Peanut Disease Control Field Trials

2012

Department, Series No. 17A
Alabama Agricultural Experiment Station
William Batchelor, Director
Auburn University
Auburn, AL

In cooperation with the Alabama Cooperative Extension System
(Alabama A&M University and Auburn University)

Authors

K. L. Bowen
Professor
Dept. of Entomology and
Plant Pathology
Auburn University, AL 36849-5624

H. L. Campbell
Research Associate
Dept. of Entomology and
Plant Pathology
Auburn University, AL 36849-5624

B. Gamble
Associate Superintendent
Wiregrass Research and
Extension Center
Headland, AL 36345

A. K. Hagan
Professor
Dept. of Entomology and
Plant Pathology
Auburn University, AL 36849-5624

J. Jones
Associate Superintendent
Gulf Coast Research and
Extension Center
Fairhope, AL 36532

S. P. Nightengale
Associate Superintendent
E.V. Smith Research Center,
Plant Breeding Unit
Tallassee, AL 36078

M. D. Pegues
Superintendent
Gulf Coast Research and
Extension Center
Fairhope, AL 36532

L. Wells
Superintendent
Wiregrass Research and Extension
Center
Headland, AL 36345

Table of Contents

Introduction

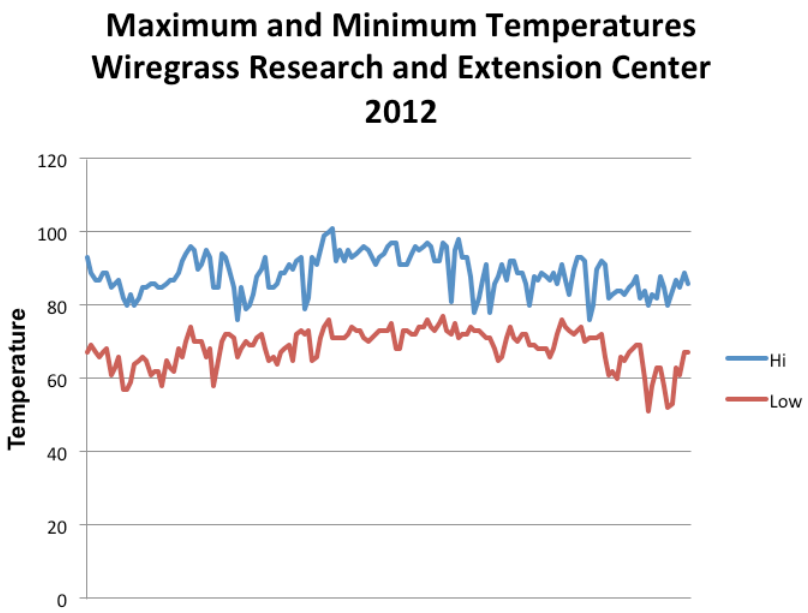
A.K. Hagan, K.L. Bowen and H.L. Campbell

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

At the GCREC, temperatures were near historical averages throughout the entire growing season (Fig. 1), and rainfall totals were at or above normal throughout the entire growing season (Fig. 2). 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.



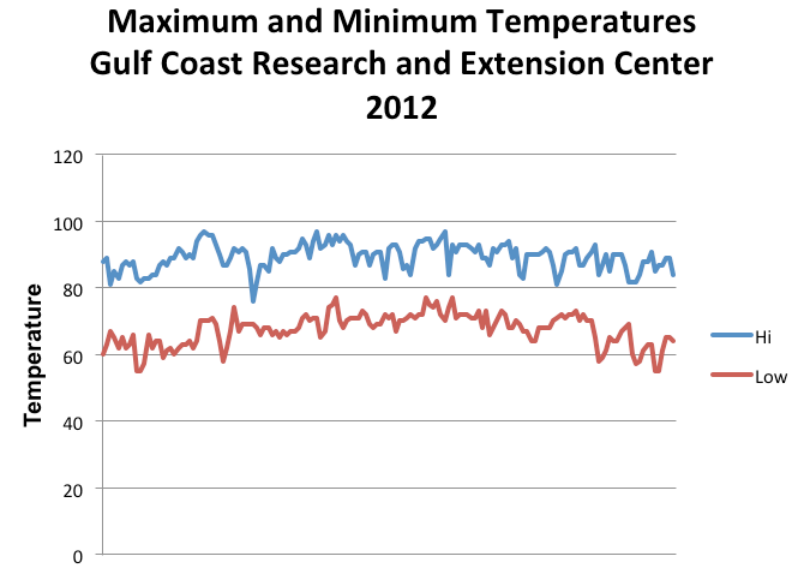
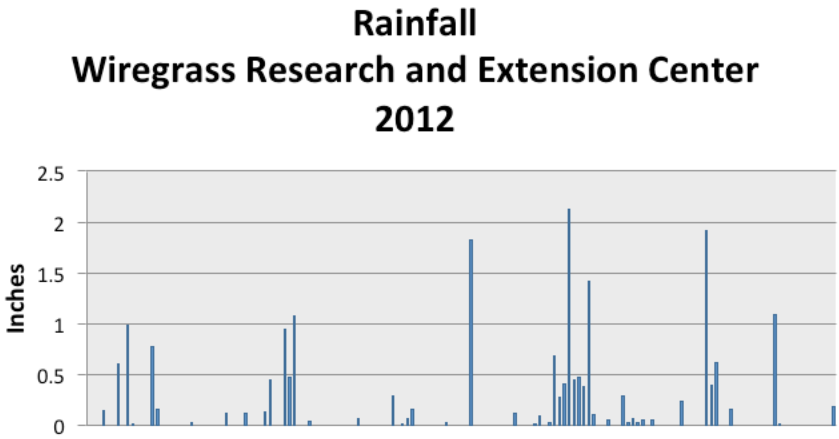


Figure 1. Daily Maximum and Minimum Temperatures from May 1 through September 30



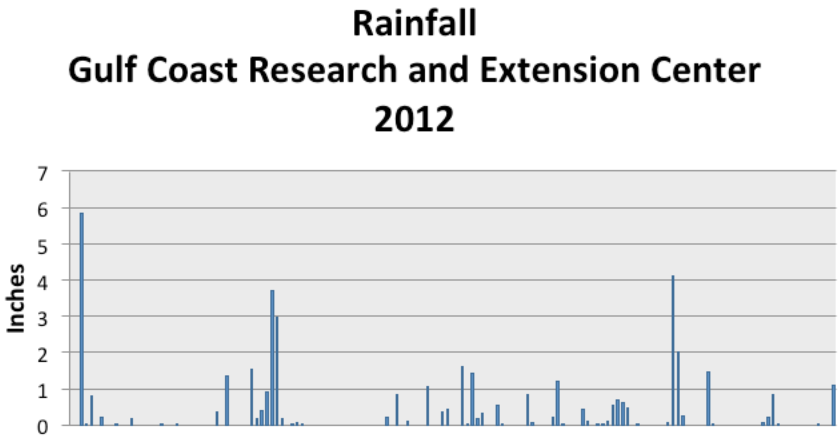


Figure 2. Daily precipitation (inches) from May 1 to September 30

Evaluation of Koverall, Topguard and Headline 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 new fungicides Koverall, Topguard, and Headline and compare them with currently registered fungicides for control of early and late leaf spot and stem-rot, and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Georgia-09B' was planted on May 22 at the Wiregrass Research and Extension Center in Headland, Alabama, in a field with a history of peanut production. Seed were sown at a rate of approximately 5 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 (organic matter < 1 percent). On April 9, 1,000 pounds per acre of lime was applied to the test area. On April 11, 1 quart per acre of Sonalan was applied and incorporated. On May 16, 1 quart per acre of Sonalan + 0.45 ounces per acre of Strongarm + 1 quart per acre of Dual Magnum were applied and incorporated for preemergent weed control. On May 23, 3 ounces per acre was applied to test area for weed control. On September 21, 3 ounces per acre Karate + 2 ounces per acre of Dimilin were applied for insect control. Thrips were controlled with an in-furrow application of 5 pounds per acre of Thimet-20G at planting.
Plots, which consisted of four 30-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on June 27, July 5, July 25, and July 31 and 0.5 inch on September 26. Fungicides were applied on a 14-21 day schedule on June 29, July 3, July 16, July 31, August 14, August 29, September 12, September 25 and October 8 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 3 using the Florida leafspot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants). Counts of stem rot loci (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 19 and yields reported at 6.78 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 2012 peanut production season, temperatures were near normal and monthly rainfall totals were near average throughout the season. Leaf spot severity progressed slowly during the season, but intensity increased in August and September due to higher rainfall and temperatures. At the time of inversion, most untreated plots were > 90 percent defoliated (data not shown). Of the fungicide programs evaluated, only Echo/Abound, Headline/Muscle/Headline/Echo, and Headline/Muscle + Echo/Muscle + Headline/Tilt-Bravo provided significantly better leaf spot control than did the season-long Echo standard. All other fungicide programs, with the exception of the Echo/Artisan program, provided leaf spot control similar to the Echo standard. Stem rot incidence was higher than in previous years. The best stem rot control was observed with the Echo/Artisan program. The Koverall + Echo/Koverall + Topguard program had significantly higher stem rot incidence than did all other programs except Echo/Muscle and Headline/Muscle + Echo/Tilt-Bravo. All remaining programs had similar stem rot incidence as the season-long Echo standard. When compared with the Echo standard, only the Echo/Abound, Echo/Artisan, Headline/Muscle/Headline/Echo, Headline/Muscle + Echo/Tilt-Bravo and Headline/Muscle + Echo/Muscle + Headline/TiltBravo had significantly higher yields.

Table 1
Evaluation of Koverall, Topguard and Headline for Peanut Disease Control in Southeast Alabama, WREC

Treatment and rate/ac	Application Timing	Disease ratings		Yield (lbs/ac)
		Leaf spot[a]	Stem rot[b]	
Koverall 2.0 lb + Echo 720 24.0 fl oz	1,2,7			
Koverall 2.0 lb + Topguard 14.0 fl oz	3,4,5,6	4.4	5.3	4,985
Echo 720 24.0 fl oz	1,2,7			
Echo 720 16.0 fl oz + Muscle 3.6F 7.2 fl oz	3,4,5,6	4.3	7.0	4,751
Echo 720 24.0 fl oz	1,2,7			
Muscle 3.6F 7.2 fl oz	3,4,5,6	5.0	3.8	4,913
Echo 720 24.0 fl oz	1,2,4,6,7			
Abound 2.08SC 18.5 fl oz	3,5	3.8	1.2	5,372
Echo 720 24.0 fl oz	1,2,7			
Echo 720 16.0 fl oz + Convoy 16.0 fl oz	3,4,5,6	5.0	2.5	5,155
Echo 720 24.0 fl oz	1,2,7			
Artisan 36.0 fl oz	3,4,5,6	5.5	1.0	5,421
Headline 2.09EC 9.0 fl oz	1.5			
Muscle 3.6F 7.2 fl oz	3,5			
Headline 2.09EC 12.0 fl oz	4			
Echo 720 24.0 fl oz	6,7	3.7	2.3	5,703
Echo 720 24.0 fl oz	1,2,7			
Provost 433SC 8.0 fl oz	3,4,5,6	4.2	2.7	5,034
Headline 2.09EC 9.0 fl oz	1.5			
Muscle 3.6F 7.2 fl oz + Echo 720 16.0 fl oz	3,4,5,6			
Tilt-Bravo 24.0 fl oz	7	4.1	3.3	5,703
Headline 2.09EC 9.0 fl oz	1.5			
Muscle 3.6F 7.2 fl oz + Echo 720 16.0 fl oz	3,5,6			
Muscle 3.6F 7.2 fl oz + Headline 2.09EC 6.0 fl oz	4			
Tilt-Bravo 24.0 fl oz	7	3.6	1.8	5,453
Tilt-Bravo 24.0 fl oz	1,2,7			
Muscle 3.6F 7.2 fl oz + Echo 16.0 fl oz	3,4,5,6	4.3	1.8	5,155
Echo 720 24.0 fl oz	1-7	4.5	3.0	4,824
LSD (P = 0.05)		*0.5*	*2.3*	*473*

a. Early and late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease;…10 =completely dead plants)
b. Stem rot incidence is expressed as the number of disease loci per 60 feet of row
Note: Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05)

Evaluation of Fontelis and YT 669 for Peanut Disease Control in Southeast Alabama, WREC

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

Objective: To evaluate the new fungicide Fontelis and the experimental fungicide YT 669 and compare them with currently registered fungicides for control of early and late leaf spot and stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Georgia-09B' was planted at the Wiregrass Research and Extension Center in Headland, Alabama, on May 22 in a field with a history of peanut production. The soil type was a Dothan sandy loam (OM < 1 percent). Seed were sown at a rate of approximately 5 seed per foot of row, and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed and nematode control were followed. On April 9, 1,000 pounds per acre of lime was applied to the test area. On April 11, 1 quart per acre of Sonalan was applied and incorporated. On May 16, 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 preemergent weed control. On May 23, 3 ounces per acre was applied to test area for weed control. On September 21, 3 ounces per acre Karate, + 2 ounces per acre of Dimilin, were applied for insect 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 feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on June 27, July 5, July 25, and July 31 and 0.5 inch on September 26. Fungicides were applied on a 14-21 day schedule on July 2, July 9, July 16, July 30, August 15, August 29, September 11 and September 24 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 2 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants). Counts of stem rot loci (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 19 and yields were reported at 6.96 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 2012 peanut production season, temperatures were near normal and monthly rainfall totals were near average throughout the season. Leaf spot severity progressed slowly during the season, but intensity increased in August and September due to higher rainfall and temperatures. At the time of inversion, most untreated plots were > 90 percent defoliated (data not shown). Of the fungicide programs tested, only Headline/Fontelis (16 fluid ounces)/ Echo and Echo/Provost resulted in significantly better leaf spot control than did the season-long Echo standard. All other fungicide programs, with the exception of the Headline/Convoy + Echo/Echo, Headline/Muscle/Echo, Echo/Muscle, and Echo/Echo + Convoy treatments, were equally effective in controlling leaf spot as Echo alone. Stem rot incidence was higher than in previous years. Lowest incidence of stem rot was observed in the Fontelis treated plots. Of the remaining programs, only Echo/Abound, Echo/Muscle and Echo/Provost had significantly lower stem rot incidence than the Echo standard. Stem rot incidence among the remaining treatments was similar. Highest yields were obtained with treatment programs that included Fontelis. All programs except YT 669 (48 fluid ounces)/Echo, Headline/Convoy + Echo/Echo, Headline/Muscle/ Echo, and Echo/Muscle yielded higher than the Echo standard.

Table 2
Evaluation of Fontelis and YT 669 for Peanut Disease Control in Southeast Alabama, WREC

Treatment and rate/ac	Application Timing	Disease ratings		Yield (lbs/ac)
		Leaf spot[a]	Stem rot[b]	
Headline 2.09Ec 9.0 fl oz	1.5			
Fontelis 16.0 fl oz	3,4,5			
Echo 720 24.0 fl oz	6,7	3.23	0.8	6,131
Headline 2.09Ec 9.0 fl oz	1.5			
Fontelis 48.0 fl oz	3,4,5			
Echo 720 24.0 fl oz	6,7	4.0	0.5	6,259
YT 669 16.0 fl oz	1,2,3			
Echo 720 24.0 fl oz	4,5,6,7	4.2	4.8	5,509
YT 669 48.0 fl oz	1,2,3			
Echo 720 24.0 fl oz	4,5,6,7	4.0	4.2	5,090
Headline 2.09Ec 9.0 fl oz	1.5			
Provost 433SC 7.0 fl oz	3,4,5			
Echo 720 24.0 fl oz	6,7	3.6	4.2	5,711
Headline 2.09Ec 9.0 fl oz	1.5			
Convoy 16.0 fl oz + Echo 720 16.0 fl oz	3,4,5			
Echo 720 24.0 fl oz	6,7	4.9	3.5	5,324
Headline 2.09Ec 9.0 fl oz	1.5			
Muscle 3.6F 7.2 fl oz	3,4,5			
Echo 720 24.0 fl oz	6,7	4.8	5.3	5,348
Echo 720 24.0 fl oz	1,2,4,6,7			
Abound 2.08SC 18.5 fl oz	3,5	3.9	3.2	5,752
Echo 720 24.0 fl oz	1,2,7			
Muscle 3.6F 7.2 fl oz	3,4,5,6	4.7	3.0	5,477
Echo 720 24.0 fl oz	1,2,7			
Provost 433SC 8.0 fl oz	3,4,5,6	3.3	1.5	5,929
Echo 720 24.0 fl oz	1,2,7			
Echo 720 24.0 fl oz + Convoy 13.0 fl oz	3,4,5,6	4.5	3.7	5,606
Headline 2.09EC 9.0 fl oz	1.5			
Muscle 3.6F 7.2 fl oz	3,5			
Headline 2.09EC 12.0 fl oz	4			
Echo 720 24.0 fl oz	6,7	3.7	4.7	5,662
Echo 720 24.0 fl oz	1-7	3.8	6.3	4,840
LSD (P = 0.05)		*0.4*	*2.9*	*660*

a. Early and late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease;…10 =completely dead plants)
b. Stem rot incidence is expressed as the number of disease loci per 60 feet of row
Note: Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05)

Evaluation of Fontelis and YT 669 for Peanut Disease Control in Southeast Alabama, WREC

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

Objective: To evaluate the new fungicide Fontelis and the experimental fungicide YT 669 and compare them with currently registered fungicides for control of early and late leaf spot and stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Georgia-09B' was planted at the Wiregrass Research and Extension Center in Headland, Alabama, on May 22 in a field with a history of peanut production. The soil type was a Dothan sandy loam (OM < 1 percent). Seed were sown at a rate of approximately 5 seed per foot of row, and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed and nematode control were followed. On April 9, 1,000 pounds per acre of lime was applied to the test area. On April 11, 1 quart per acre of Sonalan was applied and incorporated. On May 16, 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 preemergent weed control. On May 23, 3 ounces per acre was applied to test area for weed control. On September 21, 3 ounces per acre Karate, + 2 ounces per acre of Dimilin, were applied for insect 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 feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on June 27, July 5, July 25, and July 31 and 0.5 inch on September 26. Fungicides were applied on a 14-21 day schedule on July 2, July 9, July 16, July 30, August 15, August 29, September 11 and September 24 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 2 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants). Counts of stem rot loci (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 19 and yields were reported at 6.96 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 2012 peanut production season, temperatures were near normal and monthly rainfall totals were near average throughout the season. Leaf spot severity progressed slowly during the season, but intensity increased in August and September due to higher rainfall and temperatures. At the time of inversion, most untreated plots were > 90 percent defoliated (data not shown). Of the fungicide programs tested, only Headline/Fontelis (16 fluid ounces)/ Echo and Echo/Provost resulted in significantly better leaf spot control than did the season-long Echo standard. All other fungicide programs, with the exception of the Headline/Convoy + Echo/Echo, Headline/Muscle/Echo, Echo/Muscle, and Echo/Echo + Convoy treatments, were equally effective in controlling leaf spot as Echo alone. Stem rot incidence was higher than in previous years. Lowest incidence of stem rot was observed in the Fontelis treated plots. Of the remaining programs, only Echo/Abound, Echo/Muscle and Echo/Provost had significantly lower stem rot incidence than the Echo standard. Stem rot incidence among the remaining treatments was similar. Highest yields were obtained with treatment programs that included Fontelis. All programs except YT 669 (48 fluid ounces)/Echo, Headline/Convoy + Echo/Echo, Headline/Muscle/ Echo, and Echo/Muscle yielded higher than the Echo standard.

Table 3
Evaluation of Fontelis and YT 669 for Peanut Disease Control in Southeast Alabama, WREC

Treatment and rate/ac	Application Timing	Disease ratings		Yield (lbs/ac)
		Leaf spot[a]	Stem rot[b]	
Headline 2.09Ec 9.0 fl oz	1.5			
Fontelis 16.0 fl oz	3,4,5			
Echo 720 24.0 fl oz	6,7	3.23	0.8	6,131
Headline 2.09Ec 9.0 fl oz	1.5			
Fontelis 48.0 fl oz	3,4,5			
Echo 720 24.0 fl oz	6,7	4.0	0.5	6,259
YT 669 16.0 fl oz	1,2,3			
Echo 720 24.0 fl oz	4,5,6,7	4.2	4.8	5,509
YT 669 48.0 fl oz	1,2,3			
Echo 720 24.0 fl oz	4,5,6,7	4.0	4.2	5,090
Headline 2.09Ec 9.0 fl oz	1.5			
Provost 433SC 7.0 fl oz	3,4,5			
Echo 720 24.0 fl oz	6,7	3.6	4.2	5,711
Headline 2.09Ec 9.0 fl oz	1.5			
Convoy 16.0 fl oz + Echo 720 16.0 fl oz	3,4,5			
Echo 720 24.0 fl oz	6,7	4.9	3.5	5,324
Headline 2.09Ec 9.0 fl oz	1.5			
Muscle 3.6F 7.2 fl oz	3,4,5			
Echo 720 24.0 fl oz	6,7	4.8	5.3	5,348
Echo 720 24.0 fl oz	1,2,4,6,7			
Abound 2.08SC 18.5 fl oz	3,5	3.9	3.2	5,752
Echo 720 24.0 fl oz	1,2,7			
Muscle 3.6F 7.2 fl oz	3,4,5,6	4.7	3.0	5,477
Echo 720 24.0 fl oz	1,2,7			
Provost 433SC 8.0 fl oz	3,4,5,6	3.3	1.5	5,929
Echo 720 24.0 fl oz	1,2,7			
Echo 720 24.0 fl oz + Convoy 13.0 fl oz	3,4,5,6	4.5	3.7	5,606
Headline 2.09EC 9.0 fl oz	1.5			
Muscle 3.6F 7.2 fl oz	3,5			
Headline 2.09EC 12.0 fl oz	4			
Echo 720 24.0 fl oz	6,7	3.7	4.7	5,662
Echo 720 24.0 fl oz	1-7	3.8	6.3	4,840
LSD (P = 0.05)		*0.4*	*2.9*	*660*

a. Early and late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease;…10 =completely dead plants)
b. Stem rot incidence is expressed as the number of disease loci per 60 feet of row
Note: Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05)

Evaluation of Proline 480SC and Provost 433SC for Peanut Disease Control in Southeast Alabama, WREC

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

Objective: To evaluate the fungicides Proline 480SC and Provost 433SC and compare them with other currently registered fungicides for control of early and late leaf spot and stem rot, and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Georgia-09B' was planted in a field with a history of peanut production at the Wiregrass Research and Extension Center in Headland, Alabama, on May 7. The soil type was a Dothan sandy loam (OM < 1 percent), and seed were sown at a rate of approximately 5 seed per foot of row. Recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. On April 9, 1,000 pounds per acre of lime was applied to the test area. On April 11, 1 quart per acre of Sonalan was applied and incorporated. On May 8, 3 ounces per acre of Valor was applied to test area for weed control. On June 5, 4 ounces per acre of Cadre + 1.5 pints per acre of 2,4-DB was applied for postemergent 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 feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on June 27, July 5, July 25 and July 31, and 0.5 inch on September 26. In-furrow fungicide applications were made at planting with a tractor-mounted drop sprayer at 10 gallons per acre at 31 psi. Postemergent fungicides were applied with a tractor-mounted drop sprayer directly over row at 20 gallons per acre on May 30 (21 days after planting) and June 20 (28 days after planting). Foliar fungicides were applied on a 14-21 day schedule on June 28, July 3, July 12, July 26, August 13, August 27, September 11 and September 20 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 21 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 defoli-

ation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants). Counts of stem rot loci (1 locus was defined as < 1 foot of consecutive symptoms and signs of the disease) were made on September 21 immediately after plot inversion. Plots were harvested on October 19, and yields were reported at 9.56 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 2012 peanut production season, temperatures were near normal and monthly rainfall totals were near average throughout the season. Leaf spot severity progressed slowly during the season, but intensity increased in August and September due to higher rainfall and temperatures. While the Proline (IF)/Echo/Provost/Convoy + Echo treatment had the lowest leaf spot severity, none gave significantly better disease control than the season-long Echo standard. Stem rot incidence was higher than in previous years. Lowest stem rot incidence was observed with the Proline (28 DAP)/Proline/Convoy + Echo/Echo treatment. Of the remaining programs, Proline (IF)/Echo/Provost/Convoy + Echo, Proline (1)/Provost/Convoy + Echo/Echo, Echo/Abound and Headline/Provost/Headline/Echo had significantly lower stem rot incidence than the season-long Echo standard. Stem rot incidence among the remaining treatments was similar. Highest yield was obtained with Headline/Provost/Headline/Echo. Additionally, Proline (21 DAP)/Provost/Convoy + Echo/Echo, Proline (28 DAP)/Provost/Convoy + Echo/Echo, Proline (1.5)/Provost/Convoy + Echo/Echo and Echo/Abound had significantly higher yield than the season-long Echo standard. None of the remaining treatments were similar to the Echo standard.

