

---

# Peanut Disease Control Field Trials, 2008: Experimental Fungicide Trials

---

Entomology and Plant Pathology Departmental Series No. 12A  
Alabama Agricultural Experiment Station Auburn University, Auburn, Alabama  
Richard Guthrie, Director June 2009

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



## CONTENTS

	page
Authors.....	4
Introduction.....	5
Evaluation of Topguard and Unicorn for control of foliar and soil-borne diseases of peanut in southeast Alabama, WREC .....	7
Evaluation of the experimental fungicides DPX LEM 17 200SC and QFA61 LEM/Bravo for control of foliar and soil-borne diseases of peanut in southeast Alabama, WREC .....	9
Evaluation of Provost 433SC and Elast for control of foliar and soil-borne diseases of peanut in southeast Alabama, WREC .....	11
Evaluation of new fungicides Equus 720 SST and Orius 3.6F for control of foliar and soil-borne diseases of peanut in southeast Alabama, WREC .....	13
Evaluation of Evito 480SC, Tebuzol 3.6F, and Topsin M for control of foliar and soil-borne diseases of peanut in southeast Alabama, WREC .....	15
Evaluation of Artisan and Convoy for control of foliar and soil-borne diseases of peanut in southeast Alabama, WREC .....	17
Evaluation of Topguard and Unicorn for control of foliar and soil-borne diseases of peanut in southwest Alabama, GCREC .....	19
Evaluation of DPX LEM 17 200SC and QFA61 LEM/Bravo for control of foliar and soil-borne diseases of peanut in southwest Alabama, GCREC .....	21
Evaluation of Provost 433SC and Elast for control of foliar and soil-borne diseases of peanut in southwest Alabama, GCREC .....	23
Evaluation of new fungicides Equus 720 SST and Orius 3.6F for control of foliar and soil-borne diseases of peanut in southwest Alabama, GCREC .....	25
Evaluation of Evito, Tebuzol, and Topsin M for control of foliar and soil-borne diseases of peanut in southwest Alabama, GCREC .....	27
Evaluation of Artisan and Convoy for control of foliar and soil-borne diseases of peanut in southwest Alabama, GCREC .....	29
Yield and reaction of commercial runner peanut cultivars to diseases and soil insecticides in southeast Alabama, WREC .....	31
Yield and reaction of commercial runner peanut cultivars to diseases as influenced by soil insecticide treatment in southwest Alabama, GCREC .....	34

**This publication is available on-line at  
<http://www.ag.auburn.edu/aaes/communications/entplp/entplp12a.pdf>**

*Information contained herein is available to all persons without regard to race, color, sex, or national origin.*

*Published by the Alabama Cooperative Extension System (Alabama A&M and Auburn universities) in cooperation with the U.S. Department of Agriculture. An equal opportunity educator and employer.*

## AUTHORS

**K. L. Bowen**

Professor  
Dept. of Entomology and Plant Pathology  
Auburn University, Alabama 36849-5624

**H. L. Campbell**

Research Associate  
Dept. of Entomology and Plant Pathology  
Auburn University, Alabama 36849-5624

**A. K. Hagan**

Professor  
Dept. of Entomology and Plant Pathology  
Auburn University, Alabama 36849-5624

**M. D. Pegues**

Associate Director  
Gulf Coast Research and Extension Center  
Fairhope, Alabama 36532

**J. R. Weeks**

Extension Specialist and Associate Professor  
Dept. of Entomology and Plant Pathology  
Auburn University, Alabama 36849-5624

**L. W. Wells**

Director  
Wiregrass Research and Extension Center  
Headland, Alabama 36345

# Peanut Disease Control Field Trials, 2008 Experimental Fungicide Trials

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

## INTRODUCTION

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

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

During the 2008 production season at the WREC, temperatures were near historical averages (Figure 1), and monthly rainfall totals were at or near normal historical averages throughout the entire growing season (Figure 2). As a result, leaf spot severity was much worse than previously observed in all trials, and soil-borne disease incidence was greater than in previous years and adversely affected yield.

