Entomology and Plant Pathology Departmental Series No. 8
July 2005
Alabama Agricultural Experiment Station
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Peanut Disease Control Field Trials, 2004

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

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Peanut Disease Control Field Trials, 2004

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

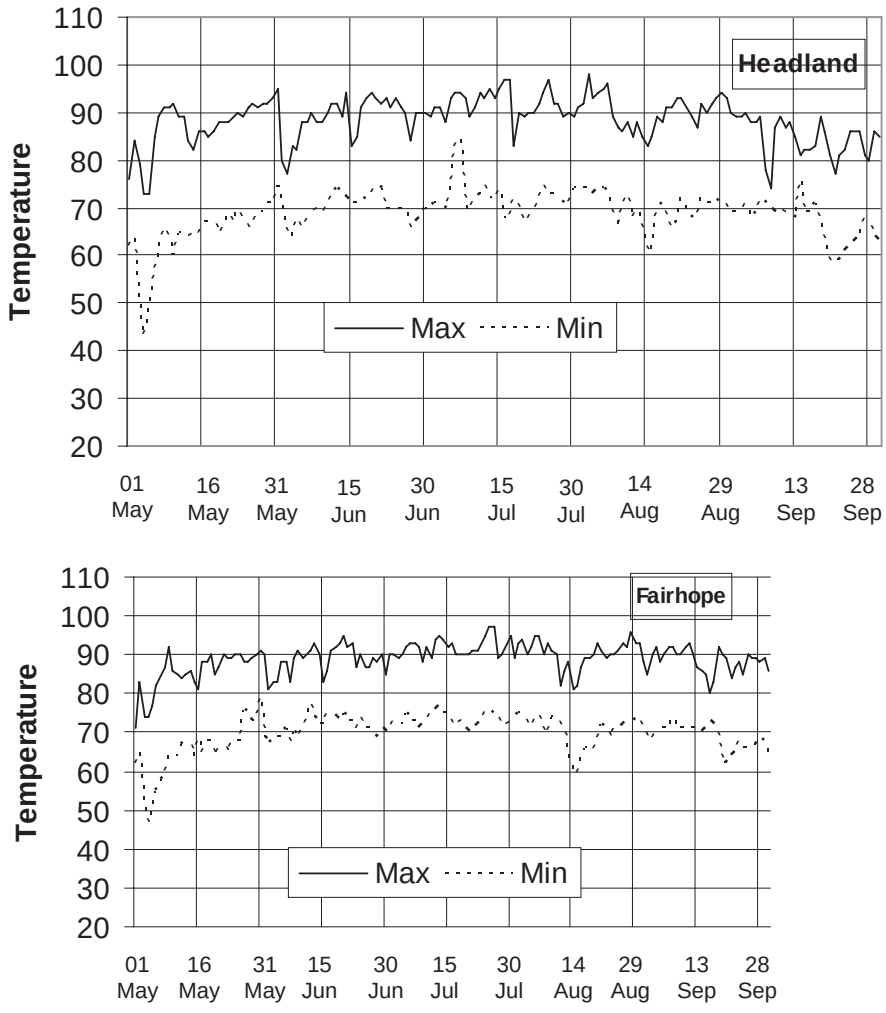
INTRODUCTION

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

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

During the 2004 production season, temperatures were near historical averages (Figure 1) and monthly rainfall totals for the entire growing season (May-October) were near to above historical averages (Figure

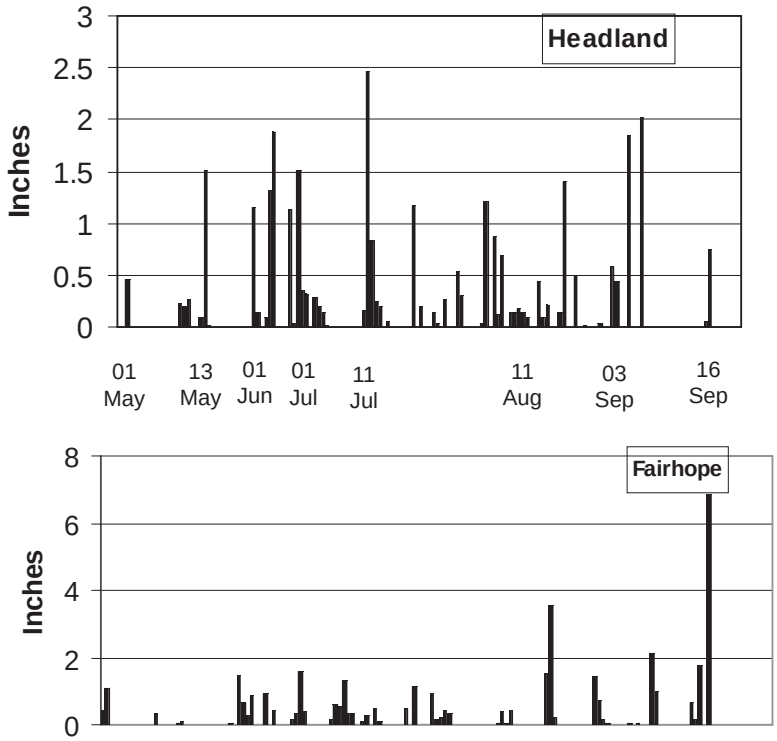
Figure 1. Daily minimum and maximum temperature (ºF) May to October 2004.



2). As a result, increases in leafspot severity were observed in all trials whereas soil-borne disease incidence was reduced.

At the GCREC, temperatures were near normal and rainfall was at or above historical averages. As a result, late leafspot and peanut rust severity increased throughout the season. Heavy rains due to Hurricane Ivan delayed harvest 7-10 days but did not impact yield in some of the tests; however, a late-season drought reduced yield in some late-harvested plots.

Figure 2. Daily precipitation (inches) May to September 2004.



COMPARISON OF MONCUT 70DF WITH ABOUND 2.08SC AND FOLICUR 3.6F FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT, WREC

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

Objective: To evaluate Moncut 70DF at different rates and intervals for control of early and late leafspot and southern stem rot of peanut and compare its activity with that of Abound 2.08SC and Folicur 3.6F, as well as their impact on peanut yield in an irrigated peanut production system.

Methods: Peanut cultivar Carver was planted on May 19 in a field with a history of peanut production at the Wiregrass Research and Extension Center (WREC) in Headland, Ala. The soil type was a Dothan sandy loam (OM <1 percent). On March 3, the test area was sub-soiled and on April 20, 1 quart per acre of Sonalan plus 0.45 pint per acre of Strongarm were applied for postemergent weed control. On June 17, 5.5 ounces per acre of Gramoxone and 1.5 pints per acre Storm plus 1.5 pints per acre of 2,4 DB was applied for weed control. Seed were sown at a rate of approximately five seeds per foot of row. Thrips were controlled with an in-furrow application of 6.5 pounds per acre of Temik 15G.

Plots consisted of six 30-foot rows spaced 3 feet apart arranged in a randomized complete block with six replications. The plots were arranged under a central pivot irrigation system and irrigated as needed. Fungicides were applied on a 14- to 21-day schedule on June 23, June 30, July 6, July 20, August 2, August 16, August 30, and September 14 using a six-row tractor-mounted boom sprayer with TX-8 nozzles calibrated to deliver 15 gallons per acre.

Early and late leafspot were visually rated on September 20 using the Florida leafspot 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 = completely defoliated or dead plants.

Counts of southern stem rot (SSR) hits (one hit was defined as ≤1 foot of consecutive SSR-damaged plants) were made on September 30 immediately after plot inversion. Plots were harvested on October 5 and yields were reported at 10 percent moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the 2004 peanut production season, temperatures were near normal and monthly rainfall totals were near to above normal in May, June, and September but were well below average for July and August. Early leafspot was the most common leafspot disease observed. The level of leafspot control obtained with Headline 6 fluid ounces/Bravo plus Moncut/Headline 9 fluid ounces/Bravo program was significantly better than that obtained with all of the other fungicide programs (see table). With the exception of the Bravo/Folicur/Moncut program, all of the treatments that included applications of Moncut 70DF or Artisan gave better SSR control than the season-long Bravo 720 program. The Headline/Bravo plus Moncut/Headline/Bravo and DPX plus Bravo/Abound/DPX plus Bravo programs yielded higher than the season-long Bravo 720 standard. Yield response with the recommended Folicur 3.6F and Abound 2SC programs, as well as those including the 0.54 pound per acre rate of Moncut 70DF were similar to that obtained with the standard Bravo 720 program.

COMPARISON OF MONCUT 70DF WITH ABOUND 2.08SC AND FOLICUR 3.6F FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT, WREC

Treatment and rate/A	Application timing[1]	Disease ratings		Yield
		LS[2]	SSR[3]	(lb/A)
Bravo 720 24.0 fl oz	1-7	4.5[4]	5.8	4,655
Headline 2.09EC 6.0 fl oz	1,2	3.3	3.5	5,336
Bravo 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5			
Headline 2.09EC 9.0 fl oz	4			
Bravo 720 24.0 fl oz	6,7			
Headline 2.09EC 9.0 fl oz	1.5	3.9	3.7	5,627
Bravo 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5			
Headline 2.09EC 6.0 fl oz	4			
Bravo 720 24.0 fl oz	6,7			
Bravo 720 24.0 fl oz	1,2,4,6,7	5.0	4.5	4,977
Bravo 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5			
Bravo 720 24.0 fl oz	1,2,7	5.3	5.2	5,046
Bravo 720 24.0 fl oz + Moncut 70DF 0.54 lb	3,4,5,6			
Bravo 720 24.0 fl oz	1,2,4,6,7	4.1	3.2	4,909
Abound 2.08SC 18.5 fl oz	3,5			
Bravo 720 24.0 fl oz	1,2,4,6,7	6.2	7.0	4,739
Folicur 3.6F 7.2 fl oz	3,5			
Bravo 720 16.0 fl oz + Kocide 4.5 LF 16.0 fl oz	1-7	4.4	7.0	4,715
DPX H6573-462 8.2 fl oz + 16 fl oz	1,2,4	3.8	5.5	5,356
Abound 2.08SC	3,5			
DPX H6573-462 8.2 fl oz + 16 fl oz	6,7			
Bravo 720 24.0 fl oz	1,2,7	5.2	7.5	5,038
Folicur 3.6F 7.2 fl oz	3,5			
Bravo 720 24.0 fl oz + Moncut 70DF 0.54 lb	4,6			
Bravo 720 24.0 fl oz	1,2,4,6,7	5.7	4.7	4,602
Artisan 3.6 SE 32.0 fl oz	3,5			
LSD (P = 0.05)		***0.4***	***1.9***	***397***

[1]Fungicide applications were made on 14-day schedule unless specified otherwise.

[2]Early and late leafspot (LS) were assessed using the Florida leafspot scoring system.

[3]Southern stem rot (SSR) counts taken at plot inversion are expressed as the number of SSR-damaged plants per 60 feet of row.

[4]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05).

EVALUATION OF EXPERIMENTAL FUNGICIDES FOR CONTROL OF LEAFSPOT AND SOUTHERN STEM ROT ON PEANUT, WREC

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

Objective: To evaluate experimental fungicides for the control of leafspot diseases and southern stem rot of peanut and compare their activity with that of currently registered fungicides as well as their impact on yield in an irrigated production system.

Methods: Peanut cultivar Carver was planted at the Wiregrass Research and Extension Center (WREC) in Headland, Ala., on May 19 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 five seeds per foot of row and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. On March 3, the test area was sub-soiled and turned. On April 20, 1 quart per acre of Sonalan plus 0.45 pint per acre of Strongarm were applied for postemergent weed control. On June 17, 5.5 ounces per acre of Gramoxone and 1.5 pints per acre Storm plus 1.5 pints per acre of 2,4 DB was applied to the area for weed control. Thrips were controlled with an in-furrow application of 6.5 pounds per acre of Temik 15G.

Plots consisted of six 30-foot rows spaced 3 feet apart arranged in a randomized complete block with six replications. Plots were arranged under a central pivot irrigation system and irrigated as needed. Fungicides were applied on June 23, July 7, July 21, August 3, August 17, August 31, and September 14 using a six-row tractor-mounted boom sprayer with TX-8 nozzles calibrated to deliver 15 gallons per acre. Headline 2.09EC (1.5 application) was applied on June 30.

Early and late leafspot were visually rated on September 20 using the Florida leafspot 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 = completely defoliated or dead plants.

Counts of southern stem rot (SSR) hits (one hit was defined as ≤1 foot of consecutive SSR-damaged plants) were made on September 30 immediately after plot inversion. Plots were harvested on October 5 and yields were reported at 10 percent moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the 2004 peanut production season, temperatures were near normal and monthly rainfall totals were near or above normal for May, June, and September but were below average for July and August. Early leafspot was the most common leafspot disease observed. Leafspot control obtained with the program that included applications of JAU6476 was significantly better than all other programs (see table). The standard Echo/Folicur 3.6F program gave significantly poorer disease control than that observed with any other fungicide program. All of the treatments that included applications of Moncut 70DF gave better SSR control than all other spray programs. The Echo/Abound program yielded significantly higher than all other programs except the Echo/Moncut, Echo/JAU6476, and Echo/Headline 6 fluid ounces/Headline 9 fluid ounces/Folicur programs. Lowest yield response was obtained with the recommended Stratego/Folicur/Echo and Folicur 3.6F programs.

EVALUATION OF EXPERIMENTAL FUNGICIDES FOR CONTROL OF LEAFSPOT AND SOUTHERN STEM ROT ON PEANUT, WREC

Treatment and rate/A	Application timing[1]	Disease ratings		Yield
		LS[2]	SSR[3]	(lb/A)
Echo 720 24.0 fl oz	1-7	4.8[4]	5.2	4,780
USF 2010	1-7	3.9	8.0	4,554
Stratego EC	1-7	4.3	9.0	4,521
Stratego SC	1-7	4.6	9.0	4,304
Echo 720 24.0 fl oz	1,2,7	3.3	7.2	4,985
JAU6476 5.7 fl oz + Induce 0.06percentv/v	3,4,5,6			
Echo 720 24.0 fl oz 24.0 fl oz	1,2,7	5.7	9.2	4,041
Folicur 3.6F 7.2 fl oz	3,4,5,6			
Echo 720 24.0 fl oz	1,2,4,6,7	3.9	4.2	5,344
Abound 2.08SC 18.5 fl oz	3,5			
Echo 720 24.0 fl oz	1,2,4,6,7	4.5	4.5	4,933
Echo 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5			
Echo 720 24.0 fl oz	1,3,7	4.3	5.0	4,856
Headline 9.0 fl oz	2			
Headline 6.0 fl oz	4			
Folicur 3.6F 7.2 fl oz	5,6			
Stratego 7.0 fl oz	1,2	6.5	9.8	3,973
Folicur 3.6F 7.2 fl oz	3,4,5,6			
Echo 720 24.0 fl oz	7			
Headline 9.0 fl oz	1.5	5.8	7.8	4,751
Folicur 3.6F 7.2 fl oz	3,5			
Headline 12.0 fl oz	4			
Echo 720 24.0 fl oz	7			
Echo 720 24.0 fl oz	1,7	4.4	5.7	5,134
Headline 9.0 fl oz	2			
Headline 6.0 fl oz	4			
Folicur 3.6F 7.2 fl oz	3,5,6			
Echo 720 24.0 fl oz	1,7	4.9	6.2	4,767
Headline 9.0 fl oz	2			
Folicur 3.6F 7.2 fl oz	3,4,5,6			
LSD (P = 0.05)		***0.5***	***2.7***	***416***

[1]Fungicide applications were made on 14-day schedule unless specified otherwise.

[2]Early and late leafspot (LS) were assessed using the Florida leafspot scoring system (1=no disease; 10=completely dead plants).

[3]Southern stem rot (SSR) counts taken at plot inversion are expressed as the number of hits per 60 feet of row.

[4]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05).

EVALUATION OF ABOUND 2.08SC AND EXPERIMENTAL FUNGICIDES FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES ON PEANUT, WREC

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

Objective: To evaluate Abound 2.08SC for control of early leafspot and southern stem rot and compare its activity against experimental fungicides in an irrigated peanut production system in southeast Alabama.

Methods: Peanut cultivar Carver was planted on May 20 in a field with a history of peanut production at the Wiregrass Research and Extension Center (WREC) in Headland, Ala. The soil type was a Dothan sandy loam (OM <1 percent). Recommendations of the Alabama Cooperative Extension System for fertilily, weed, and nematode control were followed. On April 1, the test area was sub-soiled and turned. On May 11, applications of 1 quart per acre of Sonalan plus 0.45 pint per acre of Strongarm were made for postemergent weed control. On June 10, 0.72 ounce per acre of Cadre was applied to the test area for weed control. Seed were sown at a rate of approximately five seeds per foot of row. Thrips were controlled with an in-furrow application of 6.5 pounds per acre of Temik 15G.

Plots consisted of four 30-foot rows spaced 3 feet apart arranged in a randomized complete block with six replications. The plots were arranged under a side roll irrigation system and were irrigated as needed. Fungicides were applied on a 7- to 21-day schedule on June 23, July 6, July 21, July 28, August 3, August 10, August 17, August 25, August 31, and September 14 using a four-row tractor-mounted boom sprayer with TX-8 nozzles calibrated to deliver 15 gallons per acre.

Early and late leafspot were visually rated on September 20 using the Florida leafspot 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 = completely defoliated or dead plants.

Counts of southern stem rot (SSR) hits (one hit was defined as ≤1 foot of consecutive SSR-damaged plants) were made on September 30 immediately after plot inversion. Plots were harvested on October 5 and yields were reported at 10.15 percent moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the 2004 peanut production season, temperatures were near normal and monthly rainfall totals were near to above normal for May, June, and September but were below average for July and August. Early leafspot was the more common of the two leafspot diseases. Although leafspot control varied very little among most treatment programs, the programs that contained Amistar gave significantly better disease control than the season-long Bravo 720 standard. All treatment programs except for the Abound/Abound plus Tilt/A13817/Bravo and Tilt plus Bravo/Amsitar plus NIS/Bravo gave significantly better control of SSR than the Bravo standard. High nematode populations in the soil impacted the yields in this test. The A13817/Abound/Bravo (full season) program yielded higher than all other programs. All remaining treatment regimes yielded significantly higher than the Bravo 720 standard except for the Headline plus Moncut/Bravo (four applications) and Moncut/Bravo/Bravo plus Moncut programs.

EVALUATION OF ABOUND 2.08SC AND EXPERIMENTAL FUNGICIDES FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES ON PEANUT, WREC

Treatment and rate/A	Application timing[1]	Disease ratings		Yield
		LS[2]	SSR[3]	(lb/A)
A13817 24.0 fl oz	1,2,4	4.1[4]	5.0	2,744
Abound 2.08SC 18.5 fl oz	3,5			
Bravo 720 24.0 fl oz	6,7			
A13817 24.0 fl oz	2,4	4.4	5.0	2,880
Abound 2.08SC 18.5 fl oz	3,5			
Bravo 720 24.0 fl oz	6,7			
A13817 24.0 fl oz	1,2	4.3	5.5	3,384
Abound 2.08SC 18.5 fl oz	3,5			
Bravo 720 24.0 fl oz	4,6,7			
Headline 2.09EC 6.0 fl oz	2	3.8	4.7	2,727
Folicur 3.6F 7.2 fl oz	3.5,6			
Headline 12.0 fl oz	4.5			
Bravo 720 24.0 fl oz	7			
Headline 2.09eC 6.0 fl oz	3,5.5	4.8	6.0	2,593
Folicur 3.6F 7.2 fl oz	4.5,7			
Abound 2.08SC 6.0 fl oz	In-furrow	4.8	8.0	2,775
Abound 2.08SC 18.5 fl oz + Tilt 3.6EC 4.0 fl oz	3,5.5			
A13817 24.0 fl oz	4.5			
Bravo 720 24.0 fl oz	7			
Headline 2.09EC 6.0 fl oz + Moncut 70DF 1.1 lb	3,5.5	5.0	5.2	2,623
Bravo 720 24.0 fl oz	4.5,7			
Abound 2.08SC 18.5 fl oz + Tilt 3.6EC 4.0 fl oz	3,5	5.0	6.2	3,073
A13817 24.0 fl oz	4			
Bravo 720 24.0 fl oz	6,7			
Bravo 720 24.0 fl oz	1,2,4,6,7	4.1	6.3	3,114
Abound 2.08SC 18.5 fl oz	3,5			
Bravo 720 24.0 fl oz	1,2,7	4.5	5.2	2,787
Folicur 3.6F 7.2 fl oz	3,4,5,6			
Tilt 3.6EC 2.0 fl oz + Bravo 720 16.0 fl oz	1,2,4	3.8	5.7	3,001
Amistar 6.0 oz	3,5			
Bravo 720 24.0 fl oz	6,7			
Tilt 3.6EC 2.0 fl oz + Bravo 720 24.0 fl oz	1,2,4	3.7	7.3	2,747
Amistar 6.0 fl oz + NIS 0.25percent v/v	3,5			
Bravo 720 24.0 fl oz	6,7			
Moncut 70DF 1.1 lb	In-furrow	4.3	3.3	2,521
Bravo 720 24.0 fl oz	1,2,4,6,7			
Bravo 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5			
Moncut 70DF 0.45 lb	In -furrow	5.1	6.6	2,730
Bravo 720 24.0 fl oz	1,2,4,6,7			
Bravo 720 + Moncut 70DF 1.1 lb	3,5			
Bravo 720 24.0 fl oz	1-7	5.0	9.8	2,304
LSD (P = 0.05)		***0.7***	***2.5***	***416***

[1]Fungicide applications were made on 14-day schedule unless specified otherwise.

[2]Early and late leafspot (LS) were assessed using the Florida leafspot scoring system.

[3]Southern stem rot (SSR) counts taken at plot inversion are expressed as the number of hits per 60 feet of row.

[4]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P = 0.05).

EVALUATION OF ARTISAN 3.6SE AND NAI-301 480SE FOR CONTROL OF LEAFSPOT AND SOUTHERN STEM ROT ON PEANUT, WREC

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

Objective: To evaluate Artisan 3.6SE and NAI-302 480SE for control of early leafspot and southern stem rot of peanut and compare it with currently available fungicides in an irrigated production system in southeast Alabama.

Methods: Peanut cultivar Carver was planted at the Wiregrass Research and Extension Center (WREC) in Headland, Ala., on May 19 in a field with a history of peanut production. Seed were sown at a rate of approximately five seeds per foot of row. Thrips were controlled with an in-furrow application of 6.5 pounds per acre of Temik 15G. The soil type was a Dothan sandy loam (OM <1 percent). On March 3, the test area was subsoiled and turned. On April 20, 1 quart per acre of Sonalan plus 0.45 pint per acre of Strongarm were made for postemergent weed control. On June 17, 5.5 ounces per acre of Gramoxone and 1.5 pints per acre Storm plus 1.5 pints per acre of 2,4 DB was applied to the area for weed control.

Plots consisted of six 30-foot rows spaced 3 feet apart arranged in a randomized complete block with six replications. The plots were arranged under a central pivot irrigation system and were watered as needed. Fungicides were applied at 14-day intervals on June 23, July 7, July 21, August 3, August 17, August 31, and September 14 using a six-row tractor-mounted boom sprayer with TX-8 nozzles calibrated to deliver 15 gallons per acre. Headline 2.09EC (1.5 application) was applied on June 30.

Early and late leafspot were visually rated on September 20 using the Florida leafspot 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); 10 = completely defoliated or dead plants.

Counts of southern stem rot (SSR) hits (one hit was defined as ≤1 foot of consecutive SSR-damaged plants) were made on September 30 immediately after plot inversion. Plots were harvested on October 5 and yields were reported at 10 percent moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the 2004 peanut production season, temperatures were near normal and monthly rainfall totals were near to above normal in May, June, and September but were below average for July and August. Programs that included Headline and NAI-301 gave significantly better control of leafspot than all other programs (see table). The standard Echo/Moncut, Echo/Folicur and Echo/Artisan programs were less effective than the Echo 720 full-season standard in controlling early leafspot. All treatment programs except for the Echo/Abound and Echo/Folicur standards gave significantly better control of SSR than the season-long Echo 720 program. All treatment regimes that contained either Artisan 3.6SE or NAI-301 yielded higher than all other programs. All other treatment regimes yielded significantly higher than the Echo 720 standard except for the Echo/Abound and Echo/Folicur standard.

EVALUATION OF ARTISAN 3.6SE AND NAI-301 480SE FOR CONTROL OF LEAFSPOT AND SOUTHERN STEM ROT ON PEANUT, WREC

Treatment and rate/A	Application timing[1]	Disease ratings		Yield
		LS[2]	SSR[3]	(lb/A)
Echo 720 24.0 fl oz	1-7	4.3[4]	5.2	4,626
Headline 2.09EC 6.0 fl oz	1,2	4.3	2.5	5,421
Artisan 3.6SE 32.0 fl oz	3,5			
Headline 2.09EC 9.0 fl oz	4			
Echo 720 24.0 fl oz	6,7			
Headline 2.09EC 6.0 fl oz	1,2	3.5	1.8	5,409
NAI-301 480 45.0 fl oz	3,5			
Headline 2.09EC 9.0 fl oz	4			
Echo 720 24.0 fl oz	6,7			
Echo 720 24.0 fl oz	1,2,4,6,7	5.0	2.7	5,199
Echo 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5			
Echo 720 24.0 fl oz	1,2,4,6,7	5.4	3.0	4,985
Artisan 3.6SE 32.0 fl oz	3,5			
Echo 720 24.0 fl oz	1,2,6,7	4.2	2.7	5,147
NAI-301 480SE 45.0 fl oz	3,4,5			
Echo 720 24.0 fl oz	1,2,4,6,7	4.2	4.2	4,868
Abound 2.08SC 18.5 fl oz	3,5			
Echo 720 24.0 fl oz	1,2,7	5.3	4.0	4,679
Folicur 3.6F 7.2 fl oz	3,4,5,6			
Headline 2.09EC 9.0 fl oz	1.5	4.3	2.5	5,203
Artisan 3.6SE 32.0 fl oz	3,5			
Headline 2.09EC 12.0 fl oz	4			
Echo 720 24.0 fl oz	6,7			
Headline 2.09EC 9.0 fl oz	1.5	3.8	2.3	5,368
NAI-301 489SE 45.0 fl oz	3,4,5			
Headline 2.09EC 12.0 fl oz	6			
Echo 720 24.0 fl oz	7			
LSD (P ≤ 0.05)		***0.5***	***1.6***	***441***

[1]Fungicide applications were made on 14-day schedule unless specified otherwise.

[2]Early and late leafspot (LS) were assessed using the Florida leafspot scoring system (1=no disease;10=completely dead plant).

[3]Southern stem rot (SSR) counts taken at plot inversion are expressed as the number of hits per 60 feet of row.

[4]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P≤ 0.05).

EVALUATION OF ECHO 720 AND HEADLINE 2.09EC FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES ON PEANUT, WREC

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

Objective: To evaluate Echo 720 and Headline 2.09EC for control of leafspot diseases and southern stem rot of peanut and to compare them with Abound 2.08SC, Folicur 3.6F, and Moncut 70DF in an irrigated production system in southeast Alabama.

Methods: Peanut cultivar GA 02C was planted on May 24 in a field with a history of peanut production at the Wiregrass Research and Extension Center (WREC) in Headland, Ala. Seed were sown at a rate of approximately five seeds per foot of row and the soil type was a Dothan sandy loam (OM <1 percent). Thrips were controlled with an in-furrow application of 6.5 pounds per acre of Temik 15G. On April 1, the test area was sub-soiled and turned. On May 11, 1 quart per acre of Sonalan plus 0.45 pint per acre of Strongarm were made for postemergent weed control. On June 10, 0.72 ounce per acre of Cadre was applied to the test area for weed control.

Plots consisted of six 30-foot rows spaced 3 feet apart arranged in a randomized complete block with six replications. The plots were arranged under a side roll irrigation system and were irrigated as needed. Fungicides were applied at 7- to 21-day intervals on June 23, June 30, July 6, July 22, August 2, August 16, August 31, and September 13 using a six-row tractor-mounted boom sprayer with TX-8 nozzles calibrated to deliver 15 gallons per acre.

Early and late leafspot were visually rated on September 21 using the Florida leafspot 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 = completely defoliated or dead plants.