Table 4
Evaluation of Proline 480SC and Provost 433SC for Peanut Disease Control in Southeast Alabama, WREC

Treatment and rate/ac	Application Timing	Disease ratings		Yield (lbs/ac)
		Leaf spot[a]	Stem rot[b]	
Echo 720 24.0 fl oz	1,2,7			
Provost 433SC 10.7 fl oz	3,4,6			
Convoy 13.0 fl oz+ Echo 720 24.0 fl oz	7	3.2	3.7	4,929
Proline 480SC 5.7 fl oz	IF			
Echo 720 24.0 fl oz	1,2,7			
Provost 433SC 10.7 fl oz	3,4,6			
Convoy 13.0 fl oz + Echo 720 24.0 fl oz	7	2.8	3.0	4,614
Proline 480SC 5.7 fl oz	21 DAP			
Provost 433SC 10.7 fl oz	3,4,6			
Convoy 13.0 fl oz + Echo 720 24.0 fl oz	5			
Echo 720 24.0 fl oz	7	3.0	3.3	5,009
Proline 480SC 5.7 fl oz	28 DAP			
Provost 433SC 10.7 fl oz	3,4,6			
Convoy 13.0 fl oz + Echo 720 24.0 fl oz	5			
Echo 720 24.0 fl oz	7	3.0	1.3	5,114
Proline 480SC 5.7 fl oz	1			
Provost 433SC 10.7 fl oz	3,4,6			
Convoy 13.0 fl oz + Echo 720 24.0 fl oz	5			
Echo 720 24.0 fl oz	7	3.0	2.7	4,956
Proline 480SC 5.7 fl oz	1.5			
Provost 433SC 10.7 fl oz	3,4,6			
Convoy 13.0 fl oz + Echo 720 24.0 fl oz	5			
Echo 720 24.0 fl oz	7	3.2	3.3	5,140
Echo 720 24.0 fl oz	1,2,4,6,7			
Abound 2.08SC 18.5 fl oz	3,5	3.1	2.1	5,130
Echo 720 24.0 fl oz	1,2,7			
Muscle 3.6F 7.2 fl oz	3,4,5,6	3.1	3.3	4,888
Echo 720 24.0 fl oz	1,2,4,6,7			
Echo 720 24.0 fl oz + Convoy 21.0 fl oz	3,5	3.4	3.3	4,792
Headline 2.09EC 9.0 fl oz	1.5			
Muscle 3.6F 7.2 fl oz	3,5			
Headline 2.09EC 12.0 fl oz	4			
Echo 720 24.0 fl oz	6,7	3.1	2.5	5,276
Echo 720 24.0 fl oz	1,2,7			
Provost 433SC 10.7 fl oz	3,4,5,6	3.1	3.5	5,159
Echo 720 24.0 fl oz	1-7	3.1	5.7	4,509
LSD (P = 0.05)		*0.4*	*2.6*	*493*

a. Early and late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease;…10 =completely dead plants)
b. Stem rot incidence is expressed as the number of disease loci per 60 feet of row
Note: Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05)

Evaluation of Propulse, Proline 480SC and Provost 433SC for Peanut Disease Control in Southeast Alabama, WREC

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

Objective: To evaluate the fungicides Propulse, Proline 480SC and Provost 433SC and compare them with other currently registered fungicides for control of early and late leaf spot and stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Georgia-09B' was planted on May 7 in a field with a history of peanut production at the Wiregrass Research and Extension Center in Headland, Alabama. The soil type was a Dothan sandy loam (OM < 1 percent), and seed were sown at a rate of approximately 5 seed per foot of row. Recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. On April 9, 1,000 pounds per acre of lime was applied to the test area. On April 11, 1 quart per acre of Sonalan was applied and incorporated. On May 8, 3 ounces per acre of Valor was applied to test area for weed control. On June 5, 4 ounces per acre of Cadre + 1.5 pint per acre of 2,4-DB was applied for postemergent 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 feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on June 27, July 5, July 25 and July 31, and 0.5 inch on September 26. In-furrow fungicide applications were made at planting with a tractor-mounted drop sprayer at 10 gallons per acre at 31 psi. Postemergent fungicides were applied with a tractor-mounted drop sprayer directly over row at 20 gallons per acre on May 30 (21 days after planting) and June 20 (28 DAP). Foliar fungicides were applied on a 14-21 day schedule on June 28, July 3, July 12, July 26, August 13, August 27, September 11 and September 20 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 21 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 defoli-

ation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants). Counts of stem rot loci (1 locus was defined as < 1 foot of consecutive symptoms and signs of the disease) were made on September 24 immediately after plot inversion. Plots were harvested on October 19 and yields were reported at 8.34 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 2012 peanut production season, temperatures were near normal and monthly rainfall totals were near average throughout the season. Leaf spot severity progressed slowly during the season but intensity increased in August and September due to higher rainfall and temperatures. When compared with the untreated control, all treatment programs gave better leaf spot control. The worst leaf spot control was with Echo 720/Echo 720 + Convoy, which had significantly higher leaf spot severity than did the full-season Echo 720 treatment. Propulse (100 percent emergence)/Echo/Provost and Absolute/Provost/Echo gave significantly better leaf spot control than did the Echo-only treatment. All other programs, including those that included either Proline or Provost, all had similar control to that observed with the Echo-only treatment. Stem rot intensity increased throughout the season. Of the programs tested, only the Echo-only treatment did not significantly decrease stem rot when compared with the untreated control. The Proline (IF)/Echo/Provost, Echo/Muscle, Echo/Echo + Convoy, Absolute/Provost/Echo and Headline/Provost/Headline/Echo decreased stem rot incidence when compared with the Echo-only treatment. The highest yield was with Echo/Echo + Convoy. All treatment programs, with the exception of Propulse (100 percent emergence)/Echo/Provost, Proline (100 percent emergence)/Echo, and Echo/Provost, yielded significantly higher than did both the untreated control and the Echo-only treatment.

Table 4
Evaluation of Propulse, Proline 480SC and Provost 433SC for Peanut Disease Control in Southeast Alabama, WREC

Treatment and rate/ac	Application Timing	Disease ratings		Yield (lbs/ac)
		Leaf spot[a]	Stem rot[b]	
Untreated Control		5.63	9.1	4,993
Propulse 13.7 fl oz	IF			
Echo 720 24.0 fl oz	1,2,7			
Provost 433SC 10.7 fl oz	3,4,5,6	2.9	3.8	5,856
Propulse 13.7 fl oz	100% emergence			
Echo 720 24.0 fl oz	1,2,7			
Provost 433SC 10.7 fl oz	3,4,5,6	2.8	7.1	5,332
Proline 5.7 fl oz	100% emergence			
Echo 720 24.0 fl oz	1,2,7			
Provost 433SC 10.7 fl oz	3,4,5,6	2.9	5.0	5,719
Proline 5.7 fl oz	100% emergence			
Echo 720 24.0 fl oz	1-7	3.3	4.3	5,308
Proline 5.7 fl oz	IF			
Echo 720 24.0 fl oz	1,2,7			
Provost 433SC 10.7 fl oz	3,4,5,6	3.0	3.0	5,598
Echo 720 24.0 fl oz	1,2,7			
Provost 433SC 10.7 fl oz.	3,4,5,6	2.9	4.7	5,405
Echo 720 24.0 fl oz	1,2,7			
Muscle 3.6F 7.2 fl oz	3,4,5,6	3.5	2.5	5,832
Echo 720 24.0 fl oz	1,2,4,6,7			
Echo 720 24.0 fl oz + Convoy 21.0 fl oz	3,5	3.8	2.0	5,945
Echo 720 24.0 fl oz	1,2,4,6,7			
Abound 2.08SC 18.5 fl oz	3,5	3.5	4.3	5,768
Absolute 3.5 fl oz	1,2,6			
Provost 433SC 8.0 fl oz	3,4,5			
Echo 720 24.0 fl oz	7	3.1	2.8	5,598
Headline 2.09EC 9.0 fl oz	1.5			
Muscle 3.6F 7.2 fl oz	3,5			
Headline 2.09EC 12.0 fl oz	4			
Echo 720 24.0 fl oz	6,7	2.8	2.3	5,687
Echo 720 24.0 fl oz	1-7	3.2	6.5	5,001
LSD (P = 0.05)		*0.3*	*3.4*	*510*

a. Early and late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease;…10 =completely dead plants)
b. Stem rot incidence is expressed as the number of disease loci per 60 feet of row
Note: Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05)

Evaluation 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 the fungicide Rx programs and compare 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 'Georgia-09B' was planted at the Wiregrass Research and Extension Center in Headland, Alabama, on May 22 in a field with a history of peanut production. The soil type was a Dothan sandy loam (OM < 1 percent). Seed were sown at a rate of approximately 5 seed per foot of row, and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. On April 9, 1,000 pounds per acre of lime was applied to the test area. On April 11, 1 quart per acre of Sonalan was applied and incorporated. On May 16, 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 preemergent weed control. On May 23, 3 ounces per acre was applied to test area for weed control. On September 21, 3 ounces per acre of Karate + 2 ounces per acre of Dimilin were applied for insect control. Thrips were controlled with an in-furrow application of 5.0 lb/A of Thimet 20G at planting.

Plots, which consisted of four 30-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on June 27, July 5, July 25 and July 31, and 0.5 inch on September 26. Fungicides were applied on a 14-21 day schedule on July 2, July 9, July 16, July 30, August 15, August 29, September 11 and September 24 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 16, August 28, September 11 and October 2 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). Area under the disease progress curve (AUDPC) was calculated based on observations taken approximately

every two weeks. Counts of stem rot 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 19 and yields were reported at 6.92 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 2012 peanut production season, temperatures were near normal and monthly rainfall totals were near average throughout the season. Leaf spot severity progressed slowly during the season, but intensity increased in August and September due to higher rainfall and temperatures. At the time of inversion, most untreated plots were > 90 percent defoliated (data not shown). Among all treatment programs tested, the Bravo-only, low-risk index program had the highest leaf spot severity. Of the remaining treatment programs tested, all had similar results to that observed with Bravoonly medium and high risk index. When comparing leaf spot control among the different Rx programs, the low-risk index that had Proline/Provost/Bravo, Headline/Convoy + Topsin/Bravo and Headline/Muscle/Bravo had lowest leaf spot severity. In the treatment regime with TiltBravo/Abound/Bravo, the lowest leaf spot severity was with the low-risk index; however, there were no significant differences among the indices. AUDPC ratings generally followed the results that were seen with the leaf spot ratings.

All treatment programs reduced the number of stem rot hits in comparison with the untreated control. When comparing the number of stem rot hits among the different treatment regimes, the highest number of hits was observed with the Bravo-only, low-risk index program. Among all the treatment programs tested, the highest incidence of stem rot was with the Bravo-only, low-risk program. All others had similar numbers of stem rot hits. All treatment programs significantly increased yield over the untreated control plots. The lowest yield among the treated plots was with the Bravo-only, low-risk program, and highest yield was with the medium-risk Headline/Convoy + Bravo + Topsin/Convoy + Headline/Convoy + Bravo/Topsin + Bravo program. All other programs had similar yields.

Table 5
Evaluation of Fungicide Rx Programs For Peanut Disease Control in Southeast Alabama, WREC

Treatment and rate/ac	Application Timing	Risk Index	Disease ratings			Yield (lbs/ac)
			Leaf spot[a]	AUDPC	Stem rot[b]	
Untreated Control			7.5	222.6	14.2	3,436
Proline 480 SC 5.7 fl oz	1.5	Low				
Provost 433SC 10.7 fl oz	3,5					
Bravo WS 24.0 fl oz	7		4.8	135.9	2.0	5,405
Proline 480 SC 5.7 fl oz	1.5	Medium				
Provost 433SC 10.7 fl oz	3,5,6					
Bravo WS 24.0 fl oz	7		4.5	142.5	3.1	5,897
Proline 480 SC 5.7 fl oz	1.5	High				
Provost 433SC 10.7 fl oz	3,4,5					
Convoy 13.0 fl oz	6					
+ Bravo WS 24.0 fl oz						
Bravo WS 24.0 fl oz	7		3.7	114.9	2.1	5,889
Headline 2.09SC	1.5	Low				
Convoy 21.0 fl oz	3					
+ Bravo WS 16.0 fl oz						
+ Topsin 5.0 fl oz						
Convoy 21.0 fl oz	4.5					
+ Headline 9.0 fl oz						
Topsin 5.0 fl oz	6					
+ Bravo WS 16.0 fl oz			3.5	115.0	1.7	5,929
Headline 2.09SC	1	Medium				
Convoy 21.0 fl oz	2.5					
+ Bravo WS 16.0 fl oz						
+ Topsin 5.0 fl oz						
Convoy 21.0 fl oz	4					
+ Headline 9.0 fl oz						
Convoy 16.0 fl oz	5.5					
+ Bravo WS 24.0 fl oz						
Topsin 5.0 fl oz	7		4.1	126.2	1.8	6,179
+ Bravo WS 16.0 fl oz						
Headline 2.09SC	1.5	High				
Convoy 21.0 fl oz	3,6					
+ Bravo WS 16.0 fl oz						
+ Topsin 5.0 fl oz						
Convoy 13.0 fl oz	4					
+ Bravo WS 24.0 fl oz						
Convoy 21.0 fl oz	5					
+ Headline 9.0 fl oz						
Topsin 5.0 fl oz	7		3.2	105.9	1.3	6,090

+ Bravo WS 16.0 fl oz						
Tilt-Bravo 36.0 fl oz	2	Low				
Abound 2.08SC 18.2 fl oz	3.5,5					
Bravo WS 24.0 fl oz	6.5		3.8	120.4	1.3	5,840
Tilt-Bravo 36.0 fl oz	1.5	Medium				
Abound 2.08SC 18.2 fl oz	3,5.5					
Bravo WS 24.0 fl oz	4,7		4.2	121.1	2.1	5,969
Tilt-Bravo 36.0 fl oz	1,2,4	High				
Abound 2.08SC 18.2 fl oz	3,5					
Bravo WS 24.0 fl oz	6,7		4.0	113.3	2.5	5,848
Headline 2.09SC 9.0 fl oz	2	Low				
Headline 12.0 fl oz	3.5					
+ Bravo WS 24.0 fl oz						
Muscle 3.6F 7.2 fl oz	5, 6.5		4.1	120.7	2.7	5,929
+ Bravo WS 16.0 fl oz						
Headline 2.09SC 9.0 fl oz	1.5	Medium				
Muscle 3.6F 7.2 fl oz	3, 5.5					
+ Bravo WS 24.0 fl oz						
Headline 2.09SC 12.0 fl oz	4					
Bravo WS 24.0 fl oz	7		3.2	107.4	4.5	5,792
Headline 2.09SC 9.0 fl oz	1.5	High				
Muscle 3.6F 7.2 fl oz	3,5					
+ Bravo WS 24.0 fl oz						
Headline 2.09SC 12.0 fl oz	5					
Bravo WS 24.0 fl oz	6,7		3.1	106.5	2.7	5,832
Bravo WS 24.0 fl oz		Low	5.2	164.8	5.0	5,219
Bravo WS 24.0 fl oz		Medium	3.3	105.0	4.5	5,759
Bravo WS 24.0 fl oz		High	3.0	102.1	3.7	5,340
LSD (P = 0.05)			*0.4*	*11.8*	*3.4*	*517*

a. Early and late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease;…10 =completely dead plants)
b. Stem rot incidence is expressed as the number of disease loci per 60 feet of row
Note: Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05)

Evaluation of Tilt-Bravo 4.3SE, Alto 0.83SL and Abound 2.08SC for Peanut Disease Control in Southeast Alabama, WREC

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

Objective: To evaluate the fungicides TiltBravo 4.3SE, Alto 0.83SL, and Abound 2.08SC and compare them with 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 'Georgia-09B' was planted on May 22 at the Wiregrass Research and Extension Center in Headland, Alabama, in a field with a history of peanut production. Seed were sown at a rate of approximately 5 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 April 9, 1,000 pounds per acre of lime was applied to the test area. On April 11, 1 quart per acre of Sonalan was applied and incorporated. On May 16, 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 preemergent weed control. On May 23, 3 ounces per acre was applied to test area for weed control. On September 21, 3 ounces per acre Karate + 2 ounces per acre of Dimilin were applied for insect 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 feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on June 27, July 5, July 25 and July 31, and 0.5 inch on September 26. Fungicides were applied on a 14-day schedule on July 2, July 16, August 2, August 15, August 31, September 12, September 24 and October 8 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 2 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead

plants). Counts of stem rot loci (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 19 and yields were reported at 7.5 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 2012 peanut production season, temperatures were near normal and monthly rainfall totals were near average throughout the season. Leaf spot severity progressed slowly during the season, but intensity increased in August and September due to higher rainfall and temperatures. At the time of inversion, most untreated plots were > 90 percent defoliated (data not shown). The best leaf spot control was obtained with the Tilt-Bravo/Abound (15 fluid ounces) + Alto (3.66 fluid ounces)/Bravo program. With the exception of Bravo/Bravo + Convoy, all other treatment programs gave significantly better leaf spot control than did season-long Bravo WS standard. Stem rot incidence was higher than in previous years. Tilt-Bravo/Abound (15 fluid ounces)/Bravo, Bravo/Abound, Bravo/Muscle and Bravo/Bravo + Convoy had significantly lower stem rot incidence than the Bravo WS standard. Yields were equally high for the Tilt-Bravo/Abound (15 fluid ounces)/Bravo, Bravo/Abound and Headline/Muscle/Headline/Bravo programs. Although the Bravo treatment yielded lowest, none of the remaining treatments yielded significantly higher.

Table 6
Evaluation of Tilt-Bravo 4.3SE, Alto 0.83SL and Abound 2.08SC for Peanut Disease Control in Southeast Alabama, WREC

Treatment and rate/ac	Application Timing	Disease ratings		Yield (lbs/ac)
		Leaf spot[a]	Stem rot[b]	
Tilt-Bravo 4.3SE 24.0 fl oz	1,2			
Abound 2.08SC 15.0 fl oz	3,5			
Bravo WS 24.0 fl oz	4,6,7	3.0	1.8	5,267
Tilt-Bravo 4.3SE 24.0 fl oz	1,2			
Abound 2.08SC 18.0 fl oz	3,5			
Bravo WS 24.0 fl oz	4,6,7	3.0	2.5	5,074
Tilt-Bravo 4.3SE 24.0 fl oz	1,2			
Abound 2.08SC 15.0 fl oz + Alto 0.83SL 5.5 fl oz	3,5			
Bravo WS 24.0 fl oz	4,6,7	3.0	3.3	5,074
Tilt-Bravo 4.3SE 24.0 fl oz	1,2			
Abound 2.08SC 18.0 fl oz + Alto 0.83SL 5.5 fl oz	3,5			
Bravo WS 24.0 fl oz	4,6,7	2.9	2.7	4,784
Tilt-Bravo 4.3SE 24.0 fl oz	1,2			
Abound 2.08SC 15.0 fl oz + Alto 0.83SL 3.66 fl oz	3,5			
Bravo WS 24.0 fl oz	4,6,7	2.8	2.7	4,969
Tilt-Bravo 4.3SE 24.0 fl oz	1,2			
Provost 433SC 8.0 fl oz	3,4,5,6			
Bravo WS 24.0 fl oz	7	3.0	3.2	4,687
Bravo WS 24.0 fl oz	1,2,4,6,7			
Fontelis 16.0 fl oz	3,5	3.3	3.2	4,759
Bravo WS 24.0 fl oz	1,2,4,6,7			
Abound 2.08SC 18.2 fl oz	3,5	3.1	1.7	5,114
Bravo WS 24.0 fl oz	1,2,7			
Provost 433SC 8.0 fl oz	3,4,5,6	3.0	3.0	5,001
Bravo WS 24.0 fl oz	1,2,7			
Muscle 3.6F 7.2 fl oz	3,4,5,6	3.4	1.8	4,864
Bravo WS 24.0 fl oz	1,2,7			
Bravo WS 24.0 fl oz + Convoy 13.0 fl oz	3,4,5,6	4.2	1.1	4,969
Headline 2.09EC 9.0 fl oz	1.5			
Muscle 3.6F 7.2 fl oz	3,5			
Headline 2.09EC 12.0 fl oz	4			
Bravo WS 24.0 fl oz	6,7	2.9	2.3	5,155
Bravo WS 24.0 fl oz	1-7	3.8	4.0	4,485
LSD (P = 0.05)		*0.3*	*2.1*	*628*

a. Early and late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease;…10 =completely dead plants)
b. Stem rot incidence is expressed as the number of disease loci per 60 feet of row
Note: Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05)

Evaluation of Fontelis Applied In-Furrow and at Early Emergence for its Effect on Controlling Peanut Diseases in Southeast Alabama, WREC

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

Objective: To evaluate the fungicide Fontelis applied in furrow at planting or at early emergence and compare them with other currently registered fungicides for control of early and late leaf spot and stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Georgia-09B' was planted on May 16 in a field with a history of peanut production at the Wiregrass Research and Extension Center in Headland, Alabama. The soil type was a Dothan sandy loam (OM < 1 percent), and seed were sown at a rate of approximately 5 seed per foot of row. Recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. On April 9, 1,000 pounds per acre of lime was applied to the test area. On April 11, 1 quart per acre of Sonalan was applied and incorporated. On May 8, 3 ounces per acre of Valor was applied to test area for weed control. On June 5, 4 ounces per acre of Cadre + 1.5 pints per acre of 2,4-DB were applied for postemergent weed control. Thrips were controlled with an in-furrow application of 5 pounds per acre of Thimet 20G at planting.

Plots, which consisted of four 30-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on June 27, July 5, July 25 and July 31, and 0.5 inch on September 26. In-furrow fungicide applications were made at planting with a tractor-mounted drop sprayer at 10 gallons per acre at 31 pounds per square inch. Postemergent fungicides were applied with a tractor-mounted drop sprayer directly over row at 20 gallons per acre on June 6. Foliar fungicides were applied on a 14-21 day schedule on June 22, July 3, July 19, August 1, August 16, September 7 and September 20 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 28 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 defoli-

ation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants).

Counts of stem rot loci (1 locus was defined as < 1 foot of consecutive symptoms and signs of the disease) were made on October 5 immediately after plot inversion. Plots were harvested on October 19 and yields were reported at 7.08 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 2012 peanut production season, temperatures were near normal and monthly rainfall totals were near average throughout the season. Leaf spot severity progressed slowly during the season, but intensity increased in August and September due to higher rainfall and temperatures. When compared with the untreated control, all treatment programs gave better leaf spot control. When all of the treatment programs were compared with the Bravo WS season-long treatment, all of the treatment programs, with the exception of the Proline/Bravo/Provost program, had similar control as did the Bravo-only treatment. The Proline/Bravo/Provost treatment had significantly better leaf spot control. The highest number of stem rot hits occurred in the untreated control plots. When compared with the Bravo-only treatment, only the Proline (IF)/Bravo/Fontelis and Proline/Bravo/Provost treatments had significantly lower stem rot hits. When compared with the untreated control, all of the treatment programs, with the exception of the Proline/Bravo program, yielded higher. When compared against the Bravo-only treatment, the Fontelis [20 fluid ounces (IF)]/Bravo, Fontelis [16 fluid ounces (EE)], Fontelis + Proline/Bravo, Proline/Bravo/Fontelis and Proline/Bravo/Provost treatments had significantly higher yields.

Table 7
Evaluation of Fontelis Applied In-Furrow and at Early Emergence for its Effect on Controlling Peanut Diseases in Southeast Alabama, WREC

Treatment and rate/ac	Application Timing	Disease ratings		Yield (lbs/ac)
		Leaf spot[a]	Stem rot[b]	
Untreated Control		6.7	9.5	4,130
Fontelis 16.0 fl oz	In-furrow at planting			
Bravo WS 24.0 fl oz	1-7		6.1	4,477
Fontelis 20.0 fl oz	In-furrow at planting			
Bravo WS 24.0 fl oz	1-7	3.5	4.5	4,953
Fontelis 16.0 fl oz	Early emergence			
Bravo WS 24.0 fl oz	1,2,4,6,7			
Fontelis 16.0 fl oz	3,5	3.6	4.1	5,308
Fontelis 20.0 fl oz	Early emergence			
Bravo WS 24.0 fl oz	1,2,4,6,7			
Fontelis 16.0 fl oz	3,5	3.7	5.7	4,655
Fontelis 16.0 fl oz	Early emergence			
Bravo WS 24.0 fl oz	1-7	3.5	4.7	4,759
Fontelis 20.0 fl oz	Early emergence			
Bravo WS 24.0 fl oz	1-7	3.7	6.7	4,235
Fontelis 16.0 fl oz + Proline 5.7 fl oz	In-furrow at planting			
Bravo WS 24.0 fl oz	1-7	3.2	4.3	4,776
Proline 5.7 fl oz	In-furrow at planting			
Bravo WS 24.0 fl oz	1,2,4,6,7			
Fontelis 16.0 fl oz	3,5	3.7	2.5	5,203
Proline 5.7 fl oz	In-furrow at planting			
Bravo WS 24.0 fl oz	1-7	3.4	6.8	4,090
Proline 5.7 fl oz	In-furrow at planting			
Bravo WS 24.0 fl oz	1,2,7			
Provost 10.7 fl oz	3,4,5,6	3.0	2.7	5,655
Bravo WS 24.0 fl oz	1-7	3.6	7.5	4,211
LSD (P = 0.05)		*0.4*	*3.9*	*555*

a. Early and late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease;…10 =completely dead plants)
b. Stem rot incidence is expressed as the number of disease loci per 60 feet of row
Note: Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05)

Evaluation of Echo 720, Eminent 125SL and Muscle ADV for Peanut Disease Control in Southeast Alabama, WREC

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

Objective: To evaluate the fungicides Echo 720, Eminent 125SL, and the experimental fungicide Muscle ADV and compare them with other currently registered fungicides for control of early and late leaf spot and stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Georgia-09B' was planted at the Wiregrass Research and Extension Center in Headland, Alabama, on May 7 in a field with a history of peanut production. The soil type was a Dothan sandy loam (OM < 1 percent), and seed were sown at a rate of approximately 5 seed per foot of row. Recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. On April 9, 1,000 pounds per acre of lime was applied to the test area. On April 11, 1 quart per acre of Sonalan was applied and incorporated. On May 8, 3 fluid ounces per acre of Valor was applied to test area for weed control. On June 5, 4 ounces per acre of Cadre + 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 feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on June 20, July 16, July 24 and July 30. In-furrow fungicide applications were made at planting with a tractor-mounted drop sprayer at 10 gallons per acre at 31 pounds per square inch. Foliar fungicides were applied on a 14-21 day schedule on June 22, June 28, July 5, July 17, August 2, August 17, August 31 and September 12 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 20 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead

plants). Counts of stem rot loci (1 locus was defined as < 1 foot of consecutive symptoms and signs of the disease) were made on September 24 immediately after plot inversion. Plots were harvested on October 19 and yields were reported at 8.63 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 2012 peanut production season, temperatures were near normal and monthly rainfall totals were near average throughout the season. Leaf spot severity progressed slowly during the season, but intensity increased in August and September due to higher rainfall and temperatures. While Echo/Provost and Echo/Abound programs had the lowest leaf spot severity, the season-long Echo standard and remaining fungicide programs gave similar leaf spot control. Stem rot incidence was higher than in previous years. Lowest incidence of stem rot was observed with the Echo/Echo + Convoy treatment. With the exception of the Headline/Muscle ADV treatment, all of the remaining programs had significantly lower stem rot incidence than the season-long Echo standard. The addition of ActinoGrow at planting had little effect on either leaf spot or stem rot. Among the treatment programs, the Echo/Echo + Convoy treatment program yielded highest. All fungicide programs yielded significantly higher than the season-long Echo standard.