At the GCREC, temperatures were at or above historical averages throughout the entire growing season (Figure 1), and rainfall totals were at or near normal throughout the entire growing season (Figure 2). More consistent rainfall throughout the growing season led to higher than normal leaf spot severity and higher rust severity. Stem rot incidence increased above that previously observed and resulted in yield decreases.

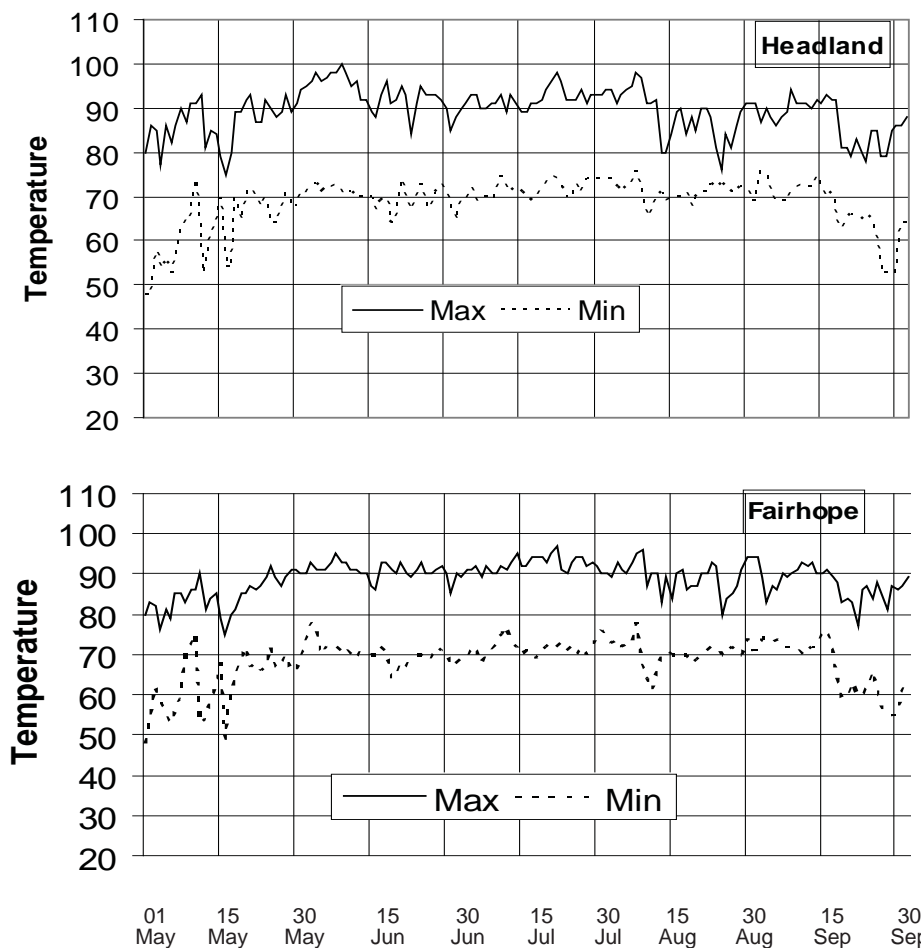
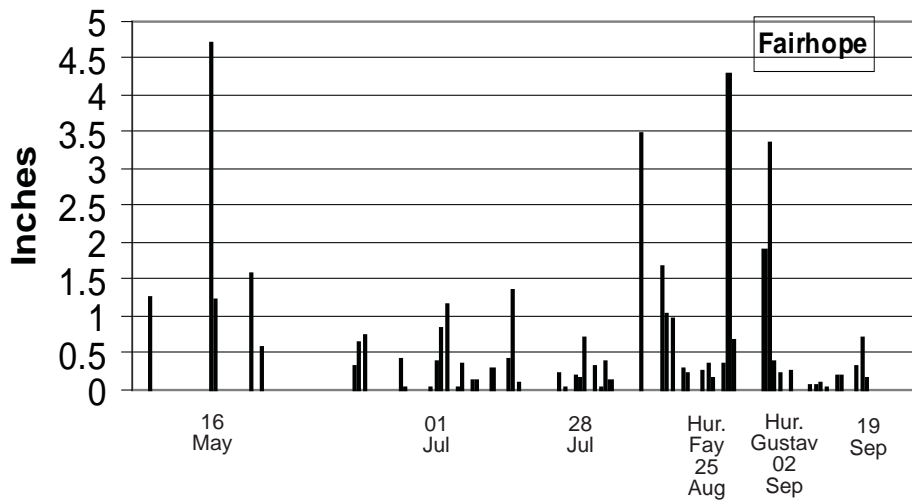
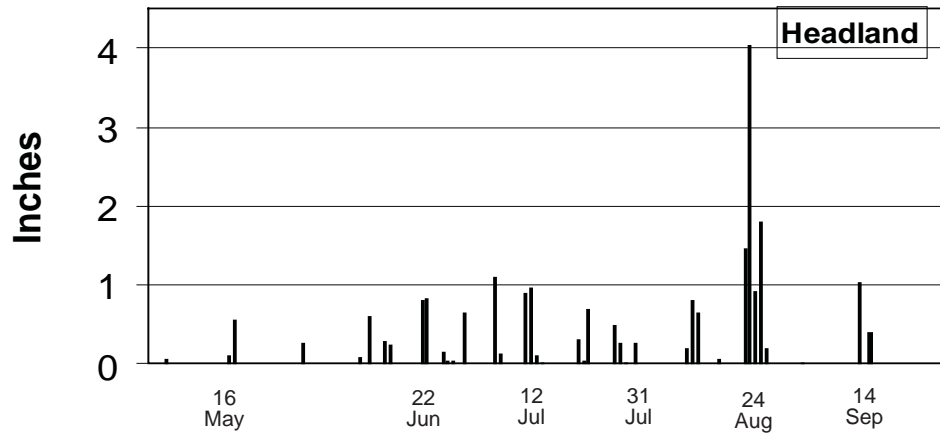


