabama, GCREC

Treatment and Rate/ac	Application Timing	Disease Ratings			Yield lbs/ac
		Leaf Spot[1]	Rust[2]	Stem Rot[3]	
Untreated Control	---	7.5[4]	6.7	5.8	3812
Equus 720 24.0 fl oz MCW 710-SC 8.0 fl oz	1,2,7 3,4,5,6	4.2	2.7	1.0	5758
Equus 720 24.0 fl oz MCW 710-SC 8.0 fl oz	1,2,7 3,4,5,6	3.7	2.3	1.2	5494
Equus 720 24.0 fl oz MCW 710-SC 8.0 fl oz	1,2,7 3,4,5,6	3.8	2.3	0.3	5991
Equus 720 24.0 fl oz MCW 710-SC 8.0 fl oz	1,2,7 3,4,5,6	3.8	2.8	1.0	5586
Equus 720 24.0 fl oz Provost 433SC 8.0 fl oz	1,2,7 3,4,5,6	3.5	2.5	1.0	5578
Equus 720 24.0 fl oz Artisan 3.6E 26.0 fl oz	1,2,7 3,4,5,6	4.6	3.5	2.7	4894
Equus 720 24.0 fl oz Orius 3.6F 7.2 fl oz	1,2,7 3,4,5,6	4.2	3.3	2.2	5005
Equus 720 24.0 fl oz Abound 2.08SC 18.2 fl oz	1,2,4,6,7 3,5	4.3	4.3	2.3	5089
Equus 720 24.0 fl oz	1-7	4.0	4.7	1.7	5184
LSD (P = 0.05)		*0.6*	*1.2*	*1.6*	*589*

[1]Early and late leaf spot were assessed using the Florida leaf spot scoring 1-10 system.
[2]Rust rated using the ICRISAT 1-9 rust rating scale.
[3]White mold hits assessed at inversion as the number of disease loci per total row ft.
[4]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05).

Impact of Row Spacing, Variety Selection and Insecticides on Thrips Damage, Diseases and Yield of Peanut, WREC

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

Objective: Assess the role of row spacing and variety selection as influenced by insecticide seed dressings, along with granular and foliar-applied 'at cracking' insecticide treatments on thrips damage levels, tomato spotted wilt virus (TSWV) incidence, occurrence of other diseases and pod yield of peanut.

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-12Y', 'Georgia-06G' and 'Flavorunner 458' were planted at rates of 6 seed per foot of row using conventional tillage practices on May 8 in single and twin rows in a Dothan fine sandy loam (OM<1%) soil. Weed control was obtained with a pre-plant, incorporated application of 1 quart per acre Sonalan HFP + 1.0 pint per acre Dual Magnum II + 0.45 ounces per acre Strongarm on May 3 followed by pre-emergent, broadcast application of 3 ounces per acre Valor on May 21 and 1.5 pint per acre 2,4 DB on July 1. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The study area received 1.0 acre inches on August 12. A split split-plot design with peanut variety as whole plots, row spacing as split-plots and insecticide treatment as split split-plots was used. Row spacing included single 36-inch or twin rows spaced 7 inches apart on 36-inch centers. Insecticide treatments included 4 ounces per 100 lb of seed of CruiserMAXX seed dressing, 5 pounds per acre of Thimet 20G in-furrow, as well as 'at-cracking' applications of Radiant at 5 fluid ounces per acre and Admire Pro at 1.7 fluid ounces per acre. Seed sown in the Thimet 20G, Radient and Admire Pro-treated plots received 3 ounces per 100 pounds of seed of the fungicide seed dressing Dynasty PD. Whole plots were randomized in four complete blocks. Individual split-split plots, which consisted of four 30-foot rows spaced 3-feet apart, were randomized within each whole plot. Chlorothalonil at 1.5 pints per acre was applied for leaf spot control on June 24 and July 9, followed by Abound 2.08SC at 18.2 fluid ounces per acre on July 26, chlorothalonil at 1.5 pints per acre on August 6, Abound 2.08SC at 18.2 fluid ounces per acre on August 28 and chlorothalonil at 1.5 pints per acre on September 13 with a tractor mounted boom sprayer with 3 TX-8 nozzles per row at 15 gallons of spray volume per acre at 45 psi. At cracking applications of Radient and Admire Pro were made with a 4-row CO2-pressurized sprayer with a single 8003 nozzle centered over the row of emerging peanut seedlings at 20 gallons per acre at 30 psi.

Insect and Disease Assessment: Thrips damage (TDR) on the leaves was assessed on a 0 to 10 scale where 0 = no visible leaf scarring, 1=10 percent leaf area scarred, 2=20 percent leaf area scarred, 3=30 percent leaf area scarred, 4=40 percent leaf area scarred, to 10=100 percent leaf area affected and plants near death on June 5. Final TSW hit counts (one hit was defined a < 1 foot of consecutive symptomatic plants per row) were made on September 16. Early and late leaf spot were rated together on September 20 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 percent defoliation, 5 = leaf spots noticeable and < 25 percent defoliation, 6 = leaf spots numerous and < 50 percent defoliation, 7 = leaf spots very numerous and < 75 percent defoliation, 8 = numerous leaf spots on few remaining leaves and <90 percent defoliation, 9 = very few remaining leaves covered with leaf spots and < 95 percent defoliation, and 10 = plants defoliated or dead. White mold hit counts (1 hit was defined as < 1 foot of consecutive white mold-damaged plants per row) were made immediately after plot inversion on September 27 for Flavorunner 458 and Georgia-06G and October 8 for Georgia-12Y. Yields are reported at 8.9 percent and 8.7 percent moisture for the varieties harvested on September 27 and October 8, respectively. Significance of interactions was evaluated using PROC GLIMMIX procedure in SAS. Statistical analyses for thrips damage, leaf spot intensity, along with TSW and white mold incidence were done on rank transformations for non-normal data, which were back transformed for presentation. Means were separated using Fisher's least significant difference (LSD) test ($P<0.05$).

Table 1.
F-Values From Generalized Linear Mixed Model Analysis for Effects of Row Spacing, Peanut Variety Selection and Insecticide on Thrips Damage (TDR), TSW and White Mold Incidence, Leaf Spot Intensity and Yield at the WREC, 2013

Sources (F values)	TDR	TSWV	Leaf spot	White mold	Yield
Peanut variety	66.74***[1]	103.27***	198.14***	50.58***	47.40***
Row spacing	1.17	1.43	1.77	17.41***	31.07***
Peanut variety x row spacing	0.16	3.48*	0.97	12.14***	6.21**
Insecticide treatment	46.49***	1.70	0.64	0.21	2.31
Peanut variety x insecticide treatment	2.77**	1.13	0.66	0.24	1.29
Row spacing x insecticide treatment	2.86**	0.33	1.82	0.88	2.35
Peanut variety x row spacing x insecticide treatment	0.61	0.37	0.76	0.56	1.50

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

A significant interaction for peanut variety x insecticide treatment and row spacing x insecticide treatment was observed for thrips damage ratings (Table 1). On all peanut varieties, Thimet 20G provided the best protection from thrips feeding damage (Table 2). Similarly high thrips damage ratings for CruiserMAXX seed dressing along with peanuts receiving the 'at cracking' applications of Radient and Admire Pro did not differ from those recorded for the non-treated control. With the notable exception of Thimet 20G treatment, Flavorunner 458 suffered heavier thrips damage than either Georgia-06G and Georgia-12Y, which had similarly low thrips damage ratings for most insecticide treatments.

Table 2.
Thrips Feeding Damage[1] as Impacted by Peanut Variety and Insecticide Treatment at the WREC, 2013

Treatment	Application		Flavorunner 458	Georgia-06G	Georgia-12Y
	Rate	Placement			
Dynasty PD control	---	---	7.8 a[2]	5.1 bcd	5.8 b
Thimet 20G	5 pounds per acre	In-furrow	3.3 e	2.6 e	2.8 e
CruiserMAXX	4 oz/100 lb seed	Seed dressing	7.0 a	4.3 d	5.3 bc
Radient EP	5 fl ounces per acre	At cracking	7.5 a	4.6 cd	4.9 bcd
Admire EP	1.7 fl ounces per acre	At cracking	8.1 a	4.9 bcd	5.4 bc

[1]Thrips damage rating (TDR) on the leaves was assessed on a 0 to 10 scale.
[2]Means in each column followed by the same letter are not significantly different according to Fisher's protected least significant difference (LSD) test ($P<0.05$).

Thrips damage ratings were significantly lower for the Thimet 20G-treated peanuts on single and twin rows compared with the remaining insecticide treatments and the Dyansty PD control (Figure 1). On single and twin rows, the CruiserMAXX seed dressing along with the 'at cracking' Radient and Admire Pro treated peanuts had thrips damage ratings that did not differ from those recorded for the Dynasty PD control.

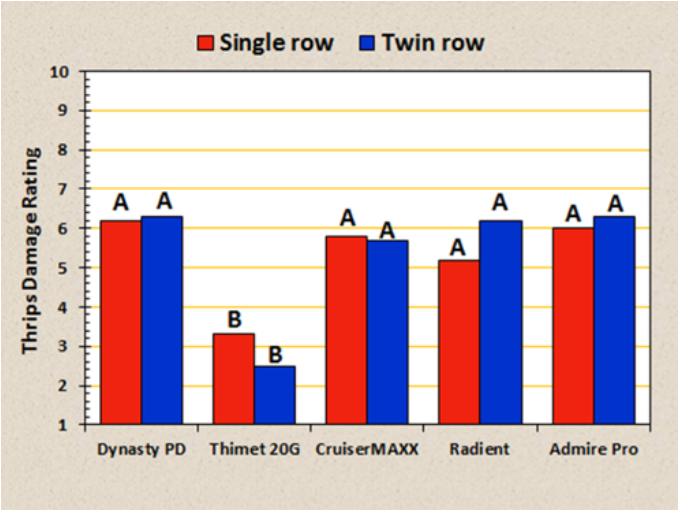


Figure 1. Thrips feed damage as impacted by row spacing and insecticides.

[1]Thrips damage rating (TDR) on the leaves was assessed on a 0 to 10 scale.

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

A significant peanut variety x row spacing interaction was noted for TSW (Table 1). Incidence of TSW was higher for Flavorunner 458 planted on single than twin rows (Figure 2). Row spacing also had not impact of TSW incidence in Georgia-06G and Georgia-12Y. Georgia-12Y had lower TSW indices than Georgia-06G. Similarly low TSW indices were reported for all insecticide treatments and the Dynasty PD control (data not shown).

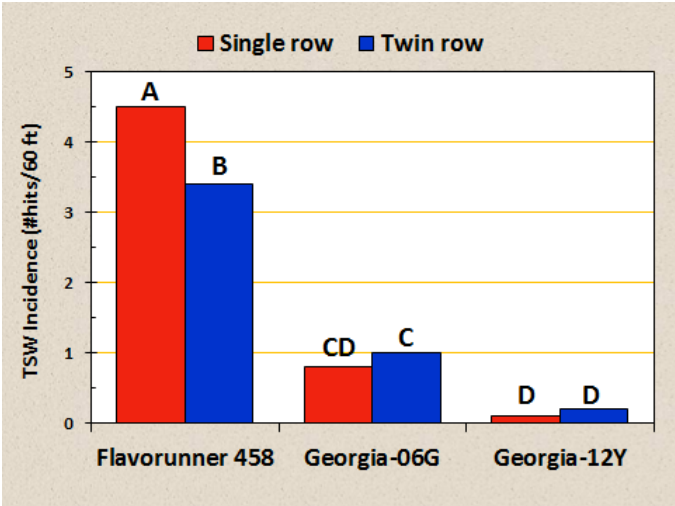


Figure 2. **TSW incidence as influenced by row spacing and peanut variety.**

As indicated by a significant peanut variety x row spacing interaction, white mold incidence was lower on twin than single row Flavorunner 458 and Georgia 06G but not Georgia 12Y peanut varieties (Table 1). Overall, white mold incidence was higher in Flavorunner 458 regardless of row spacing compared with other two peanut varieties (Figure 3). Higher white mold damage levels were noted on single but not twin row Georgia-06G than Georgia-12Y.

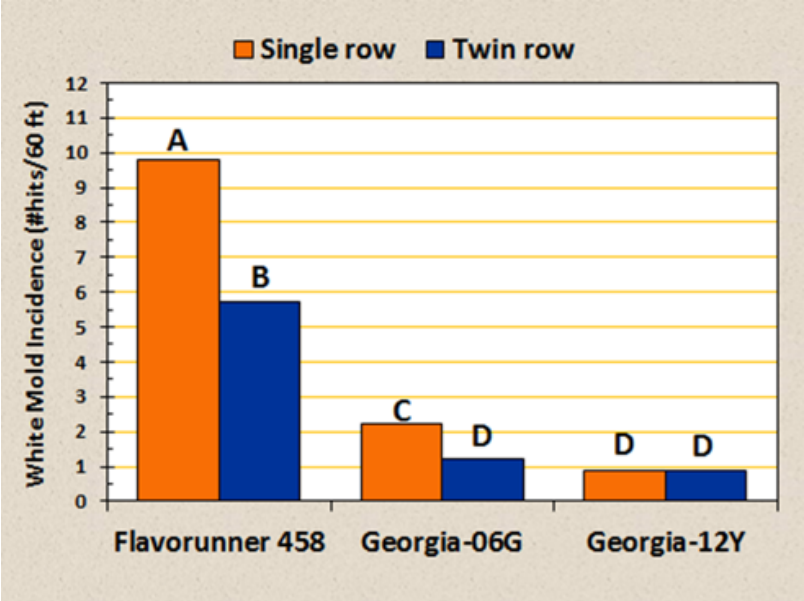


Figure 3. White mold incidence as impacted by row spacing and peanut variety.

No significant interactions were observed between any fixed variables and leaf spot intensity (Table 1). Flavorunner 458 had significantly higher leaf spot intensity values than either Georgia-06G or Georgia-12Y, which suffered the least amount of leaf spotting and premature defoliation (data not shown). Row spacing and insecticide treatment did not significantly impact leaf spot intensity (data not shown).

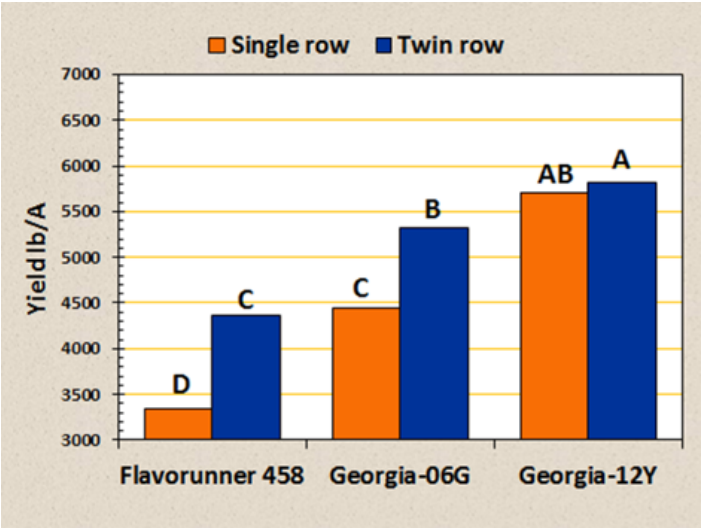


Figure 4. Peanut yields as influenced by row spacing and variety selection.

A significant peanut variety x row spacing interaction indicated that pod yields differed by peanut variety and row spacing (Table 1). Yield for Georgia-06G and Flavorunner 458 but not Georgia-12Y was higher when planted on twin than single rows (Fig. 4). Of the three varieties, Georgia-12Y produced the highest pod yields regardless of row spacing. On single and twin rows, Georgia-06G had higher yields than Flavorunner 458 on the same

row spacing. Yields for Flavorunner 458 on twin rows and Georgia-06G on single rows were similar. When compared with the Dynasty PD control, higher yields were recorded for CruiserMAXX insecticide seed dressing and the 'at cracking' Admire Pro treatments (Fig. 5). Yields for Thimet 20G were similar to those noted for the two latter insecticide treatments, while the Radient 'at cracking' treatment had lower yields than CruiserMAXX but ont Admire Pro.

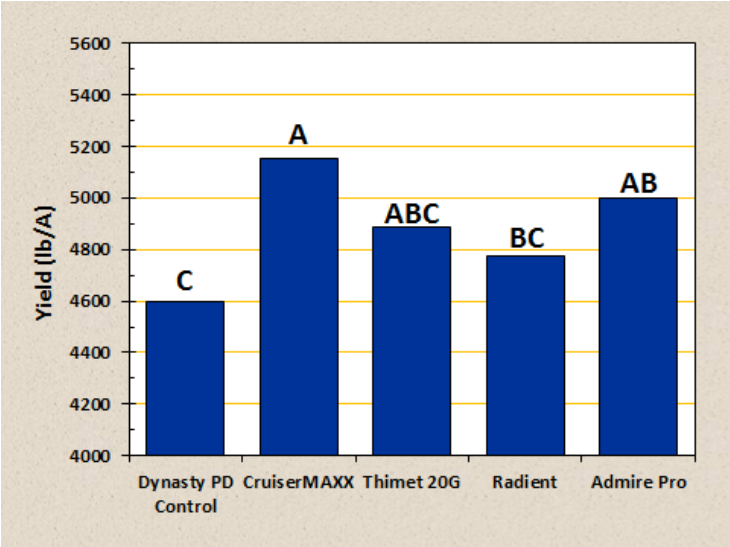


Figure 5. Insecticide treatments affect yield of peanut.

Summary: Among the insecticides tested, Thimet 20G gave superior protection from thrips feeding damage for single and twin row peanuts but did not increase pod yield when compared with the Dynasty PD control. In contrast, CruiserMAXX and Admire Pro failed to significantly reduce thrips damage when compared with the Dynasty PD control but did in increase pod yield. Radient also did not provide noticeable protection from thrips feeding damage. While TSW pressure was low, none of the insecticide treatments had any effect on the incidence of this disease.

Row spacing had a significant impact on TSW and white mold incidence along with pod yield. The decline in TSW ratings for Flavorunner 458 when sown on twin compared with single rows has also been observed for other TSW-susceptible peanut varieties in previous studies. In contrast, row spacing had no effect on TSW incidence in the resistant varieties Georgia-06G and Georgia-12Y. Under moderate to heavy pressure, white mold typically is often lower in peanuts planted on twin than single rows. Here, Flavorunner 458 and Georgia-06G had lower white mold indices when planted on twin than single rows. Yield response late maturing peanut varieties such as Georgia-12Y usually is similar when planted on single and twin rows as compared with mid-maturity varieties like Flavorunner 458 and Georgia-06G which usually see sizable yield gains when sown on twin rather than single rows.