Table 8
Evaluation of Echo 720, Eminent 125SL and Muscle ADV for Peanut Disease Control in Southeast Alabama, WREC

Treatment and rate/ac	Application Timing	Disease ratings		Yield (lbs/ac)
		Leaf spot[a]	Stem rot[b]	
ActinoGrow AG 3.0 oz	IF			
Echo 720 16.0 fl oz + Eminent 125SL 7.2 fl oz	1.5			
Muscle ADV 32.0 fl oz	3,4,5,6			
Echo 720 24.0 fl oz	7	3.23	4.8	5,671
Echo 720 16.0 fl oz + Eminent 125SL 7.2 fl oz	1.5			
Muscle ADV 32.0 fl oz	3,4,5,6			
Echo 720 24.0 fl oz	7	3.0	5.0	5,412
Echo 720 12.0 fl oz + Eminent 125SL 5.4 fl oz	1.5			
Muscle ADV 32.0 fl oz	3,4,5,6			
Echo 720 24.0 fl oz	7	3.4	5.8	5,332
Echo 720 16.0 fl oz + Eminent 125SL 4.0 fl oz	1.5			
Muscle ADV 32.0 fl oz	3,4,5,6			
Echo 720 24.0 fl oz	7	3.5	6.0	5,308
SA-0040301 32.0 fl oz	1.5			
Muscle ADV 32.0 fl oz	3,4,5,6			
Echo 720 24.0 fl oz	7	3.2	4.1	5,856
Headline 2.09EC 9.0 fl oz	1.5			
Muscle ADV 32.0 fl oz	3,4,5,6			
Echo 720 24.0 fl oz	7	3.2	7.7	5,195
Echo 720 24.0 fl oz	1,2,7			
Muscle 3.6F 7.2 fl oz	3,4,5,6	3.2	5.7	5,542
Echo 720 24.0 fl oz	1,2,7			
Provost 433SC 8.0 fl oz	3,4,5,6	2.9	5.0	5,679
Echo 720 24.0 fl oz	1,2,4,6,7			
Abound 2.08SC 18.5 fl oz	3,5	2.9	4.3	5,865
Echo 720 24.0 fl oz	1,2,7			
Echo 720 24.0 fl oz + Convoy 13.0 fl oz	3,4,5,6	3.3	3.0	6,058
Headline 2.09EC 9.0 fl oz	1.5			
Muscle 3.6F 7.2 fl oz	3,5			
Headline 2.09EC 12.0 fl oz	4			
Echo 720 24.0 fl oz	6,7	3.2	4.0	5,703
Echo 720 24.0 fl oz	1-7	3.2	10.0	4,477
LSD (P = 0.05)		*0.4*	*3.1*	*619*

a. Early and late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease;…10 =completely dead plants)
b. Stem rot incidence is expressed as the number of disease loci per 60 feet of row
Note: Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05)

Evaluation of Convoy and Artisan 3.6SE for Control of Southern Stem Rot in Southeast Alabama, WREC

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

Objective: To evaluate the fungicides Convoy and Artisan 3.6SE and compare them with other currently registered fungicides for control of stem rot and yield response in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar 'Tifguard' was planted in a field with a history of peanut production at the Wiregrass Research and Extension Center in Headland, Alabama, on May 2. The soil type was a Dothan sandy loam (OM < 1 percent), and seed were sown at a rate of approximately 5 seed per foot of row. Recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. On April 30, 0.45 ounce per acre of Strongarm + 1 quart per acre of Sonalan was applied and incorporated. On May 3, 3 ounces per acre of Valor was applied to test area 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 feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on June 20, July 24 and July 31. In-furrow fungicides applications were made at planting with a tractor-mounted drop sprayer at 10 gallons per acre at 31 pounds per square inch. Postemergent fungicides were applied with a tractor-mounted drop sprayer directly over row at 20 gallons per acre on May 30 (20 days after planting), June 20 (40 days after planting) and July 12 (60 days after planting). Foliar fungicides were applied on a 14-21 day schedule on June 22, June 29, July 5, July 17, August 2, August 17, August 31 and September 12 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 11 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead

plants).

Counts of stem rot loci (1 locus was defined as < 1 foot of consecutive symptoms and signs of the disease) were initially made on September 5 from above-ground symptoms and signs of the disease and again on September 20 immediately after plot inversion. Plots were harvested on October 19 and yields were reported at 9.56 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 2012 peanut production season, temperatures were near normal and monthly rainfall totals were near average throughout the season. Leaf spot severity progressed slowly during the season, but intensity increased in August and September due to higher rainfall and temperatures. All fungicide programs gave similar levels of leaf spot control. Stem rot incidence was higher than in previous years. Above-ground observations showed that the highest incidence of stem rot was obtained with the Convoy (20 days after planting)/Bravo program, while the Bravo/Muscle program gave the best disease control. Convoy applied at 40 and 60 days after planting had showed significantly lower stem rot hits than did Bravo alone, while Convoy applied at 20 days after planting had little impact on stem rot incidence. Of the remaining programs, Headline/Convoy + Bravo + Topsin/Convoy + Bravo/Convoy + Headline/Bravo, Bravo/Fontelis and Bravo/Provost programs had significantly lower stem rot incidence than the season-long Bravo-only standard. Higher levels of stem rot were observed in all plots when rated immediately after inversion. Only the Convoy (20 days after planting)/Bravo–treated plots had a higher incidence of stem rot than the Bravo standard. The lowest incidence of stem rot was with the Bravo/Fontelis program. With the exception of Headline/Artisan + Bravo/Artisan + Topsin/Bravo, Bravo/Bravo + Convoy (3,5), Bravo/Muscle and Headline/Muscle/Headline/Bravo, all of the treatment programs had better stem rot control than did Bravo alone. Other than Convoy (20DAP)/Bravo, Headline/Artisan + Bravo/Artisan + Topsin/Bravo, Bravo/Bravo + Convoy (3,5) and Bravo/Muscle, all other programs yielded significantly higher than the season-long Bravo standard.

Table 9
Evaluation of Convoy and Artisan 3.6SE for Control of Southern Stem Rot in Southeast Alabama, WREC

Treatment and rate/ac	Application Timing	Disease ratings			Yield (lbs/ac)
		Leaf spot[a]	Stem rot[b]	Stem rot[b]	
Convoy 32.0 fl oz	20 DAP				
Bravo WS 24.0 fl oz	1-7	2.2[w]	4.7	8.8	3,541
Convoy 32.0 fl oz	40 DAP				
Bravo WS 24.0 fl oz	1-7	2.8	2.0	4.0	4,219
Convoy 32.0 fl oz	60 DAP				
Bravo WS 24.0 fl oz	1-7	2.6	2.0	3.2	3,969
Headline 2.09EC 9.0 fl oz	1.5				
Convoy 13.0 fl oz + Bravo 16.0 fl oz + Topsin 5.0 fl oz	3.5				
Convoy 13.0 fl oz + Bravo 24.0 fl oz	4				
Convoy 13.0 fl oz + Headline 2.09EC 6.0 fl oz	6	2.7	1.5	3.2	4,259
Bravo WS 24.0 fl oz	7				
Headline 2.09EC 9.0 fl oz	1.5				
Artisan 16.0 fl oz + Bravo WS 16.0 fl oz	3,5				
Artisan 16.0 fl oz + Topsin 5.0 fl oz	4,6				
Bravo WS 24.0 fl oz	7	2.9	3.0	6.5	3,783
Bravo WS 24.0 fl oz	1,2,6,7				
Fontelis 16.0 fl oz	3,4,5	2.4	1.8	2.5	4,130
Bravo WS 24.0 fl oz	1,2,7				
Bravo WS 24.0 fl oz + Convoy 13.0 fl oz	3,4,5,6	2.7	2.2	4.3	4,050
Bravo WS 24.0 fl oz	1,2,4,6,7				
Bravo WS 24.0 fl oz + Convoy 21.0 fl oz	3,5	2.9	3.5	5.3	3,840
Bravo WS 24.0 fl oz	1,2,4,6,7				
Abound 2.08SC 18.2 fl oz	3,5	2.6	2.3	4.2	4,283
Bravo WS 24.0 fl oz	1,2,7				
Provost 433SC 8.0 fl oz	3,4,5,6	2.5	2.0	4.0	3,937
Bravo WS 24.0 fl oz	1,2,7				
Muscle 3.6F 7.2 fl oz	3,4,5,6	2.8	1.2	4.8	3,840
Headline 2.09EC 9.0 fl oz	1.5				
Muscle 3.6F 7.2 fl oz	3,5				
Headline 2.09EC 6.0 fl oz	4,6				
Bravo WS 24.0 fl oz	7	3.0	2.3	5.3	3,727
Headline 2.09EC 9.0 fl oz	1.5				
Bravo Ws 24.0 fl oz + Convoy 21.0 fl oz	3,5				
Headline 2.09EC 6.0 fl oz	4,6				
Bravo WS 24.0 fl oz	7	2.7	2.2	3.8	4,106
Bravo WS 24.0 fl oz	1-7	2.8	3.7	7.5	3,477
LSD (P = 0.05)		*0.5*	*1.7*	*3.1*	*414*

a. Early and late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease;…10 =completely dead plants)
b. Stem rot incidence is expressed as the number of disease loci per 60 feet of row
Note: Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05)

Evaluation of Commercially Available Chlorothalonil Products for Peanut Disease Control in Southeast Alabama, WREC

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

Objective: To evaluate commercially available chlorothalonil 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 'Georgia-09B' was planted at the Wiregrass Research and Extension Center in Headland, Alabama, on May 22 in a field with a history of peanut production. The soil type was a Dothan sandy loam (OM < 1 percent). Seed were sown at a rate of approximately 5 seed per foot of row, and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. On April 9, 1,000 pounds per acre of lime was applied to the test area. On April 11, 1 quart per acre of Sonalan was applied and incorporated. On May 16, 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 preemergent weed control. On May 23, 3 ounces per acrew was applied to test area for weed control. On September 21, 3 ounces per acre of Karate + 2 ounces per acre of Dimilin were applied for insect 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 feet apart, were arranged in a randomized complete block with six replicates. Plots were located under a central pivot irrigation system and irrigated 1 inch on June 27, July 5, July 25 and July 31 and 0.5 inch on September 26. Fungicides were applied on a 14-21 day schedule on July 2, July 9, July 16, July 30, August 15, August 29, September 11 and September 24 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 2 using the Florida leaf spot scoring system (1 = no disease; 2 = very few lesions in upper canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation; 5 = lesions noticeable in upper canopy with some defoliation; 6 = lesions numerous with significant defoliation; 7 = lesions numerous with heavy defoliation; 8 = very numerous lesions on few remaining leaves with heavy defoliation; 9 = very few remaining leaves covered with lesions; 10 = completely dead plants).

Counts of stem rot loci (1 locus was defined as < 1 foot of consecutive symptoms and signs of the disease) were made on October 15 immediately after plot inversion. Plots were harvested on October 19 and yields were reported at 6.74 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 2012 peanut production season, temperatures were near normal and monthly rainfall totals were near average throughout the season. Leaf spot severity progressed slowly during the season, but intensity increased in August and September due to higher rainfall and temperatures. At the time of inversion, most untreated plots were > 90 percent defoliated (data not shown). All evaluated chlorothalonil products controlled leaf spot significantly better than did the untreated control plots. Among the products tested, Bravo WS, Echo 720, Chemnut Chlorothalonil, and ChloroGold controlled leaf spot significantly better than did MicroFlo Chlorothalonil, Initiate 720, and Equus 720. While stem rot was reduced compared with the untreated control, there was very little difference among any of the products for control of stem rot. All the test plots that were treated with chlorothalonil had significantly higher yields than did the untreated control plots. Among the treatments, highest yield was obtained with the Echo 720 treatment and lowest yield was with Equus 720. All plots yielded similarly, however.

Table 10
Evaluation of Commercially Available Chlorothalonil Products for Peanut Disease Control in Southeast Alabama, WREC

Treatment and rate/ac	Application Timing	Disease ratings		Yield lbs/ac
		Leaf spot[a]	Stem rot[b]	
Untreated Control		7.53	10.3	3412
Bravo WS 24.0 fl oz	1-7	2.9	5.7	4985
Echo 720 24.0 fl oz	1-7	3.0	3.5	5356
Chemnut Chlorothalonil 24.0 fl oz	1-7	3.2	4.8	4913
MicroFlo Chlorothalonil 24.0 fl oz	1-7	3.8	5.1	5042
Initiate 720 24.0 fl oz	1-7	3.8	5.3	5098
Equus 720 24.0 fl oz	1-7	3.6	5.7	4864
ChloroGold 720 24.0 fl oz	1-7	3.2	5.8	5138
LSD (P = 0.05)		*0.4*	*2.4*	*390*

a. Early and late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease;…10 =completely dead plants)
b. Stem rot incidence is expressed as the number of disease loci per 60 feet of row
Note: Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05)

Evaluation of Equus 720, MCW 710-SC, MCW 710-EC and Orius 3.6F Programs for Peanut Disease Control in Southeast Alabama, WREC

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

Objective: To evaluate the efficacy of experimental and registered fungicides for the control of leaf spot diseases and stem rot as well as their impact on pod yield.

Methods: Peanut cultivar 'Georgia-09B' was sown at a rate of 5 seed per foot of row on May 22 at the Wiregrass Research and Extension Center in Headland, Alabama, in a field with a history of peanut production using conventional tillage practices. A preplant broadcast incorporated application of Sonalan at 1 quart per acre was followed with a broadcast incorporated application of Sonalan at 1 quart per acre + Strongarm at 0.45 ounce per acre + Dual Magnum at 1 pint per acre on May 16 and Valor at 3 ounces per acre on May 23. Escaped weeds were plowed with flat sweeps or were pulled by hand. To control thrips, 5 pounds per acre of Thimet 20G were applied in-furrow. The soil type was a Dothan sandy loam (OM < 1 percent). On June 27, July 5, July 25, July 31 and September 26, 1.0, 1.0, 1.0, 1.0 and 0.5 acre inches of water, respectively, were applied. Soil fertility recommendations of the Alabama Cooperative Extension System were followed.

Plots, which consisted of four 30-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replicates. Fungicides were applied on a 14 day schedule on July 2, July 16, August 2, August 15, August 31, September 12, September 24 and October 8 using a four-row, tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre at 45 pounds per squar inch.

Early and late leaf spot were visually rated on September 17 and October 3 using the Florida leaf spot scoring system (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). Stem rot loci counts (1 locus was defined as < 1 foot of consecutive symptoms and signs of the disease) were made on October 15 immediately after plot inversion. Plots

were harvested on October 19 and yields were reported at 7.59 percent moisture. Means were separated using Fisher's protected least significant difference (LSD) test ($P < 0.05$).

Results: During the 2012 peanut production season, near normal monthly average temperatures and rainfall totals were observed. Leaf spot severity progressed slowly during the season, but intensity increased in August and September due to higher rainfall and temperatures. Significant differences in leaf spot intensity were noted between fungicide programs as well as the non-treated control at both rating dates. At the September 17 rating date, higher leaf spot ratings were noted for the Echo 720/MCW 710-EC 7.76 fluid ounces per acre program as compared with the Echo 720/ MCW 710-SC 11.64 fluid ounces per acre and Echo 720/ MCW 710-SC 15.52 fluid ounces per acre programs. Leaf spot intensity did not decline as the rates of the MCW 710-SC and MCW 710-EC formulations increased at this rating date, and both formulations generally proved equally effective in controlling leaf spot diseases as the Equus 720 6F, Abound SC and Provost 433SC standards. At the time of plot inversion, defoliation levels recorded for the untreated controls approached 90 percent but were low in nearly all fungicide-treated plots. With both the MCW 710-SC and MCW 710-EC experimental formulations, leaf spot intensity declined with increasing application rates. With the exception of the Equus/MCW 710-EC 7.76 fluid ounces per acre and Equus/MCW 710-EC 15.5 fluid ounces per acre programs, both experimental formulations gave better leaf spot control than the Equus 720 season-long standard. Also, the Equus 720/Orius 3.6F program and Echo 720 standard gave a similar level of leaf spot control. Equus 720/ MCW 710-SC 11.64 fluid ounces, Equus 720/MCW 710-EC 31.0 fluid ounces, and Equus 720/ Abound 2SC + Orion 3.6F proved as effective in controlling leaf spot diseases as the Equus 720/Provost 433SC standard program.

Stem rot incidence was higher than in previous years. All treated plots had lower stem rot indices than did the untreated control and Equus 720 standard. All of the other treatments had stem rot incidence that was significantly lower than that observed for the season-long Equus-only treatment. The majority of fungicide programs proved equally effective in controlling stem rot as Equus 720/ Abound 2SC. Generally, all rates of the experimental MCW 710-SC or MCW 710-EC products gave similar stem rot control. Lowest yield was recorded for the untreated control. When compared with the Equus 720 standard, all other treatment programs had significantly higher yields. With a few exceptions, yield response with the experimental MCW 710-SC or MCW 710-EC did not significantly differ. Yields obtained with all rates of MCW 710-SC were similar to those recorded for the programs that included the Abound SC and Provost 433SC standards as well as both rates of the Equus 720/Abound 2SC + Orius

program.

Summary: Generally, the experimental fungicide formulations MCW 710-SC and MCW 710-EC generally proved as effective as the Abound 2SC and Provost standard programs in controlling leaf spot diseases. At the final rating date, a small but significant improvement in control was obtained at the higher compared with lowest rate of both fungicides. The MCW 710-SC formulation gave more consistent stem rot control when compared with the MCW 710-EC formulation. Few differences in the level of stem rot control were noted between the experimental and registered standards as well. With a few exceptions, highest yields were obtained with the products that significantly reduced stem rot incidence when compared with the nontreated control and Equus season-long standard.

Table 11
Evaluation of Equus 720, MCW 710-SC, MCW 710-EC and Orius 3.6F Programs for Peanut Disease Control in Southeast Alabama, WREC

Treatment and rate/ac	Application Timing	Disease ratings			Yield lbs/ac
		Leaf spot[a]		Stem rot[b]	
		September 17	October 3		
Untreated Control	---	5.6[w]	7.8	12.8	3,178 f
Equus 720 24.0 fl oz	1,2,7				
MCW 710-SC 3.88 fl oz	3,4,5,6	3.1 bc	3.7 de	5.7	5,477
Equus 720 24.0 fl oz	1,2,7				
MCW 710-SC 7.76 fl oz	3,4,5,6	3.0	3.4	4.7	5,566
Equus 720 24.0 fl oz	1,2,4,6,7				
MCW 710-SC 11.64 fl oz	3,5	2.7	3.1	3.5	5,485
Equus 720 24.0 fl oz	1,2,7				
MCW 710-SC 15.52 fl oz	3,4,5,6	2.9	3.3	3.0	5,776
Equus 720 24.0 fl oz	1,2,7				
MCW 710-EC 7.76 fl oz	3,4,5,6	3.2	3.9	4.8	5,082
Equus 720 24.0 fl oz	1,2,7				
MCW 710-EC 15.5 fl oz	3,4,5w,6	3.0	3.8	4.0	5,740
Equus 720 24.0 fl oz	1,2,7				
MCW 710-EC 23.25 fl oz	3,4,5,6	2.8	3.5	6.2	5,122
Equus 720 24.0 fl oz	1,2,7				
MCW 710-EC 31.0 fl oz	3,4,5,6	2.9	3.2	5.8	5,179
Equus 720 24.0 fl oz	1,2,7				
Abound 2.08SC 3.73 fl oz +					
Orius 3.6F 3.6 fl oz	3,4,5,6	3.0	3.4	2.8	5,663
Equus 720 24.0 fl oz	1,2,7				
Abound 2.08SC 5.57 fl oz +					
Orius 3.6F 3.6 fl oz	3,4,5,6	3.0	3.2	2.1	5,929
Equus 720 24.0 fl oz	1,2,7				
Orius 3.6F 7.2 fl oz	3,4,5,6	3.1	4.2	5.1	5,195
Equus 720 24.0 fl oz	1,2,4,6,7				
Abound 2.08SC 24.5 fl oz	3,4,5,6	3.0	3.5	2.0	5,832
Equus 720 24.0 fl oz	1,2,7				
Provost 433SC	3,5	2.9	2.9	3.3	5,977
Equus 720 24.0 fl oz	1-7	3.0	4.1	10.1	4,413
LSD (P = 0.05)		*0.3*	*0.4*	*3.2*	*620*

a. Early and late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease;…10 =completely dead plants)
b. Stem rot incidence is expressed as the number of disease loci per 60 feet of row
Note: Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05)

Influence of Peanut Variety and Insecticide Treatment on Thrips Damage Intensity, TSWV and Stem Rot Incidence and Yield, WREC

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

Objective: To compare the efficacy of foliar-applied, "at-cracking" insecticides with a soil-applied insecticide standard for the control of thrips as well as suppression of tomato spotted wilt virus (TSWV) in disease-susceptible and resistant peanut varieties.

Methods: The study area at the Wiregrass Research and Extension Center was turned with a moldboard plow and worked to seed-bed condition with a disk harrow. Rows were laid off with a Kelley Manufacturing Co. strip-till rig with rolling baskets. On May 3, the runner peanut cultivars 'Flavorunner 458', 'Georgia Green' and 'Georgia-06G' were 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 on a site maintained in a one-year-out, peanut-cotton rotation at the Wiregrass Research and Extension Center. All seed received Dynasty fungicide seed dressing. Weed control was obtained with a preemergent incorporated application of 1 quart per acre Sonalan HFP + 1 pint per acre Dual Magnum on April 21. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. Plots were irrigated as needed. A split-plot design with peanut cultivar as whole plots and insecticide treatment as subplots was used. Whole plots were randomized in four complete blocks. Insecticide subplots, which consisted of four 30-foot rows spaced 3 feet apart, were randomized within each whole plot. While the Temik 15G and Thimet 20G granular insecticides were applied in furrow at planting, banded applications of the foliar-applied insecticides were made on May 17 using a tractor-mounted sprayer with a single drop nozzle with a TX-8 tip located over the row middle at 10 gallons of spray volume per acre at 31 psi. CruiserMAXX seed dressing was custom applied to the seed with mechanical seed treatment equipment.

Thrips damage on the leaves was assessed on June 8 on a 0- to-10 scale (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). Final tomato spotted wilt (TSWV) hit counts (1 hit was defined as < 1 foot of consecutive severely TSWV-damaged plants per row) were made on October 12. Stem rot loci counts (1 locus was defined as < 1 foot of consecutive stem rot damaged plants per row) were made immediately after plot inversion on September 25. Yields were

reported at 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: Since the variety *x* insecticide interaction for TSWV and stem rot incidence as well as yield were not significant, data presented for each variable are pooled by variety and fungicide program (Table 12.1). The interaction for thrips damage was significant and data are presented by peanut variety. While overall TSWV activity was low, highest of this disease was noted in 'Flavorunner 458' (Table 12.2) and lower in 'Georgia-06G' than in 'Georgia Green.' Similarly, lower stem rot indices were reported for 'Georgia Green' and 'Georgia-06G' as compared with 'Flavorunner 458' (Table 12.2). Yield for the current industry standard 'Georgia-06G' was higher than 'Georgia Green' and 'Flavorunner', which posted the lowest pod yield. While significantly lower TSWV indices were recorded for the CruiserMAXX seed dressing than both rates of Admire Pro, no differences in disease incidence were found between the remaining insecticide treatments. Higher stem rot indices were obtained with the 7-fluid-ounces-per-acre rate of Admire Pro as compared with the at-cracking application azadirachtin (neem extract) and Temik 15G applied in-furrow. Stem rot incidence did not significantly differ among the remaining insecticide treatments. Higher yields were recorded for Temik 15G in-furrow, CruiserMAXX seed dressing and Karate treatments, as compared with the HGWH86 + Dynamic at-cracking application. Yield for the nontreated control and all insecticide treatments did not significantly differ.

Table 12.1
Anova Table for Peanut Variety and Insecticide Effects on Thrips Damage, TSWV and Stem Rot Incidence, and Pod Yield

Source (F)	Thrips Damage	Incidence		Yield (lbs/ac)
		TSWV	Stem Rot	
Peanut variety	92.86***[a]	76.90***	13.82**	19.50**
Insecticide	21.42***	1.14	1.06	1.01
Variety x insecticide	1.95*	1.31	1.13	0.59

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

Table 12.2
Effect of Peanut Variety and Insecticide on TSWV and Stem Rot Incidence as well as Pod Yield

Peanut variety	Rate/ac	Insecticide placement	Incidence[a]		Yield (lbs/ac)
			TSWV	Stem rot	
Flavorunner 458	--	--	3.9 a	1.9 a	3,570 c
Georgia Green	--	--	1.8 b	1.0 b	3,983 b
Georgia-06G	--	--	0.6 c	0.7 b	4,402 a
Insecticide					
1. Non-treated control	--	--	2.1 abc	1.3 ab	3,824 ab
2. Temik 15G	5 lb	In-furrow	2.3 abc	1.3 ab	4,138 a
3. Thimet 20G	5 lb	In-Furrow	2.2 abc	0.8 b	3,965 ab
4. CruiserMAXX	Seed dressing	Seed	1.6 c	1.0 ab	4,231 a
5. Azadirachtin	4 Tbs/gal	Foliar	2.1 abc	0.8 b	3,898 ab
6. HGWH86 + Dynamic	20.4 fl oz + 0.125 percent v/v	Foliar	1.8 abc	1.3 ab	3,682 b
7. Movento	5 fl oz	Foliar	1.8 bc	1.0 ab	3,933 ab
8. Radient	5 fl oz	Foliar	2.3 abc	1.5 ab	3,993 ab
9. Assail	4 fl oz	Foliar	1.7 abc	1.5 ab	4,058 ab
10. Karate	3.5 fl oz	Foliar	2.0 abc	1.2 ab	4,183 a
11. Admire Pro	1.7 fl oz	Foliar	2.3 ab	1.3 ab	3,961 ab
12 Admire Pro	7 fl oz	Foliar	3.1 a	1.8 a	3,956 ab

a. TSWV and stem rot severity is expressed as the number of disease loci per 60 feet of row
Note: Means in each column followed by the same letter are not significantly different according to Fisher's protected least significant difference (LSD) test ($P < 0.05$)

With a few exceptions, thrips damage ratings were higher for common insecticide treatments on 'Flavorunner 458' as compared with the less sensitive 'Georgia Green' and 'Georgia-06G', which often had similar levels of feeding injury to the foliage for common insecticide treatments (Table 3). Most notably, 'Temik 15G' in-furrow gave equally effective thrips protection on all peanut varieties. On 'Flavorunner 458', equally high thrips damage ratings were recorded for the nontreated control, Thimet 20G in-furrow, as well as at-cracking applications of Azadirachtin, HGWH86 + Dynamic, Karate, and 7 fluid ounces per acre Admire Pro, while equally effective thrips protection was obtained with 1.7 fluid ounces per acre Admire Pro, Radient, and CruiserMAXX. With 'Georgia Green' and 'Georgia-06G', the nontreated control and Azadirachtin had similarly high thrips damage ratings, as did Karate on the latter peanut variety. When compared with the highly efficacious Temik 15G in-furrow treatments on Georgia Green and 'Georgia-06G', similar reductions in thrips damage levels were noted with CruiserMAXX seed dressing, 7 fluid ounces per acre Admire Pro and 1.7 fluid ounces per acre Admire Pro on the former peanut variety. Thrips

Table 12.3
Thrips Damage as Influenced by Peanut Variety and Insecticide Treatment

		Thrips damage[a]		
Insecticide	**Rate/ac**	**Flavorunner**	**Georgia Green**	**Georgia-06G**
1. Non-treated control		9.0 a	6.0 b-h	6.5 a-f
2. Temik 15G	5 lb/A IF	2.3 p	2.0 p	2.0 p
3. Thimet 20G	5 lb/A IF	7.0 a-d	4.8 i-m	4.5 j-n
4. CruiserMAXX	Seed dressing	5.8 c-i	3.3 op	3.3 op
5. Azadirachtin	4 tbls/gal	7.7 ab	4.9 h-m	5.3 f-k
6. HGWH86 + Dynamic	20.4 fl oz + 0.125 % v/v	7.3 abc	4.0 l-o	5.0 g-l
7. Movento	5 fl oz	6.8 a-e	4.0 l-o	4.8 g-l
8. Radient	5 fl oz	5.8 d-j	4.8 i-m	4.5 j-n
9. Assail	4 fl oz	6.0 b-g	4.3 k-o	4.3 k-o
10. Karate	3.5 fl oz	7.2 ac	3.8 m-o	5.3 f-k
11. Admire Pro	1.7 fl oz	5.5 e-j	3.5 nop	4.5 i-n
12. Admire Pro	7 fl oz	7.5 ab	3.5 nop	3.5 nop

a. Thrips damage 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
Note: Means followed by the same letter are not significantly different according to Fisher's protected least significant difference (LSD) test (P < 0.05)

damage ratings for the remaining insecticide treatments on 'Georgia Green' and 'Georgia-06G' were lower when compared with the nontreated control.