Counts of southern stem rot (SSR) hits (one hit was defined as ≤1 foot of consecutive SSR-damaged plants) were made on October 14 immediately after plot inversion. Plots were harvested on October 18 and yields were reported at 10.31 percent moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the 2004 peanut production season, temperatures were near normal and monthly rainfall totals were near to above normal in April, May, and September but were below normal for July and August. The variation in the level of leafspot control was noted among the treatment programs (see table). However, the Headline/Echo plus Moncut/Headline/Echo 720 program gave significantly better leafspot control than the season-long Bravo 720 standard. No significant differences in SSR control were noted between any of the treatments. High nematode populations in the soil impacted the yields in this test. Very little yield variation was observed among the different treatments. The highest yield was recorded for the Headline/Echo plus Moncut/Headline/Echo program. Yield for the standard Echo/Folicur program was significantly below that obtained with the full-season Echo 720 program.

EVALUATION OF ECHO 720 AND HEADLINE 2.09EC FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES ON PEANUT, WREC

Treatment and rate/A	Application timing[1]	Disease ratings		Yield
		LS[2]	SSR[3]	(lb/A)
Echo 720 14.0 fl oz	1-7	5.0[4]	3.5	2,376
Echo 720 24.0 fl oz	1,2,4,6,7	4.8	3.2	2,105
Echo 720 16.0 fl oz + PropiMax EC 2.0 fl oz	3,5			
Headline 2.09EC 9.0 fl oz	1.5	4.5	3.2	2,553
Folicur 3.6F 7.2 fl oz	3,5,6			
Headline 2.09EC 12.0 fl oz	4			
Echo 720 24.0 fl oz	7			
Echo 720 24.0 fl oz	1,2,7	5.7	3.0	1,807
Folicur 3.6F 7.2 fl oz	3,4,5,6			
Echo 720 16.0 fl oz + PropiMax EC 2.0 fl oz	1,2,4	4.9	2.4	2,609
Abound 2.08SC 18.5 fl oz	3,5			
Echo 720 24.0 fl oz	6,7			
Echo 720 24.0 fl oz	1,2,4,6,7	4.6	2.7	2,318
Abound 2.08SC 18.5 fl oz	3,5			
Echo 720 24.0 fl oz	1,2,4,6,7	5.3	2.5	2,396
Echo 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5			
Echo 720 24.0 fl oz	1,2,4,6,7	4.3	2.6	2,715
Headline 2.09EC 9.0 fl oz	3,5			
Headline 2.09EC 12.0 fl oz	3,5	4.6	2.3	2,489
Folicur 3.6F 7.2 fl oz	4,6			
Headline 2.09 EC 9.0 fl oz	1.5	3.8	2.5	2,577
Echo 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5			
Headline 2.09EC 12.0 fl oz	4			
Echo 720 24.0 fl oz	6,7			
Echo 720 24.0 fl oz	1,7	5.3	3.2	2,186
Headline 2.09EC 9.0 fl oz	2			
Folicur 3.6F 7.2 fl oz	3,4,5,6			
LSD (P ≤ 0.05)		***0.7***	***1.3***	***434***

[1]Fungicide applications were made on 14-day schedule unless specified otherwise.

[2]Early and late leafspot (LS) were assessed using the Florida leafspot scoring system (1=no disease;10=completely dead plant).

[3]Southern stem rot (SSR) counts taken at plot inversion are expressed as the number of hits per 60 feet of row.

[4]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P≤ 0.05).

EVALUATION OF LORSBAN 15G FOR INCREASED CONTROL OF FOLIAR AND SOIL-BORNE DISEASES ON PEANUT, WREC

H. L. Campbell, J. R. Weeks, A. K. Hagan, and L. W. Wells

Objective: To evaluate Lorsban 15G incorporated into a system with Folicur 3.6F to determine if this combination decreased the incidence of leafspot diseases and southern stem rot of peanut and determine its effects on yield of peanut in southeast Alabama.

Methods: Peanut cultivar Carver was planted on May 24 in a field with a history of peanut production at the Wiregrass Research and Extension Center (WREC) in Headland, Ala. Seed were sown at a rate of approximately five seeds per foot of row and the soil type was a Dothan sandy loam (OM <1 percent). On March 3, the test area was sub-soiled and turned and on April 20, 1 quart per acre of Sonalan plus 0.45 pint per acre of Strongarm were made for postemergent weed control. On June 21, 5.5 ounces per acre of Gramoxone and 1.5 pints per acre Storm plus 1.5 pints per acre of 2,4 DB was applied to the area for weed control. Thrips were controlled with an in-furrow application of 6.5 pounds per acre of Temik 15G.

Plots consisted of six 30-foot rows spaced 3 feet apart arranged in a randomized complete block with six replications. The plots were arranged under a side roll irrigation system and were irrigated as needed. Fungicides were applied on June 23, July 6, July 21, August 2, August 16, August 31, and September 13 using a six-row tractor-mounted boom sprayer with TX-8 nozzles calibrated to deliver 15 gallons per acre. Lorsban 15G was applied on June 21.

Early and late leafspot were visually rated on September 21 using the Florida leafspot 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 = completely defoliated or dead plants.

Counts of southern stem rot (SSR) hits (one hit was defined as ≤1 foot of consecutive SSR-damaged plants) were made on October 8 immediately after plot inversion. Plots were harvested on October 12 and yields were reported at 10.16 percent moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the 2004 peanut production season, temperatures were near normal and monthly rainfall totals were near to above normal in May, June, and September but were well below average for July and August. Early leafspot was the primary leafspot disease observed. Little variation in the level of leafspot control was noted between the fungicide programs. Only the Bravo/Folicur/Lorsban and Bravo/Moncut treatments gave significantly better control of SSR than the full-season Bravo 720 standard. No significant differences in yield were observed among the fungicide programs.

EVALUATION OF LORSBAN 15G FOR INCREASED CONTROL OF FOLIAR AND SOIL-BORNE DISEASES ON PEANUT, WREC

Treatment and rate/A	Application timing[1]	Disease ratings		Yield
		LS[2]	SSR[3]	(lb/A)
Bravo 720 24.0 fl oz	1-7	4.3[4]	6.3	3,803
Bravo 720 2.0 fl oz	1,2,7	4.2	4.0	3,852
Folicur 3.6F 7.2 fl oz	3,4,5,6			
Bravo 720 2.0 fl oz	1,2,7	4.0	2.5	3,997
Folicur 3.6F 7.2 fl oz	3,4,5,6			
Lorsban 15G	Pegging banded over row[5]			
Bravo 720 24.0 fl oz	1,2,4,6,7	4.3	3.0	4,029
Bravo 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5			
Bravo 720 24.0 fl oz	1,2,4,6,7	4.2	4.7	4,074
Abound 2.08SC 18.5 fl oz	3,5			
LSD (P ≤ 0.05)		***0.7***	***2.8***	***478***

[1]Fungicide applications were made on 1 = June 23, 2 = July 6, 3 = July 21, 4 = August 2, 5 = August 16, 6 = August 31, and 7 = September 13.

[2]Early and late leafspot (LS) were assessed using the Florida leafspot scoring system (1=no disease;10=completely dead plant).

[3]Southern stem rot (SSR) counts taken at plot inversion are expressed as the number of hits per 60 feet of row.

[4]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P≤ 0.05).

[5]Lorsban applied on June 21.

EVALUATION OF FUNGICIDE SEED TREATMENTS AND ABOUND 2.08SC APPLIED IN-FURROW AT PLANTING AND ITS EFFECTS ON STAND, TSWV, AND SOIL-BORNE DISEASE CONTROL ON PEANUT, WREC

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

Objective: To compare new fungicide seed treatments with currently registered seed treatments with Abound 2.08SC in-furrow on peanut seed germination, stand, tomato spotted wilt virus (TSWV), and southern stem rot of peanut in southeast Alabama.

Methods: On May 7 peanut cultivar Georgia Green was planted at the Wiregrass Research and Extension Center (WREC) in Headland, Ala., in a field with a prior history of peanut production. The soil type was a Dothan sandy loam (OM <1 percent). Seed were sown at a rate of approximately 5.5 seeds per foot of row.

Plots consisted of four 30-foot rows spaced 3 feet apart and were arranged in a randomized complete block design with six replications. Plots were arranged under a central pivot irrigation system and were watered as needed. On March 3, the test area was sub-soiled and turned. On April 20, 1 quart per acre of Sonalan plus 0.45 pint per acre of Strongarm were applied for postemergent weed control. On June 17, 5.5 ounces per acre of Gramoxone and 1.5 pints per acre Storm plus 1.5 pints per acre of 2,4 DB was applied to the area for weed control. Thrips were controlled with an in-furrow application of 6.5 pounds per acre of Temik 15G. Abound 2.08SC was applied in-furrow at planting using a tractor-mounted CO2 sprayer with 8001 nozzles calibrated to deliver 5.0 gallons per acre with a nozzle placed over the open seed furrow. Stand counts were made at 7 days after planting (DAP), 14 DAP, and 28 DAP. Vigor ratings were made at 28 DAP where 1 = least vigorous plants; 5 = most vigorous plants. Foliar fungicide treatments were made on Test 1 following the recommended Bravo Ultrex/Folicur 3.6F program [Bravo Ultrex (1,2,7) and Folicur 3.6F (3,4,5,6)] and on Test 2 following the recommended Bravo 720/Abound 2.08SC program [Tilt 3.6EC plus Bravo 720 (1,2,4), Abound 2.08SC (3,5), and Bravo 720 (6,7)]. All foliar fungicides were applied at two-week intervals using a six-row tractor-mounted boom sprayer with TX-8 nozzles calibrated to deliver 15 gallons per acre.

TSWV was assessed on August 26. Southern stem rot hit counts were made on September 14 immediately after plot inversion (one hit is defined as ≤1 foot of consecutive SSR-damaged plants). Plots were harvested on September 21 and yields were reported at 10.05-percent moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the 2004 peanut production season, temperatures were near normal and monthly rainfall totals were near or above normal for April, May, and September but were well below average in July and August. Early leafspot severity was high in all the plots and defoliation was occurring in all plots at the time of harvest. In Test 1, stand counts for all seed treatments were similar (Table 1). The highest stands were recorded for the Vitavax PC-treated seed. The poorest were recorded for those treated with KNF 2830 (8 ounces per 100 pounds of seed) and Allegiance. Similar vigor ratings were observed among all plots. Lowest incidence of TSWV occurred in seed treated with Vitavax PC and Kodiak. SSR incidence was minimal in all plots and no significant differences were observed between any of the seed treatments. Yields among all programs were similar, however the seed treatment that included Kodiak yielded highest. In Test 2, similar stand results were recorded for all treatments, however, those seed treated with Dynasty PD (3.5 ounce per hundredweight) gave significantly higher stands than those that included Abound 2.08SC in furrow. Vigor results were similar among all seed treatments. SSR levels were minimal. No differences in yield were observed between any of the seed treatments however, all yielded higher than the nontreated control.

TABLE 1. PEANUT SEED TREATMENT TEST 1

Treatment and rate/A	Application timing	Stand counts 7 DAP	14 DAP	28 DAP	Vigor[1]	TSWV[2]	SSR[3]	Plot yield (lb/A)
Nontreated control		53.7[4]	77.7	78.8	3.8	6.3	6.2	3,537
Bravo Ultrex 1.4 lb	1,2,7							
Folicur 3.6 F 7.2 fl oz	3,4,5,6							
KNF 2830 3.0 oz/cwt	At planting	57.0	80.2	82.7	4.1	6.8	6.5	3,541
Bravo Ultrex 1.4 lb	1,2,7							
Folicur 3.6 F 7.2 fl oz	3,4,5,6							
KNF 2830 4.0 oz/cwt	At planting	56.0	74.7	78.3	4.0	4.7	8.2	3,695
Bravo Ultrex 1.4 lb	1,2,7							
Folicur 3.6 F 7.2 fl oz	3,4,5,6							
KNF 2830 6.0 oz/cwt	At planting	59.3	82.7	84.3	3.7	6.5	6.3	3,687
Bravo Ultrex 1.4 lb	1,2,7							
Folicur 3.6 F 7.2 fl oz	3,4,5,6							
KNF 2830 8.0 oz/cwt	At planting	60.7	75	76.3	4.1	6.7	7.0	3,828
Bravo Ultrex 1.4 lb	1,2,7							
Folicur 3.6 F 7.2 fl oz	3,4,5,6							
Vitavax PC	At planting	68.3	88.8	90.5	4.3	3.2	6.7	3,920
Bravo Ultrex 1.4 lb	1,2,7							
Folicur 3.6 F 7.2 fl oz	3,4,5,6							
Allegiance	At planting	59.8	74.8	76.3	4.0	5.7	5.2	3,662
Bravo Ultrex 1.4 lb	1,2,7							
Folicur 3.6 F 7.2 fl oz	3,4,5,6							
Kodiak	At planting	62.4	84.4	88.2	4.2	2.6	7.2	4,181
Bravo Ultrex 1.4 lb	1,2,7							
Folicur 3.6 F 7.2 fl oz	3,4,5,6							
LSD (P ≤ 0.05)		***10.2***	***7.0***	***7.5***	***0.5***	***3.3***	***3.0***	***399***

[1]Vigor ratings based on 1 = least vigorous; 5 = most vigorous.

[2]Tomato spotted wilt virus (TSWV) ratings based on number of infected plants per 60 feet of row.

[3]Southern stem rot (SSR) was assessed at inversion as the number of hits per 60 feet of row.

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

TABLE 2. PEANUT SEED TREATMENT TEST 2

Treatment and rate/A	Application timing	Stand counts 7 DAP	14 DAP	28 DAP	Vigor[1]	TSWV[2]	SSR[3]	Plot yield (lb/A)
Nontreated control		33.7[4]	40.5	40.3	2.5	12.5	2.0	2,424
Tilt 3.6EC 2.0 fl oz + Bravo 720 1.0 pt	1,2,4							
Abound 2.08SC 18.5 fl oz Bravo 720 1.5 pt	3,5 6,7							
Dynasty PD 3.5 oz/cwt	At planting	64.0	77.7	81.2	3.9	6.7	3.7	3,416
Tilt 3.6EC 2.0 fl oz + Bravo 720 1.0 pt	1,2,4							
Abound 2.08SC 18.5 fl oz Bravo 720 1.5 pt	3,5 6,7							
Dynasty PD 4.0 oz/cwt	At planting	55.0	64.8	67.8	4.1	8.0	4.2	3,295
Tilt 3.6EC 2.0 fl oz + Bravo 720 1.0 pt	1,2,4							
Abound 2.08SC 18.5 fl oz Bravo 720 1.5 pt	3,5 6,7							
Vitavax PC 4.0 oz/cwt	At planting	66.5	77.8	80.3	4.2	7.3	3.0	3,481
Tilt 3.6EC 2.0 fl oz + Bravo 720 1.0 pt	1,2,4							
Abound 2.08SC 18.5 fl oz Bravo 720 1.5 pt	3,5 6,7							
Vitavax PC 4.0 oz/cwt	At planting	53.0	69.5	72.5	3.8	7.2	4.8	3,505
Abound 2.08SC 3.0 fl oz	In-furrow							
Tilt 3.6EC 2.0 fl oz + Bravo 720 1.0 pt	1,2,4							
Abound 2.08SC 18.5 fl oz Bravo 720 1.5 pt	3,5 6,7							
Dynasty PD 4.0 oz/cwt	At planting	53.8	63.8	67.2	3.9	7.7	4.8	3,521
Abound 2.08SC 4.5 fl oz	In-furrow							
Tilt 3.6EC 2.0 fl oz + Bravo 720 1.0 pt	1,2,4							
Abound 2.08SC 18.5 fl oz Bravo 720 1.5 pt	3,5 6,7							
Vitavax PC 4.0 oz/cwt + Kodiak 0.125 oz/cwt	At planting	60.8	74.0	75.5	3.9	7.5	3.2	3,581
Abound 2.08SC 4.5 fl oz	In-furrow							
Tilt 3.6EC 2.0 fl oz + Bravo 720 1.0 pt	1,2,4							
Abound 2.08SC 18.5 fl oz Bravo 720 1.5 pt	3,5 6,7							
LSD (P ≤ 0.05)		***10.3***	***8.6***	***9.1***	***0.5***	***3.9***	***2.2***	***430***

[1]Vigor ratings based on 1 = least vigorous; 5 = most vigorous.

[2]Tomato spotted wilt virus (TSWV) ratings based on number of infected plants per 60 feet of row.

[3]Southern stem rot (SSR) was assessed at inversion as the number of hits per 60 feet of row.

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

CALENDAR AND AU-PNUT ADVISORY SCHEDULES FOR BRAVO ULTREX, FOLICUR 3.6F, AND ABOUND 2SC PROGRAMS COMPARED FOR THE CONTROL OF DISEASES ON DRYLAND FLORIDA C-99R PEANUTS, WREC

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

Objective: To assess the efficacy of recommended fungicides applied at two-, three-, and four-week intervals, and according to the AU-Peanut leafspot advisory for the control of early leafspot and southern stem rot, as well as on the yield of disease resistant peanut Florida C-99R in a rainfed or dryland production system.

Methods: On May 16, the peanut cultivar Florida C-99R (Maturity Group 5), which has partial resistance to late leafspot and southern stem rot (SSR), was planted at the Wiregrass Research and Extension Center (WREC) in Headland, Ala., at a rate of six seeds per foot of row using conventional tillage practices in a Dothan fine sandy loam (OM <1 percent) soil. Sonalan at 1.0 quart per acre plus Strongarm at 0.45 ounce per acre was broadcast prior to planting and lightly incorporated. Escape weeds were controlled with flat sweeps or were pulled by hand. Temik 15G at 6.7 pounds per acre was applied in-furrow at-planting for thrips control. The test area was not irrigated. A randomized complete block design with four replications per fungicide treatment regime was used. Plots consisted of four 30-foot rows spaced 3 feet apart. Full canopy sprays of fungicide treatment were made on a two-, three-, and four-week calendar schedule, was well as according to the AU-Pnut leafspot advisory with a tractor-mounted boom sprayer with three TX-8 nozzles per row that delivered approximately 15 gallons per acre spray volume. For the two-week schedule, fungicide applications were made on June 23, July 8, July 22, August 4, August 17, September 1, and September 14; on June 23, July 15, August 4, August 26, and September 14 for treatments applied at three-week intervals; and on June 23, July 22, August 17, and September 14 for treatments applied at four-week intervals. Fungicides were applied according to the AU-Pnut disease advisory on June 23, July 15, August 4, August 17, and September 1.

Early and late leafspot were rated together using the Florida peanut leafspot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions in lower and upper leaf canopy, 4 = some lesions in lower and upper canopy with light 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 = numerous lesions on few remaining leaves with severe defoliation (≤90 percent), 9 = very few remaining leaves covered with lesions and severe defoliation (≤95 percent), and 10 = plants defoliation or dead. Leafspot ratings were taken on July 13, July 27, August 10, August 24, September 8, September 21, and October 7. Southern stem rot (SSR) hit or loci counts, where one locus is defined as ≤1 foot of consecutive SSR-damaged plants per row, were made immediately after plot inversion on October 14. Yields reported at 7 percent moisture.

Fungicide program effects on early leafspot, southern stem rot, and yield were tested by analysis of variance and means were compared with Fisher's protected least significant difference (LSD) test.

Results: In 2004, monthly rainfall totals were nearly equal to or higher than the historical average for May and June, average to below average for July and August, and then well above average in September.

Treatment interval had a significant effect on the control of leafspot with Bravo Ultrex, Folicur 3.6F, and Abound 2SC programs. For all three fungicide programs, superior leafspot control was noted at the two-week application schedule compared to the longer treatment intervals (see the table). Similar leafspot ratings were noted for the two-week calendar programs and AU-Pnut leafspot advisory for the Bravo Ultrex, Folicur 3.6F, and Abound 2SC programs. Leafspot ratings for the three-week and four-week treatment schedules for Bravo Ultrex and Folicur 3.6F were significantly higher than the ratings for the same schedules for Abound 2SC. Incidence of SSR was low and was not influenced by treatment interval. Also, yield response to the Bravo Ultrex, Folicur 3.6F, and Abound 2SC programs was similar across at the two-, three-, and four-week treatment intervals as well as for the AU-Pnut leafspot advisory.

IMPACT OF TREATMENT SCHEDULE ON THE DISEASE CONTROL AND YIELD RESPONSE TO RECOMMENDED FUNGICIDE PROGRAMS ON FLORIDA C-99R PEANUT IN A RAINFED PRODUCTION SETTING, WREC

Fungicide regime and rate/A	Application Interval	Application Date (DAP)[1]	ELS[2] rating	SSR[3]	Yield (lb/A)
Bravo Ultrex 1.4 lb	2-week	38, 53, 67, 80, 93, 108, 123	4.4 bc[4]	2.8 a	3,491 ab
Bravo Ultrex 1.4 lb	3-week	38, 60, 80, 102, 123	6.0 a	3.5 a	3,370 ab
Bravo Ultrex 1.4 lb	4-week	38, 67, 93, 123	6.0 a	4.3 a	2,898 b
Bravo Ultrex 1.4 lb	AU-Pnut[5]	38, 53, 67, 80, 93, 108	4.0 bc	3.5 a	3,122 ab
Bravo Ultrex 1.4 lb Folicur 3.6F 0.45 pt	2-week	38, 53, 123 67, 80, 93, 108	4.5 bc	3.5 a	3,461 ab
Bravo Ultrex 1.4 lb Folicur 3.6F 0.45 pt	3-week	38 60, 80, 102, 123	6.3 a	4.0 a	3,207 ab
Bravo Ultrex 1.4 lb Folicur 3.6F 0.45 pt	4-week	38 67, 93, 123	6.0 a	3.8 a	2,916 b
Bravo Ultrex 1.4 lb Folicur 3.6F 0.45 pt	AU-Pnut	38, 53, 67, 80, 93, 108	4.5 bc	3.8 a	3,152 ab
Bravo Ultrex 1.4 lb Abound 2SC 1.2 pt	2-week	38, 53, 80, 108, 123 67, 93	3.8 c	2.8 a	3,380 ab
Bravo Ultrex 1.4 lb Abound 2SC 1.2 pt	3-week 60, 80	38, 102, 123	4.9 b	3.3 a	3,666 a
Bravo Ultrex 1.4 lb Abound 2SC 1.2 pt	4-week	38, 123 67, 93	4.9 b	4.0 a	3,455 ab
Bravo Ultrex 1.4 lb Abound 2SC 1.2 pt	AU-Pnut	38, 53, 80, 108 67, 93	4.0 bc	3.0 a	3,013 ab

[1]DAP = days after planting when fungicide applications were made.

[2] ELS = early leafspot.

[3] Southern stem rot (SSR) incidence is expressed as the number of disease hits or loci per 60 feet of row.

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

[5]AU-Pnut disease advisory rules specify that the first fungicide application be made immediately after six or more rain events ($\geq$0.1 inch) and the second and subsequent applications immediately after three rain events.

CALENDAR AND AU-PNUT ADVISORY SCHEDULES FOR BRAVO ULTREX, FOLICUR 3.6F, AND ABOUND 2SC PROGRAMS COMPARED PEANUT FOR THE CONTROL OF EARLY LEAFSPOT AND SOUTHERN STEM ROT ON IRRIGATED FLORIDA C-99R PEANUTS, WREC

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

Objective: To assess the efficacy of recommended fungicides applied at two-, three-, four-week intervals, and according to the AU-Peanut leafspot advisory for the control of early leafspot and southern stem rot, as well as on the yield of the disease resistant peanut Florida C-99R in an irrigated production system.

Methods: On May 25, the peanut cultivar Florida C-99R (Maturity Group 5), which is partially resistant to late leafspot and southern stem rot (SSR), was planted at the Wiregreass Research and Extension Center (WREC) in Headland, Ala., a rate of six seeds per foot of row using conventional tillage practices in a Dothan fine sandy loam (OM <1 percent) soil on a site maintained in a peanut-cotton-peanut rotation under a center pivot irrigation system. Sonalan at 1.0 quart per acre plus Strongarm at 0.45 ounce per acre was broadcast prior to planting and lightly incorporated. Escape weeds were controlled with flat sweeps or were pulled by hand. Temik 15G at 6.7 pounds per acre was applied in-furrow at-planting for thrips control. Plots were irrigated as needed. A randomized complete block design with four replications per fungicide treatment regime was used. Plots consisted of four 30-foot rows spaced 3 feet apart.

Full canopy sprays of fungicide treatment were made on a two-, three-, and four-week calendar schedule, was well as according to the AU-Pnut leafspot advisory with a tractor-mounted boom sprayer with three TX-8 nozzles per row that delivered approximately 15 gallons per acre of spray volume. Applications dates were June 16, June 26, July 15, August 11, August 25, and September 8 for the two-week schedules; June 16, July 7, August 11, August 18, and September 8 for the three-week schedules; and June 16, July 15, August 25, and September 8 for the four-week schedules. Fungicide treatments were applied according to the AU-Pnut disease advisory on June 23, July 8, July 26, August 11, August 30, and September 14. In the two-, three-, and four-week treatment schedules, four, three, and two applications, respectively of Folicur 3.6F were made. For all Abound programs, two applications of this fungicide were made approximately 60 and 90 days after planting (DAP) but the number of Bravo Ultrex applications varied.

Early and late leafspot were rated simultaneously using the Florida peanut leafspot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions in lower and upper leaf canopy, 4 = some lesions in lower and upper canopy with light 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 = numerous lesions on few remaining leaves with severe defoliation (≤90 percent), 9 = very few remaining leaves covered with lesions and severe defoliation (≤95 percent), and 10 = plants defoliation or dead. Leafspot ratings were taken on July 13, July 27, August 10, August 24, September 8, September 21, and October 7. Leafspot data collected on October 7 is presented in the tables. Southern stem rot (SSR) hit or loci counts, where one hit (locus) is defined as ≤1 foot of consecutive SSR-damaged plants per row, were made immediately after plot inversion on October 14. Yields reported at 10 percent moisture.

Results: In 2004, monthly rainfall totals were nearly equal to or higher than the historical average for May and June, average to below average for July and August, and then well above average in September.

Early leafspot was the primary leafspot disease observed. Application interval had a significant impact on the control of leafspot with Bravo Ultrex, Folicur 3.6F, and Abound 2SC programs. Leafspot ratings for the two-, three-, and four-week Bravo Ultrex programs were significantly different at each treatment interval. For Folicur 3.6F, lower leafspot ratings were recorded for the two-week than for with the same fungicide applied at three- and four-week intervals. Better leafspot control was obtained with Abound 2SC applied at two- and three-week intervals compared to the monthly program. The level of leafspot control obtained with the two-week and AU-Pnut schedules for most fungicides were similar. As expected, the incidence of SSR for all Bravo

Ultrex programs was similar. The two-week Folicur 3.6F program gave better SSR control than the three- and four-week programs, which included one and two fewer applications of this fungicide, respectively. With similar numbers of Abound 2SC applications in all programs, this fungicide was equally effective in controlling SSR at all treatment intervals. Generally, the combination of reduced leafspot severity and SSR incidence resulted in higher yields. Yields for all Abound 2SC and all of the season-long Bravo Ultrex programs, including the AU-Pnut advisory were not significantly different. While the yield for the Folicur 3.6F AU-Pnut advisory program was significantly higher than those for the three- and four-week programs, the yield recorded for the two-week Folicur 3.6F program was not.

Summary: The AU-Pnut disease advisory proved as effective as a two-week calendar program for scheduling the treatments included in a Bravo Ultrex, Folicur 3.6F, and Abound 2SC program for controlling diseases and maintaining peanut yields. With the Bravo Ultrex and Folicur 3.6F programs, the level of leafspot control declined when the treatment schedule was lengthened from two to four weeks. Reducing the number of Folicur 3.6F applications from four to three also resulted in a decline in southern stem rot control. Most notably, the two-week Folicur 3.6F program was less effective in controlling leafspot diseases than either the Bravo Ultrex or Abound 2SC program. The best overall yield response and disease control was obtained with the Abound 2SC programs.