As indicated by lower TDR ratings for all insecticide treatments and Dynasty PD control, Georgia-06G and Georgia-12Y showed some tolerance to thrips feeding, which should accelerate seedling recovery from thrips damage and subsequent plant growth. Flavorunner 458, which proved highly sensitive to thrips feeding, would be slower to recover, more sensitive to burn-down herbicide treatments and be more likely to suffer increased TSW incidence and sizable thrips-related yield losses. Overall, Georgia-12Y and to a lesser extent Georgia-06G displayed good disease resistance packages and the former variety produced equally high yields on single and twin rows.

Standard and High Input Fungicide Programs Give Similar Disease Control and Yields on Selected Commercial Peanut Cultivars and Experimental Lines, WREC

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

Objective: Compare the yields and level of leaf spot and stem rot control obtained with a standard and high input fungicide program on selected commercial peanut cultivars and breeding lines.

Production Methods: The study area at the Wiregrass Research and Extension Center, which is maintained in a peanut-corn rotation, was turned with a moldboard plow and worked to seed bed condition with a disk harrow. Rows were laid off on April 20 with a KMC strip till rig with rolling baskets. On May 20, commercial peanut cultivars were planted at a rate of 6 seed per row foot using conventional tillage practices in a Dothan fine sandy loam (OM<1 percent) soil. Thimet 20G at 5 pounds per acre was applied in-furrow for thrips control. Weed control was obtained with a pre-emergent, incorporated application of 1 quart per acre of Sonalan HFP + 1.5 pint per acre of Dual Magnum II on April 23 followed by pre-emerge broadcast application of 3 ounces per acre of Valor on May 21 and 4 ounces per acre of Cadre on June 14. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The test area received 0.5 acre inches of water on September 19. A split plot design with peanut cultivars as whole plots and fungicide treatments as sub-plots was used. Whole plots were randomized in four complete blocks. Sub-plots, which consisted of four 30-foot rows spaced 3-feet apart, were randomized within each whole plot. While the standard fungicide program consisted of seven applications of 1.5 pints per acre of Bravo Weather Stik 6F, the high input program included two initial applications of 1.5 pints per acre of Bravo Weather Stik followed by 1.1 pints per acre of Abound 2SC, 1.5 pints per acre of Bravo Weather Stik 6F + 21 fluid ounces per acre of Convoy, 1.1 pints per acre of Abound 2SC, 1.5 pints per acre of Bravo Weather Stik 6F + 21 fluid ounces per acre of Convoy and two final applications of 1.5 pints per acre of Bravo Weather Stik 6F. Fungicides were applied on June 25, July 10, July 26, August 6, August 28, September 10 and September 25 with a tractor mounted boom sprayer with three TX-8 nozzles per row calibrated to deliver 15 gallons of spray volume per acre at 45 psi.

Insect and Disease Assessment: Thrips damage ratings were made on a 1 to 10 scale with 1 = no damage to 10 = dead plants, on June 13. Tomato spotted wilt hits counts (1 hit was defined as < 1 foot of consecutive severely TSW-damaged plants per row) were made on August 14. Early and late leaf spot were rated together on October 1 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 percent defoliation, 5 = leaf spots noticeable and < 25 percent defoliation, 6 = leaf spots numerous and < 50 percent defoliation, 7 = leaf spots very numerous and < 75 percent defoliation, 8 = numerous leaf spots on few remaining leaves and <90 percent defoliation, 9 = very few remaining leaves covered with leaf spots and < 95 percent defoliation and 10 = plants defoliated or dead. White mold hit counts (1 hit was defined as < 1 foot of consecutive white mold-damaged plants per row) were made immediately after plot inversion on October 4. Yields are reported at 7.9 percent moisture. Significance of interactions was evaluated using PROC GLIMMIX procedure in SAS. Statistical analyses were done on rank transformations for non-normal data, which were back transformed for presentation. Means were separated using Fisher's least significant difference (LSD) test ($P<0.05$).

Results: Monthly rainfall totals for June, July and August were above the 30 year historical average but below average for September, while temperatures were below normal for each month during the entire production season. Weather patterns were favorable for leaf spot diseases but not stem rot development. Fungicide treatment x peanut variety interactions for leaf spot intensity, TSW and stem rot incidence and yield were not noted, so pooled data are presented. Highest thrips feeding damage ratings were recorded for Flavorunner 458, while equally low damage levels were observed for Georgia Greener, Georgia-09B and Georgia 10T. TSW incidence was low across all varieties and is not displayed. While early leaf spot was noted earlier in the summer, late leaf spot was the dominant leaf spot disease observed in just prior to harvest. Significant differences in late leaf spot intensity were observed between varieties with Flavorunner 458 suffering the highest level of leaf spotting and premature defoliation. In contrast, similarly low leaf spot ratings were noted for Florida-07, Georgia-06G, Tifguard and Georgia-10T. Stem rot indices were higher for Flavorunner 458 than all varieties except for Flo Run 107. Georgia-09B, Tifguard, Georgia Greener, Flo Run-107, Georgia-10T and Georgia-12Y had similarly low stem rot indices. Pod yields were equally high for Georgia-06G, Florida-07, Georgia-12Y, Tifguard, Georgia-09B, Flo Run-107 and Georgia-10T, while similarly low yields were recorded for Georgia Greener and Flavorunner 458. Similar levels of leaf spot and stem rot control as well as yield response were obtained with the standard and hi-input fungicide programs.

Summary: Thrips damage was unusually high despite the Thimet 20G in-furrow insecticide treatment due to unusually cool April and May weather patterns in this and other studies at the Wiregrass Research and Extension Center. Surprisingly, sizable differences in the reaction of peanut varieties to thrips feeding were observed with the least damage seen on Georgia-10T, Georgia-09B and Georgia Greener, which suggests that some peanut varieties may tolerate or be resistant to thrips feeding on juvenile leaves. With the exception of the susceptible standard Florunner 458, minor differences in leaf spot intensity, white mold incidence and yield response were noted between peanut varieties.

Standard and High Input Fungicide Programs Give Similar Disease Control and Yields on Selected Commercial Peanut Cultivars and Experimental Lines, WREC

Split Plot Analysis (F values)	Thrips Damage Rating[1]	Late Leaf Spot[2]	White Mold Hits/60 ft[3]	Yield lbs/ac
Variety	3.61**[4]	2.12*	4.59**	4.24 **
Fungicide program	0.73	0.96	0.24	1.85
Variety x program	0.89	1.02	0.45	2.15
Peanut Variety				
Flavorunner 458	8.5 a[5]	6.3 a	4.0 a	3267 c
Florida-07	6.5 b	4.7 cd	0.5 c	4550 a
Flo Run-107	6.8 b	5.4 ab	2.4 ab	4245 ab
Georgia-06G	6.0 bc	4.7 bcd	2.0 b	4671 a
Georgia-09B	5.3 cd	5.2 bc	1.1 bc	4364 ab
Georgia-10T	4.8 d	4.4 d	0.3 c	4181 ab
Georgia-12Y	6.5 b	5.1 bc	0.3 c	4469 a
Georgia Greener	5.3 cd	5.3 bc	0.5 c	3694 bc
Tifguard	6.8 b	4.5 cd	1.1 bc	4435 a
Fungicide Program				
Standard	6.3 a	5.1 a	1.3 a	4127 a
Hi-input	6.2 a	5.0 a	1.4 a	4287 a

[1]Thrips feeding damage on juvenile leaves was rated on a 1 to 10 scale on 13 Jun.
[2]Late leaf spot was rated using the Florida 1 to 10 leaf spot rating scale.
[3]Stem rot incidence is expressed as the number of disease loci per 60 ft of row.
[4]Significance of F values at the 0.05, 0.01 and 0.001 levels is indicated by *, **, or ***, respectively.
[5]Means in each column that are followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test (P<0.05).

Recommended Fungicide Programs Compared for Leaf Spot and White Mold Control on Peanut, WREC

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

Objective: Compare the efficacy of recommended fungicide programs for the control of leaf spot diseases and stem rot as well as on the yield of two peanut varieties.

Production Methods: The study area at the Wiregrass Research and Extension Center, which is maintained in a peanut-corn rotation, was turned with a moldboard plow and worked to seed bed condition with a disk harrow. Rows were laid off on April 20 with a KMC strip till rig with rolling baskets. On May 16, 'Georgia-06G' and 'Tifguard' peanut varieties were planted at a rate of 6 seed per foot of row using conventional tillage practices in a Dothan fine sandy loam (OM<1%) soil. Thimet 20G at 5 pounds per acre was applied in-furrow for thrips control. Weed control was obtained with a pre-emergent, incorporated application of 1 quart per acre of Sonalan HFP + 1.5 pints per acre of Dual Magnum II on April 23 followed by pre-emerge broadcast application of 3 ounces per acre of Valor on May 21 and 4 ounces per acre of Cadre on June 14. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The test area received 0.5 acre in. of water on September 19. A split plot design with peanut cultivars as whole plots and fungicide treatments as sub-plots was used. Whole plots were randomized in four complete blocks. Sub-plots, which consisted of four 30-foot rows spaced 3-feet apart, were randomized within each whole plot.

Disease Assessment: Fungicides were applied on 1 = June 27, 1.5 = July 2, 2 = July 9, 3 = July 30, 4 = August 6, 5 = August 29, 6 = September 10 and September 26 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. Early and late leaf spot were rated together on September 30 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. Stem rot hit counts (1 hit was defined as < 1 foot of consecutive stem rot-damaged plants per row) were made immediately after plot inversion on October 4. Plots were combined several days after inversion. Yields are reported at 6.6% moisture. Significance of interactions was evaluated using PROC GLIMMIX procedure in SAS. Statistical analyses were done on rank transformations for non-normal data, which were back transformed for presentation. Means were separated using Fisher's least significant

difference (LSD) test ($P<0.05$).

Results - Monthly rainfall totals for June, July and August were above the 30 yr historical average but below average for Sep, while temperatures were below normal for each month during the entire production season. Weather patterns were favorable for leaf spot but not stem rot development. Fungicide treatment x peanut variety interactions for leaf spot intensity, stem rot incidence and yield were not noted, so pooled data are presented (Table 1).

While leaf spot intensity was significantly higher on Georgia-06G than Tifguard, stem rot incidence and yield response of the two varieties was similar (Table 1). Leaf spot intensity ratings were similarly high for the Echo 720/Echo 720 + Convoy, Echo 720/Artisan + Echo 720, Echo 720/Muscle ADV and Echo 720/Evito programs. Echo 720/Abound 2SC + Alto 100SL gave better leaf spot control than Echo 720/Echo 720 + Convoy and Echo 720/Muscle ADV but was less efficacious than Echo 720/Provost 433SC, Headline 2.09SC/Muscle ADV/Headline 2.09SC/Echo 720 and Echo 720/Fontelis programs. Stem rot incidence was similar across all fungicide programs. Higher yields were obtained with Echo 720/Fontelis than other fungicide programs except for Echo 720/Provost 433SC and Echo 720/Abound 2SC + Alto 100SL. Similarly low yields were recorded for the Echo 720/Echo 720 + Convoy, Echo 720/Artisan + Echo 720, Echo 720/Muscle ADV, Headline 2.09SC/Muscle ADV/Headline 2.09SC/Echo 720 and Echo 720/Evito programs. The season-long Echo 720 standard yielded higher than the latter Echo 720/Evito but not former four fungicide programs.

Summary: Programs that included applications of Provost 433SC, Headline and Fontelis gave the best leaf spot control, while several of the Echo 720-based programs suffered from elevated late leaf spot damage. Elevated yields obtained with the former fungicide programs are due in part to better leaf spot control.

Recommended Fungicide Programs Compared for the Control of Leaf Spot and Stem Rot as well as Yield Response of Two Peanut Varieties

F Values	Application Timing	Leaf Spot Rating[1]	White Mold Hits/60 Row ft[2]	Yield lbs/ac
Variety	--	27.14***[3]	0.08	0.23
Fungicide program	--	18.46***	1.18	2.77**
Variety x fungicide program	--	1.94	0.66	0.44
Peanut Variety				
Georgia-06G	--	5.4 a[4]	2.7 a	4148 a
Tifguard	--	4.5 b	2.6 a	4049 a
Fungicide Program and Rate/ac				
Echo 720 6F 1.5 pt	1-7	5.3 ab	3.2 a	4094 b
Echo 720 6F 1.5 pt Provost 433SC 10.7 fl oz	1,2,7 3-6	4.3 c	2.8 a	4271 ab
Echo 720 6F 1.5 pt Echo 720 6F 1.5 pt + Convoy 16 fl oz	1,2,7 3-6	5.6 a	1.7 a	3997 bc
Echo 720 6F 1.5 pt Artisan 24 fl oz + Echo 720 6F 1 pt	1,2,4,6,7 3,5	5.3 ab	2.1 a	4066 bc
Echo 720 6F 1.5 pt Muscle ADV 1 qt	1,2,7 3-6	5.4 a	2.3 a	3989 bc
Headline 2.09SC 9 fl oz Muscle ADV 1 qt Headline 2.09SC 6 fl oz Echo 720 6F 1.5 pt	1.5 3,5 4,6 7	4.3 c	3.4 a	4029 bc
Echo 720 6F 1.5 pt Evito 5.7 fl oz	1,2,4,6,7 3,5	5.3 ab	2.5 a	3747 c
Echo 720 1.5 pt Fontelis 1 pt	1,2,6,7 3,4,5	4.4 c	2.8 a	4469 a
Echo 720 1.5 pt Abound 2SC 18.2 fl oz + Alto 100SL 5.5 fl oz	1,2,4,6,7 3,5	4.9 b	3.2 a	4224 ab

[1]Leaf spot intensity was rated using the Florida 1 to 10 peanut leaf spot scoring system.
[2]Stem rot incidence is expressed as the number of disease loci per 60 ft of row.
[3]Significance at the 0.05, 0.01 and 0.001 levels is indicated by *, **, or ***, respectively.
[4]Means in each column that were followed by the same letter are not significantly different according to Fisher's least significant difference (LSD) test (P≤0.05).

Bayer Peanut Rx Disease Risk Index Fungicide Program Compared for the Control of Leaf Spot and Stem Rot on Two Peanut Cultivars, WREC

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

Objective: To validate the effectiveness of the Bayer Peanut RX Disease Risk Index program for the control of leaf spot and stem rot as well as on the yield of two peanut cultivars.

Production Methods: The study site was turned with a moldboard plow on April 4 and rows were laid off on April 27 with a KMC strip till rig with rolling baskets. Peanut cultivars Tifguard and Georgia-06G were planted on May 15 at a rate of approximately 6 seed per foot of row in a field following corn using conventional tillage practices in a fine Dothan sandy loam (OM<1%). Weed control was obtained with a pre-emergent, incorporated application of 1 quart per acre of Sonalan HFP + 1.5 pint per acre of Dual Magnum II on April 23 followed by pre-emergent broadcast application of 3 ounces per acre of Valor on May 21 and 4 ounces per acre of Cadre on June 14. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The test area received 0.5 acre inches of water on September 19. Escape weeds were plowed with flat sweeps or pulled by hand. Thimet 20G at 5 pounds per acre was placed in-furrow to control thrips. A split plot design with peanut cultivars as whole plots and fungicide treatments as sub-plots was used. Whole plots were randomized in four complete blocks. Fungicide sub-plots, which consisted of four 30-foot rows spaced 3-feet apart, were randomized within each whole plot. The early emergence application of Proline 433SC at 5.7 fluid ounces per acre was made on June 17 with drop nozzles centered over the seedling peanuts at a rate of 20 gallons of spray volume per acre. Full canopy fungicide applications were made using a tractor-mounted boom sprayer with a tractor mounted boom sprayer with 3 TX-8 nozzles per row at 15 gallons of spray volume per acre at 45 psi on 1 = June 25 1.5 = July 9, 2 = July 9, 3=July 29, 4 = August 6, 4.5 = August 13, 5 = August 29, and 6 = September 10, and 7 = September 24.

Disease Assessment: Early and late leaf spot (LS) were rated together on August 6, August 20, September 4, September 17 and September 30 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 percent defoliation, 5 = lesions noticeable and < 25 percent defoliation, 6 = lesions numerous and < 50 percent defoliation, 7 = lesions very numerous and < 75 percent defoliation, 8 = numerous lesions on few remaining leaves and <90 percent defoliation, 9 = very few remaining leaves covered with lesions and < 95 percent defoliation and 10 = plants defoliated or dead. Area under disease progress curves (AUDPC) were calculated from

the leaf spot intensity data recorded over the study period. White mold hit counts (1 hit is defined as < 1 foot of consecutive stem rot damaged plants per row) were made immediately after plot inversion on September 30. Plots were combined on October 4. Yields are reported at 8.8% moisture. Statistical analysis on leaf spot intensity and white mold incidence was done on rank transformations of data, which are back transformed for presentation. Means were separated using Fisher's protected least significant difference (LSD) test ($P<0.05$).

Results: Monthly rainfall totals during the study period were above to well above the 30 year historical average except in September and October, and temperatures were at or below normal for much of the study period. Weather patterns were favored leaf spot disease but not stem rot development. Since the variety x fungicide interaction for leaf spot intensity, stem rot incidence and yield were not significant, data presented for each variable are pooled by variety and fungicide program (Table 1). While similar white indices were recorded for both peanut varieties, leaf spot intensity as the final rating date as well as yield was higher for Georgia-06G than Tifguard.

Given the rotation sequence, variety selection, tillage and variety selection, the leaf spot risk index for the study site was rated as high. For Bravo WeatherStik (WS) alone and Bravo WeatherStik/Provost 433SC at 10.7 fluid ounces per acre, the medium and high risk programs were equally effective in controlling leaf spot when compared with the low risk program. Regardless of the risk category, the early post (EP) application of Proline 480SC did not improve the effectiveness of Bravo WeatherStik/Provost 433SC against leaf spot. A decline in leaf spot control was observed with the low risk Provost 433SC program that included the EP application of Proline 480SC compared with the Provost 433SC program without the Proline 480SC EP treatment. At the high risk level, no difference in leaf spot control was obtained with Provost 433SC at the 8.0 and 10.7 fluid ounce per acre rate. No differences in white mold incidence were noted among fungicide treatments.