Summary: 'Flavorunner 458,' which is essentially a Hi-Oleic Florunner peanut, proved most sensitive to thrips, TSWV and stem rot, as well as having the lowest yield potential among the three peanut varieties screened. While thrips damage ratings and stem rot incidence did not differ between the past and current industry standards 'Georgia Green' and 'Georgia-06G,' TSWV incidence were lower and yielded higher for the latter peanut variety. With few exceptions, Temik 15G provided better protection from thrips than any other insecticide treatment, particularly on the thrips-sensitive variety 'Flavorunner 458,' On 'Georgia Green' and 'Georgia-06G,' CruiserMAXX seed dressing as well as either one or both rates of Admire Pro proved as effective as Temik 15G in limiting thrips feeding damage to peanut foliage. In contrast, azadirachtin (neem extract) failed to reduce thrips damage when compared with the nontreated control on all three peanut varieties. Across all three peanut varieties, considerable differences in the level of thrips control were noted for all insecticide treatments except for Temik 15G, which had similar damage ratings on 'Flavorunner 458,' 'Georgia Green' and 'Georgia-06G.'

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

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

Objective: To 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.

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 Kelley Manufacturing Co. strip-till rig with rolling baskets. On May 16, runner peanut cultivars and advanced breeding lines were 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. Thimet 20G at 5 pounds per acre was applied in furrow for thrips control. Weed control was obtained with a preemergent, incorporated application of Sonalan HFP at 1 quart per acre on April 21. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The test area was irrigated as needed. A split-plot design, with peanut cultivars as whole plots and fungicide treatments as subplots, was used. Whole plots were randomized in four complete blocks. Subplots, 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 Bravo Weather Stik at 1.5 pints per acre followed by Abound 2SC at 1.1 pints per acre, Bravo Weather Stik at 1.5 pints per acre + Convoy at 21 fluid ounces per acre, Abound 2SC at 1.1 pints per acre, Bravo Weather Stik 6F at 1.5 pints per acre + Convoy at 21 fluid ounces per acre, and two final applications of Bravo Weather Stik 6F at 1.5 pints per acre. Fungicides were applied on June 29, July 12, July 27, August 14, August 28, September 11 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 pounds per square inch.

Tomato spotted wilt virus (TSWV) hit counts (1 hit was defined as < 1 foot of consecutive severely TSWV-damaged plants per row) were made on August 13. Early and late leaf spot were rated together on October 1 using the 1-to-10

Florida peanut leaf spot scoring system (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). 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 5. Yields were reported at 7.5 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: The peanut cultivar *x* fungicide program interaction for stem rot incidence and yield were not significant, so pooled data are presented. The data for the significant interaction of leaf spot intensity are separated by peanut variety. Incidence of TSWV, which was equally low across all commercial varieties and experimental lines, was not presented. Leaf spot intensity on 'Georgia Green', which was equally high for both the standard and high-input fungicide programs, exceeded the ratings of all peanut varieties except for the high-input 'Georgia-06G.' With a few exceptions, SPT experimental lines, particularly 'SPT-10-05,' 'SPT-10-14,' and 'SPT-06-07,' had lower leaf spot intensity ratings than the majority of the commercial runner peanut varieties, except for both the standard and high-input 'Florida 07' as well as the 'Florida 107' and 'Georgia-10T' standard fungicide program entries. Lower leaf spot intensity was noted for the standard, as compared with high-input, fungicide programs with 'Florida 107', 'Georgia-10T' and 'SPT-10-11ol.' Stem rot indices were higher on 'Florida 107' than all other commercial varieties and experimental lines except for 'SPT-10-11ol,' 'Georgia-09B,' 'Georgia Green' and 'SPT-10-14'. Other than 'SPT-10-05', the commercial varieties had a sizable yield advantage over the experimental lines. 'Florida 07' outyielded all varieties except 'Georgia-06B', while equally low yields were recorded for 'SPT-10-14' and 'SPT-06-07'. Significant reductions in stem rot incidence that were obtained with the high-input program were reflected in higher pod yield.

Table 13
Yield and Disease Control of Selected Commercial Peanut Cultivars and Breeding Lines as Impacted by Fungicide Input Level

Split plot analysis (F value)	Leaf spot rating[a]		Stem rot hits/60 ft[b]	Yield (lbs/ac)
Peanut variety	12.38***[c]		2.35**	3.25**
Fungicide program	32.67***		59.56***	125.32***
Variety x fungicide interaction	1.95*		0.94	1.79
Variety means	**Standard**	**High Input**		
Florida 07	3.0 ghi4	3.0 ghi	1.6 cd	4,925 a
Florida 107	2.9 hij	3.4 def	4.6 a	4,398 bcd
Flavorunner	3.1 e-h	3.4 d-g	0.8 de	4,489 bc
Georgia-06G	3.5 b-e	4.0 ab	2.8 bc	4,659 ab
Georgia-09B	3.8 a-d	3.9 a-c	3.0 abc	4,235 cde
Georgia-10T	3.0 ghi	3.5 b-e	0.6 e	4,314 cde
Georgia Green	4.1 a	4.3 a	3.1 abc	4,308 bc
Georgia Greener	3.3 e-h	3.5 c-f	1.5 cde	4,199 def
Tifguard	3.4 d-g	3.4 d-g	2.0 bc	4,235 cde
SPT-10-02	3.4 d-g	3.3 e-h	3.4 bc	4,127 efg
SPT-10-05	2.6 ij	3.0 ghi	3.1 bc	4,308 cde
SPT-10-11ol	2.9 hij	3.5 c-f	4.1 ab	3,641 fg
SPT-10-14	2.5 j	2.6 ij	3.0 abc	3,624 h
SPT-06-02	3.1 f-h	3.3 e-h	1.9 cd	3,951 fg
SPT-06-07	2.5 j	2.6 ij	2.1 bc	3,533 h
Fungicide program means				
Standard	--	3.8 a	3860 b	
High Input	--	1.0 b	4505 a	

a. Leaf spot diseases were rated using the Florida 1 to 10 leaf spot rating scale
b. Stem rot severity is expressed as the number of hits per 60 foot of row
c. Significance at the 0.05, 0.01, and 0.001 levels is indicated by *, **, or ***, respectively
Note: 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)

Yield and Reaction of Experimental Lines and Commercial Peanut Varieties to Diseases, WREC

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

Objective: To compare yields and the reaction of experimental lines and commercial runner peanut varieties to tomato spotted wilt virus (TSWV), leaf spot diseases and white mold in an irrigated production system.

Methods: The study site was turned with a moldboard plot. Rows were laid off on April 10 with a Kelley Manufacturing Co. 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 at the Wiregrass Research and Extension Center in Headland, Alabama, 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 15. On April 21, a preplant application of 1.0 quart per acre of Sonalan and 0.45 ounce per acre of Strongarm was lightly incorporated. A postemergence application of 8 ounces per acre Select + 1 quart per acre COC + 4 fluid ounces per acre Interlock was made for grass control on July 21. Escape weeds were plowed with flat sweeps on June 9 and June 27 or pulled by hand. Thrips control was obtained with an at-cracking application of 0.5 pound per acre Orthene 97S. The study site was irrigated with between 0.5 and 1.0 acre inches of water on May 19, June 1, June 15, June 21, June 30, July 6, July 12, August 16, August 24, August 29, September 16 and October 5. Chlorothalonil at 1.5 pints per acre was applied on June 10, June 27, July 25, August 17 and August 24. Abound 2SC at 18.5 fluid ounces per acre was broadcast on July 11 and August 9. Plots that consisted of two 20-foot rows spaced 3 feet apart were arranged in a randomized complete block with four replications.

Tomato spotted wilt virus (TSWV) hit counts (1 hit was defined as < 1 foot of consecutive severely TSWV-damaged plants per row) were made on September 14. Early and late leaf spot were rated together on September 21, September 27, October 9 and October 17. Early, mid-season, late, and very late maturing peanut cultivars were rated using the 1-to-10 Florida peanut leaf spot scoring system (1 = no disease, 2 = very few lesions in canopy, 3 = few lesions noticed in lower and upper canopy, 4 = some lesions noticed in lower and upper 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 (loci) counts (1 hit was defined as < 1 foot of consecutive stem rot–damaged plants per row) were made immediately after plot inversion on September 21, September 27, October 9 and October 17 for the early, mid-season, late and very late maturing cultivars, respectively. Yields were reported at 7 percent moisture. Significance of treatment effects was tested by analysis of variance and least significant difference (LSD) test ($P < 0.05$).

Results: With the exception of August and September, monthly rainfall totals during the study period were well below the 30-year historical average for the study site, while temperatures were often above average. These conditions generally suppressed early and mid-summer leaf spot but favored white mold. Significant differences in leaf spot intensity, TSWV and stem rot incidence, as well as yield, were noted among commercial peanut varieites and breeding lines. Incidence of TSWV was reduced from that noted in previous years. When compared with the runner variety 'Florunner,' the Virginia standard 'NC-7' as well as experimental lines 'ASP-03,' 'AU-1204,' 'MRS-18,' 'TX 071304,' 'MRS-35,' 'ASUS-25,' 'AU-1203,' 'ASUS-06' and 'TX 071305' had equally high TSWV indices. Incidence of TSWV was equally low on the experimental line 'UF 12302' and 17 commercial varieties and experimental lines. The commercial runner standards 'Georgia 10T,' 'Georgia-06G' and 'Florida 07' had similarly high leaf spot ratings as 'ASP-03.' Minimal leaf spotting with no defoliation was observed on the early-maturing experimental lines 'N08082o-1JCT' and 'N08070o1JC.' The Virginia peanut 'NC-7,' as well as 'AU-1202' and 'N09053o1CSm,' had leaf spot ratings similar to the two former experimental lines. White mold incidence in 'AU-1201,' 'TX 071305,' 'NC 7,' 'Georgia-06G,' 'AU-1202' and 'ASP-03' was similar when compared with 'Florunner,' which had the highest rating for this disease. When compared with the experimental line 'UF 11301,' 12 additional breeding lines and commercial varieties suffered equally low levels of white mold damage. 'Florunner,' which had the highest TSWV and white mold ratings, had the lowest pod yield, while 'UF 11301' had relatively low ratings for all diseases and higher pod yields than all varieties and lines except for 'N08082o1JCT,' 'GA082524,' 'UF 12303' and 'UF 12302,' as well as 'NC-7 Virginia' and 'Florida 07' runner commercial standards.

Summary: While TSWV pressure was not high, significant differences in the reaction of experimental lines and commercial standards were noted, with highest TSWV incidence noted in the susceptible runner variety 'Florunner' and the least damage in 'UF 12302.' The experimental lines 'N08070o1JC' and 'N08082o1JCT' demonstrated exceptional leaf spot resistance when compared with current commercial standards 'Georgia-10T,' 'Georgia-06G' and 'Florida

07,' which had relatively high leaf spot ratings. A number of experimental lines had while mold indices equally as low as the 'Georgia-10T' and 'Florida 07' commercial standards. Commercial varieties and experimental lines with the lower TSWV and white mold indices often had among the highest pod yields.

Table 14
Disease Ratings and Yield For Experimental Lines and Commercial Peanut Varieties

Peanut variety	Market type	Maturity	TSWV hit/40 ft[a]	Leaf spot rating[b]	White mold hit/40 ft[a]	Yield (lbs/ac)
NC 7	Virginia	Early	6.5 abc3	3.3 gh	5.3 a-e	5,414 a-f
Florunner	Runner	Mid	13.0 a	4.4 a-e	10.8 a	3,231 i
UF 11301	Runner	Mid	3.3 b-f	4.0 c-g	0.5 i	6,210 a
UF 12302	Runner	Mid	0.5 f	3.8 fg	1.0 f-i	5,777 a-d
UF 12303	Runner	Mid	1.0 ef	3.8 d-g	1.0 f-i	5,867 abc
GA 082522	Runner	Late	3.3 b-f	4.4 a-e	0.8 ghi	5,466 a-f
GA082524	Runner	V. late	3.0 b-f	3.8 d-g	1.5 f-i	5,888 ab
GA 082546	Runner	V. late	2.0 b-f	3.8 e-g	2.0 d-h	4,773 fgh
N08082o1JCT	Virginia	Early	3.5 b-f	1.5 h	0.8 ghi	5,876 ab
N08070o1JC	Virginia	Early	1.8 b-f	1.5 h	0.7 hi	5,255 b-g
N09053o1CSm	Virginia	Early	2.5 b-f	3.5 fgh	3.5 b-g	5,155 b-g
TX 071304	Runner	Mid	4.8 a-e	3.6 d-g	3.0 c-i	4,982 b-h
TX 071305	Runner	Mid	4.0 a-f	3.9 d-g	8.8 abc	4,206 h
MRS-35	Runner	V. late	4.8 a-f	4.5 a-d	2.5 c-i	5,256 b-g
MRS-18	Runner	V. late	5.0 a-d	4.9 ab	1.5 f-i	4,937 c-h
ASP-03	Runner	Mid	8.3 ab	5.0 a	5.5 a-e	4,477 gh
ASUS-06	Runner	V. late	3.8 a-f	4.3 a-f	3.8 c-i	4,883 d-h
ASUS-18	Runner	V. late	2.0 c-f	4.4 a-d	2.8 c-h	4,809 e-h
ASUS-25	Runner	V. late	4.5 a-e	4.3 b-f	2.3 d-i	5,139 c-h
AU-1201	Runner	Mid	1.8 def	4.0 c-g	10.3 ab	5,001 b-h
AU-1202	Runner	Mid	1.5 d-f	3.3 gh	6.3 a-f	4,910 d-h
AU-1203	Runner	Mid	4.5 a-e	3.6 c-g	3.3 c-i	4,621 fgh
AU-1204	Runner	Mid	5.8 a-d	4.1 c-g	4.0 b-f	5,127 b-h
Georgia-10T	Runner	V. Late	1.5 d-f	4.6 a-c	1.5 f-i	5,120 b-h
Georgia-06G	Runner	Mid	2.8 b-f	4.8 a-c	6.0 a-d	4,694 fgh
Florida 07	Runner	Late	1.5 d-f	4.9 ab	3.8 e-i	5,731 a-e

a. TSWV and white mold severity is expressed as the number of disease hits per 40 feet of row
b. Leaf spot was rated using the Florida 1-to -0 leaf spot rating scale
Note: Means in each column followed by the same letter are not significantly different according to analysis of variance and least significant difference (LSD) test ($P < 0.05$)

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

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

Objective: To determine the impact of seeding rate on stand density, the occurrence of TSWV, leaf spot, and stem rot, as well as the yield of selected commercial peanut cultivars in a dryland production system at the Wiregrass Research and Extension Center in Headland, Alabama.

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 Kelley Manufacturing Co. strip-till rig with rolling baskets. Peanut cultivars 'Florida 07,' 'Georgia-06G,' 'Georgia-09B,' 'Georgia-10T' and 'Tifguard' were planted at rates of three, four, six and eight seeds per row foot on May 15 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 preemergent, incorporated application of Strongarm at 0.45 ounce per acre + Sonalan HFP at 1 quart per acre on April 30. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. A split plot design with peanut cultivar as the whole plot and seeding rate as split-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 22, July 5, July 19, August 2, August 28, September 13 and September 25 with a tractor-mounted boom sprayer with three TX-8 nozzles per row at 15 gallons of spray volume per acre at 45 pounds per squaqre inch. Stand counts were recorded on May 29. Plots were inverted on October 4 and mechanically harvested on October 9.

Final TSWV hit counts (one hit was defined as < 1 foot of consecutive symptomatic plants per row) were made on July 25 and September 28. Early and late leaf spot were rated together on September 28 using the 1-to-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 (one hit was defined as < 1 foot of consecutive stem rot damaged plants per row) were made immediately after plot inversion on October 4. Yields are reported at 8.95 percent moisture. Significance of interactions was evaluated using PROC GLIMMIX procedure in SAS. Statistical analyses for stand density, leaf spot intensity 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: Interactions for peanut variety *x* seeding rate for stand density and white mold were significant, so data were segregated by peanut variety. Data

Table 15.1
Analysis of Variance (ANOVA) Table for Effects of Variety Selection and Seeding Rate on Stand Density, Leaf Spot Intensity, Stem Rot Incidence and Yield in 2012

Split plot analysis (F value)	Stand density	Leaf spot intensity	Stem rot incidence	Yield (lbs/ac)
Peanut variety	95.50***[a]	2.00	24.07***	12.43***
Seeding rate	298.80***	2.82*	1.26	3.03*
Peanut variety x seeding rate	7.7***	0.55	1.91*	0.51

a. *, **,*** Indicates significance at the 0.05, 0.01, and 0.001 levels, respectively

for the nonsignificant interactions for leaf spot intensity and yield were pooled across seeding rates and peanut variety (Table 15.1). TSWV intensity, which was very low regardless of seeding rate and peanut variety, is not presented. On all peanut varieties, stand density rose with increasing seeding rates (Table 2). At each seeding rate, stand density was higher for 'Georgia-09B' than the other varieties, which had similar stand densities at the two lowest seeding

Table 15.2
Impact of Seeding Rate on the Stand Density of Five Commercial Runner Peanut Varieties

	Stand density[a]				
Seed/ft row	Florida 07	Georgia-06G	Georgia-09B	Georgia-10T	Tifguard
3	56.0 lm[b]	50.8 mn	71.2 hi	45.2 n	62.4 kl
4	61.4 k	62.6 jk	90.2 cde	58.4 kl	62.2 k
6	82.0 fg	72.6 hi	114.6 ab	67.6 ij	75.0 gh
8	90.6 cd	81.8 efg	132.2 a	84.8 def	97.8 bc

a. Stand density represents the total number of plants per 30 row feet
b. Means followed by the same letter are not significantly different according to analysis of variance and the least significant difference (LSD) test ($P < 0.05$)

rates. At the recommended seeding rate of 6 seed per foot of row, stand density was higher for 'Florida 07' than 'Georgia-06G' and 'Georgia-10T,' but not 'Tifguard,' which had a denser stand than 'Georgia-10T' and 'Georgia-06G' at the rate of 8 seed per row foot.

White mold intensified on 'Tifguard' but not 'Florida 07,' 'Georgia-06G,'

Table 15.3
Interaction of Seeding Rate and Runner Peanut Variety on the Incidence of White Mold

	White mold incidence[a]				
Seed/ft row	**Florida 07**	**Georgia-06G**	**Georgia-09B**	**Georgia-10T**	**Tifguard**
3	1.6 defg[b]	2.4 bcde	4.2 ab	0.0 i	2.0 cdef
4	0.2 hi	3.0 abcd	3.6 ab	1.2 efgh	2.4 bcde
6	1.6 defg	2.6 bcd	3.2 abc	0.8 fghi	2.8 abcd
8	1.2 efgh	2.0 cde	4.8 a	0.6 ghi	4.6 a

a. White mold incidence is expressed as the number of hits per 60 feet of row
b. Means followed by the same letter are not significantly different according to analysis of variance and the least significant difference (LSD) test ($P < 0.05$)

'Georgia-09B' or 'Georgia-10T' with increasing seeding rates (Table 15.3). Across all seeding rates, 'Georgia-10T' and 'Florida 07' had the lowest white mold indices, while 'Georgia-09B,' 'Tifguard' and 'Georgia-06G', with some exceptions, had similarly high white mold damage levels. Despite adequate summer rains, leaf spot intensity was relatively low.

Leaf spot intensity was higher on 'Georgia-09B' as compared with the remaining four peanut varieties that had similarly low disease ratings (Table 15.4).

Table 15.4
Yield and Leaf Spot Intensity on Five Commercial Peanut Varieties

Peanut variety	**Leaf spot intensity[a]**	**Yield (lbs/ac)**
Florida 07	2.7 b[b]	4,879 a
Georgia-06G	2.6 b	4,066 bc
Georgia-09B	3.1 a	3,785 c
Georgia-10T	2.5 b	4,179 b
Tifguard	2.6 b	3,913 bc

a. Leaf spot intensity was rated using the Florida 1-to-10 leaf spot scoring system.
b. 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 ($P < 0.05$).

Highest yield was recorded for 'Florida 07.' Similar yields were obtained for 'Georgia-10T,' 'Georgia-06G' and 'Tifguard,' with 'Georgia-09B' having lower yields than the former but not the two latter varieties.Yield, but not leaf spot intensity, was influenced by seeding rate (Table 5). Yield progressively dropped

Table 15.5
Influence of Seeding rate on Leaf Spot Intensity and Yield of Five Commercial Peanut Varieties

Seed/ft row	Leaf spot intensity[a]	Yield lbs/ac
3	2.6 a[b]	4,036 c
4	2.6 a	4,038 bc
6	2.8 a	4,290 ab
8	2.8 a	4,292 a

a. Leaf spot intensity was rated using the Florida 1-to-10 leaf spot scoring system.
b. 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 ($P < 0.05$).

with declining seeding rates. Highest yields were seen with rates of 6 and 8 seeds per foot of row.

Summary: In a dryland production system, pod yield dropped sharply with declining seeding rates and stand density. Optimum seeding rate for maintaining maximum yields falls within range of the currently recommended 6 seeds per row foot. Seeding rate had no impact on leaf spot diseases. White mold intensified with increasing seeding rates only on ‘Tifguard’. TSWV levels were exceptionally low across all seeding rates on all five peanut varieties and were not impacted by either variable.

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: To 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.

Methods: The study area at the Wiregrass Research and Extension Center in Headland, Alabama, was turned with a moldboard plow and worked to seed-bed condition with a disk harrow. Rows were laid off on April 2 with a Kelley Manufacturing Co. strip-till rig with rolling baskets. On May 7, the runner peanut cultivars 'Georgia-06G' and 'Tifguard' were 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 on a site maintained in a one-year-out, peanut-cotton rotation. Thimet 20G at 5 pounds per acre was applied in-furrow for thrips control. Weed control was obtained with a preemergent, incorporated application of 1 quart per acre of Sonalan HFP + 1 pint per acre Dual Magnum on April 21. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. Plots received 1.0 acre inches of water on June 27, July 5, July 25, July 31, and 0.5 acre inches of water on September 26 via a center-pivot irrigation system. A split-plot design with peanut cultivars as whole plots and fungicide treatments as subplots was used. Whole plots were randomized in four complete blocks. Fungicide subplots, which consisted of four 30-foot rows spaced 3 feet apart, were randomized within each whole plot. Full canopy sprays were made using a tractor-mounted boom sprayer with three TX-8 nozzles per row at 15 gallons of spray volume per acre at 45 pounds per square inch on 1 = June 29, 1.5 = July 3, 2 = July 12, 3 = July 26, 4 = August 14, 5 = August 28, 6 = September 10, and 7=September 21.

Early and late leaf spot were rated together on September 27 using the 1-to-10 Florida peanut leaf spot scoring system (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

28. Yields were reported at 7 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: Since the variety *x* insecticide 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. Leaf spot intensity and stem rot incidence ratings, as well as yield for Georgia-06G and Tifguard, were similar. The Provost 433SC, Quash 50WDG, Headline 2.09SC/Muscle 3.6F/Headline 2.09SC/Echo 720 and Echo 720 standard gave equally effective leaf spot control. When compared with the Provost 480SC, poorer leaf spot control was obtained with the Convoy + Echo 720, Muscle 3.6F + Echo 720, Evito and Abound 2.08SC programs. Equally high stem rot indices were noted for the Evito, Muscle 3.6F + Echo 720 and Echo 720 standard, while similarly low ratings for this disease were recorded with Artisan 3.6E + Echo 720, Convoy + Echo 720, Provost 433SC and Headline 2.09SC/Muscle 3.6F/Headline 2.09SC/Echo 720 programs. When compared with the Echo 720 standard, significant yield gains were recorded with Evito, Abound 2.08SC, Provost 433SC, Artisan 3.6F + Echo 720 and Convoy + Echo 720 programs. Equally high yields were obtained with the latter five fungicide programs.

Summary: While differences in leaf spot control were noted between fungicide treatments, all limited leaf spotting to the lower and mid-canopy with little or no premature defoliation at harvest, which indicated that early and leaf spot had minimal impact on yield. In contrast, yields were generally higher for those treatments that gave the best disease control, with equally high yields reported for the Evito, Abound 2.08SC, Provost 433SC, Artisan 3.6F + Echo 720 and Convoy + Echo 720 programs.