IMPACT OF TREATMENT SCHEDULE ON THE DISEASE CONTROL AND YIELD RESPONSE TO RECOMMENDED FUNGICIDE PROGRAMS ON IRRIGATED FLORIDA C-99R PEANUTS

Fungicide regime and rate/A	Schedule	Application date (DAP)[1]	Leafspot rating	SSR incidence[2]	Yield (lb/A)
Bravo Ultrex 1.4 lb	14-d	22, 36, 50, 62, 78, 86, 108	3.9 f[3]	7.5 abcd	3,660 cd
Bravo Ultrex 1.4 lb	21-d	22, 43, 78, 86, 108	4.5 bcd	10.3 a	3,434 d
Bravo Ultrex 1.4 lb	28-d	22, 50, 86, 108	5.3 a	7.8 abcd	3,455 d
Bravo Ultrex 1.4 lb	AU-Pnut[4]	29, 44, 62, 78, 98, 114	3.6 f	9.3 ab	3,358 d
Bravo Ultrex 1.4 lb Folicur 3.6F 0.45 pt	14-d	22, 36, 108 50, 62, 78, 93	4.3 cde	4.0 f	4,181 ab
Bravo Ultrex 1.4 lb Folicur 3.6F 0.45 pt	21-d	22, 43 78, 86, 108	4.9 ab	8.0 abc	3,738 bcd
Bravo Ultrex 1.4 lb Folicur 3.6F 0.45 pt	28-d	22, 108 50, 86	5.3 a	7.0 bcde	3,757 bcd
Bravo Ultrex 1.4 lb Folicur 3.6F 0.45 pt	AU-Pnut	29, 44 62, 78, 98, 114	4.0 def	5.5 cdef	4,283 a
Bravo Ultrex 1.4 lb Abound 2SC 1.2 pt	14-d	22, 36, 62, 86, 108 50, 78	3.6 f	3.3 f	4,538 a
Bravo Ultrex 1.4 lb Abound 2SC 1.2 pt	21-d	22, 43, 108 62, 86	4.0 def	4.3 ef	4,398 a
Bravo Ultrex 1.4 lb Abound 2SC 1.2 pt	28-d	22, 108 50, 86	4.8 abc	5.0 def	4,120 abc
Bravo Ultrex 1.4 lb Abound 2SC 1.2 pt	AU-Pnut	29, 44, 78, 114 62, 98	3.5 f	3.8 f	4,398 a

[1]DAP = days after planting when fungicide applications were made.

[2] ncidence of southern stem rot (SSR) is expressed as the number of hits or disease loci per 60 row feet.

[3]Mean followed by the same letter in each column were not significantly different according to analysis of variance and Fisher's protected least significant difference (LSD) test (P=0.05).

[4]AU-Pnut disease advisory rules specify that the first fungicide application be made immediately after six or more rain events (≥0.1 inch) and the second and subsequent applications immediately after three rain events.

FUNGICIDE PROGRAM EFFICACY FOR THE CONTROL OF LEAFSPOT DISEASES AND SOUTHERN STEM ROT ON SELECTED PEANUT LINES COMPARED IN A RAINFED PRODUCTION SYSTEM, WREC

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

Objective: The effectiveness of recommended Bravo Ultrex, Folicur 3.6F, Abound 2SC, Headline 2.09EC, and Moncut 70DF programs for the control of leafspot diseases and southern stem rot, as well as on their impact of the yield of Andru II, Carver, and Florida C-99R peanut lines in a rainfed production system.

Methods: On May 25, Andru II (Maturity Group 3), Carver (Maturity Group 4), and Florida C-99R (Maturity Group 5) peanut lines were planted at the Wiregrass Research and Extenision Center (WREC) in Headland, Ala., a rate of approximately six seeds per foot of row using conventional tillage practices in a Dothan fine sandy loam (OM <1 percent) in a tier cropped to peanut once every three years. A split-plot design with peanut lines as the whole plot 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. Sonalan at 1.0 quart per acre plus Strongarm at 0.45 ounce per acre was broadcast prior to planting and lightly incorporated. Escape weeds were controlled with flat sweeps or were pulled by hand. Temik 15G at 6.7 pounds per acre was applied in-furrow at-planting for thrips control. The test area was not irrigated. Full canopy sprays were made on 1 = June 24, 2 = July 8, 3 = July 23, 4 = August 5, 5 = August 18, 6 = September 3, and 7 = September 15 with a tractor-mounted boom sprayer with three TX-8 nozzles per row in 15 gallons per acre spray volume.

Early and late leafspot (LS) were rated simultaneously using the Florida peanut leafspot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions noticeable in lower and upper leaf canopy, 4 = some lesions in lower and upper canopy with light defoliation (≤10 percent), 5 = lesions noticeable with some defoliation (≤25 percent), 6 = lesions numerous with significant defoliation (≤50 percent), 7 = lesions numerous with heavy defoliation (≤75 percent), 8 = numerous lesions on few remaining leaves with severe defoliation (≤90 percent), 9 = very few remaining leaves covered with lesions and severe defoliation (≤95 percent), and 10 = plants defoliated or dead. Leafspot ratings were recorded on September 23 for Andru II, October 5 for Carver, and October 19 for Florida C-99R. Southern stem rot (SSR) loci, where one locus is defined as ≤1 foot of consecutive SSR-damaged plants per row, were made immediately after plot inversion on September 23 for Andru II, October 5 for Carver, and October 24 for Florida C-99R. Plots were picked two to three days later with a field combine and yields were reported at 7 percent moisture.

Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test (P=0.05). Since the cultivar/treatment interaction for leafspot, SSR, and yield were not significant, data presented in the Table 1 was pooled across peanut lines.

Results: Monthly rainfall totals were equal to or higher than the historical average for May, June, and September and below average in July and August. While early leafspot was the most common leafspot disease observed, noticeable late leafspot development was seen in early-October on the Folicur 3.6F-treated Carver peanut. Due to the rotation pattern, the incidence of leafspot diseases and SSR was reduced. Significant differences in the level of leafspot control were noted between the fungicide programs (Table 1). The Headline program gave significantly better control of early and late leafspot than the other fungicide programs. The Abound 2SC program was also more effective in controlling leafspot when compared with the season-long Bravo Ultrex, Folicur 3.6F, Stratego, and Bravo Ultrex plus Moncut 70DF programs. The level of leafspot control provided by the Folicur 3.6F and the season-long Bravo Ultrex programs was statistically similar. Fewer SSR disease hits were noted on the Moncut-treated peanuts compared to the Stratego, Headline 2.09EC, and season-long Bravo Ultrex programs. Across all three peanut lines, Moncut 70DF, Abound 2SC, and Folicur 3.6F were equally effective in controlling SSR. Yield response to the Headline program was significantly higher than that with the Stratego and season-long Bravo Ultrex programs. Yield response to the Abound program was also better than that obtained with the Stratego program.

Peanut lines differed in their susceptibility to leafspot diseases and southern stem rot. Due in part to the heavy rains in September through mid-October, leafspot intensity progressively increased on the later maturing Carver and Florida C-99R peanuts (Table 2). The level of SSR damage was significantly higher on Carver than Andru II and Florida C-99R. The least SSR damage was noted on Andru II. Carver significantly outyielded both Florida C-99R and Andru II. Yield of Andru II was lower than that of Florida C-99R.

On Andru II, Carver, and Florida C-99R, the Headline program consistently gave the best control of early leafspot (Table 3). The Abound 2SC program was as effective as the Headline program on Andru II but not on the other two peanut lines. However, better leafspot control was obtained with the Abound 2SC program compared with the Bravo Ultrex, Folicur 3.6F, and both Bravo Ultrex plus Moncut 70 DF programs on Andur II and Carver peanuts. On Florida C-99R, the level of leafspot control given by the Abound 2SC, Bravo Ultrex, Folicur 3.6F, Stratego, and both Bravo Ultrex plus Moncut 70DF programs was similar. Both Bravo Ultrex plus Moncut 70DF, the Stratego, and the Folicur programs were more effective controlling early leafspot than Bravo Ultrex alone on Andru II but not on Carver or Florida C-99R.

Overall, southern stem rot damage was relatively low on all peanut lines. As a result relatively few differences in disease control were seen between fungicide programs. On Andru II and Carver, incidence of SSR was higher for the Stratego program compared with all other program except for Bravo Ultrex alone (Table 3). On Carver and Florida C-99R, SSR damage levels for the Headline program were similar to those recorded for the Stratego and Bravo Ultrex programs. The best disease control on all three peanut lines was observed with both of the Bravo Ultrex plus Moncut 70DF and the Abound 2SCprograms. When compared with the Stratego program, Folicur 3.6F reduced SSR incidence on Andru II and Carver but not on Florida C-99R.

On Andru II, yields for the Headline program were significantly higher than those for the single application Bravo Ultrex plus Moncut 70DF and Stratego programs (Table 3). Otherwise, yields for the remaining fungicide programs were similar. For Carver, yield response with the Headline and four-application Bravo Ultrex plus Moncut 70DF programs were better than that obtained with Bravo Ultrex alone. On Florida C-99R, significant yield gains were obtained with the Headline, Abound 2SC, and the single application Bravo Ultrex plus Moncut 70DF programs.

Summary: As has been previously noted, the 9 fluid ounces of Headline 2.09EC program outperformed all other fungicide programs against early leafspot. The 1.2 pints per acre rate of Abound 2SC also proved more effective in controlling early leafspot than all of the remaining fungicide programs. In contrast to one other fungicide trial, the recommended four-application Folicur 3.6F program was as effective in controlling early leafspot as Bravo Ultrex alone but proved less effective than either Headline 2.09EC or Abound 2SC. Since SSR pressure was low, relatively little information regarding the fungicide effectiveness against this disease can be gleaned from this study. However, disease incidence was higher for the Bravo Ultrex and Stratego programs. Lowest yields were recorded for the Bravo Ultrex alone and Stratego, which gave the poorest combination of early leafspot and SSR control.

TABLE 1. COMPARISON OF RECOMMENDED FUNGICIDE PROGRAMS FOR THE CONTROL OF DISEASES AND THEIR INFLUENCE ON PEANUT YIELD, WREC 2004

Program and rate/A	Application timing	LS rating	SSR[1]	Yield (lb/A)
Bravo Ultrex 1.4 lb	1-7	4.2 a[2]	2.2 ab	3,751 bc
Bravo Ultrex 1.4 lb	1,2,7	4.1 ab	1.3 bc	3,937 abc
Folicur 3.6F 0.45 pt	3-6			
Bravo Ultrex 1.4 lb	1,2,4,5,6,7	4.0 ab	0.6 c	3,860 ab
Bravo Ultrex 1.4 lb + Moncut 70DF 1.4 lb	3			
Bravo Ultrex 1.4 lb	1,2,7	3.7 b	0.4 c	3,880 abc
Bravo Ultrex 1.4 lb + Moncut 70DF 0.4 lb	3,4,5,6			
Bravo Ultrex 1.4 lb	1,2,4,6,7	3.1 c	0.9 bc	3,883 ab
Abound 2SC 1.15 pt	3,5			
Bravo Ultrex 1.4 lb	1,2,4,6,7	2.2 d	2.1 ab	4,066 a
Headline 2.09EC 9.0 fl oz	3,5			
Stratego 7 fl oz	1,2	4.0 ab	2.9 a	3,729 c
Bravo Ultrex 1.4 lb	3-7			

[1]Southern stem rot (SSR) incidence is expressed as the number of hits or loci per 60 feet.

[2]Means in each column followed by the same letter were not significantly different according to analysis of variance and Fisher's protected least significant difference (LSD) test (P=0.05).

TABLE 2. YIELD RESPONSE AND SENSITIVITIY OF SELECTED PEANUT LINES TO LEAFSPOT AND SOUTHERN STEM ROT

Peanut line	Maturity group	Leafspot rating	SSR[1]	Yield (lb/A)
Andru II	3	3.4 b[2]	0.6 b	3,447 c
Carver	4	3.6 ab	2.4 a	4,290 a
Florida C-99R	5	3.8 a	1.4 ab	3,992 b

[1]Southern stem rot (SSR) incidence is expressed as the number of hits or loci per 60 feet.

[2]Means in each column followed by the same letter were not significantly different according to analysis of variance and Fisher's protected least significant difference (LSD) test (P=0.05).

TABLE 3. EFFICACY OF RECOMMENDED FUNGICIDE PROGRAMS FOR THE CONTROL OF DISEASES ON PEANUT BY PEANUT CULTIVAR

Program and rate/A	Application timing	Leafspot rating	SSR[1]	Yield (lb/A)
Andru II				
Bravo Ultrex 1.4 lb	1-7	4.5 a[2]	1.0 ab	3,303 ab
Bravo Ultrex 1.4 lb	1,2,7	3.5 b	0.3 b	3,618 ab
Folicur 3.6F 0.45 pt	3-6			
Bravo Ultrex 1.4 lb	1,2,4,5,6,7	3.5 b	0.5 b	3,206 b
Bravo Ultrex 1.4 lb + Moncut 70DF 1.4 lb	3			
Bravo Ultrex 1.4 lb	1,2,7	3.5 b	0.0 b	3,485 ab
Bravo Ultrex 1.4 lb + Moncut 70DF 0.4 lb	3,4,5,6			
Bravo Ultrex 1.4 lb	1,2,4,6,7	2.8 c	0.0 b	3,485 ab
Abound 2SC 1.15 pt	3,5			
Bravo Ultrex 1.4 lb	1,2,4,6,7	2.4 c	0.5 b	3,739 a
Headline 2.09EC 9.0 fl oz	3,5			
Stratego 7 fl oz	1,2	3.6 b	2.3 a	3,291 b
Bravo Ultrex 1.4 lb	3-7			
Carver				
Bravo Ultrex 1.4 lb	1-7	3.9 a	4.8 a	4,102 b
Bravo Ultrex 1.4 lb	1,2,7	4.3 a	1.0 c	4,259 ab
Folicur 3.6F 0.45 pt	3-6			
Bravo Ultrex 1.4 lb	1,2,4,5,6,7	4.1 a	1.0 c	4,271 ab
Bravo Ultrex 1.4 lb + Moncut 70DF 1.4 lb	3			
Bravo Ultrex 1.4 lb	1,2,7	3.6 ab	0.8 c	4,386 a
Bravo Ultrex 1.4 lb + Moncut 70DF 0.4 lb	3,4,5,6			
Bravo Ultrex 1.4 lb	1,2,4,6,7	3.0 b	1.3 c	4,344 ab
Abound 2SC 1.15 pt	3,5			
Bravo Ultrex 1.4 lb	1,2,4,6,7	2.1 c	3.3 abc	4,386 a
Headline 2.09EC 9.0 fl oz	3,5			
Stratego 7 fl oz	1,2	4.1 a	4.5 ab	4,283 ab
Bravo Ultrex 1.4 lb	3-7			
Florida C-99R				
Bravo Ultrex 1.4 lb	1-7	4.1 a	0.8 ab	3,848 ab
Bravo Ultrex 1.4 lb	1,2,7	4.4 a	2.5 a	3,933 ab
Folicur 3.6F 0.45 pt	3-6			
Bravo Ultrex 1.4 lb	1,2,4,5,6,7	4.3 a	0.3 b	4,102 a
Bravo Ultrex 1.4 lb + Moncut 70DF 1.4 lb	3			
Bravo Ultrex 1.4 lb	1,2,7	3.9 a	0.5 ab	3,769 ab
Bravo Ultrex 1.4 lb + Moncut 70DF 0.4 lb	3,4,5,6			
Bravo Ultrex 1.4 lb	1,2,4,6,7	3.5 a	1.5 ab	4,120 a
Abound 2SC 1.15 pt	3,5			
Bravo Ultrex 1.4 lb	1,2,4,6,7	2.1 b	2.5 a	4,072 a
Headline 2.09EC 9.0 fl oz	3,5			
Stratego 7 fl oz	1,2	4.4 a	2.0 ab	3,612 b
Bravo Ultrex 1.4 lb	3-7			

[1]Southern stem rot (SSR) incidence is expressed as the number of hits or loci per 60 feet.

[2]Means in each column followed by the same letter were not significantly different according to analysis of variance and Fisher's protected least significant difference (LSD) test (P=0.05).

EFFICACY OF RECOMMENDED FUNGICIDE PROGRAM FOR THE CONTROL OF LEAFSPOT DISEASE AND SOUTHERN STEM ROT ON SELECTED PEANUT LINES COMPARED IN AN IRRIGATED PRODUCTION SYSTEM, WREC

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

Objective: The effectiveness of recommended Bravo Ultrex, Folicur 3.6F, Abound 2SC, Headline 2.09EC, and Moncut 70DF programs for the control of leafspot diseases and southern stem rot, as well as on their impact of the yield of Andru II, Carver, and Florida C-99R peanut lines in irrigated production system.

Methods: On May 25, Andru II (Maturity Group 3), Carver (Maturity Group 4), and Florida C-99R (Maturity Group 5) peanut lines were planted at the Wiregrass Research and Extension Center (WREC) in Headland, Ala., at a rate of approximately six seeds per foot of row using conventional tillage practices in a Dothan fine sandy loam (OM <1 percent) in a tier maintained in a peanut-cotton rotation. A split-plot design with peanut lines as the whole plot 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 with each whole plot. Sonalan at 1.0 quart per acre plus Strongarm at 0.45 ounce per acre was broadcast prior to planting and lightly incorporated. Escape weeds were controlled with flat sweeps or were pulled by hand. Temik 15G at 6.7 pounds per acre was applied in-furrow at-planting for thrips control. The test area was irrigated as needed.

Full canopy sprays were made on 1= June 23, 2 = July 9, 3 = July 23, 4 = August 4, 5 = August 18, 6 = September 1, and 7 = September 15 with a tractor-mounted boom sprayer with three TX-8 nozzles per row in 15 gallons per acre spray volume. Early and late leafspot (LS) were rated together using the Florida peanut leafspot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions noticeable in lower and upper leaf canopy, 4 = some lesions in lower and upper canopy with light defoliation (≤10 percent), 5 = lesions noticeable with some defoliation (≤25 percent), 6 = lesions numerous with significant defoliation (≤50 percent), 7 = lesions numerous with heavy defoliation (≤75 percent), 8 = numerous lesions on few remaining leaves with severe defoliation (≤90 percent), 9 = few remaining leaves covered with lesions and severe defoliation (≤95 percent), and 10 = plants defoliated or dead. Leafspot ratings were recorded on September 21 for Andru II, October 7 for Carver, and October 19 for Florida C-99R. Southern stem rot (SSR) hits or disease loci, where one hit or locus is defined as ≤1 foot of consecutive SSR-damaged plants per row, were made immediately after plot inversion on September 23 for Andru II, October 8 for Carver, and October 22 for Florida C-99R. Plots were picked two to three days later with a field combine and yields were reported at 10 percent moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test (P=0.05). Since the cultivar-by-treatment interaction for leafspot, SSR, and yield were not significant, data presented in the table was pooled across peanut lines.

Results: Monthly rainfall totals were equal to or higher than the historical average for May, June, and September and below average in July and August. The combination of plentiful rainfall and a peanut-cotton-peanut rotation contributed to the heavy leafspot and SSR pressure. Leafspot ratings showed that the program containing Headline was significantly better than all other treatment regimes (Table 1). Although the season-long Bravo Ultrex and both Bravo Ultrex plus Moncut 70DF programs gave similar control of leafspot, all three were less effective than the programs that included Abound 2SC or Headline 2.09EC. Overall, the Headline 2.09EC program gave the best control of early and late leafspot. While early leafspot was the predominant leafspot disease observed, considerable late leafspot development was noted on the Folicur 3.6F and to a lesser extent the Stratego-treated Carver peanuts. Mixed outbreaks of early and late leafspot were also observed for several fungicide programs on Florida C-99R. Incidence of SSR was significantly higher for the Abound 2SC, Stratego, and season-long Bravo Ultrex program compared with the Folicur 3.6F and both Bravo plus Moncut 70DF programs. The level of SSR control of the Bravo plus Moncut 70DF programs was significantly higher than those of the other fungicide programs. Lowest yields were recorded for the Stratego program.

Significant differences in leafspot severity, incidence of SSR, and yield were seen between the three peanut cultivars. When averaged across all fungicide programs, overall leafspot severity was higher on Carver and Florida C-99R than on the early maturing Andru II (Table 2). Carver suffered from heavier SSR damage compared with Andru II and Florida C-99R, which had similar SSR damage ratings. Yield of Florida C-99R were higher compared with those for Andru II and Carver. Carver and Andru II produced similar yields.

On the individual peanut lines, the recommended four-spray block program for Folicur 3.6F failed to give effective control of a combination of early and late leafspot on Carver and Florida C-99R (Table 3). Leafspot-related defoliation on Carver and Florida C-99R was close to 65 percent and 50 percent, respectively, on the Folicur 3.6F-treated peanuts. The Stratego program also gave similarly poor leafspot control. In contrast, defoliation levels on these cultivars treated season-long with Bravo Ultrex was just below 25 percent. The Abound program controlled leafspot better on Andru II and Florida C-99R than did Bravo Ultrex alone. As previously described, the Headline 2.09EC program limited leafspot development on all three peanut cultivars to minor leafspotting with very limited premature defoliation.

Considerable differences in SSR incidence were found between fungicide programs on Andru II and Carver, but not on Florida C-99R (Table 3). In fact, the incidence of SSR on Florida C-99R was similar across fungicide programs. On both Andru II and Carver, the Bravo Ultrex plus Moncut 70DF gave significantly better control of SSR than the Abound 2SC, Headline 2.09EC, Stratego, and Bravo Ultrex programs. The level of SSR control obtained with Folicur 3.6F and both Bravo Ultrex plus Mncut 70DF programs was similar. However, disease incidence on the Folicur 3.6F-treated Andru II and Carver peanuts was statistically similar to the level of control given by the Abound 2SC and Bravo Ultrex programs. The Folicur 3.6F program gave better SSR control than Stratego on Andru II and Carver but only on Carver with the Headline 2.09EC program.

On each peanut cultivar, yield response to the different fungicide programs was related to the level of leafspot and particularly SSR damage. With a few exceptions, higher yields were obtained with the Bravo Ultrex plus Moncut 70DF programs (Table 3). Application rate and timing appeared to have little impact on the control of leafspot and SSR provided by both Bravo Ultrex plus Moncut programs. On Andru II and Florida C-99R but not the Carver peanut, yields obtained with the Folicur 3.6F and both Bravo Ultrex plus Moncut 70DF programs were not statistically different. Similar increases in yield were noted with the Abound 2SC and Bravo Ultrex plus Moncut 70DF programs on Florida C-99R but not on Carver where heavier SSR damage was seen. Yield for the Folicur 3.6F and Abound 2SC programs were similar on all three peanut cultivars. Except on Andru II, yield response for the Headline 2.09EC program was significantly below that obtained with Bravo Ultrex plus Moncut 70DF. Generally, the Stratego-treated peanuts yielded far less than those protected from leafspot and SSR with either Bravo Ultrex plus Moncut 70DF programs.

Summary: Among the seven registered fungicide programs, the Headline 2.09EC program that included two mid-summer applications of the 9.0-fluid-ounces-per-acre rate of this fungicide gave superb control of early and late leafspot. Unfortunately, Headline 2.09EC was equally ineffective as Bravo Ultrex alone in controlling SSR, particularly on the Andru II and Carver peanut. As a result of significant SSR damage, yield response with this Headline 2.09EC program was less than those obtained with the Bravo Ultrex plus Moncut 70DF programs.

While the level of leafspot control obtained was average, both of the Bravo plus Moncut 70DF programs were equally effective in controlling SSR (white mold) on peanut. The level of disease control was particularly impressive on the Andru II and Carver peanut, where both programs gave superior control of SSR. The excellent SSR control obtained with both Bravo Ultrex plus Moncut 70DF programs was reflected in higher pod yields. The level of disease control and yield response with the one 1.4 pounds per acre and four 0.4 pound per acre Moncut 70DF programs was quite similar. On peanuts threatened with severe SSR damage, either of the Bravo Ultrex plus Moncut 70DF programs may be the best fungicide programs for maintaining yields.

In some situations, the performance of Folicur 3.6F against leafspot diseases appears to have declined when compared with the results obtained with this same fungicide in past field trials. Here, an outbreak of late leafspot was seen on the Folicur 3.6F-treated Carver and Florida C-99R. In contrast, the level of SSR control

response given by this fungicide was intermediate between the Bravo Ultrex plus Moncut 70DF and Abound 2SC programs. Effectiveness of Folicur 3.6F for the control of early and late leafspot may be enhanced with a low rate of a non-ionic surfactant. On poorly rotated fields or other situations where heavy late leafspot pressure is expected, adding Bravo Ultrex or another chlorothalonil fungicide with all Folicur 3.6F tank mixture may be needed to ensure effective control of these diseases and avoid leafspot-related yield losses.

Although the level of leafspot control obtained with Abound 2SC was better than given by the Bravo Ultrex standard, this fungicide program surprisingly was not as effective in controlling SSR as Bravo Ultrex plus Moncut 70DF. As a result, the yield response with the Abound 2SC program was generally lower compared to that given by the Bravo Ultrex plus Moncut 70DF programs. In previous trials, the level of disease control and yield gains obtained with the Abound 2SC and Bravo Ultrex plus Moncut 70DF programs are often quite similar.

The effectiveness of the Stratego program was reflected in relative low pod yields, particularly on Andru II and Carver peanuts. In situations where heavy leafspot pressure is expected, an early season Stratego program may not be the best choice. For SSR control, a fungicide such as Moncut 70DF would have to be added to a Stratego program to prevent significant disease-induced yield loss.

TABLE 1. COMPARISON OF RECOMMENDED FUNGICIDE PROGRAMS FOR THE CONTROL OF DISEASES AND THEIR INFLUENCE ON PEANUT YIELD IN AN IRRIGATED PRODUCTION SYSTEM, WREC 2004

Program and rate/A	Application timing	Leafspot rating	SSR incidence[1]	Yield (lb/A)
Bravo Ultrex 1.4 lb	1-7	4.7 b[2]	12.5 a	3,783 b
Bravo Ultrex 1.4 lb	1,2,7	5.8 a	7.8 a	3,975 b
Folicur 3.6F 0.45 pt	3,4,5,6			
Bravo Ultrex 1.4 lb	1,2,4,5,6,7	5.0 b	5.0 b	4,453 a
Bravo Ultrex 1.4 lb + Moncut 70DF 1.4 lb	3			
Bravo Ultrex 1.4 lb	1,2,7	4.6 b	3.5 b	4,529 a
Bravo Ultrex 1.4 lb + Moncut 70DF 0.4 lb	3,4,5,6			
Bravo Ultrex 1.4 lb	1,2,4,6,7	4.0 c	13.6 a	3,967 b
Abound 2SC 1.15 pt	3,5			
Bravo Ultrex 1.4 lb	1,2,4,6,7	3.2 d	14.9 a	3,797 b
Headline 2.09EC 9.0 fl oz	3,5			
Stratego 7.0 floz	1,2	5.5 a	15.2 a	3,487 c
Bravo Ultrex 1.4 lb	3,4,5,6,7			

[1]Southern stem rot (SSR) incidence is expressed as the number of hits or loci per 60 feet.

[2]Means in each column followed by the same letter were not significantly different according to analysis of variance and Fisher's protected least significant difference (LSD) test (P=0.05).

TABLE 2. YIELD RESPONSE AND SENSITIVITIY OF SELECTED PEANUT LINES TO LEAFSPOT AND SOUTHERN STEM ROT

Peanut line	Leafspot rating	SSR incidence[1]	Yield (lb/A)
Andru II	4.3 b[2]	8.8 b	3,853 b
Carver	4.9 a	13.5 a	3,914 b
Florida C-99R	4.8 a	8.8 b	4,113 a

[1]Southern stem rot (SSR) incidence is expressed as the number of hits or loci per 60 feet.

[2]Means in each column followed by the same letter were not significantly different according to analysis of variance and Fisher's protected least significant difference (LSD) test (P=0.05).