Leaf Spot and Stem Rot Control as well as Yield Response With Bravo Weatherstik and Provost 480SC Peanut Rx Programs Compared on Two Peanut Varieties, WREC, 2013

Split Plot Analysis (F)	Application Timing	No. Sprays	Risk Level	Leaf Spot Rating[1]	White Mold Hits/60 ft[2]	Yield lbs/ac
Peanut variety	--	--	--	12.51*[3]	0.27	17.07***
Fungicide program	--	--	--	28.54***	0.91	3.20**
Variety x fungicide	--	--	--	1.83	1.36	0.74
Variety Means						
Tifguard	--	--	--	4.8 b[4]	2.3 a	3369 b
Georgia-06G	--	--	--	5.2 a	2.6 a	3772 a
Fungicide Means						
Bravo WS 1.5 pt	1-7	7	High	5.1 cd	3.3 a	3781 ab
Bravo WS 1.5 pt	1.5,3,4.5,6,7	5	Med	4.9 de	1.9 a	4084 a
Bravo WS 1.5 pt	1,3,5,7	4	Low	6.5 ab	3.4 a	3096 d
Bravo WS 1.5 pt Provost 433SC 10.7 fl oz .	1,2,7 3-6	7	High	4.3 f	1.9 a	3763 ab
Bravo WS 1.5 pt Provost 433SC 10.7 fl oz .	1.5,6,7 3,4.5	5	Med	4.3 f	1.6 a	3406 bcd
Bravo WS 1.5 pt Provost 433SC 10.7 fl oz .	1,7 3,5	4	Low	5.5 bc	2.5 a	3570 bc
Proline 480 SC 5.7 fl oz Bravo WS 1.5 pt Provost 433SC 10.7 fl oz .	EP[5] 1.5,7 3-6	7	High	4.8 de	2.9 a	3400 bcd
Proline 480SC 5.7 fl oz Bravo WS Provost 433SC 10.7 fl oz .	EP 1.5,6,7 3,4.5	6	Med	4.3 f	2.3 a	3757 ab
Proline 480SC 5.7 fl oz Bravo WS Provost 433SC 10.7 fl oz .	EP 1.5,7 3,5	5	Low	6.6 a	2.5 a	3146 cd
Bravo WS 1.5 pt Provost 433SC 8 fl oz .	1,2,7 3-6	7	High	4.3 f	2.0 a	3482 bc

[1]Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale.
[2]White mold incidence is expressed as the number of hits per 60 foot of row.
[3]Significance (F) at the 0.05, 0.01 and 0.001 levels is indicated by *, **, or ***, respectively.
[4]Means in each column followed by the same letter are not significantly different according to analysis of variance and Fisher's least significant difference (LSD) test (P<0.05).
[5]EP = early post banded application over the seedling peanuts.

Among the Bravo WeatherStik programs, similarly higher yields were observed for the high and medium as compared with the low risk program (Table 1). Despite significantly higher leaf spot ratings for the low risk program, similar yields were recorded for all Bravo WeatherStik/Provost 433SC at the 10.7 fluid ounce per acre programs. As was the case with leaf spot intensity, the Proline 480SC EP treatment failed to improve the yield response obtained with Bravo WeatherStik/Provost 433SC at all three risk indices. Lower yields were obtained for the low than the medium risk Proline 480SC EP/Provost 433SC/Bravo WeatherStik programs. Again, pod yields were not impacted by Provost 433SC application rate. At each risk level, yield response with Bravo WeatherStik and the corresponding Provost 433SC or Proline 480 EP/Provost 433SC programs did not significantly differ.

Summary: Despite the high Peanut Rx risk level for this particular study site, both the high and medium risk Bravo WeatherStik alone or in combination with Provost 433SC at 10.7 fluid ounces per acre proved equally effective in protecting peanut from leaf spot as well as maintaining similarly high pod yields. As expected, the low risk programs gave poorer leaf spot control, which translated into lower yield for the Bravo WeatherStik alone but not the Provost 433SC programs. Addition of Proline 480SC as an early post application over seeding peanuts did not result in superior disease control. Application rate did not impact the efficacy or yield response of Provost 433SC. This is another of a long line of field trials confirming the efficacy of the Peanut Rx program when properly utilized.

Impact of Seeding Rate on the Occurrence of Diseases and Yield Response of Commercial Peanut Varieties in a Dryland Production System, WREC

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

Objective: Determine the impact of seeding rate on stand density, the occurrence of TSWV, leaf spot, white mold, as well as the yield of selected commercial peanut cultivars in a dry-land production system at the Wiregrass Research and Extension Center in Headland, AL

Production Methods: The study area at the Wiregrass Research and Extension Center, which is maintained in a peanut-cotton rotation, was turned with a moldboard plow and worked to seed bed condition with a disk harrow. Rows were laid off on April 20 with a KMC strip till rig with rolling baskets. On May 14, the peanut varieties 'Florida-07', 'Georgia-06G', 'Georgia-09B', 'Georgia-10T' and Tifguard were planted at rates of 3, 4, 6 and 8 seed per foot of row using conventional tillage practices in a Dothan fine sandy loam (OM<1 percent) soil. Thimet 20G at 5 pounds per acre pounds was applied in-furrow for thrips control. Weed control was obtained with a pre-plant, incorporated application of 1 quart per acre Sonalan HFP + 1.0 pint per acre Dual Magnum II + 0.45 ounces Strongarm on May 3 followed by pre-emergent, broadcast application of 3 ounces per acre Valor on May 21 and 4 ounces per acre Cadre on June 14. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The study area was not irrigated. A split plot design with peanut cultivars as whole plots and seeding rates as sub-plots was used. Whole plots were randomized in four complete blocks. Individual split-split plots, which consisted of four 30-foot rows spaced 3 feet apart, were randomized within each whole plot. Chlorothalonil at 1.5 pints per acre was applied for leaf spot control on June 24, July 9, July 26, August 6, August 27 and September 13 with a tractor mounted boom sprayer with 3 TX-8 nozzles per row at 15 gallons of spray volume per acre at 45 psi. Stand counts were recorded on June 3. Plots were inverted on Oct 4 and mechanically harvested on October 9.

Disease Assessment: Final TSW hit counts (one hit was defined a < 1 foot of consecutive symptomatic plants per row) were made on September 26. Early and late leaf spot were rated together on September 26 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 percent defoliation, 5 = leaf spots noticeable and < 25 percent defoliation, 6 = leaf spots numerous and < 50 percent defoliation, 7 = leaf spots very numerous and < 75 percent defoliation, 8 = numerous leaf spots on few

remaining leaves and <90 percent defoliation, 9 = very few remaining leaves covered with leaf spots and < 95 percent defoliation, and 10 = plants defoliated or dead. White mold hit counts (1 hit was defined as < 1 foot of consecutive white mold-damaged plants per row) were made immediately after plot inversion on October 4. Yields are reported at 9.2 percent moisture. Significance of interactions was evaluated using PROC GLIMMIX procedure in SAS. Statistical analyses for stand density, leaf spot intensity, along with TSW white mold incidence were done on rank transformations for non-normal data, which were back transformed for presentation. Means were separated using Fisher's least significant difference (LSD) test ($P<0.05$).

Peanut variety x seeding rate interactions for leaf spot intensity, TSW and white mold incidence were not noted, so pooled data are presented (Table 1). As indicated by significant interactions, stand density and yield for each variety differed by seeding rate.

Table 1.
F-Values From Generalized Linear Mixed Model Analysis for Effects of Peanut Variety Selection and Seeding Rate on Stand Density, Leaf Spot Intensity, Stem Rot Incidence and Yield, WREC, 2013

Split Plot Analysis (F value)	Stand Density	TSW Incidence	Leaf Spot Intensity	White Mold Incidence	Yield
Variety	14.85***	1.97	28.68***	7.65***	5.94**
Seeding rate	391.14***	3.56*	0.34	1.99	1.75
Variety x seeding rate	4.01***	1.84	0.42	0.57	2.11*

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

TSW incidence ratings were low for all peanut varieties. No significant differences in TSW incidence were noted between varieties (Table 2). Late leaf spot was the dominant of the two leaf spot diseases. Highest late leaf spot intensity was recorded for Georgia-09B. Late leaf intensity was higher for Georgia-06G and Georgia 10T than Florida-07 and Tifguard. White mold damage levels were low on all varieties. Georgia-09B had higher white mold indices than Florida-07 and Georgia-10T but not Georgia-06G and Tifguard.

Table 2.
TSW and White Mold Incidence Along With Late Leaf Spot Intensity as Influenced by Peanut Variety Selection, WREC, 2013

Peanut Variety	TSW Incidence[1]	Late Leaf Spot Intensity[2]	White Mold Incidence[1]
Florida 07	1.0 a[3]	3.5 c[4]	0.7 c
Georgia-06G	0.8 a	4.6 b	2.0 ab
Georgia-09B	0.5 a	5.5 a	2.8 a
Georgia-10T	0.3 a	4.5 b	1.0 bc
Tifguard	0.6 a	3.6 c	2.1 a

[1]TSW and white mold incidence is expressed as the number of hits per 60 ft of row.
[2]Leaf spot intensity was rated using the Florida 1 to 10 leaf spot scoring system.
[3]Means for each variable that are followed by the same letter are not significantly different according to analysis of variance and the least significant difference (LSD) test (P<0.05).
[4]Leaf spot intensity data are calculated means, but letters differentiating means were calculated using rank transformations.

TSWV incidence was higher at a seeding rate of 3 than 4 or more seed per foot of row (Table 3). Seeding rate did not influence late leaf spot intensity. White mold incidence was higher at 8 than at 3 seed per foot of row, while the ratings at 4 and 6 seed per foot of row were intermediate.

Table 3.
Impact of Seeding Rate on Late Leaf Spot Intensity as well as TSW and White Mold Incidence in Peanut

Seeding Rate (seed/ft)	TSW Incidence[1]	Late Leaf Spot Intensity[2]	White Mold Incidence[1]
3	1.1 a[3]	4.3 a[4]	1.3 b
4	0.4 b	4.3 a	1.5 ab
6	0.4 b	4.4 a	1.9 ab
8	0.7 b	4.4 a	2.2 a

[1]TSW and white mold incidence is expressed as the number of hits per 60 ft of row.
[2]Leaf spot intensity was rated using the Florida 1 to 10 leaf spot scoring system.
[3]Means for each variable that are followed by the same letter are not significantly different according to analysis of variance and the least significant difference (LSD) test (P<0.05).
[4]Leaf spot intensity along with TSW and white mold indices data are calculated means, but letters differentiating means were calculated using rank transformations.

At all seeding rates, stand density was higher for Georgia-09B compared with all other varieties. With the exception of the highest seeding rate, similar stand densities were similar for Florida 07, Georgia-06G, Georgia-10T and Tifguard. Of the latter varieties, Tifguard had the highest stand density at the 8 seed per foot seeding rate, while Georgia-06G had the least.

Table 4.
Impact of Seeding Rate on the Stand Density of Five Commercial Runner Peanut Varieties

Seed/ft Row	Stand Density[1,3]				
	Florida 07	Georgia-06G	Georgia-09B	Georgia-10T	Tifguard
3	66.0 i[2]	65 i	81 gh	66 i	66 i
4	88 fg	81 gh	96 ef	80 gh	76 h
6	103 e	101 e	114 d	93 ef	97 e
8	124 c	113 d	150 a	122 c	136 b

[1]Stand density represents the total number of plants per 30 row ft,
[2]Means followed by the same letter are not significantly different according to analysis of variance and the least significant difference (LSD) test (P<0.05).
[3]Stand density data are calculated means, but letters differentiating means were calculated using rank transformations.

Summary: Seeding rate did not impact the yield of Florida-07, Georgia-06G, Georgia-09B and Tifguard (Table 5). With Georgia-10T, higher yields were observed at seeding rates of 4 or more seed per foot of row compared with the lowest seeding rate. Florida-07 had higher yields at all seeding rates than Georgia-10T and Tifguard. Georgia-09B and Florida-07 had similar yields at the two lower but not the two higher seeding rates, where the latter variety had the highest yield. Florida-07 and Georgia-06G had similar yields at all seeding rates except for 6 seed per foot of row as compared with minimal leaf spotting in Florida-07 and Tifguard.

Table 5.
Interaction of Seeding Rate on the Yield of Selected Peanut Varieties

Seed/ft Row	Yield (lbs/ac)[1]				
	Florida 07	Georgia-06G	Georgia-09B	Georgia-10T	Tifguard
3	5189 abcd	5198 abcd	4966 cdef	4090 g	4792 def
4	5489 abc	4976 cdef	4966 cdef	4840 def	4579 efg
6	5626 a	4937 def	4985 cdef	4901 def	4501 fg
8	5556 ab	5082 bcde	4801 def	4801 def	4859 def

[1]Means followed by the same letter are not significantly different according to analysis of variance and the least significant difference (LSD) test (P<0.05).

Summary: Seeding rate had a sizable impact as expected on stand density but not on the yield of four of five peanut varieties with a significant yield gain noted for only Georgia-10T. Frequent summer rain showers may be responsible for the minimal impact of seeding rate of yield of dryland peanuts. Incidence of TSW declined and white mold increased with rising seeding rates. Similar results have been seen in a previous irrigated seeding rate study. In contrast to that previous seeding rate trial, leaf spot ratings were not impacted by seeding rates. Pod yield was greatly impacted by variety selection with Florida-07 having higher yields than the majority of varieties screened over all seeding rates. Due to low disease pressure, differences in TSW and white mold incidence, though significant, were minor. Significant differences in leaf spot ratings were noted with Georgia-09B suffering noticeable leaf spotting and premature defoliation.

Impact of Planting Date, Variety and Insecticides on Thrips and Disease Activity as well as Stand Density and Yield of Peanut, WREC

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

Objective: Compare the efficacy of seed dressing and granular insecticides as influenced by planting date and peanut variety for the control of thrips as well as incidence of tomato spotted wilt (TSW) and stem rot as well as leaf spot diseases and yield response of a TSW susceptible and resistant peanut variety.

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 rates of 6 seed per foot of row using conventional tillage practices on April 16 (first DOP) and May 15 (second DOP) in a Dothan fine sandy loam (OM<1 percent) soil. Weed control was obtained with a pre-plant, incorporated application of 1 quart per acre Sonalan HFP + 1.0 pints per acre Dual Magnum II + 0.45 ounces Strongarm on May 3 followed by pre-emergent, broadcast application of 3 ounces per acre Valor on May 21 and 1.5 pints per acre 2,4 DB on July 1. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The study area received 1.0 acre inches on August 12. A split split-plot design with planting date as whole plots, peanut variety as sub-plots and insecticide treatment was used. Insecticide treatments included 4 ounces per 100 lb of seed of CruiserMAXX seed dressing, 5 pounds per acre of Thimet 20G in-furrow, 7 pounds per acre of Temik 15G in furrow and 4 ounces per 100 pounds of seed of CruiserMAXX fb 5 pounds per acre of Thimet 20G in-furrow. Seed sown in the Thimet 20G and Temik 15G-treated plots received 3 ounces per 100 pounds of seed of the current industry fungicide seed dressing Dynasty PD. Whole plots were randomized in four complete blocks. Individual split-split plots, which consisted of four 30-foot rows spaced 3-feet apart, were randomized within each whole plot. Chlorothalonil at 1.5 pints per acre was applied for leaf spot control on June 24, July 9, July 26, August 6, August 28 and September 13 with a tractor mounted boom sprayer with 3 TX-8 nozzles per row at 15 gallons of spray volume per acre at 45 psi. Stand counts were recorded on May 7 and May 31 for the first and second planting date, respectively, from the second row of each plot as the actual number of plants emerged. The first and second plantings were mechanically harvested on September 10 and October 1.

Insect and Disease Assessment: Thrips counts were made by placing 10 juvenile leaves collected from seedlings in the two harvest rows of each plot on May 24 (1st DOP) and

June 11 (2nd DOP) in a plastic bag containing an alcohol-based kill solution, and then determining thrips numbers in each sample using a low power microscope. Thrips damage rating (TDR) on the leaves was assessed on a 0 to 10 scale where 0 = no visible leaf scarring, 1=10 percent leaf area scarred, 2=20 percent leaf area scarred, 3=30 percent leaf area scarred, 4=40 percent leaf area scarred, to 10=100 percent leaf area affected and plants near death on May 24, May 31 and June 5 for the first planting date and June 11, June 17 and June 25 for the second planting date. Final TSW hit counts (one hit was defined a < 1 foot of consecutive symptomatic plants per row) were made on September 4 and September 26 for the first and second planting dates, respectively. Early and late leaf spot were rated together on September 6 and September 26 for the first and second planting dates, 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 percent defoliation, 5 = leaf spots noticeable and < 25 percent defoliation, 6 = leaf spots numerous and < 50 percent defoliation, 7 = leaf spots very numerous and < 75 percent defoliation, 8 = numerous leaf spots on few remaining leaves and <90 percent defoliation, 9 = very few remaining leaves covered with leaf spots and < 95 percent defoliation, and 10 = plants defoliated or dead. White mold hit counts (1 hit was defined as < 1 foot of consecutive white mold-damaged plants per row) were made immediately after plot inversion on for the first and second planting dates on September 6 and September 27, respectively. Yields are reported at 7.2 percent and 8.8 percent moisture for the first and second planting date, respectively. Significance of interactions was evaluated using PROC GLIMMIX procedure in SAS. Statistical analyses for thrips counts, thrips damage, stand density, leaf spot intensity, along with TSW and white mold incidence were done on rank transformations for non-normal data, which were back transformed for presentation. Means were separated using Fisher's least significant difference (LSD) test ($P<0.05$).

Since the interactions for thrips count, white mold incidence and yield were not significant, data presented for each of these variables are pooled by planting date, peanut variety and insecticide treatment (Table 1). One or more interactions for stand density, thrips damage, TSW incidence, leaf spot intensity was significant and data are presented by planting date, peanut variety, or insecticide treatment.

Thrips counts were higher at the April than May planting date (Table 2). Similar thrips counts were recorded at the first sampling for both planting dates. CruiserMAXX alone had a higher thrips count than CruiserMAXX + Thimet 20G but not the Dynasty PD control, Thimet 20G, or Temik 15G insecticide treatments. White mold incidence was not impacted by planting date or insecticide treatment. Flavorunner 458 suffered higher levels of white mold damage than Georgia-06G. While similar yields were noted at both planting dates, yield response for Georgia-06G was superior when compared with Flavorunner 458. Higher yields were recorded for Temik 15G than CruiserMAXX alone

and the Dynasty PD control. Thimet 20G-treated peanuts yielded higher than the Dynasty PD control but not the other insecticide treatments.

Table 1.
Impact of Planting Date, Peanut Variety Selection and Insecticide Treatment on the Thrips Count, White Mold Incidence and Yield

Variable	Thrips count[1]	White mold hits/60 row ft[2]	Yield lbs/ac
Planting date			
April 16	5.6 a[3]	2.1 a	4608 a
May 15	1.3 b	2.1 a	4895 a
Peanut variety			
Flavorunner 458	3.1 a	3.1 a	3994 b
Georgia-06G	3.8 a	1.0 b	5508 a
Insecticide treatment and rate			
Dynasty PD control	3.7 ab	2.4 a	4392 c
CruiserMAXX 4 oz/100 lb seed	6.8 a	1.8 a	4640 bc
Thimet 20G 5 pounds per acre[4]	2.8 ab	1.7 a	4822 ab
CrusierMAXX 4 oz/100 lb seed + Thimet 20G 5 pounds per acre	1.4 b	1.9 a	4764 abc
Temik 15G 7 pounds per acre [4]	2.6 ab	2.5 a	5133 a

[1]Thrips counts were determined from 10 juvenile leaves collected from each plot for the first and second planting dates on May 24 and June 11, respectively.
[2]TSWV and white mold severity is expressed as the number of disease loci per 60 ft of row.
[3]Means in each column followed by the same letter are not significantly different according to Fisher's protected least significant difference (LSD) test ($P<0.05$).
[4]Thimet 20G and Temik 15G were applied at planting as in-furrow treatments.