Table 16
Effectiveness of Recommended Fungicide Programs for Controlling Leaf Spot and Stem Rot as well as Protecting Yield of Two Peanut Varieties

Split plot analysis (F)	Application timing	Leaf spot rating[a]	Stem rot hits/60 ft[b]	Yield (lbs/ac)
Peanut variety	--	0.29[c]	0.61	2.87
Fungicide program	--	2.93**	6.22***	3.19**
Variety x fungicide	--	0.97	1.78	1.54
Variety means				
Georgia-06G	--	3.8 a	5.6 a	4,527 a
Tifguard	--	3.7 a	4.8 a	4,306 a
Fungicide program means				
Echo 720 1.5 pt	1-7	3.6 bcd	8.1 a	4,110 e
Echo 720 1.5 pt	1,2,7			
Provost 433SC 8 fl oz	3-6	3.3 d	3.8 cd	4,529 abc
Echo 720 1.5 pt	1,2,7			
Convoy 16 fl oz + Echo 720 1.5 pt	3-6	3.8 abc	3.1 cd	4,679 a
Echo 720 1.5 pt	1,2,4,6,7			
Artisan 3.6E 26 fl oz + Echo 720 1.0 pt	3,5	4.2 a	3.0 d	4,630 ab
Echo 720 1.5 pt	1,2,7			
Muscle 3.6F + Echo 720 1.0 pt	3-6	3.9 ab	6.3 ab	4,300 cde
Headline 2.09SC 9 fl oz	1.5			
Muscle 3.6F 7.2 fl oz	3,5			
Headline 2.09SC 6 fl oz	4,6			
Echo 720 1.5 pt	7	3.4 dc	4.4 cd	4,316 bcde
Echo 720 1.5 pt	1,2,4,6,7			
Evito 5.7 fl oz + 0.25% NIS	3,5	4.0 ab	6.9 ab	4,465 a-d
Echo 720 1.5 pt	1,2,7			
Quash 50WDG 4 oz	3-6	3.6 bcd	5.5 bc	4,170 de
Echo 720 1.5 pt	1,2,4,6,7			
Abound 2.08SC 18.2 fl oz	3,5	3.8 abc	5.0 bc	4,554 abc

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

Disease and Yield Response of Selected Commercial Peanut Cultivars as Influenced by Seeding Rate and Planting Date, WREC

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

Objective: To determine the impact of seeding rate as influenced by planting date on stand density, the occurrence of tomato spotted wilt virus (TSWV), leaf spot and stem rot, and on yield of selected commercial peanut cultivars at the Wiregrass Research and Extension Center in Headland, Alabama.

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 Kelley Manufacturing Co. strip-till rig with rolling baskets. Peanut cultivars 'Florida 07,' 'Georgia Green' and 'Georgia-06G' were planted on April 24 and May 24 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 preemergent, incorporated application of Sonalan HFP at 1 quart per acre. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. The test area received 0.5, 0.5, 1.0, 1.0 and 0.75 acre inches of water on June 6, June 14, August 15, August 20, and September 14, respectively. A split-plot design with planting date as whole plots, peanut cultivar as the split plot and seeding rate as split-split plots was used. Whole plots were randomized in four complete blocks. Individual 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 29, July 5, July 19, August 4, August 28, September 13 and September 25 with a tractor-mounted boom sprayer with three TX-8 nozzles per row at 15 gallons of spray volume per acre at 45 pounds per square inch. Stand counts were recorded on May 9 and June 6 for the first and second planting dates, respectively. Harvest dates were September 17 and October 15.

Final TSWV hit counts (1 hit was defined as < 1 foot of consecutive symptomatic plants per row) were made for the first and second planting dates on September 15 and October 14, respectively. Early and late leaf spot were rated together on August 29 and October 5 for the first and second planting dates, respectively, using the 1-to-10 Florida peanut leaf spot scoring system (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). 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 September 11 and October 15 for the first and second planting dates, respectively. Yields were reported at 8.5 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: Interactions for planting date *x* variety for stand density and leaf spot were significant, so data were segregated by peanut variety, while data for the nonsignificant interactions were pooled (Table 1). While planting date did not influence mean stand density for 'Florida 07' and 'Georgia Green', a denser stand was noted for 'Georgia-06G' at the May 24 than April 24 planting date (Table 2). Stand density was higher for 'Georgia Green' than 'Florida 07' and 'Georgia-06G' at both May 24 and April 24 planting dates, respectively. When

Table 17.1
Analysis of Variance (ANOVA) Table for Effects of Planting Date, Variety Selection and Seeding Rate on Stand Density, TSWV and Stem Rot Incidence, Leaf Spot Intensity and Yield, 2012

Split plot analysis (F value)	Stand density	TSWV incidence	Leaf spot intensity	Stem rot incidence	Yield lbs/ac
Planting date	0.42	4.42	319.74***	0.40	0.00
Peanut variety	63.89***	5.50**	4.51*	20.50***	17.50***
Planting date x peanut variety	9.43***	2.13	26.51***	2.70	2.14
Seeding rate	118.64***	0.58	0.44	1.15	3.18*
Planting date x seeding rate	0.33	2.24	0.93	0.10	0.52
Peanut variety x seeding rate	1.10	0.38	1.63	0.97	0.95
Planting date x peanut variety x seeding rate	0.75	1.08	0.86	0.99	1.68

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

averaged over all peanut varieties, stand density rose significantly with each incremental increase in seeding rate (Table 17.4). While the incidence of TSWV was very low and was not influenced by planting date or seeding rate (Table 17.1), higher disease levels were recorded in 'Florida 07' and 'Georgia Green' as compared with 'Georgia-06G' (Table 17.3).

Table 17.2
Interaction of Planting Date and Peanut Variety on Mean Stand Density and Leaf Spot Intensity

Planting date	Mean stand density[a]			Leaf spot intensity[b]		
	Florida 07	Georgia-06G	Georgia Green	Florida 07	Georgia-06G	Georgia Green
April 24	58.1 bc	60.8 bc	75.6 a	2.2 c	1.7 d	2.0 c
May 24	50.8 c	70.3 ab	78.1 a	3.0 b	3.5 a	3.5 a

a. Stand density, which represents the total number of plants per 60 feet of row, were recorded on May 9 and June 6 for the first and second planting date, respectively
b. Leaf spot intensity was rated using the Florida1-to-10 leaf spot scoring system.
Note: 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)

Table 17.3
Effect of Planting Date and Peanut Variety on TSWV and Stem Rot Incidence as well as Yield

Planting date	TSWV incidence[a]	Stem rot incidence[a]	Yield (lbs/ac)
April 24	1.7 a	4.4 a	3,973 a
May 24	1.1 a	4.0 a	3,973 a
Peanut variety			
Florida 07	1.5 a	2.1 c	4,259 a
Georgia-06G	0.9 b	4.2 b	4,102 a
Georgia Green	1.8 a	6.3 a	3,558 b

a. TSWV and stem rot incidence is expressed as the number of hits per 60 feet of row
Note: 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)

Table 17.4
Influence of Seeding Rate on Stand Density, TSWV and Stem Rot Incidence, Leaf Spot Intensity, and Yield

Seeding rate (seed/ft row)	Stand density[a]	TSWV incidence[b]	Leaf spot intensity[c]	Stem rot incidence[b]	Yield (lbs/ac)
2	46.5 d	1.2 a	2.7 a	3.5 a	3,766 b
3	59.1 c	1.4 a	2.6 a	4.0 a	4,005 ab
4	68.2 b	1.4 a	2.6 a	4.6 a	4,191 a
6	88.5 a	1.6 a	2.7 a	4.7 a	3,930 ab

a. Stand density, which represents the total number of plants per 60 feet of row were recorded on May 9 and June 6 for the first and second planting date, respectively
b. TSWV and stem rot incidence is expressed as the number of hits per 60 feet of row
c. Leaf spot intensity was rated using the Florida 1-to-10 leaf spot scoring system
Note: 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)

Despite lower-than-anticipated leaf spot intensity, disease ratings differed across planting dates by peanut variety (Table 17.1). All peanut varieties had higher leaf spot ratings at the May 24 than April 24 planting dates. At the April 24 planting date, leaf spot intensity in 'Georgia-06G' was lower when compared with 'Florida 07' and 'Georgia Green,' which had similar disease ratings (Table 17.2). Equally high leaf spot ratings were noted in the May 24 planting of 'Georgia-06G' and 'Georgia Green' than 'Florida 07.' Leaf spot intensity was not influenced by seeding rate.

Stem rot incidence did not significantly differ by planting date but did by peanut variety (Table 17.3). 'Georgia Green' suffered heavier stem rot damage than 'Georgia-06G' and 'Florida 07,' which had the lowest rating for this disease among the three peanut varieties. Stem rot incidences were similar across all seeding rates (Table 17.4). Yield was not influenced by planting date but was by peanut variety and seeding rate (Table 17.1). Higher pod yields were recorded for 'Florida 07' and 'Georgia-06G' than for 'Georgia Green' (Table 17.3). Lower yields were noted at the two seed per row foot as compared with four seed per row foot seeding rate, while the seeding rates of 3 and 6 seed per row foot had intermediate yields (Table 17.4).

Summary: Seed remains among the most costly input in a peanut production budget. Study results show that seeding rates may be reduced from the recommended 6 seed per feet of row to at least 4 seed and possibly 3 without sacrificing yield, reducing production costs up to 70 dollars per acre. Seeding rate did not significantly impact any disease variable but did influence stand density and pod yield where the three highest seeding rates had similarly high yields. Activity of leaf spot diseases was impacted by planting date, variety selection, or an interaction of the two. TSWV pressure was so low that planting date and seeding rate, which previously have been shown to influence disease incidence, had no noticeable impact. While differences in the varietal reaction to stem rot were noted, those differences were unlikely to noticeably impact yield. Early planting may be used to lower leaf spot activity in peanut. Leaf spot intensity was noticeably lower at the April 24 than May 24 planting date, with 'Florida 07' having the lower leaf spot ratings at both of planting dates than one or both of the other peanut varieties. Stem rot incidence was influenced only by variety selection but not seeding rate or planting date. Previous studies have shown that both the latter variables may also impact activity of this disease in peanut. As was the case with leaf spot, the least stem rot damage was noted in 'Florida 07,' which, along with 'Georgia-06G,' had similarly high yields.

Influence of Insecticide Treatment on Thrips Damage, TSWV and Stem Rot Incidence, and on Yield of Three Peanut Varieties, WREC

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

Objective: To compare the efficacy of in-furrow, applied insecticides and a seed treatment insecticide treatment for the control of thrips as well as suppression of tomato spotted wilt virus (TSWV) in three peanut varieties.

Methods: The study area at the Wiregrass Research and Extension Center in Headland, Alabama, was turned with a moldboard plow and worked to seed-bed condition with a disk harrow. Rows were laid off with a Kelley Manufacturing Co. strip-till rig with rolling baskets. On May 17, the peanut cultivars 'Georgia Green,' 'Florida 07' and 'Georgia-06G' were planted at a rate of six seed per foot of row using conventional tillage practices in a Dothan fine sandy loam (OM <1 percent) soil on a site maintained in a one-year-out, peanut-cotton rotation at the WREC. A split-plot design with peanut cultivar as whole plots and insecticide treatment as subplots was used. Whole plots were randomized in six complete blocks. Insecticide subplots, which consisted of four 30-foot rows spaced 3 feet apart, were randomized within each whole plot. CruiserMAXX insecticide/fungicide and Dynasty PD fungicide seed dressing were custom applied to the seed with mechanical seed treatment equipment. Thimet 20G at 5 pounds per acre and Temik 15G at 5 pounds per acre were applied in furrow at planting. Dynasty PD alone served as a negative control. Weed control was obtained with a preemergent, incorporated application of 1 quart per acre Sonalan HFP + 1 pint per acre Dual Magnum on April 30. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. Plots were irrigated as needed.

Stand counts were made on June 3 from the second row of each plot as the actual number of plants emerged. Thrips damage rate on the leaves was assessed on June 19 on a 0-to-10 scale (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). TSWV hit counts (1 hit was defined as < 1 foot of consecutive severely TSWV-damaged plants per row) were made on July 19 and September 19. Stem rot loci counts (1 locus was defined as < 1 foot of consecutive stem rot–damaged plants per row) were made immediately after plot inversion on October 4. Yields were reported at 8.65 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: Seed dressing and soil-insecticide treatments had little effect on stand, and therefore the data is not shown. Stand density was higher for 'Georgia Green' than 'Florida 07' or 'Georgia 06G' (data not shown). Since the variety x insecticide interaction for TSWV and stem rot incidence as well as yield were not significant, data presented for each variable are pooled by variety and fungicide program (Table 18.1). The interaction for thrips damage was significant, and data are presented by peanut variety. Overall TSWV activity was low, and no differences in the incidence of this disease were noted between peanut varieties (Table 18.1). White mold incidence was higher on 'Georgia Green' than 'Florida 07' but not 'Georgia 06G,' which had an intermediate disease rating. Yield for 'Florida 07' was higher than both 'Georgia-06G' and 'Georgia Green,' which posted the lowest pod yield. Despite low TSWV pressure, incidence of

TABLE 18.1
Effect of Peanut Variety and Insecticide on TSWV and White Mold Incidence as well as Pod Yield

Peanut variety	Rate	Insecticide placement	Incidence[a]		Yield (lbs/ac)
			TSWV	Stem rot	
Florida 07	--	--	0.7 a	1.6 b	5,955 a
Georgia Green	--	--	1.1 a	2.6 a	5,172 c
Georgia-06G	--	--	0.9 a	1.9 ab	5,538 b
Insecticide					
1. Dynasty PD	3 oz/100 lb seed	--	1.5 a	2.6 a	5,512 a
2. Dynasty PD +	3 oz/100 lb seed +	In-furrow	0.7 b	1.9 ab	5,520 a
Temik 15G	5 lb/A				
3. Dynasty PD +	3 oz/100 lb seed +	In-furrow	0.6 b	1.9 ab	5,528 a
Thimet 20G	5 lb/A				
4. CruiserMAXX	3 oz/100 lb seed +	Seed	0.9 b	1.7 b	5,663 b

a. TSWV and stem rot severity is expressed as the number of disease loci per 60 feet of row
Note: Means in each column followed by the same letter are not significantly different according to Fisher's protected least significant difference (LSD) test ($P < 0.05$)

this disease was higher for the Dynasty PD control than for the CruiserMaxx seed dressing and the two in-furrow insecticide treatments, all of which had similar TSWV indices. White mold incidence was lower for the CrusierMaxx than Dynasty PD seed dressings, while the ratings for the in-furrow insecticides were intermediate. Yield response for the CruiserMaxx and Dynasty PD seed dressing alone or in combination with Thimet 20G and Temik 15G was similar. Thrips damage ratings were higher for the Dynasty PD controls for all three

Table 18.2
Thrips Damage as Influenced by Peanut Variety and Insecticide Treatment

			Thrips damage[a]		
Treatment	**Rate**	**Placement**	**Florida-07**	**Georgia Green**	**Georgia-06G**
1. Dynasty PD	3 oz/100 lb seed	Seed	7.5 a	6.3 b	6.3 b
2. Dynasty PD +	3 oz/100 lb seed	Seed	2.8 fg	2.3 g	2.3 g
Temik 15G	+ 5 lb/ac	In-furrow			
3. Dynasty PD +	3 oz/100 lb seed	Seed	3.3 def	2.3 g	3.2 ef
Thimet 20G	+ 5 lb/ac IF	In-furrow			
4. CruiserMAXX	Seed dressing	Seed	4.3 c	3.7 cde	4.0 cd

a. Thrips damage 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.
Note: Means followed by the same letter are not significantly different according to Fisher's protected least significant difference (LSD) test ($P < 0.05$).

varieties as compared with both Temik 15G and Thimet 20G in-furrow, and the CruiserMAXX seed dressing treatments (Table 18.2). On all varieties, Thimet 20G and Temik 15G reduced the level of thrips-feeding damage than the CruiserMaxx seed dressing. On 'Georgia Green' but not the other two varieties, Temik 15G reduced the level of thrips-feed damage as compared with Thimet 20G.

Summary: Overall, the CruiserMAXX seed dressing proved as effective as the standard Thimet 20G in-furrow treatment in reducing the level of thips-feed damage in three peanut varieties. Despite differences in the level of thrips damage, yields for the two insecticide treatments and the nontreated control were similar due to the absence of TSWV. Yields of 'Florida 07,' 'Georgia Green' and 'Georgia-06G' were similar.

Comparison of Enclosure 4L and Temik 15G Programs for Peanut Root-Knot Control and Pod Yield Response, WREC

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

Objective: To compare the efficacy of Enclosure 4L and Temik 15G programs for the control of peanut root-knot nematode as well as on the yield response of a commercial peanut cultivar.

Methods: On May 30, the peanut cultivar 'Georgia-06G' was planted at the Wiregrass Research and Extension Center in Headland, Alabama, at a rate of 6 seed per foot of row using conventional tillage practices in a Dothan fine sandy loam (OM < 1 percent) soil. An incorporated preplant broadcast application of Sonalan at 1 quart per acre + Strongarm at 0.45 ounce per acre was made on April 30. Escaped weeds were plowed with flat sweeps or were pulled by hand. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. Plots were not irrigated. A randomized complete block design with four replications was used. Plots consisted of four 30-foot rows spaced 3 feet apart. To control leaf spot diseases, full canopy sprays of Bravo Weather Stik 6F at 1.5 pints per acre were made on July 9, July 23, August 13, August 27, September 10, September 20 and October 4 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 pounds per square inch. Temik 15G was banded at 6 pounds per acre over the open seed furrow at planting and again to one of two treatments at 10 pounds per acre over the row middle July 17, 45 days after planting. Initial Enclosure 4L applications at 48 fluid ounces per acre, which were made either at planting on May 30 over the open-furrow, at true ground cracking on June 8 or early post on July 19 with a single drop nozzle calibrated to deliver 10 gallons per acre spray volume at 31 pounds per square inch, were followed by 48 fluid ounces per acre of Enclosure 4L banded directly over the row center on July 17, 45 DAP, with a single drop nozzle calibrated to deliver 10 gallons per acre spray volume at 31 pounds per square inch. An IF application of Enclosure 4L at 32 fluid ounces per acre was followed with banded applications of 32 fluid ounces per acre of Enclosure on July 17 and August 4 (45 and 60 days after planting). Finally, an in-furrow application of Temik 15G at 6 pounds per acre was followed by a banded application of 48 fluid ounces per acre of Enclosure 4L on July 17 as previously described.

Early and late leaf spot were rated together on October 22 using the 1-to-10 Florida peanut leaf spot scoring system (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). Stem rot hit/Cylindrocladium black rot (CBR) counts (1 hit was defined as < 1 foot of consecutive stem rot–damaged plants per row) and root-knot damage ratings, where 1 = no visible damage; 2 = 1 percent-25 percent of roots and/or pods damaged; 3 = 26 percent-50 percent damaged; 4 = 51 percent-75 percent damage, and 5 = > 75 percent of pods/roots damaged were made immediately after plot inversion on October 23. Soil samples for a nematode soil assay, which were collected from the nontreated controls on June 6 and prior to inversion on October 3 from all plots, were processed using sugar flotation method. Means were separated using Fisher's protected least significant difference (LSD) test ($P < 0.05$).

Results: During the production season, the plots were not watered due to an irrigation system failure. The post-plant applications of Enclosure did not influence year-end leaf spot intensity ratings (Table 19). Among the Enclosure 4L treatments, stem rot/CBR incidence did not significantly differ. Plots receiving Enclosure 4L in furrow and 45 DAP suffered significantly less stem rot/CBR damage than Temik 15G + Enclosure 4L (45 days after planting). Root-knot pod and root damage ratings for the nontreated control and all nematicide treatments were similar. Final root-knot counts were higher for the 6 pounds per acre Temik 15G in-furrow as compared with the nontreated control, 6 pounds per acre Temik 15G IF fb 10 pounds per acre Temik 15G (45 days after planting), as well as 48 fluid ounces per acre Enclosure at GC fb 48 fluid ounces per acre Enclosure (45 days after planting), 48 fluid ounces per acre Enclosure at EP fb 48 fluid ounces per acre Enclosure (45 days after planting), and 32 fluid ounces per acre Enclosure IF fb 32 fluid ounces per acre Enclosure (45 days after planting) fb 32 fluid ounces per acre Enclosure 60 (days after planting). All the Enclosure 4L nematicide programs had similar final nematode counts. The nontreated control and 6 pounds Temik 15G fb 10 pounds Temik 15G had lower root-knot counts when compared with the 6 pounds per acre Temik 15G IF fb 48 fluid ounces per acre Enclosure 45 DAP and 48 fluid ounces per acre Enclosure IF fb 48 fluid ounces per acre Enclosure 45 DAP. No differences in yield were noted between the nontreated control and any of the nematicide treatments.

Table 19
Impact of Enclosure and Temik 15G Programs on Peanut Diseases, Root-Knot Damage and Final Counts, and on Pod Yield

Nematicide treatment, rate/ac, timing	Leaf spot[a]	Stem rot/ CBR[b]	Root-Knot Nematode		Yield (lbs/ac)
			Damage[c]	Final count[d]	
Nontreated control	3.3 a	3.8 ab	4.3 a	146 c	1,694 a
Temik 15G 6 lb IF	3.8 a	9.3 ab	4.0 a	349 a	1,295 a
Temik 15G 6 lb IF[e] fb Temik 15G 10 lb 45 DAP	3.5 a	4.3 ab	4.3 a	132 c	1,392 a
Temik 15G 6 lb IF fb Enclosure 4L 48 fl oz 45 DAP	3.5 a	10.3 ab	5.0 a	305 ab	1,367 a
Enclosure 4L 48 fl oz IF fb Enclosure 4L 48 fl oz 45 DAP	3.5 a	2.8 a	4.0 a	298 ab	1,633 a
Enclosure 4L 48 fl oz GC fb Enclosure 4L 48 fl oz 45 DAP	3.3 a	8.8 b	4.3 a	175 bc	1,137 a
Enclosure 4L 48 fl oz EP fb Enclosure 4L 48 fl oz 45 DAP	3.3 a	6.0 ab	4.5 a	176 bc	1,355 a
Enclosure 4L 32 fl oz IF fb Enclosure 4L 32 fl oz 45 DAP fb Enclosure 4L 32 fl oz 60 DAP	3.3 a	7.5 ab	4.5 a	179 bc	1,488 a

a. Leaf spot diseases were rated using the Florida 1-to-10 leaf spot rating scale
b. Stem rot/Cylindrocladium black rot (CBR) severity is expressed as the number of disease loci per 60 feet of row
c. Root-knot damage ratings where 1 = no visible damage; 2 = 1 percent-25 percent of roots and/or pods damaged; 3 = 26 percent-50 percent damaged; 4 = 51 percent-75 percent damage; and 5 = > 75 percent of pods/roots damaged were made immediately after plot inversion on October 23
d. Soil samples for the final nematode count were collected on October 3
e. Treatment placement and application timing: IF = in furrow over exposed seed; CG = ground cracking; EP = early post over at 100 percent seedling emergence; 45 days after planting July 24; and 60 days after planting August 4
Note: 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 ($P < 0.05$)

Summary: While differences in final root-knot counts were noted between nematicide treatments, yield for all these treatments and nontreated control were similar, as were the pod and root damage ratings. Yield was greatly suppressed by a severe early summer drought.

Comparison of Vydate CLV and Temik 15G for Peanut Root-Knot Control and Yield Response, WREC

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

Objective: To compare the efficacy of Vydate CLV applied in furrow, at ground cracking, 14 and 28 days after emergence for the control of peanut root-knot nematode and for pod yield.

Methods: On May 30, the peanut cultivar 'Georgia-06G' 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 at the Wiregrass Research and Extension Center in Headland, Alabama. A preplant, incorporated broadcast application of Sonalan at 1 quart per acre + Strongarm at 0.45 ounce per acre was made on April 30. Escaped weeds were plowed with flat sweeps or were pulled by hand. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. Plots were irrigated early but not later in the season due to a malfunction of the overhead irrigation system. A randomized complete block design with four replications was used. Plots consisted of four 30-foot rows spaced 3 feet apart. To control leaf spot diseases, full canopy sprays of Headline 2.09SC at 9.0 fluid ounces per acre were made on July 9 and July 23, Fontelis at 16.0 fluid ounces per acre on August 13, August 27 and September 10, and Bravo WS at 1.5 pints per acre on September 20 and October 4 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 pounds per square inch. Thimet 20G was banded at 6 pounds per acre over the open seed furrow at planting for thrips control. Vydate CLV application at 32 fluid ounces per acre was made at planting on May 30 over the open furrow, at true ground cracking on June 8, 14 days after emergence on June 27, and 28 days after emergence on July 9 with a single drop nozzle calibrated to deliver 20 gallons per acre spray volume at 33 pounds per square inch. Temik 15G was banded at 6-7 pounds per acre over the open seed furrow at planting for thrips and nematode control.

Early and late leaf spot were rated together on October 22 using the 1-to-10 Florida peanut leaf spot scoring system (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). Soil

disease [white mold/Cylindrocladium black rot (CBR)] hit counts (1 hit was defined as < 1 foot of consecutive symptomatic plants per row) and root-knot damage ratings where 1 = no visible damage; 2 = 1 percent-25 percent of roots and/or pods damaged; 3 = 26 percent-50 percent damaged; 4 = 51 percent-75 percent damage and 5 = > 75 percent of pods/roots damaged were made immediately after plot inversion on October 23). Soil samples for a nematode soil assay, which were collected from the nontreated controls on June 6 and prior to inversion on October 3 from all plots, were processed using sugar flotation method. Plots were harvested on October 29 and yields reported at 8.25 percent moisture. Means were separated using Fisher's protected least significant difference (LSD) test ($P < 0.05$).