TABLE 3. EFFICACY OF RECOMMENDED FUNGICIDE PROGRAMS FOR THE CONTROL OF DISEASES ON PEANUT BY PEANUT CULTIVAR

Fungicide program and rate/A	Application timing	Leafspot rating	SSR incidence[1]	Yield (lb/A)
Andru II				
Bravo Ultrex 1.4 lb	1-7	4.4 def[2]	12.3 bcdef	3,663 defg
Bravo Ultrex 1.4 lb	1,2,7	5.0 cd	5.0 fgh	3,962 bcde
Folicur 3.6F 0.45 pt	3-6			
Bravo Ultrex 1.4 lb	1,2,4,5,6,7	4.8 cde	2.0 h	4,162 abc
Bravo Ultrex 1.4 lb + Moncut 70DF 1.4 lb	3			
Bravo Ultrex 1.4 lb	1,2,7	4.9 cde	2.0 h	4,296 ab
Bravo Ultrex 1.4 lb + Moncut 70DF 0.4 lb	3,4,5,6			
Bravo Ultrex 1.4 lb	1,2,4,6,7	3.6 ghi	12.5 bcdef	3,818 cdef
Abound 2SC 1.15 pt	3,5			
Bravo Ultrex 1.4 lb	1,2,4,6,7	2.9 j	12.8 bcdef	3,812 cdef
Headline 2.09EC 9.0 fl oz	3,5			
Stratego 7 fl oz	1,2	4.8 cde	15.0 abcde	3,255 g
Bravo Ultrex 1.4 lb	3-7			
Carver				
Bravo Ultrex 1.4 lb	1-7	4.9 cde	16.8 abc	3,576 efg
Bravo Ultrex 1.4 lb	1,2,7	6.5 a	11.0 cdefg	3,648 efg
Folicur 3.6F 0.45 pt	3-6			
Bravo Ultrex 3.6F 0.45 pt	1,2,4,5,6,7	5.0 cd	5.5 fgh	4,489 a
Bravo Ultrex 1.4 lb + Moncut 70DF 1.4 lb	3			
Bravo Ultrex 1.4 lb	1,2,7	4.4 def	3.3 gh	4,544 a
Bravo Ultrex 1.4 lb + Moncut 70DF 0.4 lb	3,4,5,6			
Bravo Ultrex 1.4 lb	1,2,4,6,7	4.3 efg	16.3 abcd	3,933 bcde
Abound 2SC 1.15 pt	3,5			
Bravo Ultex 1.4 lb	1,2,4,6,7	3.5 hij	22.0 a	3,769 cdef
Headline 2.09EC 9.0 fl oz	3,5			
Stratego 7 fl oz	1,2	5.9 ab	19.8 ab	3,443 fg
Bravo Ultres 1.4 lb	3-7			
Florida C-99R				
Bravo Ultrex 1.4 lb	1-7	4.9 cde	8.5 defgh	4,108 abcd
Bravo Ultrex 1.4 lb	1,2,7	5.9 ab	7.3 efgh	4,314 ab
Folicur 3.6F 0.45 pt	3-6			
Bravo Ultrex 1.4 lb	1,2,4,5,6,7	5.3 bc	7.5 efgh	4,126 abc
Bravo Ultrex 1.4 lb + Moncut 70DF 1.4 lb	3			
Bravo Ultrex 1.4 lb	1,2,7	4.6 cdef	5.3 fgh	4,519 a
Bravo Ultrex 1.4 lb + Moncut 70DF 0.4 lb	3,4,5,6			
Bravo Ultrex 1.4 lb	1,2,4,6,7	4.0 fgh	12.0 bcdef	4,150 abc
Abound 2SC 1.15 pt	3,5			
Bravo Ultrex 1.14 lb	1,2,4,6,7	3.3 ij	10.0 cdefg	3,812 cdef
Headline 2.09EC 9.0 fl oz	3,5			
Stratego 7 fl oz	1,2	5.8 b	10.8 cdefg	3,763 cdef
Bravo Ultrex 1.4 lb	3-7			

[1]Southern stem rot (SSR) incidence is expressed as the number of hits or loci per 60 feet.

[2]Means in each column followed by the same letter were not significantly different according to analysis of variance and Fisher's protected least significant difference (LSD) test (P=0.05).

COMPARISON OF ABOUND 2SC CALENDAR AND ADVISORY PROGRAMS FOR THE CONTROL OF DISEASES ON THE FLORIDA C-99R PEANUT, WREC

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

Objective: Compared the standard and modified rules for the AU-Pnut disease advisory, as well as calendar schedules with two-, three-, and four-week treatment schedules with Abound 2SC fungicide for the control of leafspot diseases and southern stem rot along with the yield of the partially disease resistant peanut cultivar Florida C-99R in an irrigated production setting at the Wiregrass Research and Extension Center (WREC) in Headland, Ala.

Methods: On May 25, the late maturing (Group 5) peanut line Florida C-99R, which has partial resistance to late leafspot and southern stem rot (SSR), was planted at a rate of six seeds per foot of row in a site maintained in a peanut-cotton-peanut rotation using conventional tillage practices in a Dothan fine sandy loam (OM <1 percent). A randomized complete block design with four replications per treatment schedule was used. Plots consisted of four 30-foot rows spaced 3 feet apart and were irrigated as needed. Weed and nematode control recommendations of the Alabama Cooperative Extension System were followed. Escape weeds were pulled by hand. Fungicides were applied on a two-, three-, and four-week calendar schedule, as well as according to the standard 6/3 (number of rain events [≥0.10 inch] triggering the first fungicide application/number of rain events triggering subsequent applications) and modified 8/4 and 10/5 AU-Pnut leafspot advisory.

In all of the calendar programs, applications of Abound 2SC at 18.2 fluid ounces per acre were scheduled approximately 60 and 90 days after planting. A tractor-mounted boom sprayer with three TX-8 hollow cone nozzles per row that was calibrated to deliver 15 gallons per acre of spray volume was used to apply all fungicide treatments. Early and late leafspot were rated together using the Florida peanut leafspot scoring system where 1 = no disease, 2 = very few lesion in lower canopy, 3 = few lesions in lower and upper canopy, 4 = some lesions in lower and upper canopy with light 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 = numerous lesions on leaves with severe defoliation (≤90 percent), 9 = few remaining leaves covered with lesions and severe defoliation (≤95 percent), and 10 = plants defoliated or dead. Leafspot (LS) ratings were made on July 13, July 27, August 10, August 24, September 8, September 21, and October 7 and the area under the disease progress curve (AUDPC) for each treatment schedule was calculated. The leafspot ratings taken on October 7 are also presented in the table. Southern stem rot (SSR) hit or loci counts, where one hit (locus) is defined as <1 foot of consecutive SSR-damaged plants per row, were made immediately after plot inversion on October 28. Yields were adjusted to 10 percent moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference test (P=0.05).

Results: On the basis of the final leafspot ratings, the two-week calendar program gave better control of this disease than either the three- or four-week calendar schedules (see table). However, the AUDPC values for leafspot for these three programs were statistically similar. The AUDPC value for the 8/4 AU-Pnut program was significantly lower than that of the 10/5 AU-Pnut program and similar to the value for the standard 6/3 AU-Pnut advisory. Despite several fewer fungicide applications, two of the three AU-Pnut advisory programs had AUDPC values similar to those of the standard two-week Abound 2SC calendar program. No differences in SSR incidence were noted between any of the calendar and advisory programs. Although significant differences in final leafspot ratings were noted between the calendar programs, yields were similar. Higher yields were recorded for the 6/3 and 8/4 AU-Pnut advisory programs than for the 10/5 AU-Pnut advisory. Despite poorer leafspot control, the 6/3 AU-Pnut advisory had higher yields compared with the standard two-week calendar program.

Summary: The AU-Pnut advisory is a viable method of scheduling fungicide applications in an Abound 2SC program for disease control on peanut. While some of the AU-Pnut advisory programs with Abound 2SC were

not as effective in controlling leafspot as the standard two-week calendar program, yield response for several of the Abound 2SC AU-Pnut advisory treatment schedules were equal to and sometime better than that of the two-week calendar program. Compared with the standard two-week calendar program, three, four, and four fungicide applications were saved with the 6/3, 8/4, and 10/5 AU-Pnut advisory schedules, respectively.

The three- and four-week calendar treatment schedules with Abound 2SC and Bravo Ultrex proved to be surprisingly effective in controlling leafspot diseases and maintaining peanut yields. Although leafspot ratings were higher, yields for the three- and four-week calendar schedule, which reduced the number of Bravo Ultrex applications by two and three, respectively, were similar to that of the standard two-week program.

Currently, the treatment interval for effective control of leafspot diseases on peanut with most fungicides, including Abound 2SC and Bravo Ultrex is two weeks. In some situations, research has shown that effective control of this disease can be obtained with fungicide applied at intervals beyond the recommended two-week interval. The AU-Pnut disease advisory, which triggers fungicide applications at or before the onset of favorable weather conditions, is one method for maintained effective disease control without greatly increasing the risk of yield loss. Due to improved application timing, the number of applications needed to control leafspot on peanut may be reduced in all but the wettest production seasons. The AU-Pnut advisory proved particularly effective when combined with the use of a peanut cultivar with partial resistance to leafspot diseases and southern stem rot.

IMPACT OF APPLICATION SCHEDULE ON THE CONTROL OF DISEASE WITH ABOUND 2SC AND ON THE YIELD OF FLORIDA C-99R PEANUT

Program and rate/A	Application timing		Leafspot rating		SSR[3]	Yield
	Interval	DAP[1]	rating	AUDPC[2]		(lb/A)
Bravo Ultrex 1.4 lb Abound 2SC 18.2 fl oz	2-week	29, 45, 70, 99, 111 58, 84	3.8 b[4]	256 b	4.3 a	3,987 b
Bravo Ultrex 1.4 lb Abound 2SC 18.2 fl oz	3-week	29, 70, 111 51, 93	4.5 a	268 ab	5.3 a	4,041 ab
Bravo Ultrex 1.4 lb Abound 2SC 18.2 fl oz	4-week	29, 111 58, 84	4.4 a	261 b	4.0 a	4,102 ab
Bravo Ultrex 1.4 lb Abound 2SC 18.2 fl oz	6/3[5]	29, 52 78, 97	4.6 a	266 b	4.0 a	4,296 a
Bravo Ultrex 1.4 lb Abound 2SC 18.2 fl oz	8/4	29 59, 97	3.9 b	255 b	4.8 a	4,048 ab
Bravo Ultrex 1.4 lb Abound 2SC 18.2 fl oz	10/5	29, 59, 97	4.4 a	283 a	6.5 a	3,430 c

[1]DAP = days after May 14 planting date when fungicide applications were made.

[2]AUDPC = area under the disease progress curve for leafspot diseases.

[3]Southern stem rot (SSR) incidence is expressed as the number of hits or disease loci per 60 feet of row in each plot.

[4]Means followed by the same letter are not significantly different according to analysis of variance and Fisher's protected least significant difference (LSD) test (P=0.05).

[5]Number of rain events (≥0.10 inch) in a standard and modified AU-Pnut advisory required to trigger first fungicide application/number of rain events need to trigger the second and all subsequent fungicide applications.

CALENDAR AND AU-PNUT ADVISORY SCHEDULES FOR RECOMMENDED FUNGICIDE PROGRAMS COMPARED FOR DISEASE CONTROL ON THREE RAINFED PEANUT LINES, WREC

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

Objective: To compare the level of control of leafspot diseases and southern stem rot obtained with recommended fungicides applied on a standard 14-day calendar schedule and according to the AU-Pnut disease advisory on Andru II, Carver, and Florida C-99R peanuts in a rainfed production setting at the Wiregrass Research and Extension Center (WREC) in Headland, Ala.

Methods: On 25 May, Andru II (Maturity Group 3), Carver (Maturity Group 4), and Florida C-99R (Maturity Group 5) peanut lines were planted at a rate of approximately six seeds per foot of row using conventional tillage practices in a Dothan fine sandy loam (OM <1 percent). A split-plot design with peanut lines as the whole plot 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. Sonalan at 1.0 quart per acre plus Strongarm at 0.45 ounce per acre was broadcast prior to planting and lightly incorporated. Escape weeds were controlled with flat sweeps or were pulled by hand. Temik 15G at 6.7 pounds per acre was applied in-furrow at-planting for thrips control. The test area was not irrigated.

On each peanut line, fungicides were applied on a 14-day calendar schedule as well as according to the 6/3 (number of rain events triggering first fungicide application/number of rain events triggering subsequent applications) AU-Pnut leafspot advisory with a tractor-mounted boom sprayer with three TX-8 nozzles per row in 15 gallons per acre spray volume. At total of seven and five fungicide applications were made to the plots treated at 14-day intervals and according to the AU-Pnut advisory, respectively. Calendar schedule applications were made on June 23, July 8, July 22, August 4, August 17, September 1, and September 14. Applications were made according to the AU-Pnut disease advisory on June 23, July 16, August 11, August 30, and September 14. Early and late leafspot (LS) were rated together using the Florida peanut leafspot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions noticeable in lower and upper leaf canopy, 4 = some lesions in lower and upper canopy with light defoliation (≤10 percent), 5 = lesions noticeable with some defoliation (≤25 percent), 6 = lesions numerous with significant defoliation (≤50 percent), 7 = lesions numerous with heavy defoliation (≤75 percent), 8 = numerous lesions on few remaining leaves with severe defoliation (≤90 percent), 9 = very few remaining leaves covered with lesions and severe defoliation (≤95 percent), and 10 = plants defoliated or dead. The average of the final leafspot ratings are presented in the table. The area under the disease progress curve (AUDPC) was also calculated from leafspot data recorded on July 13, July 27, August 10, August 24, September 9, October 1, and October 13. Southern stem rot (SSR) or white mold loci, where one hit or disease locus is defined as ≤1 foot of consecutive SSR-damaged plants per row, were made immediately after plot inversion on September 23for Andru II, October 7 for Carver, and October 21 for Florida C-99R. Plots were picked two to four days later with a field combine and yields were reported at 10 percent moisture.

Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test (P=0.05). Since the cultivar/treatment interaction for leafspot, SSR, and yield were not significant, data presented in the table was averaged across peanut lines.

Results: Monthly rainfall totals were equal to or higher than the historical average for May, June, and September and below average in July and August. When compared to the standard seven-application, 14-day calendar schedule, the peanuts treated according to the AU-Pnut advisory received two fewer fungicide applications. When applied on a 14-day calendar schedule, Abound 2SC, Folicur 3.6F, Bravo Ultrex, and Headline 2.09EC gave significantly better control of leafspot than when the same fungicides were applied according to the AU-Pnut leafspot advisory (Table 1). Among the four 14-day calendar regimes, the Folicur 3.6F and Bravo Ultrex programs were less effective in controlling leafspot than the Headline 2.09EC and Abound 2SC pro-

grams. When applications were scheduled using AU-Pnut, the Headline 2.09EC and Abound 2SC advisory program gave the best control of leafspot diseases. The Folicur 3.6F, Headline 2.09EC, Abound 2SC, and Bravo Ultrex calendar and advisory programs gave similar control of SSR. Among the four calendar treatment regimes, SSR incidence was higher on the peanuts treated season-long with Bravo Ultrex that with Folicur 3.6F. The level of disease control obtained with the Abound 2SC and Headline 2.09EC programs was intermediate between that of the Folicur 3.6F and season-long Bravo Ultrex program. Differences in yield noted between the calendar and AU-Pnut regimes for the Abound 2SC, Headline 2.09EC, and season-long Bravo Ultrex programs were not significant. In contrast, the Folicur 3.6F calendar program had significantly higher yields compared with the AU-Pnut advisory program with the same fungicide. Among the calendar programs, yield for the Folicur 3.6F program was significantly higher than that for the season-long Bravo Ultrex program but similar to those recorded for the Abound 2SC and Headline 2.09EC.

Leafspot severity on the three peanut cultivars significantly differed (Table 2). The highest leafspot rating was recorded for the Carver peanut, which suffered nearly 25 percent premature defoliation. Leafspot severity was significantly higher on Andru II compared with Florida C-99R. As indicated by a 4.2 leafspot rating, just over 10 percent defoliation was seen on Florida C-99R. Incidence of SSR and yields were similar across all three peanut cultivars.

With the exception of the 6.4-fluid-ounces-per-acre of Headline 2.09EC program, better leafspot control on Andru II was obtained when applications were made on a calendar schedule than according to the AU-Pnut disease advisory (Table 3). Similar results were seen with all fungicide programs on Carver and Florida C-99R.

The most dramatic decline in leafspot control between the calendar and AU-Pnut advisory on all three peanut cultivars was noted for the Folicur 3.6F program. The Folicur 3.6F AU-Pnut program was particularly ineffective in controlling leafspot on the Carver peanut.

When applied on a calendar schedule, the Folicur 3.6F program generally was as effective on Andru II and Florida C-99R in controlling leafspot diseases as the Bravo Ultrex and Abound 2SC programs but did not control this disease, as well as the 6.4 fluid ounces per acre Headline 2.09EC program on any of the three peanut cultivars. On the Carver peanut, leafspot severity was higher for the Folicur 3.6F program than for the other three fungicide programs. Among the calendar programs, the best leafspot control on Carver and Florida C-99R was given by the Headline 2.09EC program.

In general, scheduling method had little impact on SSR control and yield response on the Andru II, Carver, and Florida C-99R peanuts.

Summary: When applied on a 14-day calendar schedule, Abound 2SC, Folicur 3.6F, Bravo Ultrex, and Headline 2.09EC generally gave better leafspot control than when the same fungicides were applied according to the AU-Pnut leafspot advisory. The difference in control between the calendar and advisory schedules were most apparent with the Folicur 3.6F program, particularly on the leafspot-susceptible cultivar Carver. Headline 2.09EC, which showed excellent activity against leafspot, probably is the best choice to use in conjunction with the AU-Pnut disease advisory.

Due in part to dry weather patterns in late July and early August, SSR pressure was relatively low. As a result, relatively few differences in SSR were noted between the calendar and advisory schedules for all four fungicide programs. Among the calendar schedules, the Folicur 3.6F program controlled SSR better than Bravo Ultrex alone. Otherwise, SSR damage ratings for the calendar schedules for Abound 2SC and Headline 2.09EC programs were similar to those of the Folicur 3.6F and Bravo Ultrex programs.

Dry weather also contributed to the relatively low yields. As was the case with SSR incidence, yield response with the Folicur 3.6F program was significantly higher than that obtained with Bravo Ultrex alone. Yield response for the remaining Folicur 3.6F, Abound 2SC, Bravo Ultrex, and Headline 2.09EC calendar and advisory program were statistically similar.

Finally, no particular peanut cultivar had a noticeable yield advantage over the other. As has been previously noted, Carver, however, is more susceptible to leafspot diseases than either Andru II or Florida C-99R. Due to the increased leafspot susceptibility of Carver, a more intense fungicide program will be required to maintain optimum yields.

TABLE 1. COMPARISON OF CALENDAR AND ADVISORY FUNGICIDE PROGRAMS FOR THE CONTROL OF DISEASES AND THEIR INFLUENCE ON AVERAGE POD YIELD IN A RAINFED PRODUCTION SYSTEM

Program and rate/A	Application timing		Leafspot	SSR[2]	Yield
	Schedule	Date (DAP)[1]	rating		(lb/A)
Bravo Ultrex 1.4 lb	14-day	29, 44, 71, 99, 112	3.8 de[3]	3.0 bc	2,721 abc
Abound 2SC 1.15 pt		58, 84			
Bravo Ultrex 1.4 lb	AU-Pnut	29, 97, 112	5.1 b	2.5 bc	2,686 abc
Abound 2SC 1.15 pt		52, 77			
Bravo Ultrex 1.4 lb	14-day	29, 44, 112	4.3 c	1.9 c	2,877 a
Folicur 3.6F 0.45 pt		58, 71, 84, 97			
Bravo Ultrex 1.4 lb	AU-Pnut	29	5.8 a	2.9 bc	2,497 c
Folicur 3.6F 0.45 pt		52, 71, 97, 112			
Bravo Ultrex 1.4 lb	14-day	29, 44, 58, 71, 84, 99, 112	4.0 cd	3.2 ab	2,587 bc
Bravo Ultrex 1.4 lb	AU-Pnut	29, 58,71, 97, 112	5.4 b	4.3 a	2,468 c
Bravo Ultrex 1.4 lb	14 day	29, 44, 71, 99, 112	3.6 e	2.8 bc	2,797 ab
Headline 2.09EC 6.4 fl oz		58, 84			
Bravo Ultrex 1.4 lb	AU-Pnut	29, 97, 112	4.2 c	3.2 ab	2,607 bc
Headline 2.09EC 6.4 fl oz		52, 77			

[1]DAP = days after the May 25 planting date.

[2]Southern stem rot (SSR) incidence is expressed as the number of hits or loci per 60 feet.

[3]Means in each column followed by the same letter were not significantly different according to analysis of variance and Fisher's protected least significant difference (LSD) test (P=0.05).

TABLE 2. YIELD RESPONSE AND SENSITIVITIY OF SELECTED PEANUT LINES TO LEAFSPOT AND SOUTHERN STEM ROT

Peanut line	Maturity group	Leafspot rating	SSR incidence[1]	Yield (lb/A)
Andru II	Early	4.5 b[2]	2.8 a	2,607 a
Carver	Mid-season	4.9 a	2.8 a	2,657 a
Florida C-99R	Late	4.2 c	3.3 a	2,608 a

[1]Southern stem rot (SSR) incidence is expressed as the number of hits or loci per 60 feet.

[2]Means in each column followed by the same letter were not significantly different according to analysis of variance and Fisher's protected least significant difference (LSD) test (P=0.05).

TABLE 3. DISEASE RATINGS AND YIELDS FOR FUNGICIDE PROGRAMS BY PEANUT CULTIVAR

Program and rate/A	Application timing		Leafspot	SSR[1]	Yield
	Schedule	Date (DAP)	rating		(lb/A)
Andru II					
Bravo Ultrex 1.4 lb	14-day	29, 44, 71, 99, 112	4.0 c[2]	4.0 a	2,481 ab
Abound 2SC 1.15 pt		58, 84			
Bravo Ultrex 1.4 lb	AU-Pnut	29, 97, 112	4.6 b	2.0 bc	2,710 ab
Abound 2SC 1.15 pt		52, 77			
Bravo Ultrex 1.4 lb	14-day	29, 44, 112	4.0 c	1.8 c	2,692 ab
Folicur 3.6F 0.45 pt		58, 71, 84, 97			
Bravo Ultrex 1.4 lb	AU-Pnut	29	5.5 a	2.3 abc	2,426 b
Folicur 3.6F 0.45 pt		52, 71, 97, 112			
Bravo Ultrex 1.4 lb	14-day	29, 44, 58, 71, 84, 99, 112	4.0 c	2.8 abc	2,493 ab
Bravo Ultrex 1.4 lb	AU-Pnut	29, 58,71, 97, 112	5.5 a	3.8 ab	2,638 ab
Bravo Ultrex 1.4 lb	14 day	29, 44, 71, 99, 112	3.9 c	2.8 abc	2,770 a
Headline 2.09EC 6.4 fl oz		58, 84			
Bravo Ultrex 1.4 lb	AU-Pnut	29, 97, 112	4.4 bc	3.0 abc	2,644 ab
Headline 2.09EC 6.4 fl oz		52, 77			
Carver					
Bravo Ultrex 1.4 lb	14-day	29, 44, 71, 99, 112	3.8 ed	2.3 b	2,959 ab
Abound 2SC 1.15 pt		58, 84[2]			
Bravo Ultrex 1.4 lb	AU-Pnut	29, 97, 112	5.8 b	2.8 ab	2,710 abc
Abound 2SC 1.15 pt		52, 77			
Bravo Ultrex 1.4 lb	14-day	29, 44, 112	4.9 c	2.0 b	3,049 a
Folicur 3.6F 0.45 pt		58, 71, 84, 97			
Bravo Ultrex 1.4 lb	AU-Pnut	29	6.8 a	1.8 b	2,438 cd
Folicur 3.6F 0.45 pt		52, 71, 97, 112			
Bravo Ultrex 1.4 lb	14-day	29, 44, 58, 71, 84, 99, 112	4.1 d	3.3 ab	2,559 bcd
Bravo Ultrex 1.4 lb	AU-Pnut	29, 58,71, 97, 112	5.8 b	4.5 a	2,269 d
Bravo Ultrex 1.4 lb	14 day	29, 44, 71, 99, 112	3.4 e	3.0 ab	2,741 abc
Headline 2.09EC 6.4 fl oz		58, 84			
Bravo Ultrex 1.4 lb	AU-Pnut	29, 97, 112	5.0 c	3.0 ab	2,535 cd
Headline 2.09EC 6.4 fl oz		52, 77			
Florida C-99R					
Bravo Ultrex 1.4 lb	14-day	29, 44, 71, 99, 112	3.8 cd	2.8 b	2,723 a
Abound 2SC 1.15 pt		58, 84[2]			
Bravo Ultrex 1.4 lb	AU-Pnut	29, 97, 112	5.0 ab	2.8 b	2,638 a
Abound 2SC 1.15 pt		52, 77			
Bravo Ultrex 1.4 lb	14-day	29, 44, 112	4.0 c	2.0 b	2,892 a
Folicur 3.6F 0.45 pt		58, 71, 84, 97			
Bravo Ultrex 1.4 lb	AU-Pnut	29	5.4 a	4.8 a	2,626 a
Folicur 3.6F 0.45 pt		52, 71, 97, 112			
Bravo Ultrex 1.4 lb	14-day	29, 44, 58, 71, 84, 99, 112	4.0 c	3.5 ab	2,710 a
Bravo Ultrex 1.4 lb	AU-Pnut	29, 58,71, 97, 112	4.9 b	4.8 a	2,499 a
Bravo Ultrex 1.4 lb	14 day	29, 44, 71, 99, 112	3.6 d	2.8 b	2,874 a
Headline 2.09EC 6.4 fl oz		58, 84			
Bravo Ultrex 1.4 lb	AU-Pnut	29, 97, 112	3.3 e	3.5 ab	2,644 a
Headline 2.09EC 6.4 fl oz		52, 77			

[1]Southern stem rot (SSR) incidence is expressed as the number of hits or loci per 60 feet.

[2]Means in each column followed by the same letter were not significantly different according to analysis of variance and Fisher's protected least significant difference (LSD) test (P=0.05).

CALENDAR AND AU-PNUT ADVISORY SCHEDULES FOR HEADLINE 2.09EC COMPARED FOR DISEASE CONTROL IN PEANUT, WREC

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

Objective: To assess the efficacy of Headline 2.09EC applied over a range of application rates and treatment intervals for the control of leafspot diseases and southern stem rot on selected peanut lines in an irrigated production system at the Wiregrass Research and Extension Center (WREC) in Headland, Ala.

Methods: On May 25, the peanut cultivar Andru II (Maturity Group 3), Carver (Maturity Group 4), and Florida C-99R (Maturity Group 5) were planted at a rate of six seeds per foot of row using conventional tillage practices in a Dothan fine sandy loam (OM <1 percent) soil. A split-plot design with peanut lines as the whole plot and fungicide treatments as subplots was used. Subplots, which consisted of four 30-foot rows spaced 3 feet apart, were randomized with each whole plot. Sonalan at 1.0 quart per acre plus Strongarm at 0.45 ounces per acre was broadcast prior to planting and lightly incorporated. Escape weeds were controlled with flat sweeps or were pulled by hand. Temik 15G at 6.7 pounds per acre was applied in-furrow at-planting for thrips control. The test was irrigated in late July and early August as needed.

Full canopy sprays of Headline 2.09EC at 9.0 and 15.0 fluid ounces per acre were made on a 14-, 21-, and 28-day calendar schedule, was well as according to the standard rules for the AU-Pnut leafspot advisory with a tractor-mounted boom sprayer with three TX-8 nozzles per row that delivered approximately 15 gallons of spray volume per acre. Early and late leafspot were rated simultaneously using the Florida peanut leafspot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions in lower and upper leaf canopy, 4 = some lesions in lower and upper canopy with light 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 = numerous lesions on few remaining leaves with severe defoliation (≤90 percent), 9 = very few remaining leaves covered with lesions and severe defoliation (≤95 percent), and 10 = plants defoliated or dead. Leafspot ratings were taken on July 13, July 27, August 10, August 24, September 8, September 21, October 1, and October 13 and the area under the disease progress curve (AUDPC) was calculated. Southern stem rot (SSR) hit (loci) counts, where one hit or locus is defined as < 1 foot of consecutive SSR-damaged plants per row, were made immediately after plot inversion on September 23 for Andru II, October 7 for Carver, and October 22 for Florida C-99R. Yields reported at 10 percent moisture.

Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test (P=0.05). Since the cultivar/treatment interaction for leafspot, SSR, and yield were not significant, data presented in the table was pooled across peanut lines.