Flavorunner 458 had a higher final thrips damage rating than Georgia-06G (data not shown). Except for the Dynasty PD control, thrips damage ratings for all insecticide treatments were higher at the May 15 than April 16 planting date (Fig. 1). At the early planting date, all insecticide treatments had lower thrips damage ratings compared with the Dynasty PD control. Temik 15G, Thimet 20G and CruiserMAXX + Thimet 20G, which had similarly low thrips damage ratings, also gave better thrips protection than CruiserMAXX alone at the April planting date. At the May planting date, Thimet 20G, Temik 15G and CruiserMAXX + Thimet 20G but not CruiserMAXX reduced thrips damage levels compared with the Dynasty PD control. While CruiserMAXX, Thimet 20G and CruiserMAXX + Thimet 20G proved equally ineffective the second planting date, Temik 15G gave superior thrips protection.

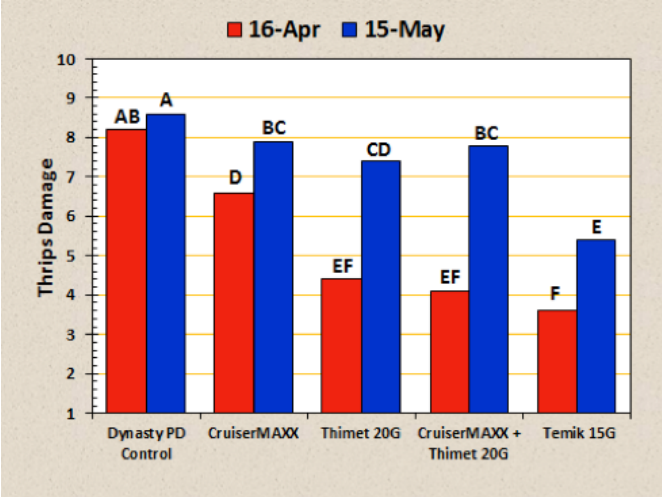


Figure 1. Interaction of planting date and insecticide treatments on thrips damage.

Stand density was higher for Georgia-06G than for Flavorunner 458 (data not shown). Planting date and insecticide treatment impacted stand density (Figure 2). CruiserMAXX but not any other treatment, including the Dynasty PD control had a higher stand density at the April 16 than May 15 planting dates. At the April planting date, higher stand counts were recorded for CruiserMAXX than for the Dynasty PD control and Temik 15G-treated peanuts. In contrast, the Dynasty PD control had a higher stand count at the May planting date than CruiserMAXX alone but not the other insecticide treatments.

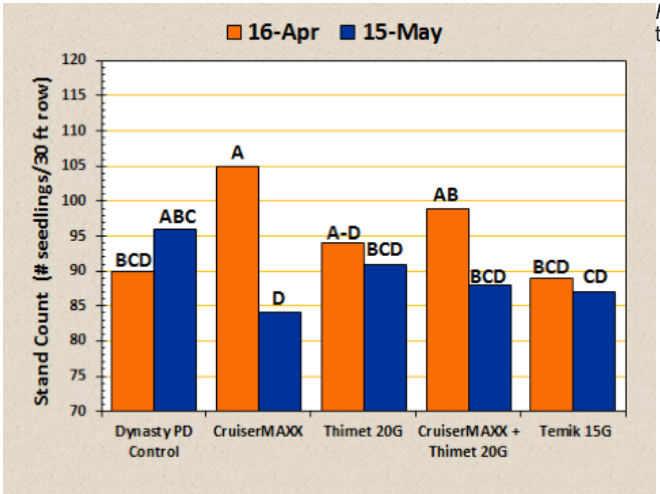


Figure 2. Interaction of planting date and insecticide treatment on stand density in peanut.

Incidence of TSW differed by peanut varieties Flavorunner 458 and Georgia-06G across planting date and insecticide treatment (Table 1). Planting date influenced TSW incidence in Flavorunner 458 but not Georgia-06G with the former variety having higher disease indices at the April than May planting date (Figure 3). At both planting dates, Georgia-06G also had equally lower TSW ratings than Flavorunner 458 (Figures 3 and.4). When compared with the Dynasty PD control, a significant reduction in TSW incidence was obtained with CruiserMAXX + Thimet 20G and CruiserMAXX alone on Flavorunner 458 and Georgia-06G, respectively (Figure 4).

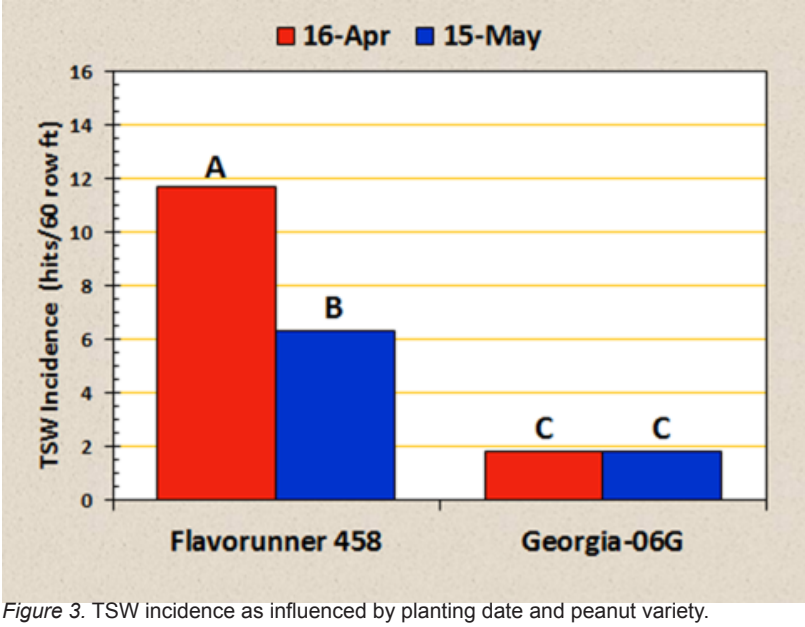


Figure 3. TSW incidence as influenced by planting date and peanut variety.

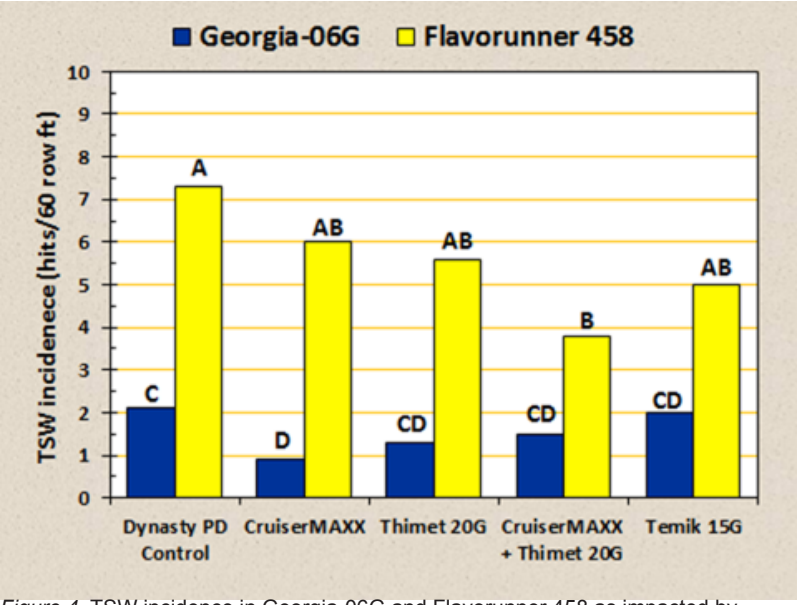


Figure 4. TSW incidence in Georgia-06G and Flavorunner 458 as impacted by insecticide treatment.

Leaf spot intensity differed by planting date and peanut variety (Fig. 5). For both Flavorunner 458 and Georgia-06G, leaf spot intensity ratings were higher at for the May than April planting dates. At both planting dates, Flavorunner 458 suffered higher levels of leaf spotting and premature defoliation than Georgia-06G. Leaf spot intensity was not impacted by insecticide treatment (data not shown).

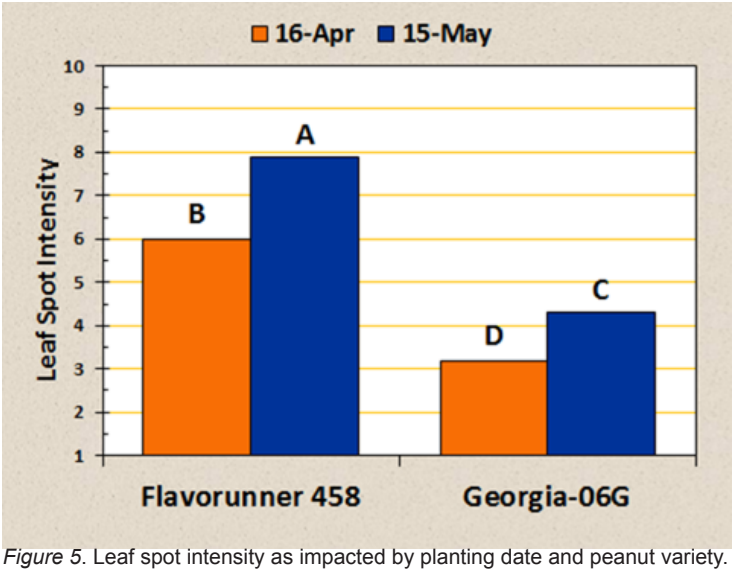


Figure 5. Leaf spot intensity as impacted by planting date and peanut variety.

Summary: Planting date, variety selection and/or insecticide treatment significantly impacted stand density, thrips counts, thrips damage to the leaves, TSW and stem rot incidence, leaf spot intensity and yield. In contrast to the current industry standard Georgia-06G, impacts of the above independent variables on thrips, diseases and yield were magnified on Flavorunner 458, a peanut variety that is susceptible to TSW, white mold and leaf spot diseases.

Performance of the seed dressing and soil insecticides was impacted by 2013 spring weather patterns. Cooler and wetter than normal conditions in April and particularly May stalled seedling growth thereby increasing crop sensitivity to thrips feeding activity as well as delaying thrips movement from winter hosts into peanut. As a result, thrips damage to seeding peanuts was greatly magnified and insecticide performance poorer than expected, particularly for CruiserMAXX and to a lesser extent Thimet 20G. Temik 15G, an insecticide that provided superior thrips control in past trials, did not provide the expected high level of protection, particularly on the May-planted peanuts. Yield response to the insecticides generally reflected the level of thrips control provided by each product with higher yields recorded for Temik 15G and Thimet 20G when compared with the Dynasty PD fungicide seed dressing control. Surprisingly, the CruiserMAXX + Thimet 20G combination treatment failed to provide better thrips control or increase yield compared with CruiserMAXX seed dressing or Thimet 20G alone. While the CruiserMAXX alone or in combination with Thimet 20G reduced TSW incidence, overall disease levels were too low, particularly in Georgia-06G to impact yield.

In the rare year when cool soil temperatures slow peanut seedling growth, an at-cracking insecticide treatment may occasionally be needed to provide an additional level of protection for CruiserMAXX and possibly Thimet 20G insecticide-treated peanuts from thrips.

Table 2.
F-Values from Generalized Linear Mixed Model Analysis for Effects of Planting Date, Peanut Variety Selection and Insecticide on Stand Density, Thrips Counts, Thrips Damage, TSW Incidence, Leaf Spot Intensity, Stem Rot Incidence and Yield, WREC, 2013

Source (F values)	Stand Density	Thrips Counts	Thrips Damage	TSW Incidence	Leaf Spot	White Mold	Yield
Planting date	0.39[1]	13.96**	109.93***	34.92***	1213.40***	0.00	2.38
Variety	6.76*	0.38	16.83***	251.80***	263.98***	42.22***	179.71***
Planting data x variety	1.14	0.05	1.49	34.92***	20.64***	0.02	2.68
Treatment	0.92	2.95*	45.74***	10.01***	0.57	1.00	3.76**
Planting date x treatment	0.87	1.60	8.89***	0.53	0.79	0.53	1.14
Variety x treatment	3.61*	1.04	0.59	3.79**	2.11	1.66	1.23
Planting date x variety x treatment	0.43	0.30	1.20	0.72	0.60	0.47	1.12

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

Disease Intensity and Yield Responses of Irrigated Commercial Peanut Cultivars Compared, WREC

A. K. Hagan and B. Gamble

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

Production Methods: The study site was turned with a moldboard plow on March 15 and rows were laid off on April 27 with a KMC strip till rig with rolling baskets. Peanut cultivars were planted on May 12 at a rate of approximately 6 seed per foot of row in a field following two years to cotton using conventional tillage practices in a fine Dothan sandy loam (OM<1 percent). Gypsum, at a rate of 600 pounds per treated acre was applied, on a 14-inch band over the row middle on June 24. A pre-plant application of 1.0 quart per acre of Sonalan and 0.45 ounces per acre of Strongarm on April 19 was lightly incorporated. Escape weeds were plowed with flat sweeps on June 14 and June 24 or pulled by hand. Thimet 20G at 5 pounds per acre was placed in-furrow to control thrips. The study site received between 0.75 and 1.0 acre inches of water on July 12, July 26, August 3, August 11, August 25, September 9 and 21 September 21. Chlorothalonil, at 1.5 pints per acre was applied on June 9, June 21, July 19, August 17, August 30, while Abound 2SC at 18.5 fluid ounces per acre was broadcast on July 7 and August 2. Plots consisted of two 20–foot rows, spaced 3 feet apart, arranged in a randomized complete block, with four replications.

Disease Assessment: Tomato spotted wilt virus (TSWV) hits counts (1 hit is defined as < 1 foot of consecutive severely TSW-damaged plants per row) were made on August 29. Early and late leaf spot (LS) were rated together on September 26, October 9 and October 16 for the mid-season, late and very late maturing cultivars, respectively, using the 1-10 Florida peanut leaf spot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions noticed in lower and upper canopy, 4 = some lesions and < 10 percent defoliation, 5 = lesions noticeable and < 25 percent defoliation, 6 = lesions numerous and < 50 percent defoliation, 7 = lesions very numerous and < 75 percent defoliation, 8 = numerous lesions on few remaining leaves and <90 percent defoliation, 9 = very few remaining leaves covered with lesions and < 95 percent defoliation, and 10 = plants defoliated or dead. White mold hit counts (1 hit is defined as < 1 foot of consecutive stem rot damaged plants per row) were made immediately after plot inversion on September 30, October 9 and October 16 for the mid-season, late and very late maturing cultivars, respectively. Plots were combined about three to five days after inversion. Yields are reported at 7 percent moisture. Statistical analysis on leaf spot intensity as well as TSW and white mold incidence was done on rank transformations of data, which are back transformed for presentation. Means were separated using Fisher's protected least significant difference (LSD) test ($P<0.05$).

Results: Monthly rainfall totals during the study period were above to well above the 30 year historical average except in September and October, and temperatures were at or below normal for much of the study period. Weather patterns were favored leaf spot disease but not stem rot development. Overall TSWV pressure was relatively low; however, significant differences in disease incidence were noted between peanut cultivars. Flo-Run 107 had a higher incidence of TSW than all cultivars except for Florida-07, Georgia-08V, Georgia-09B, Georgia-11J, Georgia Greener and TUFRunner 727. Disease intensity in 5 additional peanut cultivars was similarly low to the equally low TSW ratings for C1805-2-9 and Georgia-07W. Early leaf spot was the dominant disease observed in mid-September but rapid intensification of late leaf spot despite relatively dry weather patterns was observed from then through the final digging date. Georgia-08V, Georgia-10T, Georgia-12Y and Flo-Run 107 had similarly high leaf spot intensity ratings, while the least leaf spotting and premature defoliation were observed in Tifguard, C1805-3-43, TUFRunner 727, Georgia-11J, Georgia-07W, C1805-2-9 and Georgia Greener. Higher stem rot indices were found for Georgia-11J than all varieties except for Georgia-08V and Georgia-09B. With one exception, stem rot indices for the remaining cultivars were similarly low. Yield of Georgia-6G was higher than all varieties except for Georgia-12Y, Georgia Greener, C1805-2-9, TUFRunner 727 and Georgia-07W, while those for Florida-07, Georgia-11J, Georgia-8V and C1805-3-43 were similarly low.

Summary: While TSWV and stem rot incidence remained low, considerable intensification of late leaf spot was seen on the very late maturing (155 day to maturity) as compared with the mid-maturity (135 days to maturity) peanut varieties. Georgia-06G, the current industry standard, produced higher yields than the majority of commercial varieties screened. Diseases are not responsible for the poor yields recorded for Florida-07.

Table 1.
Disease Ratings and Yields for Commercial Peanut Varieties and Selected Advanced Breeding Lines

Cultivar[1]	Maturity	TSWV Hits/40 ft[2]	Leaf spot Rating[3]	White mold Hits/40 ft[2]	Yield lbs/ac
C1805-2-9	Mid	0.3 d[4]	4.6 cdef	0.5 bc	6201 a-d
C1805-3-43	Mid	1.5 bcd	4.3 ef	0.0 c	5554 d-g
Flo-Run 107	Mid	7.0 a	5.9 ab	0.8 b	5953 b-e
Florida-07	Late	2.8 abc	4.9 cd	0.5 bc	4825 g
Georgia-06G	Mid	1.8 bcd	4.8 cde	0.0 c	6856 a
Georgia-07W	Mid	0.3 d	4.5 def	0.0 c	6077 a-e
Georgia-08V	Mid	5.3 ab	6.3 a	0.8 ab	5280 efg
Georgia-09B	Mid	4.5 ab	5.4 bc	0.8 ab	5811 b-e
Georgia-10T	V Late	1.3 bcd	6.3 a	0.3 bc	5773 b-e
Georgia-11J	Late	2.8 abc	4.4 def	2.3 a	4861 fg
Georgia-12Y	V Late	1.8 bcd	6.1 ab	0.0 c	6561 ab
Georgia Greener	Mid	2.8 abc	4.7 cdef	0.3 bc	6396 abc
Tifguard	Mid	1.0 cd	4.2 f	0.0 c	5662 c-f
TUFRunner 727	Mid	2.8 abc	4.3 def	0.0 c	6201 a-d

[1]With the exception of Virginia market-type peanut cultivar Georgia-08V, the remaining cultivars are runner market-type peanuts.
[2]Tomato spotted wilt virus (TSW) and white mold incidence is expressed as the number of disease loci per 40 ft of row.
[3]Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale.
[4]Means in each column that are followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test (P<0.05).