Results: Vydate CLV applications had no influence on year-end leaf spot intensity ratings (Table 20). However, plots receiving Vydate CLV in-furrow, as well as 14 and 28 days after emergence, suffered significantly less soil disease damage than the peanuts treated with Thimet 20G alone. Root-knot pod and root

Table 20
Impact of Vydate CLV and Thimet 20G Programs on Peanut Diseases, Root-Knot Damage and Final Counts, and on Pod Yield

Nematicide treatment, rate/ac, timing	Leaf spot[a]	Soil Disease[b]	Root-Knot Nematode		Yield (lbs/ac)
			Damage[c]	Final count[d]	
Nontreated control	3.0 a[e]	4.0 ab	4.2 a	178 a	2,553 a
Thimet 20G 6 lb IF6	3.0 a	6.5 a	3.8 a	205 a	2,263 a
Thimet 20G 6 lb IF fb Vydate CLV 16 fl oz 14 DAE fb Vydate CLV 16.0 fl oz 28 DAE	3.0 a	6.2 ab	4.0 a	271 a	2,142 a
Thimet 20G 6 lb IF fb Vydate CLV 32.0 fl oz GC Vydate CLV 16 fl oz 14 DAE fb Vydate CLV 16.0 fl oz 28 DAE	3.0 a	5.2 ab	3.2 a	185 a	2,674 a
Thimet 20G 6 lb IF fb Vydate CLV 32.0 fl oz GC	3.0 a	4.8 ab	3.8 a	196 a	2,045 a
Thimet 20G 6 lb IF Vydate CLV 32.0 fl oz IF fb Vydate CLV 16 fl oz 14 DAE fb Vydate CLV 16.0 fl oz 28 DAE	3.0 a	1.2 b	3.5 a	255 a	2,468 a
Temik 15G 6 lb IF	3.0 a	4.8 ab	4.2 a	316 a	2,323 a

a. Leaf spot diseases were rated using the Florida 1-to-10 leaf spot rating scale
b. Stem rot/Cylindrocladium black rot (CBR) severity is expressed as the number of disease loci per 60 feet of row
c. Root-knot damage ratings where 1 = no visible damage; 2 = 1 percent-25 percent of roots and/or pods damaged; 3 = 26 percent-50 percent damaged; 4 = 51 percent-75 percent damage; and 5 = > 75 percent of pods/roots damaged were made immediately after plot inversion on October 23
d. Soil samples for the final nematode count were collected on October 3
e. 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 ($P < 0.05$)
f. Treatment placement and application timing: IF = in furrow over exposed seed; CG = ground cracking; EP = early post over at 100 percent seedling emergence; 45 days after planting July 24; and 60 days after planting August 4

damage ratings for the nontreated control and all nematicide treatments were similar. Final root-knot counts were similar among all the Vydate, Temik 15G and Thimet 20G treated plots as well as the nontreated control. No differences in yield were noted between the nontreated control and any of the nematicide treatments.

Summary: Yield response and nematode damage were severely restricted by the breakdown of the irrigation system. None of the Vydate CLV or Temik 15G nematicide treatments reduced nematode damage or increased yield when compared with the Thimet 20G thrips control treatment or the nontreated control.

Comparison of BioAct DC Liquid, Temik 15G and Actinogrow AG for Peanut Root-Knot Control and Yield Response in Peanut, WREC

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

Objective: To compare the efficacy of BioAct DC applied in furrow and at prepegging for the control of peanut root-knot nematode and on the yield response of a commercial peanut cultivar.

Methods: On May 30, the peanut cultivar 'Georgia-06G' 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 at the Wiregrass Research and Extension Center in Headland, Alabama. An incorporated preplant broadcast application of Sonalan at 1 quart per acre + Strongarm at 0.45 ounce per acre was made on April 30. Escaped weeds were plowed with flat sweeps or were pulled by hand. Soil fertility recommendations of the Alabama Cooperative Extension System were followed. Plots were irrigated early in the season but an engine malfunction on the overhead irrigation system resulted in the system being down for most of the season. A randomized complete block design with four replications was used. Plots consisted of four 30-foot rows spaced 3 feet apart. To control leaf spot diseases, full canopy sprays of Echo 720 at 1.5 pints per acre were made on July 9, July 23 and October 4, and Muscle at 7.2 fluid ounces per acre on August 13, August 27, September 10 and September 20 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. BioAct DC liquid was applied over the open seed furrow at 10 fluid ounces per acre in furrow at planting on May 30 and prior to pegging on July 17, using a single drop nozzle calibrated to deliver 20 gallons per acre spray volume at 33 pounds per square inch. An in-furrow application of Temik 15G banded at 6 pounds per acre over the open seed furrow at planting was followed with 10 pounds per acre banded postemergence.

Early and late leaf spot were rated together on October 22 using the 1-to-10 Florida peanut leaf spot scoring system (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). Soil disease white mold/Cylindrocladium black rot (CBR) hit counts (one hit was

defined as < 1 foot of consecutive diseased plants per row) and root-knot damage ratings (1 = no visible damage; 2 = 1 percent-25 percent of roots and/or pods damaged; 3 = 26 percent-50 percent damaged; 4 = 51 percent-75 percent damage and 5 = >75 percent of pods/roots damaged) were made immediately after plot inversion on October 23. Soil samples for a nematode soil assay, which were collected from the nontreated controls on June 6 and prior to inversion on October 3 from all plots, were processed using sugar flotation method. Plots were harvested on October 29 and yields were reported at 8.76 percent moisture. Means were separated using Fisher's protected least significant difference (LSD) test $P < 0.05$.

Table 21
Impact of BioAct DC and Temik 15G Programs on Peanut Diseases, Root-Knot Damage and Final Counts, and on Pod Yield

Nematicide treatment, rate/ac, timing	Leaf spot[a]	Soil Disease[b]	Root-Knot Nematode		Yield (lbs/ac)
			Damage[c]	Final juvenile count[d]	
Nontreated control	3.0 a[e]	3.0 a	4.2 a	115 a	1,609 a
BioAct DC Liquid 10 fl oz IF fb BioAct DC Liquid 10 fl oz pre-peg	3.0 a	5.2 a	4.2 a	226 a	1,404 a
BioAct DC Liquid 10 fl oz IF + Temik 15G 6 lb IF BioAct DC Liquid 10 fl oz pre-peg	3.0 a	2.2 a	4.0 a	146 a	1,827 a
Temik 15G 6 lb IF Temik 15G 10 lb post-plant	3.0 a	1.8 a	4.5 a	211 a	1,718 a
ActinoGrow AG 3.0 oz IF	3.0 a	2.2 a	4.8 a	196 a	1,525 a

a. Leaf spot diseases were rated using the Florida 1-to-10 leaf spot rating scale
b. Stem rot/Cylindrocladium black rot (CBR) severity is expressed as the number of disease loci per 60 feet of row
c. Root-knot damage ratings where 1 = no visible damage; 2 = 1 percent-25 percent of roots and/or pods damaged; 3 = 26 percent-50 percent damaged; 4 = 51 percent-75 percent damage; and 5 = > 75 percent of pods/roots damaged were made immediately after plot inversion on October 23
d. Soil samples for the final nematode count were collected on October 3
e. 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 ($P < 0.05$)
f. Treatment placement and application timing: IF = in furrow over exposed seed; CG = ground cracking; EP = early post over at 100 percent seedling emergence; 45 days after planting July 24; and 60 days after planting August 4

Results: Neither BioAct DC nor ActinoGrow AG applications had any influence on year-end leaf spot intensity or white mold incidence (Table 21). Root-knot pod and root damage ratings, as well as final root-knot juvenile counts, and yield for the nontreated control and all nematicide treatments also were similar.

Summary: The nematicide treatments, including the recommended rate of Temik 15G, had no impact on the level of damage to the pegs and pods or on final root-knot juvenile counts and pod yield. Root-knot activity was high as indicated by the relatively high pod damage ratings as well as juvenile nematode counts.

Evaluation of Koverall, Topguard and Headline 2.09SC 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 Koverall, Topguard, and Headline 2.09SC and compare them with currently registered fungicides for control of early and late leaf spot, rust, and yield response in a dryland peanut production system in southwest Alabama.

Methods: Peanut cultivar 'Georgia-09B' was planted on May 16 at the Gulf Coast Research and Extension Center near Fairhope, Alabama, at a rate of five to six seed per foot of row in a field that had previously cropped to peanut production. The soil type was a Malbis fine sandy loam (OM < 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, and 6-7 pounds per acre of Rhizobium innoculant was also applied at planting. On June 1, after planting, 1 quart per acre of Prowl + 22 ounces per acre of Roundup were applied to the test area for weed control. On June 4, 8 fluid ounces per acre Gramoxone + 1.5 pints per acre of Storm + 1 pint per 25 gallons H2O of Induce were applied for postemergent weed control. On June 18, 2 ounces per acre of Cadre + 0.225 ounce per acre of Strongarm + 1 pint per 25 gallons H2O of Induce were applied for weed control. On July 9, 1.5 pints per acre of Poast + 1 quart per acre of crop oil 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 21, June 28, July 2, July 17, 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 inches apart calibrated to deliver 15 gallons per acre at 30 pounds per square inch.

Leaf spot diseases as well as rust 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 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 percent-100 percent leaves withering. Counts of stem rot 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 12 and yields were reported at 8.65 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: In 2012, temperatures were at or above normal, and monthly rainfall totals were near normal throughout the growing season. Late leaf spot was the primary foliar disease noted. Leaf spot severity increased throughout the season and at the time of harvest untreated control plots were > 50 percent defoliated (data not shown). Echo/Muscle and Echo/Echo + Convoy gave poorer leaf spot control than did Echo alone. Only the Headline/Muscle/Headline/Echo and Echo/Provost programs gave significantly better control than did the season-long Echo standard, while all remaining programs gave similar disease control. Rust appeared in September but did not intensify as in previous years. Stem rot incidence was higher than in previous years due to higher temperatures and rainfall. With the exception of the Koverall + Echo/Koverall + Topguard, Headline/Muscle + Echo/Tilt-Bravo and Headline/Muscle + Echo/Muscle + Headline/Tilt-Bravo treatments, all others gave significantly better control of stem rot than did the season-long Echo standard. When compared with the season-long Echo standard, Echo/Provost had significantly higher yield, while the remaining fungicide programs had similar yields.

Table 22
Evaluation of Koverall, Topguard and Headline 2.09SC for Peanut Disease Control in Southwest Alabama, GCREC

Treatment and rate/ac	Application Timing	Disease ratings		Yield (lbs/ac)
		Leaf spot[a]	Stem rot[b]	
Koverall 2.0 lb + Echo 720 24.0 fl oz	1,2,7			
Koverall 2.0 lb + Topguard 14.0 fl oz	3,4,5,6	3.3	2.5	4,511
Echo 720 24.0 fl oz	1,2,7			
Echo 720 16.0 fl oz + Muscle 3.6F 7.2 fl oz	3,4,5,6	3.1	2.3	4,473
Echo 720 24.0 fl oz	1,2,7			
Muscle 3.6F 7.2 fl oz	3,4,5,6	4.2	2.1	4,175
Echo 720 24.0 fl oz	1,2,4,6,7			
Abound 2.08SC 18.5 fl oz	3,5	3.1	2.1	5,001
Echo 720 24.0 fl oz	1,2,7			
Echo 720 16.0 fl oz + Convoy 16.0 fl oz	3,4,5,6	3.9	1.7	4,305
Echo 720 24.0 fl oz	1,2,7			
Artisan 36.0 fl oz	3,4,5,6	3.5	1.2	4,779
Headline 2.09EC 9.0 fl oz	1.5			
Muscle 3.6F 7.2 fl oz	3,5			
Headline 2.09EC 12.0 fl oz	4			
Echo 720 24.0 fl oz	6,7	2.9	1.5	4,993
Echo 720 24.0 fl oz	1,2,7			
Provost 433SC 8.0 fl oz	3,4,5,6	2.8	1.8	5,215
Headline 2.09EC 9.0 fl oz	1.5			
Muscle 3.6F 7.2 fl oz + Echo 720 16.0 fl oz	3,4,5,6			
Tilt-Bravo 24.0 fl oz	7	2.7	2.5	4,481
Headline 2.09EC 9.0 fl oz	1.5			
Muscle 3.6F 7.2 fl oz + Echo 720 16.0 fl oz	3,5,6			
Muscle 3.6F 7.2 fl oz + Headline 2.09EC 6.0 fl oz	4			
Tilt-Bravo 24.0 fl oz	7	2.7	2.7	5,001
Tilt-Bravo 24.0 fl oz	1,2,7			
Muscle 3.6F 7.2 fl oz + Echo 16.0 fl oz	3,4,5,6	3.1	2.3	4,473
Echo 720 24.0 fl oz	1-7	3.3	4.1	4,412
LSD (P = 0.05)		*0.5*	*1.7*	*633*

a. Early and late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease;…10 =completely dead plants)
b. White mold hits assessed at inversion as the number of disease loci per total row foot
Note: Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05)

Evaluation of Fontelis and YT 669 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 YT 669 and compare them with currently registered fungicides for control of early and late leaf spot, rust and yield response in a dryland peanut production system in southwest Alabama.

Methods: Peanut cultivar 'Georgia-09B' was planted on May 17 at the Gulf Coast Research and Extension Center near Fairhope, Alabama, at a rate of five to 6 seed per foot of row in a field that had previously cropped to peanut production. The soil type was a Malbis fine sandy loam (OM < 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, and 6-7 pounds per acre of Rhizobium innoculant was also applied at planting. On June 1, after planting, 1 quart per acre Prowl + 22 ounces per acre of Roundup was applied to the test area for weed control. On June 4, 8 ounces per acre Gramoxone + 1.5 pint per acre of Storm + 1 pint per 25 gallons H2O of Induce was applied for postemergent weed control. On June 18, 2 ounces per acre of Cadre + 0.225 ounce per acre of Strongarm + 1 pint per 25 gallons H2O of Induce was applied for weed control. On July 9, 1.5 pints per acre Poast + 1 quart per acre of crop oil 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 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 inches apart calibrated to deliver 15 gallons per acre at 30 lb pounds per square inch.

Leaf spot diseases as well as rust 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 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 percent-100 percent leaves withering. Counts of stem rot loci were made on October 8 immediately after plot inversion (1 locus is defined as < 1 foot of consecutive stem rot–damaged plants per row). Plots were harvested on October 12 and yields were reported at 8.65 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: In 2012, temperatures were at or above normal, and monthly rainfall totals were near normal throughout the growing season. Late leaf spot was the primary foliar disease noted. Leaf spot severity increased throughout the season, and at the time of harvest, untreated control plots were > 50 percent defoliated (data not shown). Compared with the season-long Echo standard, Headline/Fontelis (48 fluid ounces)/Echo gave significantly better late leaf spot control. All other programs, with the exception of Echo/Provost, gave similar leaf spot control as the season-long Echo standard. Rust appeared in September but did not intensify as in previous years. Stem rot incidence was higher than in previous years due to higher temperatures and rainfall. Of the treatment programs tested, only Headline/Fontelis (48 fluid ounces)/Echo, Echo/Abound, Echo/Echo + Convoy had significantly lower stem rot incidence than did the Echo-only treatment. When compared with the season-long Echo standard, Headline/Fontelis (48 fluid ounces)/Echo and Echo/Abound had significantly higher yield.

Table 23
Evaluation of Fontelis and YT 669 for Peanut Disease Control in Southwest Alabama, GCREC

Treatment and rate/ac	Application Timing	Disease ratings		Yield (lbs/ac)
		Leaf spot[a]	Stem rot[b]	
Headline 2.09Ec 9.0 fl oz	1.5			
Fontelis 16.0 fl oz	3,4,5			
Echo 720 24.0 fl oz	6,7	3.2	2.7	5,544
Headline 2.09Ec 9.0 fl oz	1.5			
Fontelis 48.0 fl oz	3,4,5			
Echo 720 24.0 fl oz	6,7	2.5	0.8	5,995
YT 669 16.0 fl oz	1,2,3			
Echo 720 24.0 fl oz	4,5,6,7	2.7	3.5	5,398
YT 669 48.0 fl oz	1,2,3			
Echo 720 24.0 fl oz	4,5,6,7	2.8	3.0	5,514
Headline 2.09Ec 9.0 fl oz	1.5			
Provost 433SC 7.0 fl oz	3,4,5			
Echo 720 24.0 fl oz	6,7	2.8	2.0	5,597
Headline 2.09Ec 9.0 fl oz	1.5			
Convoy 16.0 fl oz + Echo 720 16.0 fl oz	3,4,5			
Echo 720 24.0 fl oz	6,7	2.8	2.1	5,314
Headline 2.09Ec 9.0 fl oz	1.5			
Muscle 3.6F 7.2 fl oz	3,4,5			
Echo 720 24.0 fl oz	6,7	3.0	3.3	5,039
Echo 720 24.0 fl oz	1,2,4,6,7			
Abound 2.08SC 18.5 fl oz	3,5	2.9	1.7	5,696
Echo 720 24.0 fl oz	1,2,7			
Muscle 3.6F 7.2 fl oz	3,4,5,6	3.1	3.1	4,963
Echo 720 24.0 fl oz	1,2,7			
Provost 433SC 8.0 fl oz	3,4,5,6	3.1	3.1	5,413
Echo 720 24.0 fl oz	1,2,7			
Echo 720 24.0 fl oz + Convoy 13.0 fl oz	3,4,5,6	2.7	1.1	5,329
Headline 2.09EC 9.0 fl oz	1.5			
Muscle 3.6F 7.2 fl oz	3,5			
Headline 2.09EC 12.0 fl oz	4			
Echo 720 24.0 fl oz	6,7	2.7	2.7	5,238
Echo 720 24.0 fl oz	1-7	2.8	4.1	5,024
LSD (P = 0.05)		*0.3*	*2.3*	*591*

a. Early and late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease;…10 =completely dead plants)
b. White mold hits assessed at inversion as the number of disease loci per total row foot
Note: Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05)

Evaluation of Proline 480SC and Provost 433SC 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 Proline 480SC applied in furrow and at early emergence and Provost 433SC and compare them with other currently registered fungicides for control of early and late leaf spot, stem rot, and yield response in a dryland peanut production system in southwest Alabama.

Methods: Peanut cultivar 'Georgia-09B' was planted on May 17 at the Gulf Coast Research and Extension Center near Fairhope, Alabama, at a rate of 5 to 6 seed per foot of row in a field that had previously cropped to peanut production. The soil type was a Malbis fine sandy loam (OM < 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, and 6-7 pounds per acre of Rhizobium innoculant was also applied at planting. On June 1, after planting, 1 quart per acre Prowl + 22 ounces per acre of Roundup was applied to the test area for weed control. On June 4, 8 ounces per acre Gramoxone + 1.5 pints per acre of Storm + 1 pint per 25 gallons H2O of Induce was applied for postemergent weed control. On June 18, 2 ounces per acre of Cadre + 0.225 ounce per acre of Strongarm + 1 pint per 25 gallons H2O of Induce was applied for weed control. On July 9, 1.5 pints per acre Poast + 1 quart per acre of crop oil was applied for weed control.

Plots, which consisted of four 30-ft rows on 38-inch centers, were arranged in a randomized complete block with six replications. Plots were not irrigated. In-furrow fungicides were applied using a drop nozzle directly over rows and calibrated to deliver 5 gallons per acre. Fungicides were applied directly over row at 21 and 28 days after planting (DAPs), on June 7 and June 13. 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 inches apart calibrated to deliver 15 gallons per acre at 30 pounds per square inch.

Leaf spot diseases as well as rust 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 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 percent-100 percent leaves withering. Due to low severity of rust, this data is not shown in the table. Counts of stem rot loci were visually made on October 8 immediately after plot inversion (one locus is defined as < 1 foot of consecutive stem rot–damaged plants per row). Plots were harvested on October 12 and yields were reported at 9.65 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: In 2012, temperatures were at or above normal, and monthly rainfall totals were near normal throughout the growing season. Late leaf spot was the primary foliar disease noted. Leaf spot severity increased throughout the season, and at the time of harvest, untreated control plots were > 50 percent defoliated. All of the treatment programs significantly controlled leaf spot when compared with the untreated control. Of the programs tested, all had similar control to that observed with Echo 720-only season-long treatment with the exception of the Echo/Muscle and Echo/Echo + Convoy treatments. Rust appeared in September, but severity was much lower than had been seen in previous years. Only the untreated control had significant damage from rust. All of the treatment programs had similar levels of rust control. Stem rot incidence was higher than in previous years due to higher temperatures and rainfall. At inversion, all of the treatment programs had lower incidence of stem rot than did the untreated control. All of the treatment programs gave similar levels of stem rot control, as did the Echo-only treatment. Yields were lowest in the untreated control plots. Among the treatment programs, all yielded significantly higher than did the untreated control, and all yielded similar to that obtained with the Echo-only treatment.

Table 24
Evaluation of Proline 480SC and Provost 433SCfor Peanut Disease Control in Southwest Alabama, GCREC

Treatment and rate/ac	Application Timing	Disease ratings			Yield (lbs/ac)
		Leaf spot[a]	Rust[b]	Stem Rot[c]	
Untreated Control		6.4	4.8	6.5	3,885
Echo 720 24.0 fl oz	1,2,7				
Provost 433SC 10.7 fl oz	3,4,6				
Convoy 13.0 fl oz + Echo 720 24.0 fl oz	5	3.1	2.7	1.3	5,353
Proline 480SC 5.7 fl oz	IF				
Echo 720 24.0 fl oz	1,2,7				
Provost 433SC 10.7 fl oz	3,4,6				
Convoy 13.0 fl oz + Echo 720 24.0 fl oz	5	3.1	2.5	1.5	5,414
Proline 480SC 5.7 fl oz	21 DAP				
Provost 433SC 10.7 fl oz	3,4,6				
Convoy 13.0 fl oz + Echo 720 24.0 fl oz	5				
Echo 720 24.0 fl oz	7	3.2	3.0	2.0	5,238
Proline 480SC 5.7 fl oz	21 DAP				
Provost 433SC 10.7 fl oz	3,4,6				
Convoy 13.0 fl oz + Echo 720 24.0 fl oz	5				
Echo 720 24.0 fl oz	7	3.2	2.8	1.3	5,009
Proline 480SC 5.7 fl oz	1				
Provost 433SC 10.7 fl oz	3,4,6				
Convoy 13.0 fl oz + Echo 720 24.0 fl oz	5				
Echo 720 24.0 fl oz	7	3.0	2.5	1.2	5,307
Proline 480SC 5.7 fl oz	1.5				
Provost 433SC 10.7 fl oz	3,4,6				
Convoy 13.0 fl oz + Echo 720 24.0 fl oz	5				
Echo 720 24.0 fl oz	7	3.3	2.7	1.3	5,307
Echo 720 24.0 fl oz	1,2,4,6,7				
Abound 2.08SC 18.2 fl oz	3,5	3.0	2.7	1.3	5,620
Echo 720 24.0 fl oz	1,2,7				
Muscle 3.6F 7.2 fl oz	3,4,5,6	4.2	3.3	1.7	4,848
Echo 720 24.0 fl oz	1,2,4,6,7				
Echo 720 24.0 fl oz + Convoy 21.0 fl oz	3,5	4.0	3.3	1.5	5,360

Headline 2.09SC 9.0 fl oz	1.5				
Provost 433SC 8.0 fl oz	3,5				
Headline 2.09SC 12.0 fl oz	4				
Echo 720 24.0 fl oz	6,7	2.9	2.0	2.7	5,138
Echo 720 24.0 fl oz	1,2,7				
Provost 433SC 10.7 fl oz	3,4,5,6	3.0	2.0	1.0	5,246
Echo 720 24.0 fl oz	1,2,7				
Absolute 3.5 fl oz + Muscle 3.6F 5.2 fl oz	3,4,5,6	3.0	2.5	0.7	5,597
Echo 720 24.0 fl oz	1-7	3.3	2.8	2.0	5,207
LSD (P = 0.05)		*0.8*	*0.8*	*1.9*	*617*

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

Evaluation of Fungicide R_X 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 the fungicide Rx programs and compare them for control of leaf spot and stem rot and for yield response in an irrigated peanut production system in southwest Alabama.

Methods: Peanut cultivar 'Georgia-09B' was planted on May 17 at the Gulf Coast Research and Extension Center near Fairhope, Alabama, at a rate of 5 to 6 seed per foot of row in a field that had previously cropped to peanut production. The soil type was a Malbis fine sandy loam (OM < 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, and 6-7 pounds per acre of Rhizobium inoculant was also applied at planting. On June 1, after planting, 1 quart per acre of Prowl + 22 ounces per acre of Roundup was applied to the test area for weed control. On June 4, 8 ounces per acre Gramoxone + 1.5 pints per acre of Storm + 1 pint per 25 gallons H2O of Induce was applied for postemergent weed control. On June 18, 2 ounces per acre of Cadre + 0.225 ounce per acre of Strongarm + 1 pint per 25 gallons H2O of Induce was applied for weed control. On July 9, 1.5 pints per acre of Poast + 1 quart per acre of crop oil 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 7-14 day intervals on June 21, June 28, July 2, July 9, July 19, July 23, July 30, August 7, August 13, August 20, August 27, September 3 and September 10 using a four-row ATV-mounted CO2 sprayer with three TX8 nozzles per row spaced 19 inches apart and calibrated to deliver 15 gallons per acre at 30 pounds per square inch.

Leaf spot diseases as well as rust were visually rated beginning on August 14, and ratings were made at 14-21 day intervals until 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 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 defoli-

ation (< 90 percent); 9 = very few remaining leaves covered with lesions (< 95 percent); and 10 = plants completely defoliated or dead. Area under the disease progress curve (AUDPC) was calculated from leaf spot ratings made during this time. Rust was rated using the ICRISAT rust rating scale, where 1 = no disease, ...9 = plants severely affected, 80-100 percent leaves withering. Counts of stem rot loci were visually 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 13 and yields were reported at 9.15 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: In 2012, temperatures were at or above normal, and monthly rainfall totals were near normal throughout the growing season. Late leaf spot was the primary foliar diseases noted. Leaf spot severity increased throughout the season and at the time of harvest untreated control plots were > 50 percent defoliated. All of the fungicide Rx programs tested decreased leaf spot severity when compared with the untreated control. When compared with each other, all the fungicide Rx programs had leaf spot results that were similar to that observed with all three Bravo-only Rx programs. Similar results were seen with the AUDPC, and they followed the results seen with the treatment programs. Rust appeared only in the untreated control plots and was scattered throughout the treated plots. There were no differences among any of the treatment programs.

Stem rot was higher than had previously been observed, and all treatment programs reduced the number of stem rot hits in comparison with the untreated control. When comparing the number of stem rot hits among the different treatment regimes, the highest number of hits was observed with all three Bravo-only risk index programs. All others had similar numbers of stem rot hits.

All treatment programs, with the exception of the Bravo medium-risk program, increased yield over the untreated control plots. The highest yield was with Headline/Convoy + Bravo + Topsin/Convoy + Headline/Topsin + Bravo program. All other programs had similar yields, but the only other programs that significantly increased yield compared with the untreated control were Proline/Provost/Bravo (low), Proline/Provost/Bravo (medium), and Headline/Convoy + Bravo + Topsin/Convoy + Headline/Topsin + Bravo (low) programs.