Results: Monthly rainfall totals were equal to or higher than the historical average for May, June, and September and below average in July and August. Early leafspot was the most common leafspot disease observed. The best season-long leafspot control was given by both rates of Headline 2.09EC applied on a 14-day calendar schedule and according to the AU-Pnut advisory (Table 1). A significant increase in disease severity was seen when the application interval increased from 14- to 21-days. The level of leafspot control provided by the 21- and 28-day programs of the 15 fluid ounces per acre rate but not the 9.0 fluid ounces per acre rate of Headline 2.09EC was similar. In addition, the level of leafspot control provided by the 21-day 9 fluid ounces per acre and both the 21- and 28-day 15 fluid ounces per acre Headline programs did not significantly differ from the disease ratings for the standard 14-day Bravo Ultrex program. Headline application rate and treatment interval had no impact on SSR incidence. At the 9 fluid ounces rate of Headline, yield was higher for the peanuts treated at 14-day than at the two longer application intervals. Yield for the AU-Pnut program for 9 fluid ounces per acre of Headline was significantly lower that the 14-day calendar program with the same fungicide. Despite significant differences in the level of leafspot control, yield response to the 15 fluid ounces per acre rate of Headline applied at 14-, 21-, and 28-day intervals, as well as the AU-Pnut program was simi-

lar. A significant yield gain over the standard 14-day Bravo Ultrex calendar program was obtained with the 9 fluid ounces per acre but not the 15 fluid ounces per acre Headline 14-day calendar program. Similar yields were noted for the 9 and 15 fluid ounces per acre rates of Headline applied on a 14-day schedule. In addition to better leafspot control, the 9 fluid ounces per acre Headline14-day calendar program had higher yields compared to the same rate of Headline applied at 21- and 28-day schedule. At the higher rate of Headline, the yield for the 14-, 21-, and 28-day was similar.

Although the final leafspot ratings for all three cultivars were similar, the AUDPC rating for leafspot was higher for Carver than Andru II and Florida C-99R (Table 2). The lowest AUDPC value was noted for the early maturing Andru II peanut. Across all fungicide programs, the incidence of SSR was lower on Andru II compared with Florida C-99R, while the incidence of this disease on Carver was intermediate. Yield for Carver and Florida C-99R was higher than that of Andru II.

On Andru II, the 9 fluid ounces per acre Headline 14-day calendar and AU-Pnut advisory programs gave better leafspot control than the same fungicide applied at 21- and 28-day intervals (Table 3). When 14-day Headline programs were compared, leafspot ratings for the Andru II peanuts treated with the 9 fluid ounces per acre rate was lower than that of the 15 fluid ounces per acre rate. At the higher rate, similar levels of leafspot damage were seen across all calendar treatment schedules. The 15 fluid ounces per acre Headline AU-Pnut advisory gave better leafspot control than the 21-day but not the 14- and 28-day calendar programs. Incidence of SSR was statistically similar across all Headline programs and for the Bravo Ultrex standard. Yield of Andru II did not appear to be closely lined to leafspot control, particularly for the 15 fluid ounces per acre Headline programs. At the 9 fluid ounces per acre rate, the 14-day calendar program showed better yields compared with the 21-, 28-, and AU-Pnut advisory programs. When applied every 14 days, yield for the 9 fluid ounce Headline and the standard Bravo Ultrex programs were similar. Yield was higher for the 15 fluid ounces per acre Headline 21-day program compared to the 14-day program with the same rate of this fungicide.

Treatment interval and application rate also had a significant impact on leafspot control on the Carver peanut. At both rates of Headline, better leafspot control was obtained with the 14-day than with the 21- and 28-day calendar programs (Table 3). The AU-Pnut advisory program for both the 9 and 15 fluid ounces per acre rates of Headline also gave equal control of leafspot as the corresponding 14-day calendar programs of the same rate of this fungicide. As was previously noted on Andru II, incidence of SSR was statistically similar across all Headline programs and for the Bravo Ultrex standard. In contrast to Andru II, higher yields for Carver were associated with better leafspot control. For both rates of Headline, the 14-day and AU-Pnut programs had higher yields than the corresponding 21- and 28-day programs. Yield response for the 21- and 28 day calendar programs for the 9 fluid ounces per acre and 15 fluid ounces per acre rates of Headline were similar.

On Florida C-99R, superior leafspot control was obtained with the 14-day and AU-Pnut programs for both rates of Headline compared with the longer calendar programs (Table 3). Generally, few differences in SSR incidence were noted between fungicide programs. The 9 fluid ounces per acre Headline 14-day calendar program had lower leafspot ratings than the 21-day calendar program with the same rate of this fungicide. Yield for the 9 fluid ounces per acre Headline 14-day calendar program was higher than that for the Bravo Ultrex standard and 21-day but not the 28-day program with the same rate of Headline. All of the 15 fluid ounces per acre Headline programs had similar yields.

Summary: The AU-Pnut leafspot advisory was as effective a method for scheduling applications in a Headline for the control of leafspot diseases as the recommended 14-day calendar schedule. On a 14-day schedule, both rates of Headline gave better leafspot control than the current Bravo Ultrex standard. At longer treatment intervals with both rates of Headline, the decline in leafspot control was generally correlated with a drop in yields. Headline application rate had very little influence in the control of leafspot diseases or on the yield on peanut. When applied at 15 fluid ounces per acre on a 14-day schedule, Headline failed to provide any protection from SSR. Under moderate to heavy SSR pressure, Headline will have to be either tank-mixed or alternated with another fungicide such as Moncut 70DF or Folicur 3.6F that has good activity against southern stem rot to ensure effective control of this disease.

TABLE 1. IMPACT OF TREATMENT SCHEDULE ON THE EFFICACY OF TWO RATES OF HEADLINE 2.09EC FOR THE CONTROL OF EARLY LEAFSPOT AND SOUTHERN STEM ROT, AS WELL AS THE YIELD OF SELECTED PEANUT LINES

Program and rate/A	Timing	Application date (DAP)[1]	Leafspot		SSR	Yield (lb/A)
			rating	AUDPC		
Bravo Ultrex 1.4 lb	14-d	29, 45, 58, 70, 84, 99, 112	4.0 bc	231ab[2]	8.3 a	3,646 bc
Bravo Ultrex 1.4 lb	14-d	29, 45, 70, 99, 112	3.5 ef	215 cd	7.1 a	3,979 a
Headline 2.09EC 9 fl oz		58, 84				
Bravo Ultrex 1.4 lb	21-d	29, 70, 112	4.2 b	237 a	8.6 a	3,440 c
Headline 2.09EC 9 fl oz		51, 93				
Bravo Ultrex 1.4 lb	28-d	29, 112	4.5 a	239 a	8.8 a	3,455 c
Headline 2.09EC 9 fl oz		58, 84				
Bravo Ultrex 1.4 lb	AU-Pnut[3]	29, 78, 97,112	3.8 cd	223 bc	8.9 a	3,668 bc
Headline 2.09EC 9 fl oz		45, 62				
Bravo Ultrex 1.4 lb	14-d	29, 45, 70, 99, 112	3.3 f	212 d	8.3 a	3,721 abc
Headline 2.09EC 15 fl oz		58, 84				
Bravo Ultrex 1.4 lb	21-d	29, 70, 112	4.1 b	234 a	8.2 a	3,674 bc
Headline 2.09EC 15 fl oz		51, 93				
Bravo Ultrex 1.4 lb	28-d	29, 112	4.0 bc	233 a	9.3 a	3,566 c
Headline 2.09EC 15 fl oz		58, 84				
Bravo Ultrex 1.4 lb	AU-Pnut	29, 78, 97,112	3.7 de	221 bcd	6.4 a	3,864 ab
Headline 2.09EC 15 fl oz		45, 62				

[1]DAP = days after the May 25 planting date.

[2]Means in each column followed by the same letter were not significantly different according to analysis of variance and Fisher's protected least significant difference (LSD) test (P=0.05).

[3]AU-Pnut disease advisory rules specify that the first fungicide application be made immediately after six or more rain events (≥0.1 inch) and the second and subsequent applications immediately after three rain events.

TABLE 2. YIELD RESPONSE AND SENSITIVITIY OF SELECTED PEANUT LINES TO LEAFSPOT AND SOUTHERN STEM ROT

Peanut line	Maturity group	Leafspot		SSR	Yield (lb/A)
		Final rating	AUDPC		
Andru II	Early	4.0 a[1]	211 c	7.0 b	3,456 b
Carver	Mid-season	3.9 a	241 a	8.4 ab	3,711 a
Florida C-99R	Late	3.8 a	229 b	9.2 a	3,837 a

[1]Mean separation in each column was according to analysis of variance and Fisher's protected least significant difference (LSD) test (P=0.05).

TABLE 3. INFLUENCE OF HEADLINE 2.09EC APPLICATION RATE AND TREATMENT INTERVAL ON THE CONTROL OF LEAFSPOT, SSR, AND ON THE YIELD OF THREE PEANUT CULTIVARS

Program and rate/A	Application		Leafspot	SSR[3]	Yield
	Schedule	Date (DAP)[1]	rating[2]		(lb/A)
Andru II					
Bravo Ultrex 1.4 lb	14-d	29, 45, 58, 70, 84, 99, 112	4.0 abc[4]	6.0 a	3,570 a
Bravo Ultrex 1.4 lb	14-d	29, 45, 70, 99, 112	3.5 cd	8.0 a	3,703 a
Headline 2.09EC 9 fl oz		58, 84			
Bravo Ultrex 1.4 lb	21-d	29, 70, 112	4.1 ab	6.3 a	3,328 bc
Headline 2.09EC 9 fl oz		51, 93			
Bravo Ultrex 1.4 lb	28-d	29, 112	4.4 a	8.2 a	3,237 c
Headline 2.09EC 9 fl oz		58, 84			
Bravo Ultrex 1.4 lb	AU-Pnut	29, 78, 97,112	3.4 d	6.8 a	3,370 bc
Headline 2.09EC 9 fl oz		45, 62			
Bravo Ultrex 1.4 lb	14-d	29, 45, 70, 99, 112	4.1 ab	6.5 a	3,297 c
Headline 2.09EC 15 fl oz		58, 84			
Bravo Ultrex 1.4 lb	21-d	29, 70, 112	4.5 a	7.3 a	3,714 a
Headline 2.09EC 15 fl oz		51, 93			
Bravo Ultrex 1.4 lb	28-d	29, 112	4.0 abc	9.0 a	3,461 abc
Headline 2.09EC 15 fl oz		58, 84			
Bravo Ultrex 1.4 lb	AU-Pnut	29, 78, 97,112	3.8 bcd	5.3 a	3,424 bc
Headline 2.09EC 15 fl oz		45, 62			
Carver					
Bravo Ultrex 1.4 lb	14-d	29, 45, 58, 70, 84, 99, 112	4.3 b	8.8 a	3,721 ab
Bravo Ultrex 1.4 lb	14-d	29, 45, 70, 99, 112	3.5 cd	8.3 a	4,023 a
Headline 2.09EC 9 fl oz		58, 84			
Bravo Ultrex 1.4 lb	21-d	29, 70, 112	4.3 b	8.8 a	3,322 b
Headline 2.09EC 9 fl oz		51, 93			
Bravo Ultrex 1.4 lb	28-d	29, 112	4.7 a	8.8 a	3,328 b
Headline 2.09EC 9 fl oz		58, 84			
Bravo Ultrex 1.4 lb	AU-Pnut	29, 78, 97,112	3.5 cd	10.0 a	3,987 a
Headline 2.09EC 9 fl oz		45, 62			
Bravo Ultrex 1.4 lb	14-d	29, 45, 70, 99, 112	3.3 d	8.3 a	4,017 a
Headline 2.09EC 15 fl oz		58, 84			
Bravo Ultrex 1.4 lb	21-d	29, 70, 112	3.9 bc	8.0 a	3,412 b
Headline 2.09EC 15 fl oz		51, 93			
Bravo Ultrex 1.4 lb	28-d	29, 112	4.0 b	9.0 a	3,551 b
Headline 2.09EC 15 fl oz		58, 84			
Bravo Ultrex 1.4 lb	AU-Pnut	29, 78, 97,112	3.5 cd	5.5 a	4,035 a
Headline 2.09EC 15 fl oz		45, 62			
Florida C-99R					
Bravo Ultrex 1.4 lb	14-d	29, 45, 58, 70, 84, 99, 112	3.8 bcd	10.0 ab	3,648 b
Bravo Ultrex 1.4 lb	14-d	29, 45, 70, 99, 112	3.4 d	5.0 b	4,211 a
Headline 2.09EC 9 fl oz		58, 84			
Bravo Ultrex 1.4 lb	21-d	29, 70, 112	4.1 ab	10.8 a	3,672 b
Headline 2.09EC 9 fl oz		51, 93			
Bravo Ultrex 1.4 lb	28-d	29, 112	4.4 a	9.3 ab	3,799 ab
Headline 2.09EC 9 fl oz		58, 84			
Bravo Ultrex 1.4 lb	AU-Pnut	29, 78, 97,112	3.6 cd	10.0 ab	3,648 ab
Headline 2.09EC 9 fl oz		45, 62			
Bravo Ultrex 1.4 lb	14-d	29, 45, 70, 99, 112	3.4 d	10.0 ab	3,848 ab
Headline 2.09EC 15 fl oz		58, 84			
Bravo Ultrex 1.4 lb	21-d	29, 70, 112	4.0 abc	9.3 ab	3,896 ab
Headline 2.09EC 15 fl oz		51, 93			
Bravo Ultrex 1.4 lb	28-d	29, 112	4.1 ab	10.0 ab	3,685 ab
Headline 2.09EC 15 fl oz		58, 84			
Bravo Ultrex 1.4 lb	AU-Pnut	29, 78, 97,112	3.8 bcd	8.5 ab	4,132 a
Headline 2.09EC 15 fl oz		45, 62			

[1]DAP = days after planting when fungicide applications were made.
[2]LS = combined rating for early and late leafspot.
[3]SSR = incidence of southern stem rot is expressed as the number of hits or disease loci per 60 feet of row.
[4]Means in each column that are followed by the same letter are not significantly different according to analysis of variance and Fisher's protected least significant difference (LSD) test (P=0.05).

YIELD RESPONSE AND REACTION OF COMMERCIAL RUNNER PEANUT LINES TO TSWV, LEAFSPOT DISEASES, AND SOUTHERN STEM ROT IN A PEANUT-COTTON-PEANUT CROPPING SYSTEM, WREC

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Objective: Assess the susceptibility of commercial peanut lines grown under irrigation to early and late leafspot, southern stem rot, and tomato spotted wilt virus (TSWV), as well as their yield response when maintained with two fungicide programs under moderate to heavy disease pressure.

Methods: On May 25, commercial runner peanut lines were planted at the Wiregrass Research and Extenison Center (WREC) in Headland, Ala., at a rate of approximately six seeds per foot of row using conventional tillage practices in a Dothan fine sandy loam (OM <1 percent) in a tier maintained in a peanut-cotton-peanut rotation. A split-plot design with peanut lines as the whole plot 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. Sonalan at 1 quart per acre plus Strongarm at 0.45 ounce per acre was broadcast prior to planting and lightly incorporated. Escape weeds were controlled with flat sweeps or were pulled by hand. Temik 15G at 13.3 pounds per acre was applied in-furrow at-planting for thrips control. The test area was irrigated as needed. One sub plot received seven full canopy sprays of Bravo Ultrex at 1.4 pounds per acre while the other received an application of Bravo Ultrex at 1.4 pounds per acre, which was followed by applications of Abound 2SC at 1.6 pints per acre, Bravo Ultrex at 1.4 pounds per acre plus Moncut 70DF at 0.8 pound per acre, Abound 2SC at 1.6 pints per acre, Bravo Ultrex at 1.4 pounds per acre plus Moncut 70DF at 0.8 pound per acre, and finally Bravo Ultrex at 1.4 pounds per acre. Fungicide treatments were applied on 1 = June 23, 2 = July 9, 3 = July 22, 4 = August 4, 5 = August 18, 6 = September 1, and 7 = September 15 with a tractor-mounted boom sprayer with three TX-8 nozzles per row in 15 gallons per acre spray volume.

Incidence of TSWV was determined on September 21, October 5, and October 19 for the maturity group 3 (Andru II), 4 (ANorden, AP-3, Carver, Georgia Green), and 5 (DP-1, Florida C-99R, C34-24, GA01R, GA02C) peanut lines, respectively by counting the number of TSWV hits or disease loci (one hit was defined as ≤1 foot of consecutive symptomatic plant(s) per row). Early and late leafspot (LS) were rated together using the Florida peanut leafspot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions noticeable in lower and upper leaf canopy, 4 = some lesions in lower and upper canopy with light defoliation (≤10 percent), 5 = lesions noticeable with some defoliation (≤25 percent), 6 = lesions numerous with significant defoliation (≤50 percent), 7 = lesions numerous with heavy defoliation (≤75 percent), 8 = numerous lesions on few remaining leaves with severe defoliation (≤90 percent), 9 = very few remaining leaves covered with lesions and severe defoliation (≤95 percent), and 10 = plants defoliated or dead. Leafspot ratings were recorded on September 21 for the Group 3 line, October 5 for the Group 4 lines, and October 19 for the Group 5 lines. Southern stem rot (SSR) loci, where one locus is defined as ≤1foot of consecutive SSR-damaged plants per row, were made immediately after plot inversion on September 23 for the Group 3 line, October 7 for the Group 4 lines, and October 21 for the Group 5 lines. Plots were picked two to three days later with a field combine and yields were reported at 7 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: Monthly rainfall totals were equal to or higher than the historical average for May, June, and September and below average in July and August. Incidence of TSWV was higher on DP-1, Florida C-99R, and Georgia Green than on the remaining commercial peanut lines (Table 1). Andru II, ANorden, AP-3, Carver, and C34-24 had lower TSWV ratings than Georgia Green. With the exception of DP-1, Georgia Green suffered significantly more leafspot damage than all the other peanut lines. The least spotting of the leaves and premature defoliation occurred on Andru II, C34-24, and GA01R. When compared over all peanut lines, the highest incidence of SSR was noted on ANorden. Significantly less SSR was observed on AP-3 than on ANorden,

Carver, Georgia Green, and DP-1. Yield of AP-3 and Carver was significantly higher than those of the Group 4 lines ANorden and Georgia Green. The late maturing Group 5 peanut lines all had similar yields. Yield for Andru II was similar to those recorded for all the other peanut lines.

While TSWV incidence was similar between the two fungicide programs, the Bravo Ultrex/Abound/Bravo Ultrex plus Moncut program gave superior control of leafspot diseases and SSR (Table 2). Although the yield response was higher for the Bravo Ultrex/Abound/Bravo Ultrex plus Moncut program, the yield gain between that program and the Bravo Ultrex standard was a surprisingly low 313 pounds per acre.

As expected, fungicide program had no impact on the incidence of TSWV on any peanut cultivar. With the exception of the Georgia Green, the level of leafspot control provided by the two fungicide programs was statistically similar (Table 3). When compared with the Bravo Ultrex standard, significant reductions in SSR incidence were obtained with the Bravo Ultrex/Abound 2SC/Bravo Ultrex plus Moncut 70DF program on cultivars such as ANorden, Carver, C24-34, DP-1, Florida C-99R, and GA02C with the higher disease ratings. The only cultivar that suffered significant SSR damage and failed to respond to the Bravo Ultrex/Abound 2SC/Bravo Ultrex plus Moncut 70DF program was Georgia Green. Differences in SSR hit counts noted between the Bravo Ultrex standard and the Bravo Ultrex/Abound 2SC/Bravo Ultrex plus Moncut 70DF program on Andru II, AP-3, and GA01R were not significant. Despite the differences in SSR incidence between the two fungicide programs, no significant differences in yield response were noted on any peanut cultivar.

Summary: Results of this study highlight the differences in the sensitivity of commercial peanut lines to several destructive diseases. Of the cultivars screened, AP-3 had the best disease resistance package and yield potential. While Carver and C34-24 had elevated SSR damage, both cultivars had good resistance to TSWV and had yields comparable to those of AP-3. The late maturing lines, particularly DP-1 and Florida C-99R, suffered considerably more TSWV and SSR damage than anticipated, which very likely resulted in pod yields. Georgia Green is a poor choice to grow in Alabama fields when significant disease pressure is expected. Incidence of TSWV and leafspot diseases were higher and yields lower for Georgia Green than on the highest yielding mid-season (Maturity Group 4) cultivars Carver and AP-3. Yield response of ANorden, which suffered the heaviest SSR damage, was also well below that of Carver and AP-3.

TABLE 1. DISEASE RATINGS AND YIELD RESPONSE OF COMMERCIAL PEANUT LINES WHEN AVERAGED ACROSS FUNGICIDE PROGRAMS

Peanut line	TSWV # hits/60 ft	Leafspot rating	SSR # hits/60 ft	Yield (lb/A)
Maturity Group 3 (matures 126-140 DAP)				
Andru II	2.8 c[1]	3.3 e	4.3 bc	3,636 abc
Maturity Group 4 (matures 130-145 DAP)				
ANorden	3.0 c	4.4 bc	15.5 a	3,364 bc
AP-3	1.8 c	4.0 cd	2.8 c	4,241 a
Carver	3.3 c	4.1 cd	8.5 b	4,289 a
Georgia Green	8.3 ab	5.5 a	8.5 b	3,056 c
Maturity Group 5 (matures 140-165 DAP)				
C34-24	3.0 c	3.5 de	6.0 bc	4,169 ab
DP-1	10.0 a	5.0 ab	8.3 b	3,963 ab
Florida C-99R	9.8 a	4.0 cd	6.8 bc	3,721 abc
GA01R	5.5 bc	3.3 e	5.3 bc	4,114 ab
GA02C	4.8 bc	4.0 cd	6.5 bc	3,739 abc

[1]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).

TABLE 2. IMPACT OF FUNGICIDE PROGRAM ON THE INCIDENCE OF DISEASES AND POD YIELD WHEN AVERAGED ACROSS FUNGICIDE PROGRAMS

Fungicide program	TSWV # hits/60 ft	Leafspot rating	SSR # hits/60 ft	Yield (lb/A)
Bravo Ultrex	5.2 a[1]	4.1 a	7.2 a	3,844 b
Bravo Ultrex/Abound/Bravo Ultrex + Moncut	5.0 a	3.7 b	2.0 b	4,167 a

[1]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).

TABLE 3. DISEASE RATINGS AND YIELDS OF COMMERCIAL PEANUT LINES SEPARATED BY FUNGICIDE PROGRAM

Peanut line	Fungicide program	TSWV # hits/60 ft	Leafspot rating	SSR # hits/60 ft	Yield (lb/A)
Maturity Group 3 (matures 126-140 DAP)					
Andru II	Bravo Ultrex	2.8 ef[1]	3.3 gh	4.3 bcdef	3,636 cdef
	Bravo/Abound/Moncut	2.5 ef	3.0 gh	1.8 def	4,175 abcd
Maturity Group 4 (matures 130-145 DAP)					
ANorden	Bravo Ultrex	3.0 ef	4.4 bc	15.5 a	3,364 ef
	Bravo/Abound/Moncut	2.8 ef	3.6 cdefg	3.0 cdef	3,588 def
AP-3	Bravo Ultrex	1.8 f	4.0 cdef	2.8 cdef	4,211 abcd
Bravo/Abound/Moncut		3.5 ef	3.0 gh	2.8 cdef	4,398 abc
Carver	Bravo Ultrex	3.3 ef	4.1 cde	8.5 b	4,290 abcd
	Bravo/Abound/Moncut	3.0 ef	3.4 efgh	1.0 f	4,634 a
Georgia Green	Bravo Ultrex	8.3 bc	5.5 a	8.5 b	3,055 f
	Bravo/Abound/Moncut	5.8 cde	4.3 bcd	5.0 bcdef	3,557 def
Maturity Group 5 (matures 140-165 DAP)					
C34-24	Bravo Ultrex	3.0 ef	3.5 defgh	6.0 bcde	4,320 abcd
	Bravo/Abound/Moncut	2.8 ef	2.8 h	0.8 f	4,653 a
P-1	Bravo Ultrex	10.0 ab	5.0 ab	8.3 b	3,963 abcde
	Bravo/Abound/Moncut	7.3 bcd	5.4 a	0.5 f	4,507 ab
Florida C-99R	Bravo Ultrex	9.8 ab	4.0 cdef	6.8 bc	3,721 bcdef
	Bravo/Abound/Moncut	12.3 a	4.4 bc	1.5 ef	4,078 abcde
GA01R	Bravo Ultrex	5.5 cde	3.3 fgh	5.3 bcdef	4,114 abcde
	Bravo/Abound/Moncut	5.5 cde	3.6 cdefg	2.8 cdef	4,187 abcd
GA02C	Bravo Ultrex	4.8 cdef	4.0 cdef	6.5 bcd	3,739 bcde
	Bravo/Abound/Moncut	4.5 def	3.5 defgh	1.3 ef	3,896 abcde

[1]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).

YIELDS AND RESPONSE OF RUNNER PEANUT LINES TO LEAFSPOT DISEASES, SOUTHERN STEM ROT, AND TSWV IN A DRYLAND PRODUCTION SYSTEM, WREC

A. K. Hagan, H. L. Campbell, K. L. Bowen, B. E. Gamble, and J. P. Bostick

Objective: To assess the yield potential and sensitivity of commercial and experimental runner-type peanut lines to leafspot diseases, southern stem rot, and tomato spotted wilt virus (TSWV) in a dryland or rainfed setting where peanuts are produced once every three years behind one year of cotton and then corn.

Methods: On May 11, commercial and experimental runner peanut lines were planted in a Dothan fine sandy loam (OM <1 percent) at the Wiregrass Research and Extension Center (WREC) in Headland, Ala., using conventional tillage practices at a rate of approximately six seeds per foot of row in a field previously cropped to one year of cotton and then corn. Gypsum at a rate of 600 pounds per treated acre was applied on a 14-inch band over the row middle on June 30. Sonalan at 1.0 quart per acre plus Strongarm at 0.45 ounces per acre was broadcast prior to planting and lightly incorporated. Escape weeds were controlled with flat sweeps or were pulled by hand. Temik 15G at 6.7 pounds per acre was applied in-furrow at-planting for thrips control. Additional thrips control was provided by application of 2 ounces per acre Karate Z on August 9. The plot area was not irrigated. A randomized complete block with four replications per peanut line was used. Plots consisted of four 20-foot rows spaced 3 feet apart.

Full canopy sprays of Echo 720 at 1.0 pint per acre plus Tilt 3.6E at 4 fluid ounces per acre made on June 8 were followed by applications of Echo 720 at 1.5 pint per acre on June 17, Abound 2SC at 1.2 pints per acre on July 2, Echo 720 at 1.5 pints per acre on July 15, Abound 2SC at 1.2 pints per acre on July 26, Echo 720 at 1.5 pints per acre on August 9, Bravo Weather Stik at 1.5 pints per acre on August 23, and Bravo Ultrex at 1.4 pounds per acre on September 3. All fungicide applications were made on a two-week schedule. Fungicides were applied with a tractor-mounted boom sprayer with three TX-8 nozzles per row that delivered approximately 15 gallons of water per volume. Incidence of TSWV was determined on September 3, September 20, and October 3 for the maturity groups 3, 4, and 5 peanut lines, respectively, by counting the number of TSWV hits (one hit was defined as ≤1 foot of consecutive symptomatic plant(s) per row). Early leafspot (ELS) was rated using the Florida peanut leafspot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions in lower and upper canopy, 4 = few lesions in canopy with light 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 = numerous lesions on few remaining leaves with severe defoliation (≤90 percent), 9 = very few remaining leaves covered with lesions and severe defoliation (≤95 percent), and 10 = plants defoliated or dead. Early leafspot ratings were taken on September 10 (Maturity Group 3), September 20 (Maturity Group 4), and October 3 (Maturity Group 5). Southern stem rot (SSR) hit counts (one hit is defined as ≤1 foot of consecutive SSR-damaged plants per row) were made immediately after plot inversion on September 10 (Maturity Group 3), September 21 (Maturity Group 4), and on October 7 (Maturity Group 5). Plots were harvested with a field combine. Yields are reported at 10 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: Monthly rainfall totals were equal to or higher than the historical average for May, June, and September and below average in July and August. Overall, TSWV incidence was unusually high across the whole trial. The incidence of TSWV was significantly lower for AP-3 than for Georgia Green and Florida C-99R (see the table). Georgia Green also had higher TSWV ratings compared with GA02C and GA03L. Incidence of TSWV on the remaining commercial and experimental lines was similar. Early leafspot was the only leafspot disease observed. Despite frequent showers throughout much of the summer, the pressure from ELS was low. On even the most susceptible peanut lines, no ELS-related defoliation was seen. The least ELS symptoms were seen on GAO3L, GA01R, and DP-1. Early leafspot ratings for Andru II and C34-24 were also significantly lower than those of the industry standard Georgia Green. Despite a three-year rotation pattern that

suppressed SSR development, significant differences in the incidence of this disease were noted among the 15 peanut lines. Andru II, GA01R, C34-24, and GA03L suffered the least SSR damage, while ANorden and EXP 215 had higher damage ratings than many of the remaining runner peanut lines. While GA03L had the highest yield, the yield for AP-3, Carver, EXP 3081B, EXP 3085A, GA02C, Georgia Green, Georgia HI O/L, and Florida C-99R was similar. ANorden, C34-24, and DP-1 yielded less than most of the other peanut cultivars.