Disease Intensity and Yield Responses of Rainfed Commercial Peanut Cultivars Compared, WREC

A. K. Hagan and B. Gamble

Objective: Compare the yield response and reaction of commercial peanut varieties in a rainfed production system to TSWV, leaf spot diseases and white mold.

Production Methods: The study site was turned with a moldboard plow on 15 Mar and rows were laid off on April 27 with a KMC strip till rig with rolling baskets. Peanut cultivars were planted on May12 at a rate of approximately 6 seed per foot of row in a field that was cropped the previous two years to cotton using conventional tillage practices in a fine Dothan sandy loam (OM<1%). Gypsum at a rate of 600 pounds per treated acre was applied on a 14-inch band over the row middle on June 24. A pre-plant application of 1.0 quart per acre of Sonalan and 0.45 ounces per acre of Strongarm on April 19 was lightly incorporated. Escape weeds were plowed with flat sweeps on June 14 and June 24 or pulled by hand. Thimet 20G at 5 pounds per acre was placed in-furrow to control thrips. Chlorothalonil, at 1.5 pints per acre, was applied on June 9, June 21, July 19, August 17, August 30, while Abound 2SC at 18.5 fluid ounces per acre applications were made on July 7 and August 2. Plots consisted of two 20–foot rows, spaced 3 feet apart, arranged in a randomized complete block, with four replications.

Disease Assessment: Tomato spotted wilt virus (TSWV) hit counts (1 hit was defined as < 1 foot of consecutive severely TSW-damaged plants per row) were made on August 29. Early and late leaf spot (LS) were rated together on September 26, October 9 and October 16 for the mid-season, late and very late maturing cultivars, respectively, using the 1-10 Florida peanut leaf spot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions noticed in lower and upper canopy, 4 = some lesions and < 10 percent defoliation, 5 = lesions noticeable and < 25 percent defoliation, 6 = lesions numerous and < 50 percent defoliation, 7 = lesions very numerous and < 75 percent defoliation, 8 = numerous lesions on few remaining leaves and <90 percent defoliation, 9 = very few remaining leaves covered with lesions and < 95 percent defoliation, and 10 = plants defoliated or dead. White mold hit counts (1 hit was defined as < 1 foot of consecutive white mold damaged plants per row) were made immediately after plot inversion on September 30, October 9 and October 16 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 percent moisture. Statistical analysis on leaf spot intensity as well as TSW and white mold incidence was done on rank transformations of data, which are back transformed for presentation. Means were separated using Fisher's protected least significant difference (LSD) test ($P<0.05$).

Results: Monthly rainfall totals during the study period were above to well above the 30 year historical average except in September and October and temperatures were at or below normal for much of the study period. Weather patterns were favorable for leaf spot diseases but not white mold development.

Despite generally low TSWV pressure, incidence of this disease was higher in Tuff Runner than Georgia-09B, Tifguard, Georgia-10T, Georgia-12Y, C1805-3-43 and C1805-2-9 (Table 1). Early leaf spot was the dominant disease observed in mid-September but rapid intensification of late leaf spot despite relatively dry weather patterns was observed at the later digging dates. Similarly high leaf spot intensity was recorded for Georgia-08V, Georgia-10T and Georgia-12Y, while equally low damage ratings for this disease were recorded for Tifguard, C1805-2-9, Georgia-07W, Georgia-06G, C1805-3-43, Tuff Runner and Georgia Greener. Stem rot incidence was higher on Georgia-11J compared with all other cultivars except Georgia-08V, Florida 07 and Flo-Run 107. Florida 07, C1805-2-9, Georgia-09B, Georgia-12Y, Georgia-11J, Georgia-06G and Tuff Runner had equally high yields, while similarly low yields were recorded for Georgia-08V, Tifguard, Flo-Run 107 and C1805-3-43.

Table 1.
Disease Ratings and Yield Response of Commercial Peanut Varieties in a Rainfed Production System

Cultivar[1]	Maturity	TSWV hits/40 ft[2]	Leaf spot rating[3]	White mold hits/40 ft[2]	Yield pounds per acre
C1805-2-9	Mid	1.3 b[4]	4.3 g	0.0 d	5725 ab
C1805-3-43	Mid	0.8 b	4.6 efg	0.5 bcd	4829 cde
Flo-Run 107	Mid	4.3 ab	5.1 cde	0.8 a-d	4671 cde
Florida 07	Late	3.5 ab	5.5 bcd	1.5 ab	6234 a
Georgia-06G	Mid	1.5 ab	4.5 efg	0.5 bcd	5391 a-d
Georgia-07W	Mid	2.0 ab	4.2 g	0.3 d	5198 bcd
Georgia-08V	Mid	3.5 ab	6.5 a	1.8 a	4074 e
Georgia-09B	Mid	1.5 b	5.7 bc	0.0 d	5795 ab
Georgia-10T	V Late	1.3 b	6.4 a	0.3 d	5278 bcd
Georgia-11J	Late	2.5 ab	5.0 def	2.5 a	5469 abc
Georgia-12Y	V Late	1.0 b	6.0 ab	0.3 d	5967 ab
Georgia Greener	Mid	2.0 ab	4.8 efg	0.5 cd	5268 bcd
Tifguard	Mid	1.3 b	4.2 g	0.0 d	4548 de
Tuff Runner	Mid	5.5 a	4.4 fg	0.0 d	5462 abc

[1]With the exception of the Virginia market-type peanut cultivar Georgia-08V, the remaining cultivars are runner market-type peanuts.

[2]Tomato spotted wilt virus (TSWV) and white mold incidence is expressed as the number of disease hits per 40 ft of row.

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

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

Summary: With the low TSWV and white mold pressure, diseases had very limited impact on variety yield response. Many of the mid-maturity varieties, except for the Virginia market type peanut Georgia-08V, suffered from relatively lower leaf spot damage, while the later maturing lines suffered significant leaf spotting and premature defoliation.

Yield Response and Disease Reaction of Experimental Peanut Breeding Lines Compared, WREC

A. K. Hagan and B. Gamble

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

Production Methods: The study site was turned with a moldboard plow on March 5 and rows were laid off on April 27 with a KMC strip till rig with rolling baskets. Peanut cultivars were planted on May 12 at a rate of approximately 6 seed per foot of row in a field that was cropped the previous two years to cotton using conventional tillage practices in a fine Dothan sandy loam (OM<1 percent). Gypsum, at a rate of 600 pounds per treated acre, was applied on a 14-inch band over the row middle on June 24. A pre-plant application of 1.0 quart per acre of Sonalan and 0.45 ounces per acre of Strongarm on April 19 was lightly incorporated. Escape weeds were plowed with flat sweeps on June 14 and June 24 or pulled by hand. Thimet 20G at 5 pounds per acre was placed in-furrow to control thrips. The study site received with between 0.75 and 1.0 acre inches of water on July 12, July 26, August 3, August 11, August 25, September 9, September 13 and September 21. Chlorothalonil at 1.5 pints per acre was applied on June 9, June 21, July 19, August 17, August 30, while Abound 2SC at 18.5 fluid ounces per acre was broadcast on July 7 and August 2. 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 August 29. Early and late leaf spot (LS) were rated together on September 18, September 26, October 9 and October 16 for the early, mid-season, late and very late maturing cultivars, respectively, using the 1-10 Florida peanut leaf spot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions noticed in lower and upper canopy, 4 = some lesions and < 10 percent defoliation, 5 = lesions noticeable and < 25 percent defoliation, 6 = lesions numerous and < 50 percent defoliation, 7 = lesions very numerous and < 75 percent defoliation, 8 = numerous lesions on few remaining leaves and <90 percent defoliation, 9 = very few remaining leaves covered with lesions and < 95 percent defoliation, and 10 = plants defoliated or dead. 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 September 18, September 30, October 9 and October 16 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 percent moisture. Statistical analysis on leaf spot intensity as well as TSWV and stem rot incidence was done on rank transformations of data, which are back transformed for

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

Results: Monthly rainfall totals during the study period were above the 30 year historical average except in September and October, and temperatures were at or below normal for much of the study period. Weather patterns were favorable for leaf spot disease but not white mold development. Incidence of TSWV was higher in Florunner than all cultivars and experimental lines except for ARDG 1, TX 071305, UF 13303, UF 13302, 12H-5-23,24, 11H-1-35,36, NC-7, SPT 10-05, ARSOK–R35 and ARSOK V30B, while 9 selections, including the Georgia-06G commercial standard, had indices as low as that reported for GA102719. Similarly high leaf spot ratings were noted for Florunner, TX 071304, TX 071305, GA102720 and ARSOK V30B. Among all experimental lines, only SPT 10-02 had lower leaf spot intensity than the Georgia-06G commercial standard. While stem rot incidence was relatively low, significant differences in disease were noted among the experimental lines and commercial varieties. Equally high stem rot counts were recorded for Florunner, NC-7, ARSOK V30B, ARSOK-R35, ARDG2, UF 13301 and UF13303, while equally low disease ratings were observed for the majority of experimental lines screened. A wide variation in yield was observed between peanut cultivars and experimental lines. The commercial standard Georgia-06G produced higher pod yields than all experimental lines except UF13301, UF13302 and N10046o1. Older commercial Virginia and runner market type peanut standards NC-7 and Florunner, respectively, yielded less than all experimental lines except for ARSOK V30B, ARSOK-R35 and SPT 10-05.

Summary: While TSWV and white mold pressure was low, considerable late leaf spot development was noted on some advanced breeding lines and the old commercial standards Florunner and NC-7. In contrast to observations with commercial peanut varieties, some of the later maturing advanced breeding lines did not suffer high levels of late leaf spot incited-premature defoliation. Yield for the commercial standard Georgia-06G had significantly yields than the majority of the advanced breeding lines.

Table 1.
Yield Response and Reaction of Advanced Breeding Lines to Tomato Spotted Wilt, Late Leaf Spot and White Mold

Cultivar[1]	Market Type[1]	Maturity	TSWV Hits/40 ft[2]	Leaf Spot Rating[3]	White Mold Hits/40 ft[2]	Yield lbs/ac
NC-7	V	Early	5.5 a-d[4]	5.1 hi	1.0 a-d	4088 j
Florunner	R	Mid	8.8 a	7.5 a	3.0 a	3983 j
UF13301	R	Mid	0.8 hij	6.2 cde	1.3 abc	6213 ab
UF13302	R	Mid	5.3 abc	6.3 b-e	0.0 e	6036 abc
UF 13303	R	Mid	5.3 ab	6.2 cde	1.0 a-d	5859 bcd
GA102716	R	Mid	2.0 d-j	5.3 gh	0.3 de	5345 d-g
GA102719	R	Late	0.3 j	5.1 hi	0.3 de	5820 b-e
GA10272	R	Late	2.5 c-j	6.8 abc	1.7 cde	5873 bcd
N10046o	V	Mid	1.0 g-j	5.3 gh	0.3 de	6035 abc
SPT 10-02	R	Mid	1.0 g-j	4.1 j	0.8 bcd	5027 fgh
SPT 10-05	R	Mid	4.3 a-d	4.8 ij	0.5 cde	4443 hij
TX 071304	R	Mid	3.0 b-h	7.0 ab	0.8 cde	5257 efg
TX 071305	R	Mid	5.5 a-d	6.7 a-d	0.8 cde	5286 d-g
ARSOK–R35	R	Early	3.8 a-e	5.9 ef	2.5 ab	4247 ij
ARSOK V30B	V	Early	4.8 a-f	6.8 abc	2.3 ab	4124 j
11H-1-35,36	R	Mid	5.8 a-d	5.0 hi	1.0 de	5452 c-f
12H-4-9,10	R	Mid	0.5 ij	6.1 de	0.0 e	5805 b-e
12H-5-23,24	R	Mid	6.0 a-d	6.1 de	0.0 e	5434 def
ARDG 1 (ASUS-06)	R	V Late	8.3 a	5.0 hi	0.3 de	4778 ghi
ARDG 2 (ASUS-18)	R	V Late	2.3 c-j	4.9 ij	1.0 a-d	5066 fg
ARDG 3 (ASUS-25)	R	V Late	2.5 c-i	5.8 ef	0.3 de	5337 d-g
ARDG 4 (MRS-29)	R	V Late	5.0 b-h	5.5 fg	0.0 e	4880 fgh
ARDG 5 (MRS-35)	R	V Late	4.0 b-g	5.3 gh	0.3 de	4829 ghi
ARDG 6 (MRS-41)	R	Late	1.0 g-j	5.3 gh	0.0 e	4745 ghi
Georgia-06G	R	Mid	1.5 e-j	5.0 hi	0.8 cde	6536 a

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

Evaluation of Vydate CLV for Peanut Disease and Nematode Control in Southeast Alabama, WREC

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

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

Methods: Peanut cultivar 'GA 06G' was planted in a field with a history of peanut production on May 23 at the Wiregrass Research and Extension Center in Headland, AL. Seed were sown at a rate of approximately five seed per ft of row and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed and nematode control were followed. The soil type was a Dothan sandy loam (OM<1 percent). On May 3, 1 quart per acre of Sonalan + 0.45 ounce per acre of Strongarm + 1 quart per acre of Dual Magnum were applied and incorporated for pre-emergent weed control. Three ounces per acre of Valor were applied to test area for weed control on May 4. On June 20, 2 ounces per acre of Cadre + 1 quart per acre of Basagran + 24 ounces per acre of Fusilade + 1 quart per acre of Crop Oil concentrate was applied to the test area for weed control. Thrips were controlled with an in-furrow application of 5.0 pounds per acre of Thimet 20G at planting. Cruiser MAXX seed treatment was also utilized for thrips control. Temik 15G was utilized as a positive control at planting at a rate of 5.0 pounds per acre for thrips and nematode control.

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 0.75 inch of water was applied during the season on May 30 and 1.0 inch of water was applied on September 16. Rainfall recorded during the growing season was as follows: June – 5.08 inches, July – 16.08 inches, August – 10.8 inches and September - 3.9 inches. In-furrow fungicides were applied with a drop down nozzle directly over the furrow and was applied at a rate of 10 gallons per acre at planting. Early emergence applications were applied at ground cracking on June 11 and at 14 days after emergence on June 21 using a drop nozzle directly over the row calibrated to deliver 20 gallons per acre. Headline at 9.0 fluid ounces per acre was applied on July 9 and July 26, Fontelis at 16.0 fluid ounces per acre was applied on August 5, August 26 and September 9 and Bravo WS was applied at 24.0 fluid ounces per acre on September 20 and October 1 for disease control using a four row tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

Early and late leaf spot were visually rated on October 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 (SR) loci (1 locus was defined as < 1 ft of consecutive symptoms and signs of the disease) were made on October 18 immediately after plot inversion. Plots were harvested on October 18 and yields were reported at 7.56 percent moisture. Nematode disease ratings were made on October 18 immediately after plot inversion (1 = no damage, 2= 1-25 percent of roots and/or pods damaged, 3 = 26-50 percent damage, 4 = 51-75 percent damage, and 5 = >76 percent damage. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P < 0.05$).

Results: During the 2013 peanut production season, temperatures were near normal and monthly rainfall totals were above average during June, July and August. Leaf spot progressed rapidly during the season but development slowed in Sep due to cooler and drier weather patterns. Stem rot incidence was lower than in previous years due to higher than normal rainfall and cooler soil temperatures. Vydate CLV had little impact on leaf spot severity when compared with the non-treated control (no in-furrow treatments). No differences in stem rot incidence were seen among the treated plots with the exception of those that received an in-furrow treatment of Temik 15G. The plots treated with Temik at planting had a higher incidence of stem rot than did any of the other treated plots. Among the treated plots, only the Thimet 20G, Thimet 20G(IF)/Vydate and Temik treated plots had lower nematode damage than the non-treated control. Vydate applied at 14 days after emergence, while reducing nematode damage, was not statistically different from the non-treated plot. Yields from all plots were numerically higher than the non-treated plots however none yielded statistically better than did the control.

Evaluation of Vydate CLV for Peanut Disease and Nematode Control in Southeast Alabama, WREC

Treatment and Rate/ac	Application Timing	Disease Ratings			Yield lbs/ac
		Leaf Spot[1]	Stem Rot[2]	RK[3]	
Untreated Control	---	4.2[4]	2.5	3.5	4126
Thimet 20G 5.0 lb	IF	4.1	2.2	2.8	4162
Thimet 20G 5.0 lb Vydate CLV 32.0 fl oz	IF Ground Crack	3.9	2.2	2.8	4513
Thimet 20G 5.0 lb Vydate CLV 32.0 fl oz Vydate CLV 16.0 fl oz	IF Ground Crack 14 DAE	4.1	2.8	3.0	4356
Thimet 20G 5.0 lb Vydate CLV 16.0 fl oz Vydate CLV 16.0 fl oz	IF GC 14 DAE	4.0	3.0	3.0	4441
CruiserMaxx Vydate CLV 32.0 fl oz Vydate CLV 16.0 fl oz	Seed treatment GC 14 DAE	4.1	3.5	3.0	4465
Temik 15G 5.0 lb	IF	4.4	6.0	2.8	4332
LSD (P = 0.05)		0.5	2.0	0.7	895

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

Experimental Nematicide MCW-2 (Nimitiz) Evaluated on Peanut for the Control of Peanut Root Knot Nematode as well as Impact on Non-Target Disease and Yield of Georgia-06G Peanut, WREC

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

Objective: Assess the efficacy of the experimental nematicide MCW-2 15G for the control of peanut root knot nematode Meloidogyne arenaria race two in peanut as well as its impact on pod damage, leaf spot intensity, white mold incidence and yield of the Georgia-06G peanut at the WREC in 2013.