Table 25
Evaluation of Fungicide R_x Programs for Peanut Disease Control in Southwest Alabama, GCREC

Treatment and rate/ac	Application timing	Risk Index	Disease ratings				Yield (lbs/ac)
			Leaf spot[a]	AUDPC	Rust[b]	Stem rot[c]	
Untreated Control			5.6	140.1	5.0	4.7	4,412
Proline 480 SC 5.7 fl oz	1.5	Low					
Provost 433SC 10.7 fl oz	3,5						
Bravo WS 24.0 fl oz	7		3.0	87.3	2.2	1.5	5,215
Proline 480 SC 5.7 fl oz	1.5	Medium					
Provost 433SC 10.7 fl oz	3,5,6						
Bravo WS 24.0 fl oz	7		2.8	87.0	2.5	1.2	5,032
Proline 480 SC 5.7 fl oz	1.5	High					
Provost 433SC 10.7 fl oz	3,4,5						
Convoy 13.0 fl oz	6						
+ Bravo 24.0 fl oz							
Bravo WS 24.0 fl oz	7		2.7	86.7	2.3	0.7	4,710
Headline 2.09SC	1.5	Low					
Convoy 21.0 fl oz	3						
+ Bravo WS 16.0 fl oz							
+Topsin 5.0 fl oz							
Convoy 21.0 fl oz	4.5						
+ Headline 9.0 fl oz							
Topsin 5.0 fl oz	6		2.7	84.8	2.8	0.5	5,238
+ Bravo WS 16.0 fl oz							
Headline 2.09SC	1	Medium					
Convoy 21.0 fl oz	2.5						
+ Bravo WS 16.0 fl oz							
+ Topsin 5.0 fl oz							
Convoy 21.0 fl oz	4						
+ Headline 9.0 fl oz							
Convoy 16.0 fl oz	5.5						
+ Bravo 24.0 fl oz							
Topsin 5.0 fl oz	7		2.8	90.3	2.2	1.7	4,741
+ Bravo WS 16.0 fl oz							
Headline 2.09SC	1.5	High					
Convoy 21.0 fl oz	3,6						
+ Bravo WS 16.0 fl oz							

+ Topsin 5.0 fl oz							
Convoy 13.0 fl oz	4						
+ Bravo WS 24.0 fl oz							
Convoy 21.0 fl oz	5						
+ Headline 9.0 fl oz							
Topsin 5.0 fl oz	7		2.7	85.7	2.2	2.2	4,939
+ Bravo WS 16.0 fl oz							
Tilt-Bravo 36.0 fl oz	2	Low					
Abound 2.08SC 18.2 fl oz	3.5,5						
Bravo WS 24.0 fl oz	6.5		2.8	84.5	2.2	2.3	4,809
Tilt-Bravo 36.0 fl oz	1.5	Medium					
Abound 2.08SC 18.2 fl oz	3.5,5						
Bravo WS 24.0 fl oz	4,7		2.9	94.5	2.3	1.0	5,031
Tilt-Bravo 36.0 fl oz	1,2,4	High					
Abound 2.08SC 18.2 fl oz	3,5						
Bravo WS 24.0 fl oz	6,7		2.8	88.7	2.3	1.7	4,986
Headline 2.09SC 9.0 fl oz	2	Low					
Headline 12.0 fl oz	3.5						
+ Bravo 24.0 fl oz							
Muscle 3.6F 7.2 fl oz	5,6.5		2.8	87.6	2.3	2.7	4,809
+ Bravo 16.0 fl oz							
Headline 2.09SC 9.0 fl oz	1.5	Medium					
Muscle 3.6F 7.2 fl oz	3,5.5						
+ Bravo 24.0 fl oz							
Headline 2.09SC 12.0 fl oz	4						
Bravo WS 24.0 fl oz	7		2.7	89.7	2.2	2.7	4,519
Headline 2.09SC 9.0 fl oz	1.5	High					
Muscle 3.6F 7.2 fl oz	3,5						
+ Bravo 24.0 fl oz							
Headline 2.09SC 12.0 fl oz	5						
Bravo WS 24.0 fl oz	6,7						
Bravo WS 24.0 fl oz		Low	2.9	92.5	2.7	3.3	4,657
Bravo WS 24.0 fl oz		Medium	3.2	95.8	2.5	3.8	4,404
Bravo WS 24.0 fl oz		High	3.1	90.4	2.3	3.8	4,626
LSD (P = 0.05)			*0.4*	*8.7*	*0.6*	*1.8*	*602*

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

Evaluation of Tilt-Bravo 4.3SE, Abound 2.08SC and Alto 0.83SL 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 Tilt-Bravo 4.3SE, Abound 2.08SC and Alto 0.83SL and compare them with currently registered fungicides for control of early and late leaf spot, rust and yield response in a dryland peanut production system in southwest Alabama.

Methods: Peanut cultivar 'Georgia-09B' was planted on May 17 at the Gulf Coast Research and Extension Center near Fairhope, Alabama, at a rate of 5 to 6 seed per foot of row in a field that had previously cropped to peanut production. The soil type was a Malbis fine sandy loam (OM < 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, and 6-7 pounds per acre of Rhizobium innoculant was also applied at planting. On June 1, after planting, 1 quart per acre Prowl + 22 ounces per acre Roundup were applied to the test area for weed control. On June 4, 8 ounces per acre Gramoxone + 1.5 pints per acre of Storm + 1 pint per 25 gallons H2O of Induce were applied for postemergent weed control. On June 18, 2 ounces per acre of Cadre + 0.225 ounce per acre of Strongarm + 1 pint per 25 gallons H2O of Induce were applied for weed control. On July 9, 1.5 pints per acre Poast + 1 quart per acre of crop oil were applied for weed control.

Plots, which consisted of four 30-ft 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 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 inches apart and calibrated to deliver 15 gallons per acre at 30 pounds per square inch.

Leaf spot diseases as well as rust 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 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 loci were made on October 8 immediately after plot inversion (1 locus is defined as < 1 foot of consecutive stem rot damaged plants per row). Plots were harvested on October 12 and yields were reported at 8.65 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: In 2012, temperatures were at or above normal, and monthly rainfall totals were near normal throughout the growing season. Late leaf spot was the primary foliar diseases noted. Leaf spot severity increased throughout the season, and at the time of harvest, untreated control plots were > 50 percent defoliated. All treatment programs had significantly better leaf spot control than did the untreated control. When compared with the Bravo-only season-long treatment, all of the treatments had similar leaf spot control. Even though stem rot incidence was higher than in previous years, numbers were still low. However, all treatment programs had significantly lower stem rot incidence than did the untreated control. All the treatment programs were significantly similar. Among the treatment programs, with the exception of Tilt-Bravo/Abound (18 fluid ounces)/Bravo, all treatment programs yielded significantly higher than did the untreated control. All other treatment programs were statistically similar.

Table 26
Evaluation of Tilt-Bravo 4.3SE, Abound 2.08SC and Alto 0.83SL for Peanut Disease Control in Southwest Alabama, GCREC

Treatment and rate/ac	Application Timing	Disease ratings		Yield (lbs/ac)
		Leaf spot[a]	Stem rot[b]	
Untreated Control		5.3	4.3	4,735
Tilt-Bravo 4.3SE 24.0 fl oz	1,2			
Abound 2.08SC 15.0 fl oz	3,5			
Bravo WS 24.0 fl oz	4,6,7	2.7	1.5	6,263
Tilt-Bravo 4.3SE 24.0 fl oz	1,2			
Abound 2.08SC 18.0 fl oz	3,5			
Bravo WS 24.0 fl oz	4,6,7	2.9	1.2	5,521
Tilt-Bravo 4.3SE 24.0 fl oz	1,2			
Abound 2.08SC 15.0 fl oz + Alto 5.5 fl oz	3,5			
Bravo WS 24.0 fl oz	4,6,7	2.7	1.3	6,094
Tilt-Bravo 4.3SE 24.0 fl oz	1,2			
Abound 2.08SC 18.0 fl oz + Alto 5.5 fl oz	3,4,5			
Bravo WS 24.0 fl oz	4,6,7	2.8	1.0	6,209
Tilt-Bravo 4.3SE 24.0 fl oz	1,2			
Abound 2.08SC 15.0 fl oz + Alto 3.66 fl oz	3,4,5			
Bravo WS 24.0 fl oz	6,7	2.7	0.2	6,316
Tilt-Bravo 4.3SE 24.0 fl oz	1,2			
Provost 433SC 8.0 fl oz	3,4,5,6			
Bravo WS 24.0 fl oz	7	2.8	1.3	6,041
Bravo WS 24.0 fl oz	1,2,4,6,7			
Fontelis 16.0 fl oz	3,5	2.9	1.5	6,186
Bravo WS 24.0 fl oz	1,2,4,6,7			
Abound 2.08SC 18.2 fl oz	3,5	2.7	1.5	6,010
Bravo WS 24.0 fl oz	1,2,7			
Provost 433SC 8.0 fl oz	3,4,5,6	2.7	1.5	6,087
Bravo WS 24.0 fl oz	1,2,7			
Muscle 3.6F 7.2 fl oz	3,4,5,6	3.1	1.7	5,865
Bravo WS 24.0 fl oz	1,2,4,6,7			
Bravo WS 24.0 fl oz + Convoy 13.0 fl oz	3,5	2.6	1.0	6,239
Headline 2.09SC 6.0 fl oz	1,2			
Muscle 3.6F 7.2 fl oz	3,5			
Headline 2.09SC 12.0 fl oz	4			

Bravo WS 24.0 fl oz	6,7	2.7	1.7	5,827
Bravo WS 24.0 fl oz	1-7	2.9	1.8	5,836
LSD (P = 0.05)		*0.4*	*1.2*	*877*

a. Early and late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease;…10 =completely dead plants)
b. White mold hits assessed at inversion as the number of disease loci per total row foot
Note: Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05)

Evaluation of Echo 720, Eminent 125SL and Muscle ADV 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 Echo 720, Eminent 125SL and Muscle ADV and compare them with currently registered fungicides for control of early and late leaf spot, rust and yield response in a dryland peanut production system in southwest Alabama.

Methods: Peanut cultivar 'Georgia-09B' was planted on May 16 at the Gulf Coast Research and Extension Center near Fairhope, Alabama, at a rate of five to six seed per foot of row in a field that had previously cropped to peanut production. The soil type was a Malbis fine sandy loam (OM < 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, and 6-7 pounds per acre of Rhizobium innoculant was also applied at planting. On June 1, after planting, 1 quart per acre Prowl + 22 ounces per acre Roundup were applied to the test area for weed control. On June 4, 8 ounces per acre Gramoxone + 1.5 pints per acre of Storm + 1 pint per 25 gallons H2O of Induce were applied for postemergent weed control. On June 18, 2 ounces per acre of Cadre + 0.225 ounce per acre of Strongarm + 1 pint per 25 gallons H2O of Induce were applied for weed control. On July 9, 1.5 pints per acre Poast + 1 quart per acre of crop oil were 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. In-furrow fungicides were applied using a drop nozzle directly over row calibrated to deliver 5 gallons per acre. Foliar fungicides were applied as a full canopy spray at 14-day intervals on June 21, June 28, July 2, July 19, 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 inches apart calibrated to deliver gallons per acre at 30 pounds per square inch.

Leaf spot diseases as well as rust 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 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 loci were made on October 8 immediately after plot inversion (1 locus is defined as < 1 foot of consecutive stem rot–damaged plants per row). Plots were harvested on October 12 and yields were reported at 9.25 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: In 2012, temperatures were at or above normal and monthly rainfall totals were near normal throughout the growing season. Late leaf spot was the primary foliar disease noted. Leaf spot severity increased throughout the season, and at the time of harvest, untreated control plots were > 50 percent defoliated. Rust never materialized as in previous years and appeared sporadically within the untreated control plots. All treated plots had no significant injury from rust (data not shown). All treatment programs gave significantly better control of leaf spot than did the untreated control. Among the treatment programs, leaf spot control was similar. Stem rot hit counts were slightly higher than had been seen in previous years, and with the exception of the Headline/Muscle/Headline/Echo treatment program, all others had significantly lower stem rot incidence. All of the treatment programs increased yield above that which was obtained with the untreated control. However, the Echo + Eminent/Muscle ADV/Echo, Echo/Muscle, Echo/Provost, Headline/Muscle/Headline/Echo, and Echo-only treatments did not yield significantly higher. Among the treatment programs, all had similar yields.

Table 27
Evaluation of Echo 720, Eminent 125SL and Muscle ADV for Peanut Disease Control in Southwest Alabama, GCRE

Treatment and rate/ac	Application Timing	Disease ratings		Yield (lbs/ac)
		Leaf spot[a]	Stem rot[b]	
Untreated Control		5.2	3.6	4,404
ActinoGrow AG 3.0 oz	In-furrow			
Echo 720 16.0 fl oz + Eminent 125SL 7.2 fl oz	1.5			
Muscle ADV 32.0 fl oz	3,4,5,6			
Echo 720 24.0 fl oz	7	2.8	1.5	5,238
Echo 720 16.0 fl oz + Eminent 125SL 7.2 fl oz	1.5			
Muscle ADV 32.0 fl oz	3,4,5,6			
Echo 720 24.0 fl oz	7	3.1	2.3	4,909
Echo 720 12.0 fl oz + Eminent 125SL 5.4 fl oz	1.5			
Muscle ADV 32.0 fl oz	3,4,5,6			
Echo 720 24.0 fl oz	7	2.9	1.7	5,314
Echo 720 16.0 fl oz + Eminent 125SL 4.0 fl oz	1.5			
Muscle ADV 32.0 fl oz	3,4,5,6			
Echo 720 24.0 fl oz	7	2.9	1.7	5,233
SA-0040301 32.0 fl oz	1.5			
Muscle ADV 32.0 fl oz	3,4,5,6			
Echo 720 24.0 fl oz	7	2.9	0.5	5,398
Headline 2.09SC 9.0 fl oz	1.5			
Muscle ADV 32.0 fl oz	3,4,5,6			
Echo 720 24.0 fl oz	7	2.7	0.5	5,475
Echo 720 24.0 fl oz	1,2,7			
Muscle 3.6F 7.2 fl oz	3,4,5,6	3.5	1.3	4,917
Echo 720 24.0 fl oz	1,2,7			
Provost 433SC 8.0 fl oz	3,4,5,6	2.8	1.2	5,054
Echo 720 24.0 fl oz	1,2,4,6,7			
Abound 2.08SC 18.5 fl oz	3,5	2.9	1.7	5,651
Echo 720 24.0 fl oz	1,2,7			
Echo 720 24.0 fl oz + Convoy 13.0 fl oz	3,4,5,6	3.1	0.5	5,360
Headline 2.09EC 9.0 fl oz	1.5			
Muscle 3.6F 7.2 fl oz	3,5			
Headline 2.09EC 12.0 fl oz	4			
Echo 720 24.0 fl oz	6,7	2.8	2.5	5,039
Echo 720 24.0 fl oz	1-7	3.1	1.5	5,016
LSD (P = 0.05)		*0.5*	*1.3*	*688*

a. Early and late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease;…10 =completely dead plants)
b. White mold hits assessed at inversion as the number of disease loci per total row foot
Note: Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05)

Evaluation of Commercially Available Chlorothalonil Products 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 commercially available Chlorothalonil products and compare them with other currently registered fungicides for control of early and late leaf spot, stem rot and yield response in a dryland peanut production system in southwest Alabama.

Methods: Peanut cultivar 'Georgia-09B' was planted on May 16 at the Gulf Coast Research and Extension Center near Fairhope, Alabama, at a rate of 5 to 6 seed per foot of row in a field that had previously cropped to peanut production. The soil type was a Malbis fine sandy loam (OM < 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, and 6-7 pounds per acre of Rhizobium innoculant was also applied at planting. On June 1, after planting, 1 quart per acre Prowl + 22 ounces per acre Roundup were applied to the test area for weed control. On June 4, 8 ounces per acre Gramoxone + 1.5 pints per acre of Storm + 1 pint per 25 gallons H2O of Induce were applied for postemergent weed control. On June 18, 2 ounces per acre of Cadre + 0.225 ounce per acre of Strongarm + 1 pint per 25 gallons H2O of Induce were applied for weed control. On July 9, 1.5 pints per acre Poast + 1 quart per acre of crop oil were 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 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 inches apart calibrated to deliver 15 gallons per acre at 30 pounds per square inch.

Leaf spot diseases as well as rust 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 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. Due to low severity of rust, this data is not shown in the table. Counts of stem rot loci were visually made on October 8 immediately after plot inversion (1 locus is defined as < 1 foot of consecutive stem rot damaged plants per row). Plots were harvested on October 12 and yields were reported at 9.65 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: In 2012, temperatures were at or above normal, and monthly rainfall totals were near normal throughout the growing season. Late leaf spot was the primary foliar disease noted. Leaf spot and rust severity increased throughout the season, and at the time of harvest, untreated control plots were > 50 percent defoliated. All of the treatment programs significantly controlled leaf spot and rust when compared with the untreated control. However, there were no significant differences among any of the different chlorothalonil products tested. Rust affected the untreated control plots, but among the different chlorothalonil products, all controlled rust significantly better, and there were no differences among any of the products. Stem rot incidence among the tested products was lower when compared with the untreated control. When looked at individually, there were some differences among the different products. The lowest stem rot incidence was seen with Equus 720, and the numbers were significantly lower than all other tested products except Initiate 720 and MicroFlo Chlorthalonil. All products increased yield above what was observed with the untreated control. The highest yield was with Equus 720, but among the tested products, there were no significant differences in yield.

Table 28
Evaluation of Commercially Available Chlorothalonil Products for Peanut Disease Control in Southwest Alabama, GCREC

Treatment and rate/ac	Application Timing	Disease ratings			Yield (lbs/ac)
		Leaf spot[a]	Rust[b]	Stem rot[c]	
Untreated Control		5.3	6.1	11.8	3,571
Bravo WS 24.0 fl oz	1-7	2.9	2.5	6.5	4,550
Echo 720 24.0 fl oz	1-7	2.8	2.1	7.1	4,481
Chemnut Chlorothalonil 24.0 fl oz	1-7	2.8	2.0	7.0	4,511
MicroFlo Chlorothalonil 24.0 fl oz	1-7	2.8	2.1	4.5	4,511
Initiate 720 24.0 fl oz	1-7	2.7	2.3	4.8	4,550
Equus 720 24.0 fl oz	1-7	2.8	2.1	3.7	5,077
ChloroGold 720 24.0 fl oz	1-7	2.7	2.0	6.7	4,504
LSD (P = 0.05)		*0.4*	*0.6*	*2.7*	*663*

a. Early and late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease;…10 =completely dead plants)
b. White mold hits assessed at inversion as the number of disease loci per total row foot
c. Rust rated using the ICRISAT (1-9) rust rating scale
Note: Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05)

Evaluation of Convoy and Artisan 3.6SE 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 Convoy and Artisan 3.6SE and compare them with other currently registered fungicides 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-09B' was planted on May 17 at the Gulf Coast Research and Extension Center near Fairhope, Alabama, at a rate of 5 to 6 seed per foot of row in a field that had previously cropped to peanut production. The soil type was a Malbis fine sandy loam (OM < 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, and 6-7 pounds per acre of Rhizobium innoculant was also applied at planting. On June 1, after planting, 1 quart per acre Prowl + 22 ounces per acre Roundup were applied to the test area for weed control. On June 4, 8 ounces per acre Gramoxone + 1.5 pints per acre of Storm + 1 pint per 25 gallons H2O of Induce were applied for postemergent weed control. On June 18, 2 ounces per acre of Cadre + 0.225 ounce per acre of Strongarm + 1 pint per 25 gallons H2O of Induce were applied for weed control. On July 9, 1.5 pints per acre Poast + 1 quart per acre of crop oil were 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. In-furrow fungicides were applied using a drop nozzle directly over row calibrated to deliver 5 gallons per acre. Fungicides were applied directly over row at 20, 40 and 60 days after planting on June 4, June 21 and July 5, respectively. 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 inches apart and calibrated to deliver 15 gallons per acre at 30 pounds per square inch.

Leaf spot diseases as well as rust 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 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. Due to low severity of rust this data is not shown in the table. Counts of stem rot loci were visually made on September 14 and again 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 12 and yields were reported at 8.56 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: In 2012, temperatures were at or above normal and monthly rainfall totals were near normal throughout the growing season. Late leaf spot was the primary foliar diseases noted. Leaf spot severity increased throughout the season, and at the time of harvest, untreated control plots were > 50 percent defoliated (data not shown). The Headline/Convoy + Bravo +Topsin/Convoy + Bravo/Convoy + Headline/Bravo and Headline/Artisan + Bravo/Artisan + Topsin/Bravo treatments had significantly lower leaf spot than Bravo alone. Rust appeared in September but did not warrant ratings. Stem rot incidence was higher than in previous years due to higher temperatures and rainfall. At inversion, all of the treatment programs had lower incidence of stem rot than did the season-long Bravo-only treatment. With the exception of Convoy (20 days after planting)/Bravo, all treatments that included either Convoy or Artisan had significantly lower stem rot incidence than did Bravo only. Lowest yield was recorded for the season-long Bravo standard. Headline/Bravo + Convoy/Headline/Bravo yielded higher than Bravo WS alone, Convoy (20 days after planting)/Bravo, Convoy (60 days after planting)/Bravo, Bravo/Bravo (1,2,7) + Convoy (3,4,5,6) and Bravo/Provost programs.

Table 29
Evaluation of Convoy and Artisan 3.6SE for Peanut Disease Control in Southwest Alabama, GCREC

Treatment and rate/ac	Application Timing	Disease ratings			Yield (lbs/ac)
		Leaf spot[a]	Stem rot[c]	Stem rot[c]	
Convoy 32.0 fl oz	20 DAP				
Bravo WS 24.0 fl oz	1-7	2.8	3.3	4.7	4,726
Convoy 32.0 fl oz	40 DAP				
Bravo WS 24.0 fl oz	1-7	2.8	0.8	1.0	5,528
Convoy 32.0 fl oz	60 DAP				
Bravo WS 24.0 fl oz	1-7	3.3	1.0	3.2	4,932
Headline 2.09EC 9.0 fl oz	1.5				
Convoy 13.0 fl oz + Bravo 16.0 fl oz + Topsin 5.0 fl oz	3,5				
Convoy 13.0 fl oz + Bravo 24.0 fl oz	4				
Convoy 13.0 fl oz + Headline 2.09EC 6.0 fl oz	6	2.6	1.8	2.8	5,422
Bravo WS 24.0 fl oz	7				
Headline 2.09EC 9.0 fl oz	1.5				
Artisan 16.0 fl oz + Bravo WS 16.0 fl oz	3,5				
Artisan 16.0 fl oz + Topsin 5.0 fl oz	4,6				
Bravo WS 24.0 fl oz	7	2.6	1.2	2.1	5,223
Bravo WS 24.0 fl oz	1,2,6,7				
Fontelis 16.0 fl oz	3,4,5	2.9	1.2	1.5	5,444
Bravo WS 24.0 fl oz	1,2,7				
Bravo WS 24.0 fl oz + Convoy 13.0 fl oz	3,4,5,6	3.2	0.5	1.5	5,422
Bravo WS 24.0 fl oz	1,2,4,6,7				
Bravo WS 24.0 fl oz + Convoy 21.0 fl oz	3,5	3.3	0.8	1.5	4,955
Bravo WS 24.0 fl oz	1,2,4,6,7				
Abound 2.08SC 18.2 fl oz	3,5	2.8	2.0	3.3	5,337
Bravo WS 24.0 fl oz	1,2,7				
Provost 433SC 8.0 fl oz	3,4,5,6	2.8	1.7	2.7	4,802
Bravo WS 24.0 fl oz	1,2,7				
Muscle 3.6F 7.2 fl oz	3,4,5,6	3.0	1.3	2.3	5,330
Headline 2.09EC 9.0 fl oz	1.5				
Muscle 3.6F 7.2 fl oz	3,5				
Headline 2.09EC 6.0 fl oz	4,6				
Bravo WS 24.0 fl oz	7	2.9	1.5	3.3	5,047
Headline 2.09EC 9.0 fl oz	1.5				
Bravo WS 24.0 fl oz + Convoy 21.0 fl oz	3,5				

Headline 2.09EC 6.0 fl oz	4,6				
Bravo WS 24.0 fl oz	7	2.7	0.8	1.8	5,582
Bravo WS 24.0 fl oz	1-7	3.1	3.3	5.3	4,649
LSD (P = 0.05)		*0.4*	*1.8*	*2.1*	*624*

a. Early and late leaf spot were assessed using the Florida leaf spot scoring system (1 = no disease;…10 =completely dead plants)
b. White mold hits assessed at inversion as the number of disease loci per total row foot
Note: Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05)

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, M. Pegues and J. Jones

Objective: To determine the impact of seeding rate on stand density, the occurrence of tomato spotted wilt virus (TSWV), leaf spot and stem rot and the yield of selected commercial peanut cultivars in a dryland production system at the Gulf Coast Research and Extension Center in Fairhope, Alabama.

Methods: After rows were laid off with a Kelley Manufacturing Co. strip-till rig with rolling baskets on May 22, 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 15 in a Malbis fine sandy loam (OM < 1 percent) soil in a field cropped to peanut production 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 22 fluid ounces per acre + Prowl H2O at 1 quart per acre + Dynamic surfactant at 2 quarts per 100 gallons, followed by Gramoxone 8 fluid ounces per acre + Storm 1.5 ton per acre + Induce 1 quart per 100 gallons on June 4, Cadre 2 ounces per acre + Strongarm 0.225 ounce per acre + Induce 1 quart per 100 gallons on June 18, and Butyrac 175 1.1 pints per acre + Induce 1 quart per 100 gallons on July 17. Chlorothalonil at 1.5 pints per acre were applied for leaf spot control on June 28, July 9, July 19, July 23, August 7, August 22, September 5 and September 21 with an ATV-mounted boom sprayer with three TX-8 nozzles per row at 15 gallons of spray volume per acre at 45 pounds per square inch.

TSWV hits counts (1 hit was defined as < 1 foot of consecutive severely TSWV-damaged plants per row) were made on October 8. Early and late leaf spot were rated together on October 8 using the 1-to-10 Florida peanut 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. 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 18. Plots were mechanically harvested on October 23 and yields were reported at 8.95 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: A significant peanut variety x seeding rate was noted for stand density but not for TSWV and white mold incidence as well as leaf spot intensity and yield (Table 30.1). Data for the latter variables are presented by seeding rate and variety. On all peanut varieties, stand density rose with increasing seeding rates (Table 30.2). At the 8 seed per foot seeding rate, stand density was higher for 'Georgia-09B' than for 'Florida 07' and 'Georgia-10T' but not for 'Georgia-06G' and 'Tifguard,' while at the recommended 6 seed per foot rate, a denser stand was noted for 'Georgia-09B' than the other varieties except for 'Georgia-06G.' At the two lowest seeding rates, 'Tifguard' had a better stand than 'Florida 07' and 'Georgia-10T' but not 'Georgia-06G' and 'Georgia-09B.'