Summary: Dry summer weather patterns that helped suppress leafspot development apparently had a limited impact on yield potential. TSWV incidence was surprisingly high on many cultivars considered partially resistant to this disease. Yield of ANorden, DP-1, C34-24, and GA01R was unusually low, particularly when compared to Georgia Green. The high yielding GA03L also proved among the least sensitive cultivars to TSWV and early leafspot.

YIELD RESPONSE AND SENSITIVITY OF EXPERIMENTAL AND COMMERCIAL RUNNER PEANUT CULTIVARS TO TSWV, EARLY LEAFSPOT, AND SSR IN A DRYLAND OR RAINFED PRODUCTION SYSTEM

Peanut line	TSWV # hits/60 ft	Leafspot rating	SSR # hits/60 ft	Yield (lb/A)
Maturity Group 3 (matures 126-140 DAP)				
Andru II	14.8 abc[1]	1.8 cde	0.5 d	4,465 cdef
EXP 215	19.0 abc	1.9 bcde	4.3 ab	4,392 def
Maturity Group 4 (matures 130-145 DAP)				
ANorden	17.5 abc	2.3 abc	5.3 a	4,111 f
AP-3	12.8 c	2.0 bcd	2.3 bcd	4,774 abcde
Carver	20.0 ab	2.3 abc	2.3 bcd	4,719 abcdef
EXP 3081B	16.0 abc	2.8 a	1.8 bcd	5,064 abc
EXP 3085A	15.0 abc	2.8 a	4.0 abc	5,200 ab
GA03L	14.0 bc	1.3 e	2.0 bcd	5,318 a
Georgia Green	21.0 a	2.5 ab	3.0 abcd	5,055 abc
Georgia HI O/L	18.8 abc	2.4 abc	4.0 abc	5,046 abc
Maturity Group 5 (matures 140-165 DAP)				
C34-24	15.5 abc	1.8 cde	1.0 d	4,202 ef
DP-1	15.8 abc	1.3 e	1.5 cd	4,247 ef
Florida C-99R	20.0 ab	2.4 abc	1.8 bcd	5,019 abcd
GA01R	15.5 abc	1.5 de	0.8 d	4,646 bcdef
GA02C	14.0 bc	2.0 bcd	1.3 d	4,937 abcd

[1]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).

RESPONSE OF RUNNER AND VIRGINIA PEANUT LINES TO LEAFSPOT DISEASES, SOUTHERN STEM ROT, AND TSWV IN AN IRRIGATED PRODUCTION SYSTEM, WREC

A. K. Hagan, H. L. Campbell, K. L. Bowen, B. E. Gamble, and J. P. Bostick

Objective: Evaluate the yield response and sensitivity of tomato spotted wilt virus (TSWV), leafspot diseases, and southern stem rot of experimental and commercial peanut lines in an irrigated production system at the Wiregrass Research and Extension Center (WREC) in Headland, Ala.

Methods: On May 11, commercial experimental runner peanut lines were planted in a Dothan fine sandy loam (OM <1 percent) using conventional tillage practices at a rate of approximately six seeds per foot of row in a field previously cropped to one year of cotton and then corn. Gypsum at a rate of 600 pounds per treated acre was applied on a 14-inch band over the row middle. A randomized complete block with four replications per peanut line was used. Plots consisted of four 20-foot rows spaced 3 feet apart. Gypsum was applied on a 14-inch band over the row middle on June 30. Sonalan at 1 quart per acre plus Strongarm at 0.45 ounce per acre was broadcast prior to planting and lightly incorporated. Escape weeds were controlled with flat sweeps or were pulled by hand. Temik 15G at 6.7 pounds per acre was applied in-furrow at-planting for thrips control. Additional thrips control was provided by a 2 ounces per acre Karate Z application on August 9. The test was irrigated with 0.4 inch of water on May 20, 0.3 inch on May 24, 0.45 inch on August 18, 0.75 inch on July 13, July 29, and August 26, and 1 inch on August 6. Full canopy sprays of Echo 720 at 1 pint per acre plus Tilt 3.6E at 4 fluid ounces per acre made on June 8 were followed by applications of Echo 720 at 1.5 pints per acre on June 17, Abound 2SC at 1.2 pints per acre on July 2, Echo 720 at 1.5 pints per acre on July 15, Abound 2SC at 1.2 pints per acre on July 26, Echo 720 at 1.5 pints per acre on August 9, Bravo Weather Stik at 1.5 pints per acre on August 23, and Bravo Ultrex at 1.4 pounds per acre on September 3. All fungicide applications were made on a two-week schedule. Fungicides were applied with a tractor-mounted boom sprayer with three TX-8 nozzles per row that delivered approximately 15 gallons of water per volume.

Incidence of TSWV was determined on September 3, September 20, and October 3 for the maturity groups 3, 4, and 5 peanut lines, respectively, by counting the number of TSWV hits or loci (one hit was defined as ≤1 foot of consecutive symptomatic plant(s) per row). Early leafspot (ELS) and late leafspot (LLS) were rated using the Florida peanut leafspot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions in lower and upper canopy, 4 = few lesions in canopy with light 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 = numerous lesions on few remaining leaves with severe defoliation (≤90 percent), 9 = very few remaining leaves covered with lesions and severe defoliation (≤95 percent), and 10 = plants defoliated or dead. Leafspot ratings were taken on September 10 (Maturity Group 3), September 20 (Maturity Group 4), and October 3 (Maturity Group 5). Southern stem rot (SSR) hit or loci counts (one hit is defined as ≤1 foot of consecutive SSR-damaged plants per row) were made immediately after plot inversion on September 10 (Maturity Group 3), September 21 (Maturity Group 4), and on October 7 (Maturity Group 5). Plots were harvested with a field combine. Yields are reported at 10 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: Monthly rainfall totals were equal to or higher than the historical average for May, June, and September and below average in July and August. Incidence of TSWV was generally higher on the Virginia lines, particularly NC-VII, VA 98R, and Wilson than on the majority of the runner peanut lines. When compared to the runner standard Georgia Green, only EXP 3084, GA02C, and GA03L had lower TSWV ratings. While a combination of ELS and to a lesser extent LLS were noted on Gregory, ELS alone was observed on the remaining 21 peanut lines. Significant differences in the severity of leafspot diseases were noted between the Virginia and runner peanut lines. The Virginia peanut lines VT 9560102-6-522 and Wilson had the highest level of leafspotting and premature leaf loss. When compared to Georgia Green, significantly less ELS was

found on Andru II, GA02C, GA03L, C34-24, DP-1, Florida C-99R, GA01R, and Hull. Despite a three-year rotation pattern that suppressed SSR development, significant differences in the incidence of this disease were noted between peanut lines. Incidence of SSR was higher on VT 9560102-6-522, VA 98R, and NC-VII than on the majority of other peanut lines. Generally, few differences in SSR incidence were noted between the runner peanut lines. With the exception of the late maturing DP-1 and Hull, yield of the remaining runner peanut lines was similar to that of Georgia Green. Highest yields were recorded for the runner peanut lines EXP 3081B and EXP 3085A. Generally, the Virginia peanut lines had the lowest yields.

Summary: Considerable differences in the sensitivity of peanut cultivars to TSWV and leafspot diseases were noted. Of available commercial runner lines, GA02C, GA03L, and C34-24 had among the lowest ratings for TSWV and leafspot diseases. Another runner peanut with an excellent disease resistance package and yield potential was EXP 3085A. Several of the late maturing commercial peanut lines such as DP-1, Florida C-99R, and GA01R suffered from considerable TSWV damage but had very low leafspot ratings. Yield of these cultivars may have been greatly reduced by the heavy TSWV damage.

YIELD RESPONSE AND DISEASE REACTION OF EXPERIMENTAL AND COMMERCIAL VIRGINIA AND RUNNER PEANUT LINES IN A COTTON-CORN-PEANUT ROTATION, WREC

Peanut line	Type[1]	TSWV # hits/60 ft	Leafspot rating	SSR # hits/60 ft	Yield (lb/A)
Maturity Group 3 (matures 126-140 DAP)					
Andru II	R	14.5 fghij[2]	3.3 ghij	0.3 ef	5,064 defgh
EXP 215	R	---	---	0.3 ef	5,826 abcd
NC-7	V	23.5 abc	3.9 cdefg	0.3 ef	4,038 ij
NC-VII	V	26.0 a	4.4 cde	3.8 ab	4,728 efghij
Maturity Group 4 (mature 130-145 DAP)					
ANorden	R	17.0 defgh	4.3 cdef	0.5 def	5,245 bcdefg
AP-3	R	14.8 fghij	3.8 defgh	0.5 def	5,182 cdefg
Carver	R	23.0 abcd	4.5 cd	1.5 cdef	5,300 bcdef
EXP 3081B	R	21.8 abcde	4.3 cdef	0.5 def	6,098 ab
EXP 3085A	R	12.0 hij	4.5 cd	0.8 def	6,180 a
GA03L	R	10.3 j	3.5 efghi	0.0 f	6,026 abc
Georgia Green	R	19.0 bcdefg	4.5 cd	1.3 cdef	5,400 abcde
Georgia HI O/L	R	18.3 bcdefg	3.8 defgh	1.0 cdef	5,953 abc
Gregory	V	23.3 abc	4.8 bc	2.5 bc	4,891 efghi
VA 98R	V	25.5 a	4.6 cd	4.0 ab	4,066 ij
VT9560102-6-522	V	20.3 abcdef	5.8 a	5.3 a	4,202 hij
Wilson	V	24.3 ab	5.5 ab	2.0 cd	4,002 j
Maturity Group 5 (mature 140-165 DAP)					
Tifrunner	R	13.8 ghij	3.4 fghij	1.8 cde	5,200 cdefg
DP-1	R	16.0 efghij	2.5 i	1.0 cdef	4,465 fghij
Florida C-99R	R	21.8 abcde	2.6 ij	2.0 cd	5,300 bcdefg
GA01R	R	17.8 cdefgh	2.9 hij	1.7 cde	5,254 bcdefg
GA02C	R	11.0 ij	3.3 ghij	1.3 cdef	5,808 abcd
Hull	R	20.3 abcdef	2.5 i	1.5 cdef	4,401 ghij

[1]V= Virginia peanut and R = runner peanut.

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

EVALUATION OF PEANUT CULTIVARS FOR SUITABILITY IN A PEST MANAGEMENT SYSTEM, WREC

J. R. Weeks, H. L. Campbell, and L. W. Wells

Objective: To evaluate eight peanut cultivars with varying maturity intervals for insect damage and disease control in a pest management system in southeast Alabama and to compare yields.

Methods: Eight peanut cultivars were planted at the Wiregrass Research and Extension Center (WREC) in Headland, Ala., in a field with a prior history of peanut production on May 17. The soil was a Dothan sandy loam (OM <1 percent). On May 13, 1 quart per acre of Sonalan plus 0.45 ounce per acre Strongarm were incorporated into the soil for weed control. Seed were sown at a rate of approximately five seeds per foot of row. Treatments included Temik 15G and Thimet 20G applied in-furrow at planting on all cultivars. A nontreated plot was also maintained for comparison.

Plots consisted of eight 40-foot rows spaced 36 inches apart arranged in a randomized complete block design with six replications. Plots were arranged under a central pivot irrigation system and were irrigated as needed. Fungicides were applied on to all plots on June 17 (Bravo 720, 1.5 pints per acre), June 30 (Headline,9 ounces per acre), July 9 (Bravo 720, pint per acre plus Folicur 3.6F, 0.45 pint per acre), July 20 (Headline, 9 ounces per acre), August 3 (Bravo 720, 1 pint per acre plus Folicur 3.6F, 0.45 pint per acre), August 17 (Bravo 720, 1 pint per acre plus Folicur 3.6F, 0.45 pint per acre), September 3 (Bravo 720, 1 pint per acre plus Folicur 3.6F, 0.45 pint per acre), and October 4 (Bravo 720, 1.5 pints per acre) using a tractor-mounted boom sprayer with TX-8 nozzles calibrated to deliver 15 gallons per acre.

Stand counts were made on May 27 and thrips damage ratings (TDR) were made on June 11 from all plots. Tomato spotted wilt virus (TSWV) ratings were made on July 7, August 6, and September 21 by counting the number of row feet of peanut plants that were severely affected. Early leafspot was visually rated on September 23 from the mid-maturing varieties and October 14 from the late-maturing varieties using the Florida 1-10 leafspot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions in lower and upper leaf canopy, 4 = some lesions in lower and upper canopy with light 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 = numerous lesions on few remaining leaves with severe defoliation (≤90 percent), 9 = very few remaining leaves covered with lesions and severe defoliation (≤95 percent), and 10 = plants defoliation or dead.

Counts of southern stem rot (SSR) hits (one hit was defined as ≤1 foot of consecutive SSR-damaged plants) were made on October 1 and October 22, respectively, immediately after plot inversion. Plots were harvested on October 4 and October 26 and yields were reported at 10.2 percent moisture. Results were pooled and analyzed across treatment and cultivars. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: Monthly rainfall totals were equal to or higher than the historical average for May, June, and September and below average in July and August. When cultivars were evaluated, DP-1 had the highest emergence rate and this was significantly better than all other cultivars. Lowest emergent rate was observed with C-99R (Table 1). When treatments were compared the Temik 15G-treated rows had significantly lower stands than the other two treatments (Table 2). TDR showed that GA 01R had the least thrips damage and Tifrunner had the greatest thrips damage and the Temik treated plots had the best TDR ratings and were significantly better than the Thimet and nontreated plots. TSWV incidence increased throughout the season and on the last evaluation, cultivars Ga. Green and Carver had the highest incidence of TSWV and were significantly worse than all other cultivars. The plots treated with Temik showed consistently lower incidence of TSWV throughout the season. Final TSWV incidence showed both Temik- and Thimet-treated peanuts having significantly lower incidence than nontreated peanuts. Even though all plots were treated with the same fungicide treatment regime, differences among cultivars did occur. Ga. Green had the highest leafspot severity and GA 01R had

the lowest severity among the cultivars. The in-furrow applications of Temik and Thimet had no effect on leafspot severity. All cultivars had similar numbers of SSR hits; however, AP-3 and GA 02C had significantly lower numbers than all other cultivars. SSR incidence was similar among in-furrow treatment regimes. Yield response differed among the cultivars. GA 01R had significantly higher yields than all other cultivars. Ga. Green yielded lowest among the cultivars and was significantly lower than all others except GA 02C. Temik-treated peanuts had significantly higher yields than did nontreated peanuts. No significant differences in yield were observed between Temik and Thimet in-furrow insecticide treatments in yield response.

TABLE 1. COMPARISON OF SELECTED PEANUT LINES FOR INSECT AND DISEASE CONTROL IN A DRY-LAND PEANUT PRODUCTION SYSTEM IN SOUTHEAST ALABAMA, WREC, 2004

Cultivar	Stand	TDR	TSWV[1] 1	TSWV 2	TSWV 3	LS[2]	SSR[3]	Yield (lb/A)
Ga. Green	108.5 b[4]	3.9 de	4.9 bc	13.9 a	23.6 a	3.8 a	6.1 a	4,752 e
Carver	104.9 b	4.0 cde	5.4 b	10.4 b	16.2 b	3.1 ef	5.2 a	5,510 bc
GA 02C	98.3 c	4.1 bcde	4.3 bcd	7.1 cd	9.2 c	3.6 ab	1.8 b	5,042 de
Tifrunner	105.3 b	4.8 a	3.8 cde	7.2 c	7.3 cde	3.2 de	6.6 a	5,553 b
AP-3	108.8 b	4.4 b	2.6 e	4.4 d	5.3 ef	3.6 ab	2.8 b	5,790 b
C-99R	86.5 d	4.3 bc	7.9 a	11.6 ab	8.2 cd	3.4 cd	5.0 a	5,186 cd
GA 01R	97.5 c	3.8 e	3.2 de	4.9 cd	4.6 f	2.9 f	5.8 a	6,452 a
DP-1	114.2 a	4.2 bcd	4.3 bcd	6.2 cd	6.5 def	3.4 bc	5.1 a	5,794 b

[1]Tomato spotted wilt virus (TSWV) assessed as the number of row ft of infected plants.
[2]Leafspot (LS) rated using the Florida 1-10 leafspot scoring system.
[3]Southern stem rot (SSR) incidence is expressed as the number of hits per 80 feet.
[4]Means followed by the same letter do not differ significantly according to analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

TABLE 2. EVALUATION OF IN-FURROW TREATMENT FOR EFFECT ON STAND, THRIPS, TOMATO SPOTTED WILT, AND DISEASES OF PEANUT IN SOUTHEAST ALABAMA, WREC

Treatment	Stand	TDR	TSWV[1] 1	TSWV 2	TSWV 3	LS[2]	SSR[3]	Yield (lb/A)
Temik 15G	98.5 b[4]	2.7 c	3.4 c	6.3 b	8.6 b	3.4 a	4.9 ab	5,650 a
Thimet 15G	104.4 a	3.8 b	4.5 b	7.4 b	9.4 b	3.4 a	5.3 a	5,516 ab
UTC	106.2 a	6.1 a	5.8 a	11.0 a	12.2 a	3.4 a	4.2 b	5,350 b

[1]Tomato spotted wilt virus (TSWV) assessed as the number of row ft of infected plants.
[2]Leafspot (LS) rated using the Florida 1-10 leafspot scoring system.
[3]Southern stem rot (SSR) incidence is expressed as the number of hits per 80 feet.
[4]Means followed by the same letter do not differ significantly according to analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

EVALUATION OF MONCUT 70DF FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT, GCREC

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

Objective: To evaluate Moncut 70DF at different rates and intervals and compare its efficacy with that of currently registered fungicides for control of early and late leafspot, rust, and southern stem rot and yield response in a dry land peanut production system in southwest Alabama.

Methods: Peanut cultivar Georgia Green was planted on May 12 at a rate of five seeds per foot of row in a field with a prior history of peanut production at the Gulf Coast Research and Extension Center (GCREC) in Fairhope, Ala. Thrips were controlled with an in-furrow application of of 6-7 pounds per acre of Temik 15G. Seed were planted in raised beds with bed knockers. The soil type was a Malbis fine sandy loam (OM <1 percent). On May 25, 6 ounces per acre of Gramoxone plus 1.5 pints per acre Storm plus 1 pint per 50 gallons Preference were made for post-emergent weed control. On June 16 1 pint per acre Storm plus 1 pint per acre Butyrac 175 plus 1.5 pints per acre Poast plus 1 quart per acre Prime Oil was applied for weed control.

Plots consisted of six 30-foot rows on 38-inch center arranged in a randomized complete block with six replications. Fungicides were applied on a 14-day schedule as a full canopy spray at 20 gallons per acre using a six-row tractor-mounted boom sprayer with TX-8 nozzles. Early and late leafspot and rust were visually rated on September 24 using the Florida leafspot 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 = completely defoliated or dead plants. Peanut rust was rated with the ICRISAT rust rating scale (1 = no disease, 2 = 10 percent leaves affected; 3 = 20 percent leaves affected; 4 = 30 percent leaves affected; 5 = 40 percent leaves affected; 6 = 50 percent leaves affected; 7 = 60 percent leaves affected; 8 = 70 percent leaves affected; 9 = plants severely affected, 80-100 percent leaves withered).

Counts of southern stem rot (SSR) hits were made on September 27 immediately after plot inversion (one hit is defined as ≤1 foot of consecutive SSR-damaged plants per row). Plots were harvested on September 30 and yields were reported at 10.1 percent moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the 2004 growing season, temperature was near normal levels and rainfall was at or above the historical normal average. As a result of above average rainfall in June, July, August, and September, leafspot severity increased throughout the season as a result of above average rainfall in June, July, and August. Late leafspot was the primary leafspot disease found. Programs that included four mid season applications of Folicur 3.6F, as well as the season-long Bravo 720 plus Kocide program, were not as effective in controlling leafspot as the season-long Bravo 720 standard program (see table). Peanut rust appeared in early August and spread rapidly through the field. As was observed for leafspot control, the Bravo 720 program gave better control than all of the other fungicide programs except for the standard Bravo/Moncut program. Since SSR pressure was low, few differences in the control of this disease were seen between the fungicide programs. Harvesting was delayed 7-10 days due to Hurricane Ivan. Yields for all the programs were similar with only the Bravo 720 plus Kocide program having yields significantly below those of the season-long Bravo 720 program.

EVALUATION OF MONCUT 70DF FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT, GCREC

Treatment and rate/A	Application timing[1]	LLS[2]	Rust[3]	SSR[4]	Yield (lb/A)
Bravo 720 24.0 fl oz	1-7	3.3[5]	4.5	4.7	5,166
Headline 2.09EC 6.0 fl oz	1,2	4.0	6.2	4.5	4,710
Bravo 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5				
Headline 2.09EC 9.0 fl oz	4				
Bravo 720 24.0 fl oz	6,7				
Headline 2.09EC 9.0 fl oz	1.5	3.7	5.5	4.3	5,215
Bravo 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5				
Headline 2.09EC 6.0 fl oz	4				
Bravo 720 24.0 fl oz	6,7				
Bravo 720 24.0 fl oz	1,2,4,6,7	3.2	4.2	5.0	4,722
Bravo 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5				
Bravo 720 24.0 fl oz	1,2,7	3.7	5.7	4.5	4,657
Bravo 720 24.0 fl oz + Moncut 70DF 0.54 lb	3,4,5,6				
Bravo 720 24.0 fl oz	1,2,4,6,7	3.8	5.7	4.5	4,707
Abound 2.08SC 18.5 fl oz	3,5				
Bravo 720 24.0 fl oz	1,2,4,6,7	4.0	5.5	4.0	5,230
Folicur 3.6F 7.2 fl oz	3,5				
Bravo 720 16.0 fl oz + Kocide 4.5 LF 16.0 fl oz	1-7	3.9	6.0	4.7	4,285
DPX H6573-462 8.2 fl oz + 16 fl oz	1,2,4	3.3	5.8	4.0	5,330
Abound 2.08SC	3,5				
DPX H6573-462 8.2 fl oz + 16 fl oz	6,7				
Bravo 720 24.0 fl oz	1,2,7	3.6	5.7	4.2	5,292
Folicur 3.6F 7.2 fl oz	3,5				
Bravo 720 24.0 fl oz + Moncut 70DF 0.54 lb	4,6				
Bravo 720 24.0 fl oz	1,2,4,6,7	3.3	5.3	4.5	5,200
Artisan 3.6 SE 32.0 fl oz	3,5				
LSD (P ≤ 0.05)		***0.5***	***0.9***	***1.7***	***749***

[1]Fungicide applications were made at 14-day intervals unless otherwise indicated.

[2]Leafspot (LLS) diseases were assessed using the Florida leafspot scoring system (1 = no disease; 10 = completely dead plants).

[3]Rust rated using the ICRISAT 1-9 rating scale (1 = no disease; 9 = plants severely affected, 80-100 percent leaves withering)

[4]Southern stem rot (SSR) incidence is expressed as the number of hits per 60 feet of row.

[5]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P ≤0.05).

EVALUATION OF EXPERIMENTAL FUNGICIDES FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT, GCREC

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

Objective: To evaluate experimental fungicides for the control of early and late leafspot, rust, and southern stem rot and compare their activity with that of currently registered fungicides disease control and their effect on the yield of peanut.

Methods: Peanut cultivar Georgia Green was planted on May 12 at the Gulf Coast Research and Extension Center (GCREC) in Fairhope, Ala., at a rate of five seeds per foot of row in a field with a prior history of 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 Temik 15G. Seed were sown in raised beds with bed knockers. The soil type was a Malbis fine sandy loam (OM <1 percent). On May 25, 6 ounces per acre of Gramoxone plus 1.5 pints per acre Storm plus 1 pint per 50 gallons Preference were made for post-emergent weed control. On June 16 1 pint per acre Storm plus 1 pint per acre Butyrac 175 plus 1.5 pints per acre Poast plus 1 quart per acre Prime Oil was applied for weed control.

Plots consisted of six 30-foot rows on 38-inch centers arranged in a randomized complete block with six replications. Fungicides were applied at 14-day intervals as a full canopy spray at 20 gallons per acre using a six-row tractor-mounted boom sprayer with TX-8 nozzles. Early and late leafspot were visually rated on September 24 using the Florida leafspot scoring system wher 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 = completely defoliated or dead plants. The ICRISAT rust rating scale (1 = no disease, 2 = 10 percent leaves affected; 3 = 20 percent leaves affected; 4 = 30 percent leaves affected; 5 = 40 percent leaves affected; 6 = 50 percent leaves affected; 7 = 60 percent leaves affected; 8 = 70 percent leaves affected; and 9 = plants severely affected, 80-100 percent leaves withering) was used to rate peanut rust severity.

Counts of southern stem rot (SSR) hits were made on September 27 immediately after plot inversion (one hit is defined as ≤1 foot of consecutive SSR-damaged plants per row). Plots were harvested on September 30 and yields were reported at 10.1 percent moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the 2004 growing season, temperature was near normal levels and rainfall was at or above the historical average. Due to above average rainfall in June, July, and August, leafspot severity increased throughout the season as a result of above average rainfall in June, July, and August. The standard full-season Echo 720 full season program gave significantly better control of late leafspot than did all other treatment programs except for those that included JAU6476 and Moncut. Peanut rust appeared in early August and spread rapidly through the field. As was observed with late leafspot, the season-long Echo 720 program gave better control of rust than all of the other fungicide programs except for the Echo/JAU6476, Echo/Moncut, and Echo/Abound programs. Since SSR pressure was low, few differences in the control of this disease were noted between the fungicide programs. However, the Echo/Moncut treatment program gave significantly better SSR control than Echo alone. Harvest was delayed 7-10 d due to Hurricane Ivan. Yields for all the programs were similar with only the Stratego SC and Echo/Headline/Headline/Folicur treatment yielding significantly lower than the season-long Echo 720 program.

EVALUATION OF EXPERIMENTAL FUNGICIDES FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT, GCREC

Treatment and rate/A	Application timing[1]	LLS[2]	Rust[3]	SSR[4]	Yield (lb/A)
Echo 720 24.0 fl oz	1-7	3.0[5]	3.8	4.0	5,261
USF2010 3.5 fl oz	1-7	3.9	5.5	2.8	5,153
Stratego EC 7.0 fl oz	1-7	3.7	6.0	3.3	4,873
Stratego SC 7.0 fl oz	1-7	3.5	5.7	2.7	4,603
Echo 720 24.0 fl oz	1,2,7	3.3	4.3	4.2	5,070
JAU6476 5.7 fl oz + Induce 0.06percentv/v	3,4,5,6				
Echo 720 24.0 fl oz 24.0 fl oz	1,2,7	4.3	5.8	3.0	4,925
Folicur 3.6F 7.2 fl oz	3,4,5,6				
Echo 720 24.0 fl oz	1,2,4,6,7	3.8	4.8	2.8	5,636
Abound 2.08SC 18.5 fl oz	3,5				
Echo 720 24.0 fl oz	1,2,4,6,7	3.2	4.3	2.2	5,490
Echo 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5				
Echo 720 24.0 fl oz	1,3,7	3.7	5.3	3.2	5,139
Headline 9.0 fl oz	2				
Headline 6.0 fl oz	4				
Folicur 3.6F 7.2 fl oz	5,6				
Stratego 7.0 fl oz	1,2	4.3	5.8	3.2	4,863
Folicur 3.6F 7.2 fl oz	3,4,5,6				
Echo 720 24.0 fl oz	7				
Headline 9.0 fl oz	1.5	3.6	5.3	4.5	4,817
Folicur 3.6F 7.2 fl oz	3,5				
Headline 12.0 fl oz	4				
Echo 720 24.0 fl oz	7				
Echo 720 24.0 fl oz	1,7	3.8	5.8	3.8	5,139
Headline 9.0 fl oz	2				
Headline 6.0 fl oz	4				
Folicur 3.6F 7.2 fl oz	3,5,6				
Echo 720 24.0 fl oz	1,7	4.0	6.3	3.5	4,710
Headline 9.0 fl oz	2				
Folicur 3.6F 7.2 fl oz	3,4,5,6				
LSD (P ≤ 0.05)		***0.5***	***1.0***	***1.8***	***524***

[1]Fungicide applications were made at 14-day intervals unless otherwise indicated.