Production Methods: The study area at the Wiregrass Research and Extension Center, which is maintained in a peanut-cotton rotation, was turned with a moldboard plow and worked to seed bed condition with a disk harrow. Rows were laid off on April 20 with a KMC strip till rig with rolling baskets. On May 28, the Georgia-06G peanut cultivar was planted at a rate of 6 seed per foot of row using conventional tillage practices in a Dothan fine sandy loam (OM<1 percent) soil. Weed control was obtained with a pre-emergent, incorporated application of 1 quart per acre Sonalan HFP + 1.5 pints per acre Dual Magnum II on April 23 followed by pre-emerge broadcast application of 3 ounces per acre Valor on May 21 and 4 ounces per acre Cadre on June 14. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The test area received 0.5 acre inches of water on September 19 A randomized complete block design consisting of four replications of four 30-foot rows spaced 3-feet apart was used. Leaf spot control was obtained with two consecutive applications of Equus at 1.5 made on July 9 and July 26, which were followed with four consecutive applications of Orius 3.6F on August 5, August 26, September 9 and September 20 and a final application of Equus at 1.5 pints per acre with a tractor mounted boom sprayer with three TX-8 nozzles per row calibrated to deliver 15 gallons of spray volume per acre at 45 psi. MCW-2 15G was 1) applied over the open seed furrow (in-furrow) which was then closed with a press wheel; 2) applied at-planting over the closed seed furrow on a 6 inch T-band; and 3) applied over the row middle at pegging (60 DAP) on an 6 inch band on July 31. Temik 15G was applied over the open seed furrow and over the row middle at-pegging (60 DAP) on July 31. Vigor ratings were recorded on a 1 to 5 scale where 1 = least vigorous to 5 = most vigorous on October 17. Early and late leaf spot were rated together on October 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 percent defoliation, 5 = leaf spots noticeable and < 25 percent defoliation, 6 = leaf spots numerous and < 50 percent defoliation, 7 = leaf spots very

numerous and < 75 percent defoliation, 8 = numerous leaf spots on few remaining leaves and <90 percent defoliation, 9 = very few remaining leaves covered with leaf spots and < 95 percent defoliation, and 10 = plants defoliated or dead. 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 October 18. Root knot ratings made at inversion on October 22 where 1 = no visible damage; 2 = 1-25 percent of roots and/or pods damaged; 3 = 26-50 percent damage; 4 = 51-75 percent damage and 5 = >75 percent of pods/roots damaged. Soil samples for a nematode assay, which were taken on June 6 (Pinitial) and October 16 (Pfinal), were processed using the sugar flotation method. The root knot reproduction ratio was calculated by dividing the (Pfinal +1)/Pinitial +1). Plots were inverted on October 17 and combined on October 28. Yields are reported at 6.3% moisture.

Results: Rainfall totals for June, July and August were above to well above the 30-yr average but below average for September and October. Temperatures during the study period were near to below normal. Higher vigor ratings were recorded for both of the Temik 15G treatments and the 1 pound per acre MCW-2 15G applied in-furrow, compared with the non-treated control (Table 1). Ratings for the remaining MCW-2 treatments did not differ from the non-treated control. Leaf spot and white mold ratings were generally higher for the Temik 15G than the MCW-2 15G and non-treated control. A reduction in root knot galling levels was obtained with both Temik 15G but not the MCW-2 15G treatments. No differences in the root knot reproduction index or yield were seen between the Temik 15G and MCW-2 15G treatments. A lower root knot reproduction ratio was noted between the MCW-2 T-band/MCW-2 at-peg treatment and the non-treated control.

Summary: With few exceptions, MCW-2 15G did not consistently improve plant vigor, reduce root knot damage or reproduction, or increase peanut pod yield when compared with the non-treated control. Also, few differences in the above parameters were seen between MCW-2 and the Temik 15G positive controls. Temik 15G did reduce root knot damage but not reproduction compared with the non-treated control. Despite higher leaf spot intensity and white mold damage, yield response with Temik 15G matched that with MCW-2 15G and the non-treated control.

Table 1.
MCW-2 15G Compared With Temik 15G for the Control of Peanut Root Knot Nematode in Peanut

Nematicide Treatment	Vigor Rating[1]	Leaf Spot[2]	White Mold[3]	Root Knot Damage[4]	Root Knot PF/PI ratio[v]	Yield lbs/ac
Control	2.8 b[6]	5.1 b	4.3 bc	3.8 a	103 a	3245 a
MCW-2 15G 1 lb IF AP	3.8 a	5.1 b	4.5 bc	3.0 ab	63 ab	3279 a
MCW-2 15G 2 lb IF AP	3.5 ab	4.9 b	2.3 c	2.8 abc	96 ab	3739 a
MCW-2 15G 3 lb IF AP	3.5 ab	5.0 b	4.8 bc	2.5 abc	164 a	3243 a
MCW-2 15G 2 lb T-Band AP	3.5 ab	5.0 b	2.8 c	2.8 abc	184 a	3497 a
MCW-2 15G 4 lb T-Band AP	3.3 ab	5.4 b	3.5 c	2.5 abc	116 ab	3412 a
MCW-2 15G 4 lb T-Band AP fb MCW-2 15G 5 lb At-Peg	3.5 ab	4.9 b	4.0 bc	2.5 abc	43 b	3037 a
Temik 15G 5.0 lb IF AP IF	3.8 a	6.0 a	7.0 ab	2.0 c	86 ab	3436 a
Temik 15G 5 lb IF AP IF fb Temik 15G 10 lb At-Peg	3.8 a	6.0 a	12.0 a	2.3 bc	75 ab	3182 a

[1]Vigor rating was visually assessed on a 1 to 5 scale.
[2]Early leaf spot (ELS) intensity was rated using the Florida 1 to 10 peanut leaf spot rating scale.
[3]White mold incidence is expressed as the number of disease hits per 60 foot of row.
[4]Root knot damage on the pods, pegs and roots was rated immediately after inversion on a 1 to 5 scale.
[5]Root knot reproductive ratio = (Pfinal+1)/Pinitial+1).
[6]Means in each column that are followed by the same letter are not significantly different according to Fisher's protected least significance (LSD) test (P<0.05).

Recommended Fungicide Programs Compared for Disease Control and Yield Response on Two Peanut Varieties, GCREC

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

Objective: Assess the yield response and efficacy of recommended fungicide programs for the control of leaf spot diseases, peanut rust, white mold on two commercial peanut varieties in a dryland production system at the GCREC in 2013.

Production Methods: After rows were laid off with a KMC strip till rig with rolling baskets, the runner-market type peanut varieties 'Georgia-06G' and 'Georgia-09B' were planted on May 17 at a rate of 6 seed per foot of row in a Malbis fine sandy loam (OM<1%) soil in a field cropped to peanut every third year at the Gulf Coast Research and Extension Center. Weed control was obtained with an at-plant broadcast application of Roundup WeatherMAX at 1 quart per acre + Prowl H2O at 1 quart per acre + Flame surfactant at 1 gallon per acre on May 17 followed by Gramoxone at 8 fluid ounces per acre + Storm at 1.5 pint per acre + 2,4-DB at 1.5 pints per acre + Induce at 1 quart per 100 gallons on June 17, Cadre at 2 ounces per acre + Strongarm at 0.45 ounces per acre + Induce at 1 quart per 100 gallons on June 27 and Poast Plus at 1.5 pints per acre + Crop Oil at 1 quart per acre on July 2. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The study area was not irrigated. A split plot design with peanut variety as whole plots and fungicide programs as sub-plots was used. Whole plots were randomized in four complete blocks. Individual sub-plots consisted of four 30-foot rows spaced 3.2-feet apart. Thimet 20G at 5 pounds per acre was applied in-furrow for thrips control. Fungicides were applied on June 26, July 10, July 24, August 6, August 23, September 4 and September 17 with an ATV mounted boom sprayer with three TX-8 nozzles per row calibrated to deliver 15 gallons of spray volume per acre at 45 psi.

Disease Assessment: Early and late leaf spot were rated together on September 24 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 percent defoliation, 5 = leaf spots noticeable and < 25 percent defoliation, 6 = leaf spots numerous and < 50 percent defoliation, 7 = leaf spots very numerous and < 75 percent defoliation, 8 = numerous leaf spots on few remaining leaves and <90 percent defoliation, 9 = very few remaining leaves covered with leaf spots and < 95 percent defoliation and 10 = plants defoliated or dead. Rust severity was assessed using the ICRISAT 1-9 rating scale where 1 = no disease and 9 = 80 to 100 percent of leaves withered on September 24. White mold hit counts (1 hit was defined as < 1 foot of consecutive white mold-damaged plants per row) were made immediately after plot inversion on October 3. Plots

were mechanically harvested on October 10. Yields are reported at 8.25 percent moisture. Significance of interactions was evaluated using PROC GLIMMIX procedure in SAS. Statistical analyses were done on rank transformations for non-normal data, which were back transformed for presentation. Means were separated using the least significant difference (LSD) test ($P<0.05$).

Results: Leaf spot intensity, white mold incidence and yields for Georgia-06G and Georgia-09B did not significantly differ (Table 1). While rust pressure was low, Georgia-09B suffered higher damage from this disease than Georgia-06G. Fungicide program significantly impacted leaf spot intensity, rust severity and yield but not white mold incidence. Echo 720 season long, Echo 720/Artisan + Echo 720, Echo 720/Abound 2.08SC + Alto 100S and Echo 720/Evito programs had leaf spot intensity values similar to Headline 2.09SC/Muscle 3.6F/Headline 2.09SC/Echo 720 program, which suffered the highest level of leaf spotting with minor premature defoliation. Similarly effective leaf spot control was obtained with the Echo 720/Fontelis, Echo 720/Convoy + Echo 720 and Echo/Provost 433SC programs. Rust severity was higher for the Echo 720/Artisan + Echo 720 and Echo 720/Evito compared with the Echo 720/Fontelis and Echo 720/Muscle ADV programs. While minor differences in disease ratings were noted, Echo 720/Fontelis produced higher pod yields than Echo 720/Evito and the season-long Echo 720 standard programs, while the yield response for the remaining programs was intermediate.

Table 1.
Impact of Recommended Fungicides on the Control of Diseases on Two Peanut Varieties, GCREC, 2013

Peanut Variety	Application Timing	Leaf Spot[1]	Rust[2]	White Mold[3]	Yield lbs/ac
Georgia-06G	---	3.2 a	2.1 b	1.1 a	5148 a
Georgia-09B	---	3.1 a	2.4 a	1.4 a	5096 a
Fungicide Treatments					
Echo 720 1.5 pt	1-7	3.2 abc	2.5 ab	1.5 a	4685 b
Echo 720 1.5 pt Provost 433SC 10.7 fl oz	1,2,7 3-6	2.7 d	2.0 b	1.2 a	5334 ab
Echo 720 1.5 pt Convoy 1 pt + Echo 720 1.5 pt	1,2,7 3-6	3.0 cd	2.3 ab	1.1 a	5110 ab
Echo 720 1.5 pt Artisan 24 fl oz + Echo 720 1.0 pt	1,2,4,6,7 3,5	3.2 abc	2.8 a	1.4 a	5334 ab
Echo 720 1.5 pt Muscle ADV 32 fl oz	1,2,7 3-6	3.1 bc	2.0 b	1.3 a	4938 ab
Headline 2.09SC 9 fl oz Muscle 3.6F 7.2 fl oz Headline 2.09SC 6 fl oz Echo 720 1.5 pt	1.5 3,5 4,6 7	3.6 a	2.1 ab	1.0 a	5150 ab
Echo 720 1.5 pt Evito 5.7 fl oz	1,2,4,6,7 3,5	3.4 ab	2.4 a	2.0 a	4903 b
Echo 720 1.5 pt Fontelis 1 pt	1,2,3,7 4,5,6	3.0 cd	2.0 b	0.9 a	5592 a
Echo 720 1.5 pt Abound 2.08SC 18.2 fl oz + Alto 100S 5.5 fl oz	1,2,4,6,7 3,5	3.3 abc	2.1 ab	1.0 a	5058 ab

[1]Leaf spot intensity was rated using the Florida 1 to 10 leaf spot scoring system.
[2]Rust severity was assessed using the ICRISAT 1-9 rating scale
[3]White mold incidence is expressed as the number of hits per 60 ft of row.

Summary: Despite frequent showers throughout June, July and August, ratings for leaf spot diseases and rust were relatively low. Wet and cooler weather patterns did suppress white mold development. The Echo 720/Fontelis program gave slightly better leaf spot and rust control which may have resulted in higher yields than several fungicide programs. Overall, disease control and yield response with the majority of fungicide programs did not greatly differ.

Bayer Peanut Rx Disease Risk Index Fungicide Program Compared for the Control of Leaf Spot, Rust and Stem Rot n Two Peanut Cultivars, GCREC

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

Objective: To validate the effectiveness of the Bayer Peanut RX Disease Risk Index program for the control of leaf spot, rust and stem rot as well as on the yield of two peanut cultivars.

Production Methods: After rows were laid off with a KMC strip till rig with rolling baskets, the runner-market type peanut varieties 'Georgia-06G' and 'Georgia-09B' were planted on May 17 at a rate of 6 seed per foot of row in a Malbis fine sandy loam (OM<1 percent) soil in a field cropped to peanut every third year at the Gulf Coast Research and Extension Center. Weed control was obtained with an at-plant burn down broadcast application of Roundup WeatherMAX at 1 quart per acre + Prowl H2O at 1 quart per acre + Flame surfactant at 1 gallon per acre on May 17 followed by Gramoxone at 8 fluid ounces per acre + Storm at 1.5 pint per acre + 2,4-DB at 1.5 pints per acre + Induce at 1 quart per 100 gallons on June 17, Cadre at 2 ounces per acre + Strongarm at 0.45 ounces per acre + Induce at 1 quart per 100 gallons on June 27 and Poast Plus at 1.5 pints per acre + Crop Oil at 1 quart per acre on July 2. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The study area was not irrigated. A split plot design with peanut variety as whole plots and fungicide programs as sub-plots was used. Whole plots were randomized in four complete blocks. Individual sub-plots consisted of four 30-foot rows spaced 3.2-feet apart. Thimet 20G at 5 pounds per acre was applied in-furrow for thrips control. Fungicides were applied on 1) June 26, 1.5) July 3, 2) July 10, 3) July 24, 4) August 6, 4.5) August 14, 5) August 23, 6) September 4 and 7) September 17 with an ATV mounted boom sprayer with three TX-8 nozzles per row calibrated to deliver 15 gallons of spray volume per acre at 45 psi. The early emergence application of Proline 433SC was made on June 13 with a single TX-8 nozzle centered over the seedling peanuts at a rate of 10 gallons of spray volume per acre.

Disease Assessment: Early and late leaf spot (LS) were rated together on August 1, August 15, August 29, September 11, September 24 and October 2 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 percent defoliation, 5 = lesions noticeable and < 25 percent defoliation, 6 = lesions numerous and < 50 percent defoliation, 7 = lesions very numerous and < 75 percent defoliation, 8 = numerous lesions on few remaining leaves and <90 percent defoliation, 9 = very few remaining leaves covered with lesions and < 95 percent defoliation and 10 = plants

defoliated or dead. Area under disease progress curves (AUDPC) were calculated from the leaf spot intensity data recorded over the study period. Rust severity was assessed using the ICRISAT 1-9 rating scale where 1 = no disease and 9 = 80 to 100% of leaves withered on October 2. White mold hit counts (1 hit is defined as < 1 foot of consecutive stem rot damaged plants per row) were made immediately after plot inversion on October 3. Plots were combined on October 10. Yields are reported at 9.25% moisture. Statistical analysis on leaf spot intensity and white mold incidence was done on rank transformations of data, which are back transformed for presentation. Means were separated using Fisher's protected least significant difference (LSD) test ($P<0.05$).

Results: Monthly rainfall totals during the study period were above to well above the 30 year historical average except in September and October and temperatures were at or below normal for much of the study period. Weather patterns were favored leaf spot disease but not white mold development.

Since the variety x fungicide interaction for leaf spot intensity, stem rot incidence and yield were not significant, data presented for each variable are pooled by variety and fungicide program (Table 1). While white mold incidence was lower and rust severity higher for Georgia-06G compared with Georgia-09B, leaf spot intensity and yield for the two varieties did not significantly differ. Given the extended peanut rotation, the leaf spot risk level at this study site would be classified as low to medium. Significant differences in leaf spot intensity were noted between fungicide treatments. A decline in leaf spot control was seen as Bravo WeatherStik application numbers declined from 7 to 4. Few differences in leaf spot control were noted among the Provost 433SC programs. Inclusion of the Proline 480SC early post application did not improve the level of leaf spot control obtained with any Provost 433SC program regardless of the risk index level. Rust severity was also impacted by fungicide treatments but no decline in disease control was seen with a decline in application numbers with the Bravo WeatherStik, Provost 433SC, or Proline 480SC/Provost 433SC programs. With white mold, higher disease ratings were noted for the low and medium as compared with the high risk 10.7 fluid ounce per acre Provost 433SC program. No differences in white mold control were seen across the low, medium and high Bravo WeatherStik and Proline 480SC/Provost 433SC programs. Yields were similar across all fungicide programs.

Table 1.
Leaf Spot and Stem Rot Control as well as Yield Response With Bravo Weatherstik and Provost 480SC Peanut Rx Programs Compared on Two Peanut Varieties, GCREC, 2013

Split Plot Analysis (F)	Application Timing	No. Sprays	Risk Level	Leaf Spot Rating[1]	Rust Severity	White Mold Hits/60 ft[2]	Yield lbs/ac
Peanut variety	--	--	--	0.02[3]	14.10***	4.79*	0.34
Fungicide program	--	--	--	2.06*	2.23*	1.96	0.33
Variety x fungicide	--	--	--	0.72	1.25	0.85	1.05
Variety means							
Tifguard	--	--	--	3.7 a[4]	2.7 a	1.2 b	5025 a
Georgia-06G	--	--	--	3.7 a	2.3 b	1.8 a	5117 a
Fungicide means							
Bravo WS 1.5 pt	1-7	7	High	3.3 c	2.0 c	1.5 abcd	5053 a
Bravo WS 1.5	1.5,3,4.5,6,7	5	Med	3.5 bc	2.3 bc	1.9 abc	4940 a
Bravo WS 1.5 pt	1,3,5,7	4	Low	4.0 ab	2.4 abc	1.8 abc	5058 a
Bravo WS 1.5 pt Provost 433SC 10.7 fl oz	1,2,7 3-6	7	High	3.6 bc	2.3 bc	0.5 d	5144 a
Bravo WS 1.5 pt Provost 433SC 10.7 fl oz	1.5,6,7 3,4.5	5	Med	4.1 a	2.8 ab	2.1 ab	5173 a
Bravo WS 1.5 pt Provost 433SC 10.7 fl oz	1,7 3,5	4	Low	3.8 abc	2.4 abc	2.5 a	5150 a
Proline 5.7 fl oz Bravo WS 1.5 pt Provost 433SC 10.7 fl oz	EP[5] 1.5,7 3-6	7	High	3.8 abc	2.8 ab	1.5 abcd	4937 a
Proline 5.7 fl oz Bravo WS Provost 433SC 10.7 fl oz	EP 1.5,6,7 3,4.5	6	Med	3.9 ab	2.9 a	0.9 cd	5058 a
Proline 5.7 fl oz Bravo WS Provost 433SC 10.7 fl oz	EP 1.5,7 3,5	5	Low	3.8 ab	3.0 a	1.3 bcd	5012 a
Bravo WS 1.5 pt Provost 433SC 8 fl oz	1,2,7 3-6	7	High	3.6 bc	2.5 abc	1.0 bcd	5190 a

[1]Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale.
[2]White mold incidence is expressed as the number of hits per 60 foot of row.
[3]Significance (F) at the 0.05, 0.01 and 0.001 levels is indicated by *, **, or ***, respectively.
[4]Means in each column followed by the same letter are not significantly different according to analysis of variance and Fisher's least significant difference (LSD) test (P<0.05).
[5]EP = early post banded application over the seedling peanuts.