Table 30.1
Analysis of Variance (ANOVA) Table for Effects of Variety Selection and Seeding Rate on Stand Density, TSWV Incidence, Leaf Spot Intensity, Stem Rot Incidence and Yield for Dryland Seeding Rate Study, GCREC

Split plot analysis (F value)	Stand density	TSWV incidence	Leaf spot intensity	White mold incidence	Yield (lbs/ac)
Peanut variety	13.02***	0.96	0.73	3.33*	3.98**
Seeding rate	212.62***	3.21*	2.30	1.90	4.95**
Peanut variety x seeding rate	3.09**	1.18	0.67	0.20	0.84

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

Table 30.2
Impact of Seeding Rate on the Stand Density of Five Commercial Runner Peanut Varieties

Seed ft/row	Stand density1*				
	Florida 07	Georgia-06G	Georgia-09B	Georgia-10T	Tifguard
3	51.0 m2	59.0 kl	59.0 kl	56.0 lm	61.5 k
4	63.5 jk	67.5 hij	69.5 ghi	64.3 ijk	72.3 gh
6	76.5 fg	84.3 def	93.8 bcd	80.5 ef	85.5 de
8	88.8 cd	102.5 ab	124.3 a	100.8 bc	100.0 ab

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

Incidence of TSWV and white mold were very low. Lower TSWV incidence was noted at the 8 seed rate than lower seeding rates, where similar disease indices were recorded (Table 30.3). White mold incidence was higher at six seed as compared with 8 seed per foot of row, with the ratings for the two lower rates intermediate. Leaf spot intensity was not influenced by seeding rate. Higher yields were recorded at the two higher rates than lowest seeding rate as well as between the 4 and 8 seed per foot rates.

Table 30.3
Influence of Seeding Rate on Leaf Spot Intensity and Yield of Five Commercial Peanut Varieties

	Incidence			
Seed ft/row	**TSWV**	**White mold**	**Leaf spot intensity[a]**	**Yield (lbs/ac)**
3	1.3 a	0.7 ab	2.6 a[b]	5,039 c
4	1.0 a	0.8 ab	2.6 a	5,310 bc
6	1.0 a	1.3 a	2.8 a	5,491 ab
8	0.4 b	0.6 b	2.8 a	5,846 a

a. Leaf spot intensity was rated using the Florida 1-to-10 leaf spot scoring system
b. Leaf spot intensity data are calculated means, but letters differentiating means were calculated using rank transformations
Note: 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)

Incidence of TSWV was similar for all peanut varieties (Table 30.4). While white mold pressure was very low, higher disease indices were noted for 'Georgia-06G' and 'Georgia-09B' than for 'Florida 07,' 'Georgia-10T,' and 'Tifguard,' which had similarly low white mold indices. Leaf spot intensity was higher on 'Georgia-09B' than 'Florida 07,' with intermediate ratings being recorded for the remaining varieties. Equally high yields were recorded for 'Georgia-09B,' 'Georgia-06B,' and 'Florida 07,' while 'Georgia-10T' and 'Tifguard' had similarly low yields.

Table 30.4
Yield and Leaf Spot Intensity on Five Commercial Peanut Varieties

	Incidence			
Peanut variety	**TSWV[a]**	**White mold[a]**	**Leaf spot intensity[b]**	**Yield lb/ac**
3	1.3 a	0.7 ab[c]	2.6 a[c]	5,039 c
4	1.0 a	0.8 ab	2.6 a	5,310 bc
6	1.0 a	1.3 a	2.8 a	5,491 ab
8	0.4 b	0.6 b	2.8 a	5,846 a

a TSWV and white mold incidence is expressed as the number of hits per 60 feet of row
b. Leaf spot intensity was rated using the Florida 1-to-10 leaf spot scoring system
c.TSWV and white mold incidence as well as leaf spot intensity data are calculated means, but letters differentiating means were calculated using rank transformations
Note: 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)

Summary: As expected, seed rate had a sizable impact on stand density (plant populations), with ‘Tifguard’ and ‘Georgia-10T’ trending toward a lower stand density. In addition, a progressive increase in yield was seen as seeding rates rose from 3 to 8 seed per row foot. In this dryland study, highest yields were obtained with the 6 to 8 seed per row foot rates. Due to low pressure from all three diseases, seeding rate proved to have little impact on TSWV and white mold incidence as well as leaf spot disease intensity in peanut. Disease impact on variety yield was also muted by low disease pressure from TSWV, white mold and leaf spot. Equally high yields were obtained with ‘Georgia-09B,’ ‘Georgia-06B’ and ‘Florida 07.’

Standard and High Input Fungicide Programs Give Similar Disease Control and Yields on Selected Commercial Peanut Varieties, GCREC

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

Objective: To 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.

Methods: After rows were laid off with a Kelley Manufacturing Co. strip-till rig with rolling baskets on May 22, commercial-runner, market-type peanut varieties were planted 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 production every third year at the Gulf Coast Research and Extension Center near Fairhope, Alabama. Weed control and 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 subplots was used. Whole plots were randomized in six complete blocks. Individual subplots 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. Weed control was obtained with an at-plant broadcast application of Roundup WeatherMax at 22 fluid ounces per acre + Prowl H2O at 1 quart per acre + Dynamic surfactant at 2 quarts per 100 gallons followed by Gramoxone 8 fluid ounces per acre + Storm 1.5 tons per acre + Induce 1 quart per100 gallons of H2O on June 4, Cadre 2 ounces per acre + Strongarm 0.225 ounce per acre + Induce 1 quart per 100 gallons on June 18 and Butyrac 175 1.1 pints per acre + Induce 1 quart per 100 gallons on July 17. 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 Bravo Weather Stik at 1.5 pints per acre followed by Abound 2SC at 1.1 pints per acre, Bravo Weather Stik at 1.5 pints per acre + Convoy at 21 fluid ounces per acre, Abound 2SC at 1.1 pints per acre, Bravo Weather Stik 6F at 1.5 pints per acre + Convoy at 21 fluid ounces per acre and two final applications of Bravo Weather Stik 6F at 1.5 pints per acre. Fungicides were applied on June 28, July 9, July 23, August 7, August 22, September 5 and September 21 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 pounds per square inch.

Tomato spotted wilt virus (TSWV) hit counts (1 hit was defined as < 1 foot of consecutive severely TSWV damaged plants per row) were made on August 14.

Early and late leaf spot were rated together on August 14, August 30, September 13, September 26 and October 17 using the 1-to-10 Florida peanut 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.. Area under disease progress curves (AUDPC) values for leaf spot diseases were calculated from the disease intensity data. 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 18. Plots were mechanically harvested on October 23 and yields were reported at 9.2 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: With a significant variety *x* fungicide interaction, leaf spot intensity and TSWV incidence data are segregated by peanut variety and fungicide program (Table 31.1). Leaf spot AUDPC values, white mold incidence and yield data are pooled due to the absence of a variety *x* fungicide program interaction.

Table 31.1
Analysis of Variance (ANOVA) Table for Effects of Peanut Variety and Fungicide Program on Leaf Spot Intensity and AUDPC Values, as well as TSWV and White Mold Intensity and Yield at the GCREC, 2012

Split plot analysis (F)	Leaf spot intensity[a]	Leaf spot AUDPC	TSWV hits/60 ft	White mold hits/60 ft	Yield (lbs/ac)
Peanut variety	1.90	6.88***	3.88**	1.06	2.57*
Fungicide program	48.60***[b]	2.69	9.81***	1.00	0.07
Variety x fungicide program	3.04**	1.50	2.77*	2.08	1.16

a. Leaf spot intensity was rated using a 1-to-10 leaf spot scoring system on October 17
b. Significance of F values at the 0.05, 0.01, and 0.001 levels is indicated by *, **, or ***, respectively

TSWV incidence was very low on all varieties, regardless of fungicide input program (Table 31.2). Among all varieties, only 'Georgia-06G' and 'Georgia-09B' saw a reduction in TSWV incidence on the high-input as compared with the standard fungicide program. As indicated by final leaf spot intensity ratings of 3.6 or below, symptoms in all peanut varieties were limited to light leaf spotting in the lower and mid-canopy as well as minimal premature defoliation (Table 31.2). Better leaf spot control was obtained with the high-input than standard fungicide program on 'Georgia Green' and 'Georgia-06G,' while

similar disease ratings were recorded for both fungicide programs on the remaining varieties. For the standard fungicide program, leaf spot intensity was higher on 'Georgia-06G' and 'Georgia Green' when compared with all varieties except 'Tifguard.' Under the high-input fungicide program, 'Tifguard' had the highest leaf spot intensity ratings. Season-long leaf spot intensity differed

Table 31.2
Interaction of Peanut Variety and Fungicide Program on TSWV Incidence and Leaf Spot Intensity

	TSWV incidence[a]		Leaf spot[b]	
Peanut variety	**Standard**	**High-input**	**Standard**	**High-input**
Florida 07	0.0 d	0.25 cd	2.9 d	3.0 cd
Georgia-06G	1.5 a	0.0 d	3.6 a	3.0 cd
Florida 107	0.0 d	0.0 d	2.9 d	3.0 cd
Georgia Green	0.25 cd	0.25 cd	3.6 a	3.3 bc
Georgia Greener	0.25 cd	0.0 d	3.0 cd	3.0 cd
Tifguard	0.25 cd	0.25 cd	3.6 ab	3.6 a
Georgia-09B	0.75 abc	0.0 d	3.0 cd	3.0 cd
Georgia-10T	1.0 ab	0.5 bcd	3.3 bc	3.1 bc

a. Tomato spotted wilt virus (TSWV) hits counts (1 hit was defined as < 1 foot of consecutive severely TSWV-damaged plants per row) were made on August 14
b. Leaf spot intensity was rated using a peanut leaf spot scoring system (scale = 1 to 10) on October 17
Note: Means in each column followed by the same letter are not significantly different according to Fisher's protected least significant difference (LSD) test ($P < 0.05$)

significantly between peanut varieties, with 'Tifguard' and 'Georgia-10T' having the highest season-long leaf spot AUDPC values (Table 31.3). Lowest leaf spot AUDPC values were recorded for Florida 07. The standard and high-input fungicide programs gave the same level of season-long leaf spot control. White mold incidence was equally low across all peanut varieties and fungicide input programs. Equally high yields were noted for 'Georgia-09B,' 'Georgia Green,' 'Georgia-06G,' 'Florida 07' and 'Georgia-10T.' 'Georgia Greener,' 'Tifguard' and 'Florida 107' had lower yields than 'Georgia-09B.'

Table 31.3
Peanut Variety and Fungicide Program Influence on Diseases and Yield

Peanut variety	Leaf spot AUDPC[a]	White mold hits/60 ft[b]	Yield (lbs/ac)
1. Florida 07	150 d	0.6 a	6,123 abc
2. Georgia-06G	165 c	0.5 a	6,133 abc
3. Florida 107	169 bc	0.2 a	6,056 bc
4. Georgia Green	166 bc	0.9 a	6,419 ab
5. Georgia Greener	162 c	0.6 a	5,415 c
6. Tifguard	188 a	0.1 a	5,469 c
7. Georgia-09B	166 bc	0.6 a	6,958 a
8. Georgia-10T	177 ab	0.1 a	6,123 abc
Fungicide program			
Standard	166 a	0.6 a	6118 a
High-Input	171 a	0.4 a	6054 a

a. AUDPC = area under the disease progress curve = total leaf spot over growing season.
b.White mold hits counts (1 hit was defined as < 1 foot of consecutive white mold–damaged plants per row) were made on at plot inversion on October 18
Note: Means in each column followed by the same letter are not significantly different according to Fisher's protected least significant difference (LSD) test ($P < 0.05$)

Summary: In the absence of noticeable white mold activity, the level of overall disease control and yield response with the standard as compared with more costly high-input fungicide program is not significantly different. Overall activity of all foliar and soil diseases was relatively low and likely had no impact on variety yield. Highest leaf spot levels were seen on 'Tifguard' and 'Georgia-10T,' while the least development of this disease was seen on 'Florida 07.' 'Georgia Green,' 'Florida 07,' 'Georgia-06G' and 'Georgia-10T' matched the yield of 'Georgia-09B.'

Influence of Insecticide Treatment on Thrips Damage, TSWV and Stem Rot Incidence, and on Yield of Three Peanut Varieties, GCREC

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

Objective: To compare the efficacy of in-furrow granular insecticides and a seed treatment insecticide on leaf damage caused by thrips as well as suppression of tomato spotted wilt virus (TSWV) and yield in three peanut varieties.

Methods: Peanut cultivars 'Georgia Green,' 'Florida 07,' and 'Georgia 06G' were planted on May 23 at the Gulf Coast Research and Extension Center near Fairhope, Alabama, at a rate of 5 to 6 seed per foot of row in a field that had previously been cropped to peanut production. The soil type was a Malbis fine sandy loam (OM < 1 percent). Recommendations of the Alabama Cooperative Extension System for fertility and weed control were followed. At planting, 6-7 pounds per acre of Rhizobium innoculant was applied in-furrow. Plots, which consisted of four 30-foot rows on 38-inch centers, were arranged in a split-plot design with peanut variety as the main plot and insecticide as the split-plot treatment. CruiserMAXX insecticide/fungicide and Dynasty PD fungicide seed dressing was custom applied with mechanical seed treatment equipment, while Thimet 20G at 6 pounds per acre was applied in-furrow at planting. On June 1, after planting, 1 quart per acre Prowl + 22 ounces per acre Roundup were applied to the test area for early post-weed control, followed by 8 ounces per acre Gramoxone + 1.5 pints per acre of Storm + 1 pint per 25 gallons H2O of Induce on June 8, 2 ounces per acre of Cadre + 0.225 ounce per acre of Strongarm + 1 pint per 25 gallons H2O of Induce on June 18 and 1.5 pints per acre Poast + 1 quart per acre of crop oil on July 9. Plots were not irrigated. Foliar fungicides were applied as a full canopy spray at 14-day intervals 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 per square inch for control of foliar diseases.

Stand counts were made on June 7 from the second row of each plot as the actual number of plants emerged. Thrips damage ratings on the leaves was assessed on June 21 on a 0-to-10 scale, (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). TSWV hit counts (1 hit was defined as < 1 foot of consecutive severely TSWV-damaged plants per row) were made on July 24 and September 21. 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 9. Yields were reported at 5.98 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: Treatment had little effect on stand, and therefore the data is not shown. Since the variety *x* insecticide interactions for TSWV and stem rot incidence as well as yield were not significant, data presented for each variable are pooled by variety and fungicide program (Table 32.1). The interaction for thrips damage was significant, and data are presented by peanut variety. Overall TSWV and white mold activity was low, and no differences in the incidence of either disease were noted between peanut varieties (Table 32.1). Yield for 'Florida 07,' 'Georgia 06G' and 'Georgia Green' are similar. Incidence of TSWV and white mold as well as yield for all three peanut varieties did not significantly differ.

Table 32.1
Effect of Peanut Variety and Insecticide on TSWV and White Mold Incidence, as well as on Pod Yield

Peanut variety	Rate	Insecticide placement	Incidence[a]		Yield (lbs/ac)
			TSWV	White Mold	
Florida 07	--	--	0.1 a	0.5 a	4,805 a
Georgia Green	--	--	0.2 a	1.0 a	4,939 a
Georgia-06G	--	--	0.1 a	0.8 a	4,925 a
Insecticide					
1. Dynasty PD	Seed dressing	--	0.1 a	0.6 a	4,832 a
2. Dynasty PD +Thimet 20G	Seed Dressign + 5 lb/A	In-Furrow	0.2 a	0.8 a	4,919 a
3. CruiserMAXX	Seed dressing	Seed	0.2 a	1.0 a	4,917 a

a. TSWV and stem rot severity is expressed as the number of disease loci per 60 feet of row
Note: 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 higher for the untreated plots in all three varieties as compared with Thimet 20G and the CruiserMAXX insecticide treatments (Table 32.2). Thrips damage ratings were higher in the non-insecticide treated 'Florida 07' and 'Georgia-06G' than 'Georgia Green.' In addition, Thimet 20G and CruiserMAXX gave equally effective thrips protection on all peanut varieties. The late May planting date resulted in much lower thrips damage than would have been observed at an earlier planting date.

Table 32.2
Thrips Damage as Influenced by Peanut Variety and Insecticide Treatment

Insecticide	Rate	Thrips damage[a]		
		Florida-07	Georgia Green	Georgia-06G
1. Dynasty PD	Seed dressing	4.0 a	3.0 b	4.0 a
3. Dynasty PD + Thimet 20G	Seed dressing + 5 lb/A IF	2.0 c	2.0 c	2.0 c
4. CruiserMAXX	Seed dressing	2.5 bc	2.0 c	2.3 c

a. Thrips damage 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.
Note: Means followed by the same letter are not significantly different according to Fisher's protected least significant difference (LSD) test ($P < 0.05$).

Summary: Overall, the CruiserMAXX seed dressing proved as effective as the standard Thimet 20G in-furrow treatment in reducing the level of thips feed damage in three peanut varieties. Despite differences in the level of thrips damage, yields for the two insecticide treatments and the nontreated control were similar due to the absence of TSWV. Yield of 'Florida 07,' 'Georgia Green' and 'Georgia-06G' were similar.

Recommended Fungicides Compared for Leaf Spot and Stem Rot Control in Central Alabama, PBU

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

Objective: To evaluate recommended fungicide programs and compare them for their efficacy against leaf spot diseases and Southern stem rot on two peanut cultivars in central Alabama.

Methods: The test site was disked and chiseled prior to sowing 'Georgia-06G' and 'Tifguard' peanut cultivars at a rate of 6 seed per foot of row in an Independence (Cahaba) loamy fine sand (OM < 1 percent) on May 30 at the E.V. Smith Research Center's Plant Breeding Unit (PBU) near Tallassee, Alabama. Weed control was obtained with a preplant application of Pendant at 1.2 pints per acre + Dual Magnum II at 1.5 pints per acre on May 30 followed by Post Plus at 2 pints per acre on July 10, and Basagran at 1 pint per acre + Ultra Blazer at 1 pint per acre on July 25. Thrips control was obtained with an in-furrow application of Temik 15G at 6.7 pounds per acre. A center pivot irrigation system was used to apply 0.5 acre inches of water on May 30, July 1, July 6, July 26 and July 27.

A split-plot design with cultivars as whole plots and fungicide treatments as subplots was used. Whole plots were randomized in four complete blocks. Individual subplots consisted of four 30-foot rows spaced 3 feet apart. Fungicides were applied on July 11, July 25, August 8, August 23, September 9, September 20 and October 4 with a four-row tractor-mounted sprayer.

Early leaf spot was rated on October 13, using the Florida peanut 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. Stem rot loci counts (1 locus was defined as < 1 foot of consecutive stem rot–damaged plants per row) were made immediately after plot inversion on October 22. Plots were combined on October 29. Yields were reported at 10 percent moisture. Analyses of interactions were done using the PROC MIXED procedure in SAS. Statistical analyses were done on rank transformations for non-normal data, which were back transformed for presen-

tation. Means were separated using Fisher's protected least significant difference (LSD) test ($P < 0.05$). Fungicide treatment x peanut cultivar interaction for early leaf spot, stem rot and yield were not significant, so pooled data are presented.

Results: While stem rot incidence was similar, early leaf spot intensity was higher and yield lower for 'Tifguard' as compared with 'Georgia-06G.' When compared with Headline 2.09SC, equally effective early leaf spot control was obtained with all fungicide programs except for Convoy + Bravo WeatherStik and Bravo WeatherStik alone. While stem rot incidence was low, significant differences in disease damage were noted. Only the Abound 2SC, 8 fluid ounces per acre Provost 433SC, and Convoy + Bravo WeatherStik programs recorded fewer stem rot loci than Bravo WeatherStik alone. Yield was higher for the Abound 2SC program when compared with the Quash or Bravo WeatherStik alone programs.

Table 33
Recommended Fungicides Compared for Leaf Spot and Stem Rot Control in Central Alabama, PBU

Split plot analysis (F value)	Application Timing	Leaf spot rating[a]	Stem rot[b]	Yield (lbs/ac)
Peanut variety	--	1.903	0.45	0.78
Fungicide program	--	2.38*	3.01**	2.72**
Variety x fungicide program	--	1.62	0.72	0.59
Peanut variety				
Georgia-06G	--	3.0 b	1.2 a	5,009 a
Tifguard	--	3.5 a	1.5 a	4,582 b
Fungicide and rate/ac				
Echo 720 1.5 pt	1-7	3.7 a	2.5 a	4,461 b
Echo 720 1.5 pt	1,2,7			
Provost 433SC 8 fl oz	3-6	2.9 bc	0.4 de	5,049 ab
Echo 720 1.5 pt	1,2,7			
Provost 433SC 10.7 fl oz	3-6	3.2 abc	1.0 bcd	4,823 ab
Echo 720 1.5 pt	1,2,4,6,7			
Artisan 3.6E 26 fl oz + Echo 720 1 pt	3,5	3.6 ab	1.5 abcd	4,427 b
Echo 720 1.5 pt	1,2,4,6,7			
Convoy 1 pt + Echo 720 1.5 pt	3,5	3.7 a	0.8 cde	4,793 ab
Echo 720 1.5 pt	1,2,4,6,7			
Headline 2.09SC 9.0 fl oz	3,5	2.8 c	2.3 ab	4,825 ab
Echo 720 1.5 pt	1,2,7			
Muscle 7.2 fl oz + Echo 720 1 pt	3-6	3.4 abc	1.6 abc	5,078 ab
Echo 720 1.5 pt	1,2,7			
Quash 50WDG 4 oz	3-6	3.2 abc	2.4 ab	4,527 b
Echo 720 1.5 pt	1,2,4,6,7			
Abound 2SC 18.5 fl oz	3,5	2.8 c	0.0 e	5,265 a

a. Leaf spot intensity was rated using the Florida 1-to-10 peanut leaf spot scoring system.
b. 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
c. Significance of F values at the 0.05, 0.01, and 0.001 levels is indicated by *, **, or ***, respectively
Note: Means followed by the same letter do not differ significantly at P = 0.05

Response of Runner and Virginia Peanut Varieties to TSWV, Early Leaf Spot and Stem Rot, PBU

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

Objective: To evaluate runner and Virginia peanut varieties for their response to tomato spotted leaf virus (TSWV), leaf spot and stem rot as well as yield response in an irrigated peanut trial in central Alabama.

Methods: The test site, at the E.V. Smith Research Center's Plant Breeding Unit (PBU) near Tallassee, Alabama, was disked and chiseled prior to sowing 'Georgia-06G' and 'Tifguard' peanut cultivars at a rate of 6 seed per foot of row in an Independence (Cahaba) loamy fine sand (OM < 1 percent) on May 30. Weed control was obtained with a preplant application of Pendant at 1.2 pints per acre + Dual Magnum II at 1.5 pints per acre on May 30, followed by Post Plus at 2 pints per acre on July 10 and Basagran at 1 pint per acre + Ultra Blazer at 1 pint per acre on July 25. Thrips control was obtained with an in-furrow application of Temik 15G at 6.7 pounds per acre. A center pivot irrigation system was used to apply 0.5 inch of water on May 30, July 1, July 6, July 26 and July 27.

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 July 11, July 25, August 8, August 23, September 9, September 20 and October 4 with a four-row, tractor-mounted sprayer.

Early leaf spot was rated on October 13 using the Florida peanut 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. Stem rot loci counts (1 locus was defined as < 1 foot of consecutive stem rot damaged plants per row) were made immediately after plot inversion on October 22. Plots were combined on October 29. Yields were reported at 10 percent moisture. Significance of treatment effects were tested using PROC MIXED and means separated using Fisher's least significant difference (LSD) test ($P < 0.05$).

Results: Incidence of TSWV was very low and no differences in disease incidence were noted. Equally high ELS indices were recorded for the runner peanut varieties 'Florida 07,' 'Georgia-09B,' 'Georgia-10T,' 'Georgia 07W' and 'Tifguard,' as well as all Virginia peanut varieties. 'Georgia Greener' had a lower ELS rating than 'Georgia-09B,' 'Georgia-10T,' 'Tifguard,' 'Perry,' 'Gregory' and 'Florida 07.' While stem rot incidence was equally low on all runner peanut varieties, the Virginia peanut varieties 'Gregory,' 'NCVII' and 'Perry' had similarly higher ratings for this disease. Among the runner peanut varieties, 'Florida 07' had higher yields except for 'Georgia-07W.' Similarly high yields were noted for the Virginia peanut varieties 'Bailey,' 'Perry' and 'Sugg.'

Table 34
Response of Runner and Virginia Peanut Varieties to TSWV, Early Leaf Spot and Stem Rot, PBU

Peanut type	TSWV loci/60 ft[a]	ELS rating[b]	Stem rot loci/60 ft[a]	Yield (lbs/ac)
Runner				
Florida 107	1.0 a	2.7 bc4	1.3 d	3,600 e
Florida 07	0.5 a	3.2 ab	2.2 cd	4,873 a
Georgia-06G	0.0 a	2.6 bc	4.0 cd	4,114 cde
Georgia-07W	0.0 a	3.0 abc	4.0 cd	4,735 abc
Georgia-09B	0.2 a	3.5 a	3.8 cd	4,210 b-e
Georgia-10T	0.0 a	3.7 a	1.7 cd	4,084 cde
Georgia Greener	0.2 a	2.3 c	3.0 cd	3,772 e
Tifguard	0.2 a	3.6 a	2.2 cd	3,711 e
Virginia				
Bailey	0.0 a	2.9 abc	1.2 d	5,069 a
Gregory	0.8 a	3.4 ab	13.3 a	3,972 de
NC V11	0.8 a	2.9 abc	14.5 a	3,650 e
Perry	0.7 a	3.7 a	8.3 ab	4,799 ab
Sugg	0.8 a	3.0 abc	4.4 bc	4,616 a-d

a. TSWV and stem rot incidence is expressed as the number of disease loci per 60 feet of row
b. Early leaf spot (ELS) intensity was rated using the Florida 1-to-10 peanut leaf spot scoring system
Note: Means in each column that are followed by the same letter are not significantly different according Fisher's least significant difference (LSD) test ($P < 0.05$)