[2]Leafspot (LLS) diseases were assessed using the Florida leafspot scoring system (1 = no disease; 10 = completely dead plants).

[3]Rust rated using the ICRISAT 1-9 rating scale (1 = no disease; 9 = plants severely affected, 80-100 percent leaves withering)

[4]Southern stem rot (SSR) incidence is expressed as the number of hits per 60 feet of row.

[5]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P ≤0.05).

EVALUATION OF ABOUND 2.08SC AND EXPERIMENTAL FUNGICIDES FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHWEST ALABAMA, GCREC

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

Objective: To evaluate Abound 2.08SC and experimental fungicides for control of early and late leafspot, rust, and southern stem rot of peanut in southwest Alabama and compare their activity with that of currently registered products and their effect on yield.

Methods: Peanut cultivar Georgia Green was planted at the Gulf Coast Research and Extension Center (GCREC) in Fairhope, Ala., on May 12 at a rate of five seeds per foot of row in a field with a prior history of 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 of 6-7 pounds per acre of Temik 15G. Seed were sown in raised beds with bed knockers. On May 25, 6 ounces per acre of Gramoxone plus 1.5 pints per acre Storm plus 1 pint per 50 gallons Preference were made for postemergent weed control. On June 16 1 pint per acre Storm plus 1 pint per acre Butyrac 175 plus 1.5 pints per acre Poast plus 1 quart per acre Prime Oil was applied for weed control. On July 13, 1.5 pints per acre of Ultra Blazer plus Solubor 2 pounds per acre plus Preference 1.5 pints per 50 gallons were applied for weed control. On August 6 1 ounce per acre Karate plus 1 ounce per acre Tracer plus 1 pint per 50 gallons Induce was applied for insect control and on August 25, Karate 1 ounce per acre plus Induce 1 pint per 50 gallons was applied.

Plots consisted of four 30-foot rows on 38-inch centers arranged in a randomized complete block with six replications. Fungicides were applied at 14-day intervals as a full canopy spray at 20 gallons per acre using a four-row tractor-mounted boom sprayer with TX-8 nozzles. Early and late leafspot were visually rated on September 24 using the Florida leafspot 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 = completely defoliated or dead plants) and the ICRISAT rust rating scale (1 = no disease, 2 = 10 percent leaves affected; 3 = 20 percent leaves affected; 4 = 30 percent leaves affected; 5 = 40 percent leaves affected; 6 = 50 percent leaves affected; 7 = 60 percent leaves affected; 8 = 70 percent leaves affected; and 9 = plants severely affected, 80-100 percent leaves withering) was used to assess rust severity.

Counts of southern stem rot (SSR) hits were made on September 27 immediately after plot inversion (one hit is defined as ≤1 foot of consecutive SSR-damaged plants per row). Plots were harvested on September 30 and yields were reported at 9.88 percent moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the 2004 growing season, temperature was near normal levels and rainfall was at or above normal levels. Due to above average rainfall in June, July, August, and September, late leafspot severity increased throughout the season. The standard Bravo 720 full season program gave better control of late leafspot than the A13817 (2,4)/Abound (3,5)/Bravo (6,7), Headline (3, 5,5)/Folicur (4.5, 7), Headline (2)/Folicur (3.5, 6)/Headline (4.5)/Bravo 720 (7), Abound (IF)/Abound plus Tilt (3, 5.5)/A13817 (4.5)/Bravo 720 (7), and Bravo/Folicur treatment programs. Peanut rust appeared in early August and spread rapidly through the field. As was observed above for late leafspot control, the Bravo 720 program gave better control of rust than all of the other fungicide programs. Since SSR pressure was low, few differences in the control of this disease were noted between the fungicide programs. However, SSR incidence was significantly higher for the Bravo/Folicur program compared to the season-long Bravo 720 program. Harvest was delayed 7-10 days due to Hurricane Ivan. Yields for all the programs were similar with only the Tilt plus Bravo/Amistar/Bravo treatment regime yielding significantly higher than the season-long Bravo 720 program.

EVALUATION OF ABOUND 2.08SC EXPERIMENTAL FUNGICIDES FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHWEST ALABAMA, GCREC

Treatment and rate/A	Application timing[1]	LLS[2]	Rust[3]	SSR[4]	Yield (lb/A)
A13817 24.0 fl oz	1,2,4	3.7[5]	5.7	2.2	5,054
Abound 2.08SC 18.5 fl oz	3,5				
Bravo 720 24.0 fl oz	6,7				
A13817 24.0 fl oz	2,4	4.2	6.3	2.5	4,795
Abound 2.08SC 18.5 fl oz	3,5				
Bravo 720 24.0 fl oz	6,7				
A13817 24.0 fl oz	1,2	3.8	5.5	2.3	4,780
Abound 2.08SC 18.5 fl oz	3,5				
Bravo 720 24.0 fl oz	4,6,7				
Headline 2.09EC 6.0 fl oz	2	4.5	6.3	2.8	4,756
Folicur 3.6F 7.2 fl oz	3.5,6				
Headline 12.0 fl oz	4.5				
Bravo 720 24.0 fl oz	7				
Headline 2.09EC 6.0 fl oz	3,5.5	4.2	6.2	2.8	5,054
Folicur 3.6F 7.2 fl oz	4.5,7				
Abound 2.08SC 6.0 fl oz	In-furrow	5.0	7.0	3.7	4,320
Abound 2.08SC 18.5 fl oz + Tilt 3.6EC 4.0 fl oz	3,5.5				
A13817 24.0 fl oz	4.5				
Bravo 720 24.0 fl oz	7				
Headline 2.09EC 6.0 fl oz + Moncut 70DF 1.1 lb	3,5.5	4.0	5.7	3.2	4,840
Bravo 720 24.0 fl oz	4.5,7				
Abound 2.08SC 18.5 fl oz + Tilt 3.6EC 4.0 fl oz	3,5	3.8	5.3	2.0	4,963
A13817 24.0 fl oz	4				
Bravo 720 24.0 fl oz	6,7				
Bravo 720 24.0 fl oz	1,2,4,6,7	3.6	5.7	2.7	4,680
Abound 2.08SC 18.5 fl oz	3,5				
Bravo 720 24.0 fl oz	1,2,7	4.2	6.0	3.8	4,925
Folicur 3.6F 7.2 fl oz	3,4,5,6				
Tilt 3.6EC 2.0 fl oz + Bravo 720 16.0 fl oz	1,2,4	3.5	5.5	1.8	5,452
Amistar 6.0 oz	3,5				
Bravo 720 24.0 fl oz	6,7				
Tilt 3.6EC 2.0 fl oz + Bravo 720 24.0 fl oz	1,2,4	3.6	5.0	1.8	5,391
Amistar 6.0 fl oz + NIS 0.25percent v/v	3,5				
Bravo 720 24.0 fl oz	6,7				
Moncut 70DF 1.1 lb	In-furrow	3.6	4.7	2.2	5,322
Bravo 720 24.0 fl oz	1,2,4,6,7				
Bravo 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5				
Moncut 70DF 0.45 lb	In -furrow	3.6	4.7	2.2	5,108
Bravo 720 24.0 fl oz	1,2,4,6,7				
Bravo 720 + Moncut 70DF 1.1 lb	3,5				
Bravo 720 24.0 fl oz	1-7	3.4	4.7	2.2	4,963
LSD (P ≤ 0.05)		***0.6***	***0.9***	***1.7***	***446***

[1]Fungicide applications were made at 14-day intervals unless otherwise indicated.

[2]Leafspot (LLS) diseases were assessed using the Florida leafspot scoring system (1 = no disease; 10 = completely dead plants).

[3]Rust rated using the ICRISAT 1-9 rating scale (1 = no disease; 9 = plants severely affected, 80-100 percent leaves withering)

[4]Southern stem rot (SSR) incidence is expressed as the number of hits per 60 feet of row.

[5]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P ≤0.05).

EVALUATION OF ECHO 720 AND HEADLINE 2.09EC FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHWEST ALABAMA, GCREC

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

Objective: To evaluate Echo 720 and Headline 2.09EC for control of leafspot diseases and soil-borne diseases in a dryland production system in southwest Alabama and compare their activity with that of Abound 2.08SC, Folicur 3.6F, and Moncut 70DF and their effect on yields.

Methods: Peanut cultivar Georgia Green was planted at the Gulf Coast Research and Extension Center (GCREC) in Fairhope, Ala., on May 12 at a rate of five seeds per foot of row in a field with a prior history of peanut production. The soil type was a Malbis fine sandy loam (OM <1 percent). Recommendations for fertility and weed control of the Alabama Cooperative Extension System were followed. Thrips were controlled with an in-furrow application of of 6-7 pounds per acre of Temik 15G. Seed were sown in raised beds with bed knockers. On May 25, 6 ounces per acre of Gramoxone plus 1.5 pints per acre Storm plus 1 pint per 50 gallons Preference were made for postemergent weed control. On June 16 1 pint per acre Storm plus 1 pint per acre Butyrac 175 plus 1.5 pints per acre Poast plus 1 quart per acre Prime Oil was applied for weed control. On July 13, 1.5 pints per acre of Ultra Blazer plus Solubor 2 pounds per acre plus Preference 1.5 pints per 50 gallons were applied for weed control. On August 6, 1 ounce per acre Karate plus 1 ounce per acre Tracer plus 1 pint per 50 gallons Induce was applied for insect control and on August 25, Karate 1 ounce per acre plus Induce 1 pint per 50 gallons was applied.

Plots consisted of six 30-foot rows on 38-inch centers arranged in a randomized complete block with six replications. Fungicides were applied on a 14-day schedule as a full canopy spray at 20 gallons per acre using a six-row tractor-mounted boom sprayer with TX-8 nozzles. Early and late leafspot were visually rated on September 24 using the Florida leafspot 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 = completely defoliated or dead plants. The ICRISAT rust rating scale (1 = no disease, 2 = 10 percent leaves affected; 3 = 20 percent leaves affected; 4 = 30 percent leaves affected; 5 = 40 percent leaves affected; 6 = 50 percent leaves affected; 7 = 60 percent leaves affected; 8 = 70 percent leaves affected; and 9 = plants severely affected, 80-100 percent leaves withering) was used to assess rust severity.

Counts of southern stem rot (SSR) hits were made on September 27 immediately after plot inversion (one hit is defined as ≤1 foot of consecutive SSR-damaged plants per row). Plots were harvested on September 30 and yields were reported at 9.88 percent moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the 2004 growing season, temperature was near normal levels and rainfall was at or above normal levels. Leafspot severity increased throughout the season as a result of above average rainfall in June, July, and August. The Echo/Moncut program gave significantly better late leafspot control than did all other treatment programs (see table). The level of leafspot control provided by all other fungicide programs was similar to that observed with Echo 720 alone. Peanut rust appeared in early August and spread rapidly through the field. As was for late leafspot, all programs except the Headline (1.5)/Folicur (3,5,6)/Headline (4)/Echo 720 (7), Echo/Folicur, and Echo 720/Headline/Folicur treatments gave similar control of rust. Since SSR pressure was low, few differences in the control of this disease were seen among the fungicide programs. Harvest was delayed 7-10 days due to Hurricane Ivan. Yields for all the fungicide programs were similar.

EVALUATION OF ECHO 720 AND HEADLINE 2.09EC FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHWEST ALABAMA, GCREC

Treatment and rate/A	Application timing[1]	LLS[2]	Rust[3]	SSR[4]	Yield (lb/A)
Echo 720 14.0 fl oz	1-7	3.8[5]	5.3	2.3	4,519
Echo 720 24.0 fl oz	1,2,4,6,7	3.8	5.0	3.7	4,827
Echo 720 16.0 fl oz + PropiMax EC 2.0 fl oz	3,5				
Headline 2.09EC 9.0 fl oz	1.5	4.8	7.3	3.8	4,060
Folicur 3.6F 7.2 fl oz	3,5,6				
Headline 2.09EC 12.0 fl oz	4				
Echo 720 24.0 fl oz	7				
Echo 720 24.0 fl oz	1,2,7	4.5	6.5	2.8	4,932
Folicur 3.6F 7.2 fl oz	3,4,5,6				
Echo 720 16.0 fl oz + PropiMax EC 2.0 fl oz	1,2,4	3.9	6.0	3.5	4,901
Abound 2.08SC 18.5 fl oz	3,5				
Echo 720 24.0 fl oz	6,7				
Echo 720 24.0 fl oz	1,2,4,6,7	3.8	6.0	3.2	5,054
Abound 2.08SC 18.5 fl oz	3,5				
Echo 720 24.0 fl oz	1,2,4,6,7	3.2	4.8	3.0	5,131
Echo 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5				
Echo 720 24.0 fl oz	1,2,4,6,7	3.8	5.8	2.8	4,473
Headline 2.09EC 9.0 fl oz	3,5				
Headline 2.09EC 12.0 fl oz	3,5	4.3	6.2	3.7	4,596
Folicur 3.6F 7.2 fl oz	4,6				
Headline 2.09 EC 9.0 fl oz	1.5	3.7	5.8	3.0	4,458
Echo 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5				
Headline 2.09EC 12.0 fl oz	4				
Echo 720 24.0 fl oz	6,7				
Echo 720 24.0 fl oz	1,7	4.8	7.0	3.3	4,175
Headline 2.09EC 9.0 fl oz	2				
Folicur 3.6F 7.2 fl oz	3,4,5,6				
LSD (P ≤ 0.05)		***0.5***	***0.9***	***1.4***	***814***

[1]Fungicide applications were made at 14-day intervals unless otherwise indicated.

[2]Leafspot (LLS) diseases were assessed using the Florida leafspot scoring system (1 = no disease; 10 = completely dead plants).

[3]Rust rated using the ICRISAT 1-9 rating scale (1 = no disease; 9 = plants severely affected, 80-100 percent leaves withering).

[4]Southern stem rot (SSR) incidence is expressed as the number of hits per 60 feet of row.

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

EVALUATION OF FUNGICIDE SEED TREATMENTS ON STAND, TSWV, AND SOIL-BORNE DISEASE CONTROL ON PEANUT, GCREC

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

Objective: To evaluate new fungicide seed treatments and compare them with currently registered seed treatments on germination, stand, tomato spotted wilt virus (TSWV), and southern stem rot of peanut in southwest Alabama.

Methods: Peanut cultivar Georgia Green was planted at the Gulf Coast Research and Extension Center (GCREC) in Fairhope, Ala., on May 10 at a rate of five seeds per foot of row in a field with a prior history of peanut production. The soil type was a Malbis fine sandy loam (OM <1 percent). Recommendations for fertility and weed control of the Alabama Cooperative Extension System were followed. Thrips were controlled with an in-furrow application of 6-7 pounds per acre of Temik 15G. The seed were planted in raised beds with bed knockers. On June 9, 6 ounces per acre of Gramoxone plus 1.0 pint per acre Storm plus 1 pint per acre Butyrac 175 plus 1 pint per 50 gallons Activate were made for postemergent weed control. On July 8, 1.5 pints per acre of Ultra Blazer plus Solubor 2 pounds per acre plus Preference 1.5 pints per 50 gallons were applied for weed control. On July 27, 2 ounces per acre Karate plus 1 pints per acre Butyrac 175 plus 1 pint per 50 gallons Preference was applied for insect control and on August 25, Karate 1 ounces per acre plus Induce 1 pints per 50 gallons was applied.

Plots consisted of four 30-foot rows spaced 39 inches apart and were arranged in a randomized complete block design with six replications. Thrips were controlled with an in-furrow application of 6.5 pounds per acre of Temik 15G. Stand counts were made at 7 days after planting (DAP), 14 DAP, and 28 DAP. Vigor ratings were made at 28 DAP where 1 = least vigorous plants to 5 = most vigorous plants. Foliar fungicide treatments were made following the recommended Bravo 720/Abound 2.08SC program (Tilt 3.6EC plus Bravo 720 [1,2,4], Abound 2.08SC [3,5], and Bravo 720 [6,7]). All foliar fungicides were applied at two-week intervals using a six-row tractor-mounted boom sprayer with TX-8 nozzles calibrated to deliver 15 gallons per acre.

TSWV was assessed on August 25 and counts of southern stem rot (SSR) hits were made on September 14 immediately after plot inversion (one hit is defined as $\leq$1 foot of consecutive SSR-damaged plants per row). Plots were harvested on September 24 and yields were reported at 10.05 percent moisture. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: During the 2004 growing season, temperature was near normal levels and rainfall was at or above historical average. Due to above average rainfall in June, July, and August, leafspot severity increased throughout the season. All seed treatments gave similar stand numbers at 7, 14, and 28 days. All were better than the nonntreated control. Seed treated with Dynasty at 4 ounces per hundredweight had the lowest incidence of TSWV. SSR ratings for all seed treatments were similar. Yields for all seed treatments were similar with only the Dynasty 4 ounces per hundredweight treated seed yielding significantly higher than the nontreated control.

EVALUATION OF FUNGICIDE SEED TREATMENTS ON STAND, TSWV, AND SOIL-BORNE DISEASE CONTROL ON PEANUT, GCREC

Treatment and rate/A	Application timing	Stand counts[1]			TSWV[2]	SSR[3]	Plot yield (lb/A)
		7 DAP	14 DAP	28 DAP			
Nontreated Control		24.0[4]	51.2	54.5	4.0	1.2	3,969
Tilt 3.6EC 2.0 fl oz + Bravo 720 1.0 pt Abound 2.08SC 18.5 fl oz Bravo 720 1.5 pt	1,2,4 3,5 6,7						
Dynasty PD 3.5 oz/cwt Tilt 3.6EC 2.0 fl oz + Bravo 720 1.0 pt Abound 2.08SC 18.5 fl oz Bravo 720 1.5 pt	At planting 1,2,4 3,5 6,7	31.8	71.8	73.7	1.3	1.7	4,389
Dynasty PD 4.0 oz/cwt Tilt 3.6EC 2.0 fl oz + Bravo 720 1.0 pt Abound 2.08SC 18.5 fl oz Bravo 720 1.5 pt	At planting 1,2,4 3,5 6,7	32.7	72.3	74.7	0.5	0.7	4,642
Vitavax PC 4.0 oz/cwt Tilt 3.6EC 2.0 fl oz + Bravo 720 1.0 pt Abound 2.08SC 18.5 fl oz Bravo 720 1.5 pt	At planting 1,2,4 3,5 6,7	29.8	70.7	73.0	2.3	1.2	4,252
Vitavax PC 4.0 oz/cwt Abound 2.08SC 3.0 fl oz Tilt 3.6EC 2.0 fl oz + Bravo 720 1.0 pt Abound 2.08SC 18.5 fl oz Bravo 720 1.5 pt	At planting In-furrow 1,2,4 3,5 6,7	25.0	71.7	73.8	3.0	1.7	4,420
Dynasty PD 4.0 oz/cwt Abound 2.08SC 4.5 fl oz Tilt 3.6EC 2.0 fl oz + Bravo 720 1.0 pt Abound 2.08SC 18.5 fl oz Bravo 720 1.5 pt	At planting In-furrow 1,2,4 3,5 6,7	25.8	73.0	74.7	2.8	0.8	4,412
Vitavax PC 4.0 oz/cwt + Kodiak 0.125 oz/cwt Abound 2.08SC 4.5 fl oz Tilt 3.6EC 2.0 fl oz + Bravo 720 1.0 pt Abound 2.08SC 18.5 fl oz Bravo 720 1.5 pt	At planting In-furrow 1,2,4 3,5 6,7	26.7	69.3	72.5	1.3	1.5	4,145
LSD (P ≤ 0.05)		***5.4***	***7.5***	***7.5***	***2.1***	***1.0***	***590***

[1]Stand counts were made on May 17, May 24, and June 7.

[2]Tomato spotted wilt virus (TSWV) ratings based on number of infected plants per 60 feet of row.

[3]Southern stem rot (SSR) hits assessed at inversion as the number of hits per 60 feet of row.

[4]Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P ≤0.05).

IMPACT OF APPLICATION INTERVAL ON THE CONTROL OF LATE LEAFSPOT AND RUST ON THE FLORIDA C-99R PEANUT IN A RAINFED PRODUCTION SYSTEM IN SOUTHWEST ALABAMA, GCREC

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

Objective: To assess the efficacy of recommended fungicides applied at two-, three-, and four-week intervals, and according to the AU-Peanut leafspot advisory for the control of early leafspot and southern stem rot, as well as on the yield of disease resistant peanut Florida C-99R in a rainfed or dryland production system.

Methods: On May 13, the disease-resistant peanut cultivar Florida C-99R (Maturity Group 5) were planted at a rate of six seeds per foot of row in a field that was cropped to peanut once every three years using conventional tillage practices in a Malbis fine sandy loam (OM <1 percent) soil at the Gulf Coast Research and Extension Center (GCREC) in Fairhope, Ala. Plots were randomized into four complete blocks and consisted of four 30-foot rows spaced 3.2-feet apart, were randomized within each whole plot. The test area was subsoiled and bedded before 2 pints per acre of Prowl was broadcast. Temik 15G at 6.5 pounds per acre was applied in-furrow for thrips control. Post-emergent applications of 6 fluid ounces per acre of Gramoxone plus 1 pint per acre of Storm plus 1 pint per 50 gallons Activate were made. The test area was not irrigated. Full canopy sprays were made on a 14-, 21-, and 28-day calendar schedule, as well as AU-Pnut disease advisory. Treatment dates for the 14-day schedule were June 21, July 6, July 20, July 29, August 13, August 26, and September 8; June 21, July 12, August 3, August 19, and September 8 for the 21-day schedule; and June 21, July 20, August 13, and September 8 for the 28-day schedule. Fungicides were applied according to the AU-Pnut disease advisory on June 21, July 6, July 20, July 29, August 13, August 26, and September 8. A four-row ATV-mounted boom sprayer with three TX-8 nozzles per row in 10 gallons per acre spray volume was used to make all fungicide applications.

Early and late leafspot (LS) were rated simultaneously using the Florida peanut leafspot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions in lower and upper leaf canopy, 4 = some lesions in lower and upper canopy with light 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 = numerous lesions on few remaining leaves with severe defoliation (≤90 percent), 9 = very few remaining leaves covered with lesions and severe defoliation (≤95 percent), and 10 = plants defoliated or dead. Peanut rust severity was rated on October 18 using the ICRISAT 1-9 rust rating scale where 1 = no disease to 9 = 80 to 100 percent of leaves withered. Leafspot and rust ratings were recorded on July 28, August 11, August 25, September 7, September 27, and October 18. Late leafspot ratings from October 18 are displayed in the table. Southern stem rot (SSR) hit counts, where one hit is defined as ≤1 foot of consecutive SSR-damaged plants per row, were made immediately after plot inversion on October 18. Harvest date was October 21 with a field combine and yields reported at 10 percent moisture. Significance of treatment effects were tested by analysis of variance and Fisher's least significant difference (LSD) test (P=0.05).

Results: Rainfall totals for May, June, July, August, and September reached or exceeded the historical average for those months. Very heavy rainfall associated with hurricane created a favorable environment for the development of late leafspot and rust development. With the Bravo Ultrex and Abound programs, the best leafspot control was obtained with the 14-day and AU-Pnut schedules (table). The level of late leafspot control with the 21- and 28-day schedules with the Bravo Ultrex and Abound programs was similar. Treatment schedule had no impact on the level of late leafspot control provided by the Folicur program. When applied on a 14-day and AU-Pnut schedule, the Bravo Ultrex and Abound programs controlled late leafspot better than the Folicur program.

Overall rust damage was very heavy. The best rust control was obtained with the 14-day and AU-Pnut Bravo Ultrex and Abound programs (see table). With both of these programs, rust severity increased as the

application interval increased from 14- to 28-days. All Folicur programs were equally ineffective in controlling peanut rust.

While the incidence of SSR was low, significant differences in the level of disease damage were noted between fungicide programs (see table). At the 14-day treatment schedule, SSR incidence was similar for the Abound, Folicur, and Bravo Ultrex programs.

Treatment schedule had relatively little impact on yield response with all three fungicide programs. For each program, yields were similar across all treatment schedules (table).

Summary: The Folicur program was less effective in controlling late leafspot and rust than Bravo Ultrex and Abound programs. While the effectiveness of the Bravo Ultrex and Abound programs declined at treatment interval lengthened, adequate control of late leafspot was seen with the 21- and 28-day interval programs. At 21- and 28- day intervals, the Abound but not Bravo Ultrex programs also gave good control of rust. Despite considerable late leafspot and rust development, particularly on the Folicur-treated peanuts, yield response across fungicide programs was similar. Perhaps the Florida C-99R is impacted less by the effects of leafspot and rust-related defoliation than other peanut cultivars.

IMPACT OF TREATMENT SCHEDULE ON THE DISEASE CONTROL AND YIELD RESPONSE TO RECOMMENDED FUNGICIDE PROGRAMS ON FLORIDA C-99R PEANUT IN A RAINFED PRODUCTION SETTING, WREC 2004

Treatment and rate/A	Application schedule	LLS[1]	Rust	SSR[2]	Yield (lb/A)
Bravo Ultrex 1.4 lb	14-day	3.2 e[3]	4.0 e	3.3 abc	5,679 ab
Bravo Ultrex 1.4 lb	21-day	4.1 cd	5.3 bcd	4.0 abc	5,268 abc
Bravo Ultrex 1.4 lb	28-day	4.4 bc	6.2 ab	3.5 abc	5,235 abc
Bravo Ultrex 1.4 lb	AU-Pnut	3.3 e	4.5 de	3.0 bcd	5,566 abc
Bravo Ultrex 1.4 lb Folicur 3.6F 0.45 pt	14-day	4.8 ab	6.0 ab	3.2 abcd	5,308 abc
Bravo Ultrex 1.4 lb Folicur 3.6F 0.45 pt	21-day	4.8 ab	5.7 bc	3.5 abc	5,453 abc
Bravo Ultrex 1.4 lb Folicur 3.6F 0.45 pt	28-day	5.2 a	6.3 ab	4.3 ab	4,953 c
Bravo Ultrex 1.4 lb Folicur 3.6F 0.45 pt	AU-Pnut	4.8 ab	6.8 a	4.5 a	5,072 bc
Bravo Ultrex 1.4 lb Abound 2SC 1.2 pt	14-day	3.6 de	4.7 cde	2.7 cd	5,703 a
Bravo Ultrex 1.4 lb Abound 2SC 1.2 pt	21-day	4.1 cd	4.5 de	2.8 cd	5,332 abc
Bravo Ultrex 1.4 lb Abound 2SC 1.2 pt	28-day	4.7 abc	5.8 ab	2.7 cd	5,534 abc
Bravo Ultrex 1.4 lb Abound 2SC 1.2 pt	AU-Pnut	3.5 de	4.2 e	1.8 d	5,816 a

[1]LLS = late leafspot.

[2]Incidence of southern stem rot (SSR) is expressed as the number of hits per 60 row feet.

[3]Means in each column that are followed by the same letter are not significantly different according to analysis of variance and Fisher's protected least significant difference (LSD) test (P=0.05).

YIELD RESPONSE AND DISEASE CONTROL WITH RECOMMENDED FUNGICIDE PROGRAMS ON SELECTED CULTIVARS OF PEANUT IN SOUTHWEST ALABAMA, GCREC

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

Objective: The effectiveness of recommended Bravo Ultrex, Folicur 3.6F, Abound 2SC, Headline 2.09EC, and Moncut 70DF programs for the control of late leafspot, peanut rust, and southern stem rot, as well as on their impact of the yield of Andru II, Carver, and Florida C-99R peanut lines in a rainfed production system.

Methods: On May 13, the peanut cultivars Andru II (Maturity Group 3], Carver (Maturity Group 4), and Florida C-99R (Maturity Group 5) were planted at a rate of six seeds per foot of row in a field that was cropped to peanut once every three years using conventional tillage practices in a Malbis fine sandy loam (OM <1 percent) soil on the Gulf Coast Research and Extension Center (GCREC) in Fairhope, Ala.. A split-plot design with peanut cultivars as whole plots and fungicide programs as subplots was used. Whole plots were randomized into four complete blocks. Subplots, which consisted of four 30-foot rows spaced 3.2-feet apart, were randomized within each whole plot. The test area was subsoiled and bedded before 2 pints per acre of Prowl was broadcast. Temik 15G at 6.5 pounds per acre was applied in-furrow for thrips control. Post-emergent applications of 6 fluid ounces per acre of Gramoxone plus 1 pint acre of Storm plus 1 pint per 50 gallons Activate were made. The test area was not irrigated. Full canopy sprays on all peanut cultivars were made on a 14-day calendar schedule on June 21, July 6, July 14, July 30, August 13, August 26, and September 8 with a four-row ATV-mounted boom sprayer with three TX-8 nozzles per row in 10 gallons per acre spray volume.