Disease and Yield Response of Selected Commercial Peanut Cultivars in a Dryland Production System as Influenced by Seeding Rate, GCREC

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

Objective: Determine the impact of seeding rate on stand density, occurrence of TSWV, leaf spot, stem rot, as well as the yield of selected commercial peanut cultivars in a dryland production system at the Gulf Coast Research and Extension Center in Fairhope, AL.

Production Methods: After rows were laid off with a KMC strip till rig with rolling baskets, Peanut cultivars Florida 07, Georgia-06G, Georgia-09B, Georgia-10T and Tifguard were planted at rates of 3, 4, 6 and 8 seed per row foot on May 17 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. Thimet 20G at 5 pounds per acre was applied in-furrow for thrips control. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The study area was not irrigated. Weed control was obtained with an at-plant broadcast application of Roundup WeatherMax at 1 quart per acre + Prowl H2O at 1 quart per acre + Flame surfactant at 1 quart per 100 gal followed by Gramoxone 8 fluid ounces per acre + Storm 1.5 pint per acre + 2,4,DB at 1.5 pints per acre + Induce 1 quart per 100 gal on June 17, Cadre at 2 ounces per acre + Strongarm 0.45 ounces per acre + Induce 1 quart per 100 gal on June 27 and Poast Plus at 1.5 pints per acre + Crop Oil at 1 quart per acre on July 2. Chlorothalonil at 1.5 pints per acre was applied for leaf spot control on June 26, July 10, July 24, August 6, August 23, September 3 and September 17 with an ATV-mounted boom sprayer with 3 TX-8 nozzles per row at 15 gallons of spray volume per acre at 45 psi.

Disease Assessment: Stand counts, which are expressed as the number of plants per 30 row feet were recorded for June 16. Final tomato spotted wilt (TSW) hits counts (1 hit was defined as < 1 foot of consecutive severely TSWV-damaged plants per row) were made on September 24. Early and late leaf spot were rated together on September 24 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 percent defoliation, 5 = leaf spots noticeable and < 25 percent defoliation, 6 = leaf spots numerous and < 50 percent defoliation, 7 = leaf spots very numerous and < 75 percent defoliation, 8 = numerous leaf spots on few remaining leaves and <90 percent defoliation, 9 = very few remaining leaves covered with leaf spots and < 95 percent defoliation, and 10 = plants defoliated or dead. Rust severity was assessed using the ICRISAT 1-9 rating scale where 1 = no disease and 9 = 80 to 100 percent of leaves withered on September

24. White mold hit counts (1 hit was defined as < 1 foot of consecutive white mold-damaged plants per row) were made immediately after plot inversion on October 3. Plots were mechanically harvested on October 10. Yields are reported at 8.75 percent moisture. Significance of interactions was evaluated using PROC GLIMMIX procedure in SAS. Statistical analyses were done on rank transformations for non-normal stand density, TSW, leaf spot, rust, white mold and yield data, which were back transformed for presentation. Means were separated using Fisher's least significant difference (LSD) test ($P<0.05$).

Results: Monthly rainfall totals during the study period were above to well above the 30 year historical average except in September and October, and temperatures were at or below normal for much of the study period. Weather patterns were favorable for leaf spot diseases but not stem rot development. Since the peanut variety x fungicide interaction for stand, TSW and white mold incidence, leaf spot intensity, rust severity and yield were not significant, data are pooled. A higher stand density was noted for Georgia-09B than the other four peanut varieties (Table 1). Incidence of TSW was low and no differences in disease ratings were noted between peanut varieties. Despite favorable weather patterns, leaf spot intensity and rust severity were not high. Highest leaf spot intensities were recorded for Florida-07, while equally low ratings for leaf spot diseases were observed for Georgia-10T and Tifguard. Leaf spot ratings for Georgia-06G and Georgia-09B were higher than Georgia-10T but lower than Florida-07. Rust severity was higher on Georgia-09B and Florida-07 than Georgia-06G, Georgia-10T and Tifguard. White mold incidence was higher on Florida-07 than the other peanut varieties. Georgia-10T and Tifguard had lower white mold indices than Georgia-06G and Georgia-09B, which suffered similar damage. Sizable differences in yield were observed among the five peanut varieties. Highest yield was recorded for Georgia-10T, while Florida-07, which suffered considerable leaf spot, rust and white mold damage, produced the lower yields than Georgia-06G, Georgia-09B and Tifguard.

Stand density rose significantly with each successive increase in seeding rate (Table 1). Despite low TSW pressure, disease incidence declined as seeding rate increased. In contrast, seeding rate had no impact on leaf spot intensity, rust severity and white mold incidence. Higher pod yields were noted at the highest than at lowest seeding rate. Yields at the 4 and 6 seed per row foot were similar those recorded at the highest and lowest seeding rates.

Summary: With the relatively low contract prices for peanuts in 2014 as well as high seed prices, cutting seeding rates may result in some savings to the cost-conscious peanut producer. Reducing seeding rates below the recommended 6 to 4 seed per row foot, which might save up to $40 per acre probably would have minimal impact on diseases and yield and would provide a substantial savings to the producer. Under weather stresses that potentially could cause significant stand loss, reducing seeding rates would, however,

be ill advised. Of the five varieties, Georgia-10T suffered the least disease damage and produced the highest yields, while Florida-07 had the highest disease ratings and lowest yield.

Table 1.
Impact of Variety Selection and Seeding Rate on the Stand Density and Yield Response of Selected Commercial Runner Peanut Varieties as well as Their Reaction to TSW, Leaf Spot Diseases, Peanut Rust and White Mold, GCREC, 2013

Source (F value)	Stand Density[6]	TSWV Incidence[2,6]	Leaf spot[3]	Rust[4]	White mold[2,6]	Yield
Peanut variety	3.06*[1]	0.82	12.57***	4.32*	17.20***	3.50*
Seeding rate	335.80***	4.23**	0.89	1.52	0.14	3.92*
Variety x seeding rate	1.54	1.31	1.09	1.62	0.41	0.91
Peanut Variety						
Florida-07	100 b[5]	0.6 a	4.0 a	2.6 a	4.8 a	3863 c
Georgia-06G	99 b	0.8 a	3.4 bc	2.2 b	2.0 b	4310 b
Georgia-09B	108 a	0.4 a	3.5 b	3.3 a	2.4 b	4493 b
Georgia-10T	100 b	0.4 a	3.0 d	2.0 b	1.0 c	5236 a
Tifguard	97 b	0.3 a	3.3 cd	2.1 b	1.1 c	4350 b
Seeding Rate						
3	71 d	1.0 a	3.5 a	2.3 a	2.2 a	4180 b
4	86 c	0.7 ab	3.4 a	2.4 a	2.4 a	4462 ab
6	110 b	0.3 bc	3.5 a	2.6 a	2.2 a	4439 ab
8	136 a	0.2 c	3.4 a	2.5 a	2.3 a	4721 a

[1]Significance at the 0.05, 0.01 and 0.001 levels is indicated by *, **, or ***, respectively.
[2]TSWV and white mold incidence is expressed as the number of hits per 60 ft of row.
[3]Leaf spot intensity was rated using the Florida 1 to 10 leaf spot scoring system on September 24.
[4]Rust severity was assessed using the ICRISAT 1-9 rating scale on September 24.
[5]Means for each variable that are followed by the same letter are not significantly different according to analysis of variance and the least significant difference (LSD) test (P<0.05).
[6]Stand, TSWV and white mold resistance, leaf spot intensity and yield data are calculated means, but letters differentiating means were calculated using rank transformations.

Efficacy of Seed Dressing and In-Furrow Insecticide Treatments for Thrips Control and Yield Response as Influenced by Planting Date and Peanut Variety, GCREC

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

Objective: Evaluate the effectiveness of the seed dressing insecticide CruiserMAXX and in-furrow insecticides Thimet 20G and Temik 15G for the suppression of thrips damage, TSWV and diseases as well as yield response of peanut as influenced by planting date and variety selection in Southwest Alabama.

Production Methods: A wheat cover crop drilled on December 7, 2012, was killed with Roundup WeatherMAXX at 22 fluid ounces per acre on March 15. The study site was tilled with a KMC ripper/roller unit on March 18. After rows were laid off with a KMC strip till rig with rolling baskets on April 1, peanut cultivars Flavorunner 458 and Georgia-06G were planted on April 18 (1st DOP) and May 16 (2nd DOP) at rate of 6 seed per row foot in a Malbis fine sandy loam (OM<1 percent) soil in a field cropped to peanut every third year at the Gulf Coast Research and Extension Center. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The study area was not irrigated. Weed control was obtained with an at-plant broadcast application of Prowl H_2O at 1 quart per acre (1st DOP) or Roundup WeatherMax at 22 fl ounces per acre + Prowl H_2O at 1 quart per acre (2nd DOP) followed by Gramoxone at 8 fluid ounces per acre + Storm at 1.5 pint per acre + Butyrac 175 at 1 pint per acre + Induce 1 quart per 100 gal on May 8 (1st DOP) and June 14 (2nd DOP) and Cadre at 2 ounces per acre + Strongarm at 0.45 ounces per acre + Induce at 1 quart per 100 gal on June 27. Chlorothalonil at 1.5 pints per acre was applied for leaf spot control on June 27, July 10, July 24, August 5, August 21, September 3 and September 17 with an ATV-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 10 and May 30 for the first and second planting date, respectively, from the second row of each plot as the actual number of seedlings emerged per 30 foot of row.

Insect and Disease Assessment: Thrips counts were made by placing 10 juvenile leaves collected from seedlings in the two harvest rows of each plot in a plastic bag containing an alcohol-based kill solution for the 1st DOP on May 26, May 30 and June 6 and for the 2nd DOP on June 13, June 19 and June 27; then determining thrips numbers in each sample using a low power microscope. Thrips count data are presented for the May 26 (1st DOP) and June 13 (2nd DOP) sampling dates. Thrips damage (TDR) on the leaves was assessed on a 0 to 10 scale where 0 = no visible leaf scarring, 1=10 percent leaf area scarred, 2=20% leaf area scarred, 3=30% leaf area scarred, 4=40% leaf area scarred, to

10=100% leaf area affected and plants near death on May 23, May 30 and June 13 for the first planting date and June 13, June 18 and June 24 for the second planting date. Final TSW hit counts (one hit was defined a < 1 foot of consecutive symptomatic plants per row) were made on September 5 and September 24 for the first and second planting dates, respectively. Early and late leaf spot were rated together on September 5 and September 24 for the first and second planting dates, 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 percent defoliation, 5 = leaf spots noticeable and < 25 percent defoliation, 6 = leaf spots numerous and < 50 percent defoliation, 7 = leaf spots very numerous and < 75 percent defoliation, 8 = numerous leaf spots on few remaining leaves and <90 percent defoliation, 9 = very few remaining leaves covered with leaf spots and < 95 percent defoliation, and 10 = plants defoliated or dead. Rust severity was assessed using the ICRISAT 1-9 rating scale where 1 = no disease and 9 = 80 to 100 percent of leaves withered on September 24. White mold hit counts (1 hit was defined as < 1 foot of consecutive white mold-damaged plants per row) were made immediately after plot inversion on for the first and second planting dates on September 5 and September 24, respectively. The first and second plantings were mechanically harvested on September 9 and October 30. Yields are reported at 8 percent moisture. Significance of interactions was evaluated using PROC GLIMMIX procedure in SAS. Statistical analyses for thrips counts, thrips damage, stand density, leaf spot intensity, along with TSW and white mold incidence were done on rank transformations for non-normal data, which were back transformed for presentation. Means were separated using Fisher's least significant difference (LSD) test ($P<0.05$).

Results: Across all peanut varieties, denser stands were found at May than April planting date (data not shown). As indicated by a significant interaction for peanut variety x insecticide treatment, stand density differed by peanut variety and insecticide treatment (Table 1). For Georgia-06G, stand density was equally higher for CruiserMAXX seed dressing and CruiserMAXX seed dressing + Thimet 20G in-furrow insecticide treatment compared with the Dynasty PD control, which shared similarly low stand density counts with Thimet 20G and Temik 15G (Figure 1). Insecticide treatment did not impact stand density on Flavorunner 458. In contrast to the other insecticide treatments where similar stands were recorded on both varieties, application of Thimet 20G to Flavorunner 458 resulted in a higher stand density compared with Georgia-06G.

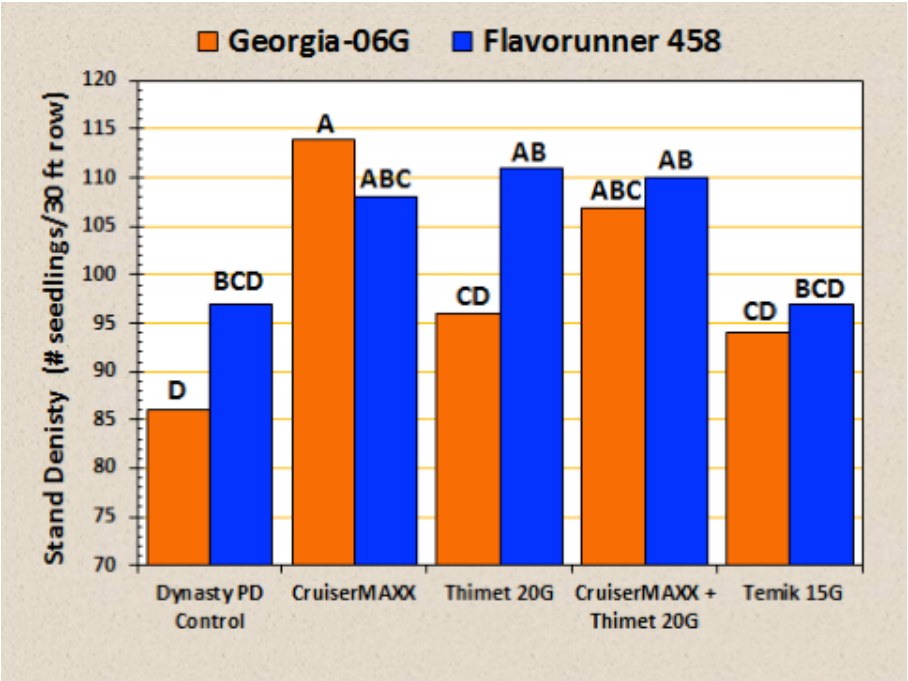


Figure 1. Stand density as impacted by peanut variety and insecticide treatment.

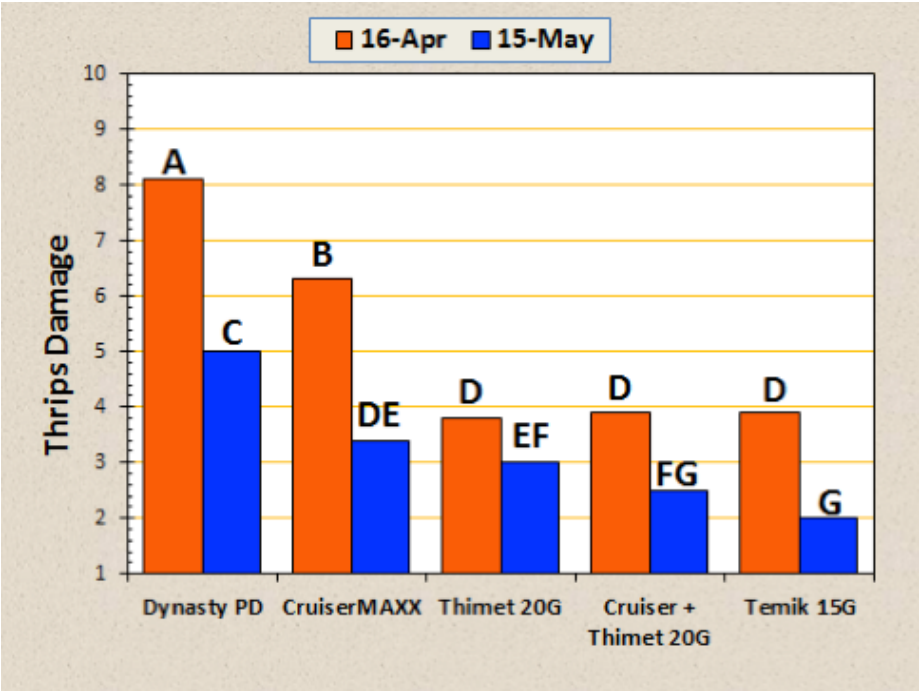


Figure 2. Thrips damage varied by planting date and insecticide treatment.

The level of thrips protection provided by insecticide treatments varied by planting date (Table 1). As expected, higher damage levels were noted for all treatments including the Dynasty PD control at the April than May planting date (Figure 2). At the April planting date, all insecticide treatments reduced the level of thrips damage compared with the Dynasty PD control but Thimet 20G, CruiserMAXX + Thimet 20G and Temik 15G gave better thrips protection than CruiserMAXX. In May, CruiserMAXX proved as effective as Thimet 20G in protecting peanuts from thrips but provided less thrips protection than CruiserMAXX and Temik 15G.

Thrips counts, leaf spot intensity, rust severity and white mold incidence were impacted by planting date but TSWV incidence was not (Table 2). Higher leaf spot intensity and white mold incidence were higher at the May than April planting date. In contrast, thrips numbers, which were very low, were higher at the April than May planting date.

Table 2.
Thrips Counts, TSWV and White Mold Incidence, Leaf Spot Intensity and Rust Severity, as Influenced by Planting Date

Planting date	Thrips Count	TSWV[1]	Leaf Spot[2]	White Mold[1]
April 18	0.92 a[3]	3.7 a	4.0 b	1.8 b
May 16	0.03 b	3.3 a	5.0 a	2.7 a

[1]TSW and white mold severity is expressed as the number of disease loci per 60 ft of row.
[2]Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale.
[3]Means in each column followed by the same letter are not significantly different according to Fisher's protected least significant difference (LSD) test (P<0.05).

Flavorunner 458 had higher ratings for TSWV, leaf spot intensity and rust severity than Georgia-06G (Table 3). White incidence was higher on Georgia-06G than Flavorunner 458. Similar thrips counts were recorded for Flavorunner 458 and Georgia-06G.

Table 3.
Thrips Counts, TSWV and White Mold Incidence, Leaf Spot Intensity and Rust Severity, As Influenced By Peanut Variety

Planting Date	Thrips Count	TSWV[1]	Leaf Spot[2]	Rust[3]	White Mold[1]
Flavorunner 458	0.6 a[4]	5.5 a	5.2 a	5.3 a	1.4 b
Georgia-06G	0.4 a	1.6 b	3.7 b	3.6 b	3.0 a

[1]TSWV and white mold severity is expressed as the number of disease loci per 60 ft of row.
[2]Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale.
[3]Rust severity was assessed using the ICRISAT 1-9 rating scale.
[4]Means in each column followed by the same letter are not significantly different according to Fisher's protected least significant difference (LSD) test (P<0.05).