Late leafspot (LS) were rated simultaneously using the Florida peanut leafspot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions in lower and upper leaf canopy, 4 = some lesions in lower and upper canopy with light 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 = numerous lesions on few remaining leaves with severe defoliation (v90 percent), 9 = very few remaining leaves covered with lesions and severe defoliation (≤95 percent), and 10 = plants defoliated or dead. Peanut rust severity was rated using the ICRISAT 1-9 rust rating scale where 1 = no disease to 9 = 80 to 100 percent of leaves withered. Leafspot and rust ratings were recorded on September 24 for Andru II and Carver, and on October 4 for Florida C-99R. Southern stem rot (SSR) hit counts, where one locus or hit is defined as ≤1 foot of consecutive SSR-damaged plants per row, were made immediately after plot inversion on September 24 for Andru II, October 5 for Carver, and October 18 for Florida C-99R. Andru II, Carver, and Florida C-99R were harvested on September 27, October 7, and October 21, respectively with a field combine and yields reported at 10 percent moisture.

Significance of treatment effects were tested across all cultivars by analysis of variance and Fisher's least significant difference (LSD) test (P=0.05). Since the cultivar/treatment interactions for leafspot diseases, peanut rust, SSR, and yield were not significant, the data for each of these variables was pooled or averaged across the three peanut cultivars

Results: Rainfall totals for May, June, July, August, and September reached or exceeded the historical average for those months. Very heavy rainfall associated with hurricane created a favorable environment for the development of late leafspot and rust on all three peanut lines. Disease loci counts for SSR were very low across all fungicide programs and are not included in this report. The heaviest leafspotting and premature defoliation was noted on the Folicur-treated peanuts. Bravo Ultrex season-long and both Bravo plus Moncut programs gave better control of late leafspot than the Abound program and all were equal in efficacy to the Headline program. The Folicur, Abound, and Headline programs were less effective in controlling rust than both of the Bravo plus Moncut programs. Bravo Ultrex season-long gave better control of peanut rust than Folicur and Abound but was equal to Headline in performance against this disease. Yield response with the Bravo plus Moncut programs was superior to that obtained with the Folicur and Abound programs. Yields for the Folicur-treated peanuts were also significantly below those recorded for the Abound, season-long Bravo Ultrex, Headline, and Stratego programs.

Significant differences in the severity of late leafspot and rust, as well as SSR incidence and yield were seen between the three peanut lines (Table 2). The lowest level of late leafspot was seen on Florida C-99R. Severity of this disease was very similar on Andru II and Carver. Carver also suffered significantly heavier rust damage than either Andru II or Florida C-99R. Again, the least rust damage was noted on Florida C-99R. While overall SSR pressure was low to moderate, the incidence of this disease was higher on the late maturing Florida C-99R than on Andru II or Carver. The early maturing Andru II suffered the least SSR damage. Heavy late leafspot and rust damage significantly reduced the yield of Carver. Despite higher leafspot and rust ratings, the yield of Andru II and Florida C-99R were similar.

On Andru II, defoliation levels for the Folicur program exceeded 50 percent compared with less than 10 percent for both of the Bravo Ultrex plus Moncut programs (Table 3). The Abound program also was less effective in controlling late leafspot compared with both Bravo Ultrex plus Moncut programs. Significant differences in rust control were noted between fungicide programs on Andru II. The poorest rust control was given by the Folicur, Headline, Abound, and Stratego program. The four-application Bravo Ultrex plus Moncut program controlled rust better than the Folicur, Abound, and Stratego programs. While some differences in SSR control were noted, disease pressure was low. The combination of heavy late leafspot and rust damage greatly reduced the yield response with the Folicur, Abound, and Stratego programs.

The Folicur program failed to adequately protect the Carver peanut from late leafspot and rust (Table 3). Of the remaining programs, the four-application Bravo Ultrex plus Moncut program gave the best combination of late leafspot and rust control. Yield of the heavily late leafspot and rust damaged Folicur-treated Carver peanuts was significantly lower than those for both Bravo Ultrex plus Moncut and the Stratego programs.

While late leafspot and rust damage was lower on the late maturing Florida C-99R peanut, significant differences in the control of these diseases were noted between fungicide programs. The Bravo Ultrex and the single application Bravo Ultrex plus Moncut programs gave the best control of late leafspot and rust on this cultivar (Table 3). In contrast, the Folicur program gave the poorest control of both diseases. Yield for the Bravo Ultrex program was significantly higher compared with the Folicur program.

Summary: Due to favorable weather patterns in August and September, late leafspot and rust pressure was very high. In addition to poor control of late leafspot and rust, yield response with the labeled Folicur program was well below that obtained with all other fungicide programs. The Headline and Abound programs were not particularly effective in controlling rust, particularly on the Andru II and Carver peanuts. The best combination of disease control and yield gains was given by both of the Bravo Ultrex plus Moncut programs.

Carver, which was the most susceptible of the three peanut lines to rust, probably is too sensitive to this disease and late leafspot to consistently make top yields in Baldwin and Mobile Co with an intensive fungicide treatment program. Florida C-99R, which suffered the least late leafspot and rust damage, produced good yields with the standard Bravo Ultrex program.

TABLE 1. COMPARISON OF RECOMMENDED FUNGICIDE PROGRAMS FOR THE CONTROL OF DISEASES AND THEIR INFLUENCE ON PEANUT YIELD IN AN IRRIGATED PRODUCTION SYSTEM, GCREC 2004

Fungicide program and rate/A	Spray timing	Late leafspot	Rust	SSR[1]	Yield (lb/A)
Bravo Ultrex 1.4 lb	1-7	3.7 cd[2]	5.4 bcd	2.3 c	4,921 ab
Bravo Ultrex 1.4 lb	1,2,7	5.4 a	6.5 a	3.4 a	4,328 c
Folicur 3.6F 0.45 pt	3,6				
Bravo Ultrex 1.4 lb	1,2,4,5,6,7	3.5 d	5.2 cd	2.5 bc	5,070 a
Bravo Ultrex 1.4 lb + Moncut 70DF 1.4 lb	3				
Bravo Ultrex 1.4 lb	1,2,7	3.5 d	4.8 d	2.3 c	5,085 a
Bravo Ultrex 1.4 lb + Moncut 70DF 0.4 lb	3,4,5,6				
Bravo Ultrex 1.4 lb	1,2,4,6,7	4.4 b	6.3 a	3.3 ab	4,726 b
Abound 2SC 1.15 pt	3,5				
Bravo Ultrex 1.4 lb	1,2,4,6,7	3.8 cd	6.0 ab	2.6 abc	4,749 ab
Headline 2.09EC 9 fl oz	3,5				
Stratego 7 fl oz	1,2	4.0 bc	5.8 abc	2.8 abc	4,821 ab
Bravo Ultrex 1.4 lb	3,4,5,6,7				

[1]Incidence of southern stem rot (SSR) is expressed as the number of hits per 60 feet of row.

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

TABLE 2. YIELD RESPONSE AND SENSITIVITY OF SELECTED PEANUT LINES TO LATE LEAFSPOT AND PEANUT RUST

Peanut cultivar	Late leafspot	Rust	SSR[1]	Yield (lb/A)
Andru II	4.5 a[2]	5.9 b	1.9 c	4,986 a
Carver	4.6 a	6.8 a	2.7 b	4,524 b
Florida C-99R	3.0 b	4.5 c	3.6 a	4,932 a

[1]Incidence of southern stem rot (SSR) is expressed as the number of hits per 60 feet of row.

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

TABLE 3. EFFICACY OF RECOMMENDED FUNGICIDE PROGRAMS FOR THE CONTROL OF DISEASES ON PEANUT BY PEANUT CULTIVAR

Fungicide program	Application timing	Late leafspot	Rust	SSR[1]	Yield (lb/A)
Andru II					
Bravo Ultrex 1.4 lb	1-7	4.3 bc[2]	5.5 bc	2.0 ab	5,093 abc
Bravo Ultrex 1.4 lb	1,2,7	6.3 a	7.3 a	2.5 a	4,370 d
Folicur 3.6F 0.45 pt	3-6				
Bravo Ultrex 1.4 lb	1,2,4,5,6,7	3.8 c	5.0 bc	2.0 ab	5,597 a
Bravo Ultrex 1.4 lb + Moncut 70DF 1.4 lb	3				
Bravo Ultrex 1.4 lb	1,2,7	3.8 c	4.5 c	1.0 b	5,494 ab
Bravo Ultrex 1.4 lb + Moncut 70DF 0.4 lb	3,4,5,6				
Bravo Ultrex 1.4 lb	1,2,4,6,7	5.0 b	6.5 ab	1.8 ab	4,668 cd
Abound 2SC 1.15 pt	3,5				
Bravo Ultrex 1.4 lb	1,2,4,6,7	4.3 bc	6.0 abc	1.3 ab	4,932 bcd
Headline 2.09EC 9.0 fl oz	3,5				
Stratego 7 fl oz	1,2	4.5 bc	6.3 ab	2.5 a	4,749 cd
Bravo Ultrex 1.4 lb	3-7				
Carver					
Bravo Ultrex 1.4 lb	1-7	4.4 bc	7.0 a	2.3 ab	4,450 ab
Bravo Ultrex 1.4 lb	1,2,7	6.0 a	7.0 a	3.5 ab	4,091 b
Folicur 3.6F 0.45 pt	3-6				
Bravo Ultrex 1.4 lb	1,2,4,5,6,7	4.3 bc	6.8 ab	2.0 b	4,795 a
Bravo Ultrex 1.4 lb + Moncut 70DF 1.4 lb	3				
Bravo Ultrex 1.4 lb	1,2,7	3.6 c	5.8 b	2.8 ab	4,772 a
Bravo Ultrex 1.4 lb + Moncut 70DF 0.4 lb	3,4,5,6				
Bravo Ultrex 1.4 lb	1,2,4,6,7	5.0 b	7.5 a	3.8 a	4,336 ab
Abound 2SC 1.15 pt	3,5				
Bravo Ultrex 1.4 lb	1,2,4,6,7	4.1 bc	7.0 a	2.3 ab	4,508 ab
Headline 2.09EC 9.0 fl oz	3,5				
Stratego 7 fl oz	1,2	4.6 b	6.8 ab	2.5 ab	4,714 a
Bravo Ultrex 1.4 lb	3-7				
Florida C-99R					
Bravo Ultrex 1.4 lb	1-7	2.4 c	3.8 b	2.8 b	5,219 a
Bravo Ultrex 1.4 lb	1,2,7	3.9 a	5.2 a	4.3 a	4,219 b
Folicur 3.6F 0.45 pt	3-6				
Bravo Ultrex 1.4 lb	1,2,4,5,6,7	2.5 c	3.8 b	3.5 a	4,817 ab
Bravo Ultrex 1.4 lb + Moncut 70DF 1.4 lb	3				
Bravo Ultrex 1.4 lb	1,2,7	3.0 b	4.3 ab	3.3 a	4,990 ab
Bravo Ultrex 1.4 lb + Moncut 70DF 0.4 lb	3,4,5,6				
Bravo Ultrex 1.4 lb	1,2,4,6,7	3.3 b	4.8 ab	4.3 a	5,173 ab
Abound 2SC 1.15 pt	3,5				
Bravo Ultrex 1.4 lb	1,2,4,6,7	3.0 b	5.0 a	4.3 a	4,806 ab
Headline 2.09EC 9.0 fl oz	3,5				
Stratego 7 fl oz	1,2	3.0 b	4.5 ab	3.3 a	5,001 ab
Bravo Ultrex 1.4 lb	3-7				

[1]Southern stem rot (SSR) incidence is expressed as the number of hits or disease loci per 60 feet.

[2]Means followed by the same letter are not significantly different according to analysis of variance and Fisher's protected least significant difference (LSD) test (P=0.05).

YIELD RESPONSE AND SUSCEPTIBILITY OF RUNNER PEANUT LINES TO DISEASES IN SOUTHWEST ALABAMA, GCREC

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Objective: To determine the susceptibility of commercial runner peanut lines to TSWV, leafspot diseases, southern stem rot, and peanut rust, as well as the yield potential of those lines in a rainfed setting where peanut are rotated behind one year of corn and then cotton.

Methods: On May 13, peanuts were planted at a rate of six seeds per foot of row in a field that was cropped to peanut once every three years using conventional tillage practices in a Malbis fine sandy loam (OM <1 percent) soil at the Gulf Coast Research and Extension Center (GCREC) in Fairhope, Ala. A randomized complete block design with four replications was used. Individual plots consisted of four 30-foot rows spaced 3.2-feet apart. The test area was subsoiled and bedded before 2 pints per acre of Prowl was broadcast. Temik 15G at 6.5 pounds per acre was applied in-furrow for thrips control. Postemergent applications of 6 fluid ounces per acre of Gramoxone plus 1 pint per acre of Storm plus 1 pint per 50 gallons Activate were made. The test area was not irrigated. Full canopy sprays of the fungicide Bravo Ultrex at 1.5 pinte per acre were made on a 14-day calendar schedule on June 21, July 6, July 14, July 30, August 13, August 26, and September 8 with a four-row ATV-mounted boom sprayer with three TX-8 nozzles per row in a 10-gallon-per-acre spray volume. Incidence of TSWV was determined on September 14 by counting the number of TSWV hits or disease loci (one hit was defined as ≤1 foot of consecutive symptomatic plant(s) per row). Early and late leafspot (LS) were rated simultaneously using the Florida peanut leafspot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions in lower and upper leaf canopy, 4 = some lesions in lower and upper canopy with light 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 = numerous lesions on few remaining leaves with severe defoliation (≤90 percent), 9 = very few remaining leaves covered with lesions and severe defoliation (≤95 percent), and 10 = plants defoliated or dead. Peanut rust severity was rated using the ICRISAT 1-9 rust rating scale where 1 = no disease to 9 = 80 to 100 percent of leaves withered. Leafspot was rated on July 14, July 28, August 11, August 25, September 7, September 24, and on October 4 and the AUDPC was calculated. Southern stem rot (SSR) hit counts, where one hit is defined as ≤1 foot of consecutive SSR damaged plants per row, were made immediately after plot inversion on September 24 for early (Maturity Group 3), October 5 for mid-season (Maturity Group 4), and October 18 (Maturity Group 5) for the late maturing lines. The early, mid-season, and late-maturing peanut lines were harvested on September 27, October 7, and October 21, respectively, with a field combine and yields reported at 10 percent moisture. Significance of treatment effects were tested across all cultivars by analysis of variance and Fisher's least significant difference (LSD) test (P=0.05).

Results: Rainfall totals for May, June, Juy, August, and September reached or exceeded the historical average for those months. Overall TSWV pressure was higher in 2004 than in previous years. Incidence of this disease was higher on Georgia Green and GA01R compared with Andru II, AP-3, and Tifrunner. Very heavy rainfall associated with Hurricane Ivan created favorable conditions for the development of late leafspot and rust on all peanut lines. The late-maturing (Group 5) Hull suffered the heaviest development of late leafspot and rust. Among the remaining late-maturing Group 5 lines, DP-1, Florida C-99R, and GA02C had significantly higher late leafspot rating and LS AUDPC values than GA01R and Tifrunner. The late leafspot rating and LS AUDPC value for UF000324 was significantly below those noted for the Group 4 lines Carver, Georgia Green, ANorden, and AP-3, as well as all of the other lines evaluated. The early maturing Andru II peanut had a lower LS AUDPC value but not final leafspot rating than all other peanut lines except for UF000324. With the exception of Hull, the heaviest rust damage was noted on ANorden, AP-3, Georgia Green, and Carver. Tifrunner, UF000324, Florida C-99R, and GA01R had the lowest rust ratings. Overall, SSR incidence on most peanut lines was relatively low. The highest incidence of this disease was noted on Hull, Tifrunner, and DP-1. Least

SSR development was seen on the early maturing Andru II peanut. The late maturing GA01R, which had low ratings for all diseases, outyielded Hull, UF000324, Tifrunner, and Carver. Other cultivars with yields similar to those produced by GA01R were Andru II, DP-1, Florida C-99R, GA02C, Georgia Green, ANorden, and AP-3.

Summary: With the exception of TSWV, the late maturing Florida C-99R, DP-1, GA01R and GA02C, as well as the early maturing Andru II have a very good disease resistance package and yield potential. Tifrunner (C34-24) also has an excellent disease resistance package but its yield was disappointingly low. The industry standard Georgia Green was hit fairly hard by TSWV and rust but was among the highest yielding peanut cultivars. While the AP-3 had the fewest TSWV hits and good yield potential, this cultivar proved very susceptible to rust. Hull, which proved highly susceptible to all four diseases, will no longer be commercially available.

DISEASE SEVERITY AND YIELD RESPONSE OF COMMERCIAL PEANUT LINES AT THE GULF COAST RESEARCH AND EXTENSION CENTER

Peanut line	Maturity group	TSWV # hits/60 ft	Leafspot Rating	Leafspot AUDPC	Rust	SSR[1] # hits/60 ft	Yield (lb/A)
Andru II	3	6.5 bc[2]	4.1 b	162 g	4.5 cd	0.8 f	5,070 abc
Carver	4	8.5 abc	4.0 b	222 bcd	5.5 bc	2.5 bcdef	4,114 d
DP-1	5	10.5 ab	3.3 c	234 b	4.5 cd	3.8 abc	5,046 abc
Florida C-99R	5	7.8 abc	3.1 c	228 b	3.8 d	3.5 bcd	5,034 abc
GA01R	5	13.0 a	3.0 c	189 f	3.5 d	2.5 bcdef	5,590 a
GA02C	5	8.0 abc	3.8 b	223 bc	4.5 cd	2.0 cdef	5,300 ab
Georgia Green	4	13.3 a	4.0 b	213 cd	5.5 bc	1.5 ef	5,009 abc
Hull	5	11.5 ab	4.8 a	291 a	7.3 a	5.5 a	4,513 bcd
ANorden	4	7.8 abc	3.8 b	211 cd	6.3 ab	2.8 bcde	5,179 ab
AP-3	4	4.3 c	3.9 b	207 de	6.0 b	2.3 cdef	5,114 abc
UF000324	4	11.5 ab	3.1 c	141 h	3.8 d	1.8 def	4,610 bcd
Tifrunner	5	5.8 bc	2.9 c	194 ef	4.3 d	4.3 ab	4,259 cd

[1]Southern stem rot (SSR) incidence is expressed as the number of disease loci per 60 feet of row.

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

EVALUATION OF PEANUT CULTIVARS FOR SUITABILITY IN PEST MANAGEMENT SYSTEMS IN SOUTHWEST ALABAMA, GCREC

J. R. Weeks, H. L. Campbell, and M. D. Pegues

Objective: To evaluate eight peanut cultivars in a pest management system for insect resistance and disease resistance in a dry-land peanut production system in southwest Alabama.

Methods: On May 11, eight peanut cultivars were planted at the Gulf Coast Research and Extension Center (GCREC) in Fairhope, Ala., in a field with a prior history of peanut production. The soil was a Malbis fine sandy loam (OM <1 percent). On June 9, 6 ounces per acre Gramoxone plus 1 pint acre Storm plus 1 pint per acre Butyrac 175 plus 1 pint per 50 gallons Activate was applied for weed control. On July 8, 1.5 pints per acre Ultra Blazer plus 2.5 pounds per acre Solubor plus 1 pint per 50 gallons Preference was applied for weed control. On July 27, 2 ounces per acre Karate plus 1 pint per acre Butyrac 175 plus 1 pint per 50 gallons Preference was applied to all plots. On August 25, 1 ounce per acre Karate plus 1 pint per 50 gallons Induce were applied for insect control. Seed were sown at a rate of approximately five seeds per foot of row. Treatments included Temik 15G and Thimet 20G applied in-furrow at planting on all cultivars. A nontreated plot was also maintained for comparison.

Plots consisted of four 30-foot rows spaced 39 inches apart arranged in a randomized complete block design with six replications. Plots were not irrigated. Fungicides were applied on to all plots on June 17 (Stratego, 7 fluid ounces per acre), June 28 (Stratego, 7 fluid ounces per acre), July 12 (Folicur 3.6F, 0.45 pint per acre plus Preference, 1 pint 50 gallons), July 23 (Echo, 1.5 pints per acre), August 4 (Abound 2SC, 18.5 fluid ounces per acre), August 18 (Bravo 720, 1.5 pints per acre), September 1 (Bravo 720, 1.5 pints per acre), and September 8 (Bravo 720, 1.5 pints per acre) using a tractor-mounted boom sprayer with TX-8 nozzles calibrated to deliver 20 gallons per acre.

Stand counts were made on May 25 and thrips damage ratings (TDR) were made on June 10 from all plots. Tomato spotted wilt virus (TSWV) ratings were made on July 12, August 9, and September 14 by counting the number of row feet of peanut plants that were severely affected. Early leafspot was visually rated on September 24 from the mid-maturing varieties and October 4 from the late-maturing varieties using the Florida 1-10 leafspot scoring system where 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions in lower and upper leaf canopy, 4 = some lesions in lower and upper canopy with light 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 = numerous lesions on few remaining leaves with severe defoliation (≤90 percent), 9 = very few remaining leaves covered with lesions and severe defoliation (≤95 percent), and 10 = plants defoliation or dead. Rust was rated using the ICRISAT 1-9 rust rating scale.

Counts of southern stem rot (SSR) hits (one hit was defined as ≤1 foot of consecutive SSR-damaged plants) were made on September 27 and October 18, respectively, immediately after plot inversion. Plots were harvested on October 1 and October 22 and yields were reported at 10 percent moisture. Results were pooled and analyzed across treatment and cultivars. Significance of treatment effects were tested by analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

Results: Rainfall totals for May, June, July, August, and September reached or exceeded the historical average for those months. Very heavy rainfall associated with hurricane created a favorable environment for the development of late leafspot and rust development. When cultivars were evaluated Georgia Green had the highest emergence rate and was significantly better than DP-1, GA 01R, and C-99R (Table 1). No differences were observed among in-furrow treatments (Table 2). Thrips damage ratings (TDR) showed Georgia Green to have the least thrips damage and DP-1 to have the most. The Temik- and Thimet-treated plots were both significantly better than the untreated control plots. Incidence of TSWV increased throughout the season. Georgia Green had the consistently had the highest incidence of TSWV and AP-3 had the lowest. In all three ratings,

both the Temik- and Thimet-treated plots had significantly lower incidence of TSWV than the untreated control plots. Late leafspot was the primary leafspot observed in the fields. Georgia Green, ANorden, and AP-3 had higher leafspot incidence than did all other cultivars. The in-furrow treatments had very little effect on leafspot. As was observed for leafspot, Georgia Green, ANorden, and AP-3 had higher rust severity than all other cultivars. The in-furrow treatments had little effect on rust severity. Georgia Green, ANorden, and AP-3 had the highest incidence of SSR and hits were significantly higher than all other cultivars. Very few differences were observed among in-furrow treatments. All cultivars produced similar yields however Tifrunner was significantly lower than all other cultivars. There were no differences among in-furrow treatments.

TABLE 1. COMPARISON OF SELECTED PEANUT LINES FOR INSECT AND DISEASE CONTROL IN A DRY-LAND PEANUT PRODUCTION SYSTEMT IN SOUTHEAST ALABAMA, GCREC, 2004

Cultivar	Stand	TDR	TSWV[1] 1	TSWV 2	TSWV 3	LS[2]	Rust[3]	SSR[4]	Yield (lb/A)
Ga. Green	93.3 a[5]	3.7 d	3.3 ab	11.1 a	18.0 a	4.1 a	6.8 a	5.1 a	5,567 ab
GA 02C	89.8 ab	3.9 cd	2.4 bc	5.4 c	7.4 c	3.4 b	4.1 d	1.6 d	5,391 b
ANorden	90.6 ab	4.0 bcd	3.1 abc	9.8 a	11.7 b	3.9 a	6.3 a	4.8 a	5,261 b
AP-3	90.0 ab	4.2 bc	1.4 d	2.4 d	4.1 d	3.9 a	6.7 a	4.4 a	5,912 a
C-99R	82.3 c	4.3 bc	3.8 a	8.8 ab	11.9 b	3.3 bc	5.5 b	2.7 bc	5,466 ab
GA 01R	83.1 c	4.4 ab	2.2 cd	8.9 ab	9.1 bc	3.0 d	5.2 bc	2.1 cd	5,946 a
DP-1	85.5 bc	4.8 a	2.2 cd	5.9 c	6.8 cd	3.1 cd	4.8 c	2.4 cd	5,589 ab
Tifrunner	90.2 ab	4.8 a	2.6 bc	6.8 bc	7.5 c	3.0 d	5.4 bc	3.4 b	4,543 c

[1]Tomato spotted wilt virus (TSWV) assessed as the number of row feet of infected plants.

[2]Leafspot (LS) rated using the Florida 1-10 leafspot scoring system.

[3]Rust rated using the ICRISAT 1-9 rust rating scale.

[4]Southern stem rot (SSR) incidence is expressed as the number of hits per 80 feet.

[5]Means followed by the same letter do not differ significantly according to analysis of variance and Fisher's protected least significant difference (LSD) test ($P \leq 0.05$).

TABLE 2. EVALUATION OF IN-FURROW TREATMENT FOR EFFECT ON STAND, THRIPS, TOMATO SPOTTED WILT, AND DISEASES OF PEANUT IN SOUTHEAST ALABAMA, GCREC

Treatment	Stand	TDR	TSWV[1] 1	TSWV 2	TSWV 3	LS[2]	Rust[3]	SSR[4]	Yield (lb/A)
Temik 15G	87.7 a[5]	2.8 c	1.7 b	5.9 b	8.8 b	3.4 b	5.5 a	3.6 a	5,542 a
Thimet 15G	87.3 a	3.3 b	19 b	5.9 b	7.6 b	3.5 ab	5.5 a	2.9 b	5,484 a
UTC	89.3 a	6.7 a	4.2 a	10.3 a	12.2 a	3.5 a	5.8 a	3.5 ab	5,331 a

[1]Tomato spotted wilt virus (TSWV) assessed as the number of row feet of infected plants.

[2]Leafspot (LS) rated using the Florida 1-10 leafspot scoring system.

[3]Rust rated using the ICRISAT 1-9 rust rating scale.

[4]Southern stem rot (SSR) incidence is expressed as the number of hits per 80 feet.

[5]Means followed by the same letter do not differ significantly according to analysis of variance and Fisher's protected least significant difference (LSD) test ($P < 0.05$).

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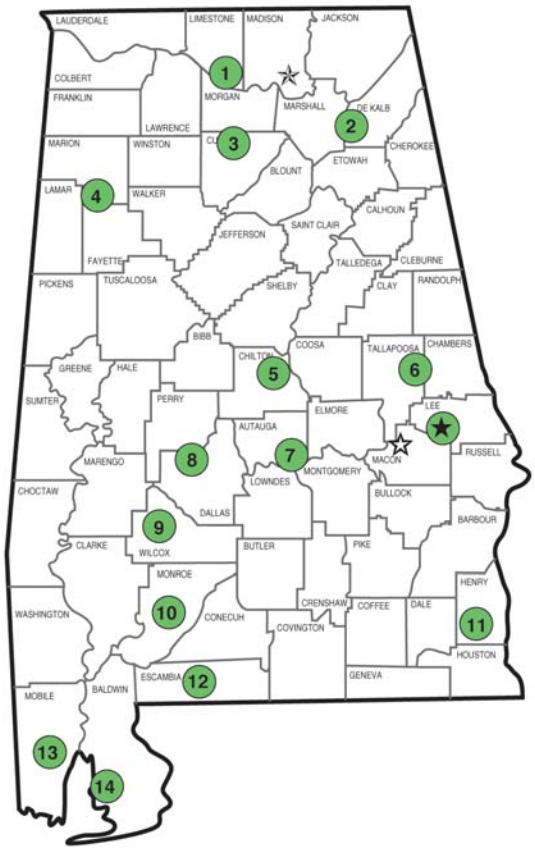

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