No significant 3 or 2 way interactions for planting date, variety selection and insecticide treatment were observed for TSWV and while mold incidence as well as leaf spot intensity (Table 1). A significant reduction in TSWV incidence when compared with the Dynasty PD control were obtained with Thimet 20G, CruiserMAXX and CruiserMAXX + Thimet 20G but not Temik 15G (Table 4). Insecticide treatments did not significantly impact thrips counts (data not shown), leaf spot intensity, rust severity and white mold incidence. Higher yields were obtained with Thimet 20G and CruiserMAXX + Thimet 20G when compared the Dynasty PD control but not CruiserMAXX alone or Temik 15G. Yield response among the insecticide treatments did not significantly differ.

Table 4.
Impact of Insecticide Treatments on TSWV and White Mold Incidence, Leaf Spot Intensity and Pod Yield of Peanut, GCREC, 2013

Treatment	Application Rate	Placement	TSWV[1]	Leaf Spot[2]	Rust[3]	White Mold[1]	Yield lbs/ac
Dynasty PD control	---	---	4.7 a[4]	4.4 a	4.6 a	2.4 a	3645 b
Thimet 20G	5 lbs/ac	In-furrow	3.4 b	4.5 a	4.3 a	2.0 a	4020 a
CruiserMAXX	4 oz/100 lb seed	Seed dressing	3.3 b	4.4 a	4.3 a	2.1 a	3825 ab
CruiserMAXX fb Thimet 20G	4 oz/100 lb seed fb 5 lbs/ac	Seed dressing In-furrow	2.7 b	4.4 a	4.6 a	2.5 a	4017 a
Temik 15G	7 lbs/ac	In-furrow	3.5 ab	4.5 a	4.4 a	2.0 a	3819 ab

[1]TSWV and white mold severity is expressed as the number of disease loci per 60 ft of row.
[2]Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale.
[3]Rust severity was assessed using the ICRISAT 1-9 rating scale.
[4]Means in each column followed by the same letter are not significantly different according to Fisher's protected least significant difference (LSD) test ($P<0.05$).

As indicated by a significant planting date x variety interaction, rust severity varied by planting date and peanut variety (Table 1). Flavorunner 458 had higher rust severity ratings at the April and May planting dates compared with Georgia-06G (Fig. 3). Similar rust ratings were recorded for Flavorunner 458 at the April and Georgia-06G at the May planting dates. For both varieties, rust severity ratings were higher at the May compared with the April planting date.

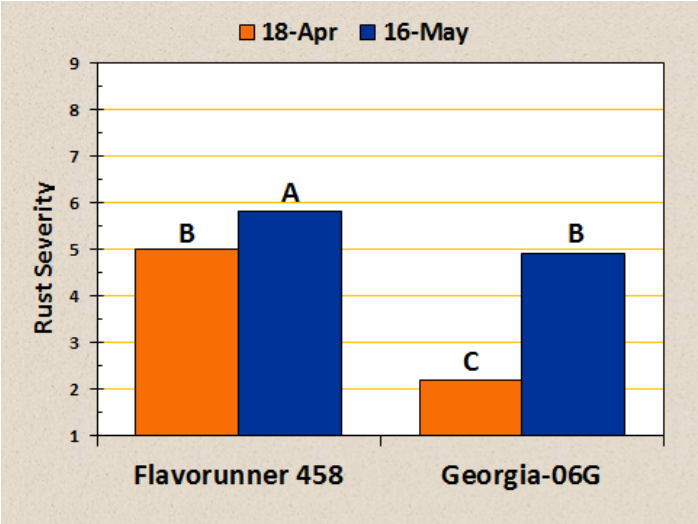


Figure 3. Interaction of planting date and variety selection on peanut rust severity.

A significant planting date x peanut variety interaction for yield was observed (Table 1). Yield of Georgia-06G but not Flavorunner 458 was impacted by planting date (Fig. 4). Georgia-06G had significantly higher yields at the April than the May planting date. Regardless of the planting date, Georgia-06G had significantly higher yield than Flavorunner 458.

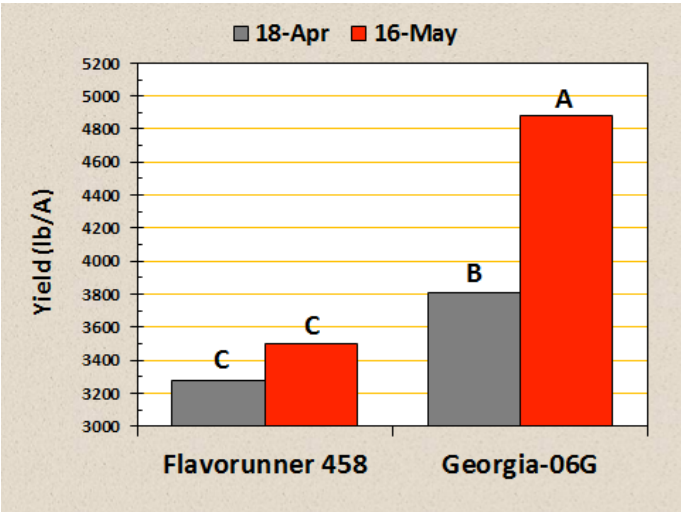


Figure 4. Yield of Flavorunner 458 and Georgia-06G as influenced by planting date.

Summary: For all insecticide treatments, thrips damage ratings were higher at the April than May planting date with Thimet 20G, CruiserMAXX + Thimet 20G and Temik 15G giving better thrips protection than CruiserMAXX alone. All of the insecticide treatments also reduced the incidence of TSW but not the other diseases. When compared with the Dynasty control, significant yield gains were obtained with CruiserMAXX alone and CruiserMAXX + Thimet 20G. There was no improvement in the performance of Thimet 20G with the addition of the CruiserMAXX seed dressing.

Table 1.
F-Values From Generalized Linear Mixed Model Analysis for Effects of Planting Date, Peanut Variety Selection and Insecticide on Stand Density, Thrips Counts, Thrips Damage, TSW Incidence, Leaf Spot Intensity, Stem Rot Incidence and Yield, GCREC, 2013

Source (F values)	Stand Density	Thrips Counts	Thrips Damage	TSWV	Leaf Spot	Rust	White Mold	Yield
Planting date	90.07***[1]	7.57*	274.25***	0.32	18.76**	23.33**	4.88	40.09***
Variety	7.58**	1.52	16.06***	100.92***	85.48***	64.92***	20.59***	87.24***
Planting data x variety	0.55	2.31	0.17	0.77	2.07	18.47***	0.07	17.44***
Treatment	16.45***	0.75	126.55***	3.18*	0.06	0.39	0.18	1.91
Planting date x treatment	2.04	0.81	13.71***	2.42	0.52	0.28	0.60	1.14
Variety x treatment	3.82**	0.60	2.41	2.40	0.46	0.75	0.74	0.48
Planting date x variety x treatment	2.33	0.29	1.46	1.34	0.42	1.16	0.4	1.91

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

Yield and Reaction of Runner, Virginia and Valencia Market-Type Peanut Cultivars to Diseases in Central Alabama, PBU

A. K. Hagan, H. L. Campbell and S. Nightengale

Objective: Compare yields and the reaction of Runner, Virginia and Valencia market type peanut cultivars to leaf spot diseases and white mold in an irrigated production system in Central Alabama.

Production Methods: The test site was disked and chiseled prior to sowing each peanut variety at a rate of 6 seed/ft of row in an Independence (Cahaba) loamy fine sand (OM<1 percent) on May 22. Weed control was obtained with a pre-plant application of Prowl H2O at 1.2 pints per acre + Dual Magnum II at 1.25 pints per acre on May 22 followed by 2,4D-B Amine at 28 fluid ounces per acre on July 12. Escape weeds were plowed with flat sweeps on June 25 and July 31 or pulled by hand. Thrips control was obtained with an early post application of Bracket 90S at 0.5 pounds per acre. A center pivot irrigation system was used to apply 0.25 and 0.5 acre inches of water on May 29 and May 31, respectively. Plots, which contained four 30-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replications. Echo 720 at 1.5 pints per acre was applied for leaf spot control on June 25, July 11, July 25, August 8, August 23, September 6 and September 16 with a four-row tractor mounted sprayer. Early leaf spot (ELS) was rated on September 19 for the Virginia and Valencia cultivars and October 3 for the runner peanut cultivars, using the 1-10 Florida peanut leaf spot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions noticed in lower and upper canopy, 4 = some lesions in canopy and < 10 percent defoliation, 5 = lesions noticeable and < 25 percent defoliation, 6 = lesions numerous and < 50 percent defoliation, 7 = lesions very numerous and < 75 percent defoliation, 8 = numerous lesions on few remaining leaves and <90 percent defoliation, 9 = very few remaining leaves covered with lesions and < 95 percent defoliation, and 10 = plants defoliated or dead. White mold hit counts (1 hit was defined as < 1 foot of consecutive white mold-damaged plants per row) were made immediately after plot inversion on September 19 for the Valencia and Virginia market- type peanut cultivars and on October 3 for the runner peanut varieties. Plots were combined on five days after inversion. Yields are reported at 10 percent moisture. Statistical analysis on leaf spot intensity and white mold incidence was done on rank transformations of data, which are back transformed for presentation. Means were separated using Fisher's protected least significant difference (LSD) test ($P<0.05$).

Results: Monthly rainfall totals during the study period were above to well above the 30 year historical average except in September and October, and temperatures were at or below normal for much of the study period. Weather patterns were favorable for early

leaf spot
but not white mold development. At plot inversion, early leaf spot intensity was higher on Georgia Valencia than any other runner- or Virginia market-type variety except for Georgia-09B (Table 1). Among the runner market-type varieties, similarly high leaf spot intensity ratings were recorded for Georgia-09B, Florida-107 and Georgia-06G, while the least leaf spotting and premature defoliation was noted in Tifguard and Goergia-10T. Among the Virginia-market type varieties, Perry and Phillips had higher early leaf spot intensity ratings than Bailey, Sugg and Florida Fancy with the latter suffering the least leaf spot damage. While significant differences in white mold incidence were noted among peanut cultivars, damage levels were low. White mold incidence was higher on all runner market type varieties when compared with Georgia-10T. Disease indices for all of the Virginia and Valencia market-type varieties did not significantly differ. Wet soil conditions due to continued heavy rainfall suppressed peanut yield. Higher yields were recorded for Florida-07 than all varieties. Georgia Greener had higher yields than Florida-107 but not the remaining runner market-type peanut cultivars, all of which produced similar pod yields. Among the Virginia market-type varieties, Perry and Phillips out-yielded Sugg but not Florida Fancy and Bailey. Lowest pod yields were recorded for Georgia Valenica.

Table 1.
Yield Response and Reaction of Runner, Valencia and Virginia Market-Type Peanut Varieties to Early Leaf Spot and White Mold in Central Alabama, PBU

Variety	Early Leaf Spot Intensity[1]	White Mold Incidence[2]	Yield lbs/ac
Runner market type			
Florida-07	4.0 cd[3]	2.0 a	3865 a
Florida-107	4.5 bc	2.3 a	2786 cde
Georgia-06G	4.3 bc	1.3 ab	2835 bcde
Georgia-09B	4.7 ab	1.5 ab	3119 bc
Georgia-10T	3.8 def	0.2 c	3016 bcde
Georgia Greener	4.0 cd	1.5 ab	3232 b
Tifguard	3.7 ef	1.7 a	3042 bcd
Virginia market type			
Bailey	3.7 def	0.3 bc	2611 ef
Florida Fancy	3.3 f	0.7 abc	2671 def
Perry	4.2 bc	0.5 abc	2790 cde
Phillips	4.4 bc	1.0 abc	2798 cde
Sugg	3.8 de	0.5 abc	2268 f
Valencia market type			
Georgia Valencia	5.7 a	1.3 ab	1421 g

[1]Early leaf spot was rated using the Florida 1 to 10 leaf spot rating scale.
[2]White mold incidence is expressed as the number of disease hits per 60 foot of row.
[3]Means in each column followed by the same letter are not significantly different according to analysis of variance and least significant difference (LSD) test ($P<0.05$).

Summary: Weather patterns during the summer of 2013 were excessively wet for the production of high peanut yields. Given the frequent shower and history of peanut production on this site, early leaf spot pressure was much less than anticipated. The earlier harvested Virginia and later harvested runner market-type peanut varieties suffered from relatively light leaf spot pressure but did not yield well in wet soils. White mold damage was also low due to cooler summer temperatures and excessively heavy rain.

Early Leaf Spot and White Mold Control on Peanut With Recommended Fungicides, PBU

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

Production Methods: The test site was disked and chiseled prior to sowing each peanut cultivar at a rate of 6 seeds per foot of row in an Independence (Cahaba) loamy fine sand (OM<1 percent) on May 22. Weed control was obtained with a pre-plant application of Prowl H2O at 1.2 pints per acre + Dual Magnum II at 1.25 pints per acre on May 22 followed by 2,4D-B amine at 28 fluid ounces per acre on July 12. Escape weeds were plowed with flat sweeps on June 25 and July 31 or pulled by hand. Thrips control was obtained with an early post application of Bracket 90S at 0.5 pounds per acre. A center pivot irrigation system was used to apply 0.25 and 0.5 acre inches of water on May 29 and May 31. Plots, which contained four 30-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replications. Fungicides were applied on June 25, July 11, July 25, August 8, August 23, September 6 and September 16 with a four-row tractor mounted sprayer.

Disease Assessment: Early leaf spot (ELS) was rated on August 27, September 19 and October 3 using the 1-10 Florida peanut leaf spot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions noticed in lower and upper canopy, 4 = some lesions in canopy and < 10 percent defoliation, 5 = lesions noticeable and < 25 percent defoliation, 6 = lesions numerous and < 50 percent defoliation, 7 = lesions very numerous and < 75 percent defoliation, 8 = numerous lesions on few remaining leaves and <90 percent defoliation, 9 = very few remaining leaves covered with lesions and < 95 percent defoliation, and 10 = plants defoliated or dead. White mold hit counts (1 hit was defined as < 1 ft of consecutive white mold-damaged plants per row) were made immediately after plot inversion on October 10. Plots were combined on 5 days after inversion. Yields are reported at 10 percent moisture. Statistical analysis on leaf spot intensity and white mold incidence was done on rank transformations of data, which are back transformed for presentation. Means were separated using Fisher's protected least significant difference (LSD) test ($P<0.05$).

Results: Monthly rainfall totals for June, July and August were above the 30 year historical average but below average for September, while temperatures were below normal for each month during the entire production season. Weather patterns were favorable for leaf spot diseases but not white mold development. Fungicide treatment x peanut variety interactions for leaf spot intensity, white mold incidence and yield were not noted, so pooled data are presented (Table 1). While leaf spot intensity was higher

on Georgia-06G than Tifguard, white mold incidence and yield response with the two peanut varieties was similar. Higher leaf spot intensity ratings were recorded for Echo 720-season long than for all other fungicide programs except for Echo 720/Convoy + Echo 720. Equally effective leaf spot control was obtained with the Echo 720/10.7 fluid ounce per acre Provost 433SC, Echo 720/Abound 2SC and Echo 720/Headline 2.09SC programs. While white mold pressure was relatively low, differences in disease incidence were noted among fungicide programs. The Echo 720/Headline 2.09SC program had a higher white mold index than the Echo 720/Abound 2SC, Echo 720/Convoy + Echo 720 and Echo/10.7 fluid ounce per acre Provost 433SC programs. Low leaf spot and white mold disease ratings translated into higher yields being noted for the Echo 720/ Abound 2SC program as compared with all other fungicide programs except for Echo 720/Fontelis, Echo 720/Muscle 3.6F + Echo 720 and Echo 720/Convoy + Echo 720 programs. Similarly low yields to those recorded for the Echo 720 season-long standard were obtained with all fungicide programs except for Echo 720/Abound 2SC and Echo 720/Fontelis.

Table 1.
Recommended Fungicide Programs Impact Early Leaf Spot and White Mold Control as well as Yield Response of Two Peanut Varieties, PBU

Split-plot analysis P(F)	Application Schedule	ELS[1] Intensity	White Mold Incidence[2]	Yield lbs/ac
Peanut cultivar	---	16.25***[3]	0.21	0.83
Fungicide program	---	11.91***	2.47*	2.60
Treatment x variety	---	0.71	1.09	1.33
Peanut Cultivar Mean				
Georgia-06G	---	4.0 a[4]	1.9 a	3554 a
Tifguard	---	3.6 b	1.7 a	3247 a
Fungicide Mean (rate per acre)				
Echo 720 1.5 pt	1–7	4.8 a	2.5 ab	3046 c
Echo 720 1.5 pt Provost 433SC 8 fl oz	1,2,7 3,4,5,6	3.7 c	1.8 abc	3225 bc
Echo 720 1.5 pt Provost 433SC 10.7 fl oz	1,2,7 3,4,5,6	3.1 d	1.4 bc	3223 bc
Echo 720 1.5 pt Artisan 3.6E 26 fl oz + Echo 720 1.0 pt	1,2,4,6,7 3,5	4.2 b	2.4 ab	3212 bc
Echo 720 1.5 pt Convoy 1 pt + Echo 720 1.5 pt	1,2,4,6,7 3,5	4.5 ab	1.0 bc	3609 abc
Echo 720 1.5 pt Headline 2.09E 9 fl oz	1,2,4,6,7 3,5	3.3 cd	3.3 a	3288 bc
Echo 720 1.5 pt Muscle 3.6F + Echo 720 1.0 pt	1,2,7 3,4,5,6	3.7 c	1.4 abc	3509 abc
Echo 720 1.5 pt Fontelis 1 pt	1,2,6,7 3,4,5	3.7 c	1.5 abc	3618 ab
Echo 720 1.5 pt Abound 2SC 18.2 fl oz	1,2,4,6,7 3,5	3.2 d	0.9 c	3876 a

[1]Early leaf spot (ELS) intensity was rated using the Florida 1 to 10 peanut leaf spot rating scale.
[2]White mold incidence is expressed as the number of disease hits per 60 foot of row.
[3]Significance at the 0.05, 0.01 and 0.001 levels is indicated by *, **, or ***, respectively.
[4]Means in each column that were followed by the same letter are not significantly different according to Fisher's least significant difference (LSD) test ($P \leq 0.05$).

Summary: Significant differences in fungicide program performance were noted in 2013. The best combination of disease control and yield response was obtained with the Echo 720/Abound 2SC and to a lesser extent the Echo 720/Fontelis programs. The relatively low incidence of white mold seemed to have an enhanced impact on yield response obtained with some fungicide programs.