Figure 1. Daily minimum and maximum temperature (°F), May to October 2008.

Figure 2. Daily precipitation (inches), May to October 2008.



## EVALUATION OF TOPGUARD AND UNICORN FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHEAST ALABAMA, WREC

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

**Objective:** To evaluate Topguard and the new fungicide Unicorn and compare them against currently registered fungicides at various application intervals for their efficacy in controlling leaf spot diseases and stem rot of peanut in an irrigated production system in southeast Alabama.

**Methods:** Peanut cultivar AT3085RO was planted at the Wiregrass Research and Extension Center in Headland, Alabama, in a field with a history of peanut production on May 21. The soil type was a Dothan sandy loam (organic matter <1 percent). Seed were sown at a rate of approximately five seed per foot of row, and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. On March 5, the test area was paratilled and turned. On May 6, 1 quart per acre of Sonalan + 0.45 pint per acre of Strongarm were applied to the test area for preemergent weed control. Thrips were controlled with an in-furrow application of 6.7 pounds per acre of Temik 15G at planting. On June 24, 8 ounces per acre of Gramoxone + 8 ounces per acre of Basagran + 1.5 pints per acre of 2,4 DB were applied for postemergent weed control.

Plots, which consisted of four 30-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replications. Plots were located under a central pivot irrigation system and irrigated 0.5 inch on June 6, 1 inch on July 24 and August 4, and 0.5 inch on September 8 and September 30. Fungicides were applied on July 2, July 15, July 29, July 30, August 14, September 2, September 15, and October 1 using a four-row, tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

**Disease Assessment:** Early and late leaf spot were visually rated on September 29 using the Florida leaf spot scoring system [1 = no disease; 2 = very few lesions in lower canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation ( $\leq 10$  percent); 5 = lesions noticeable in upper canopy with some defoliation ( $\leq 25$  percent); 6 = lesions numerous with significant defoliation ( $\leq 50$  percent); 7 = lesions numerous with heavy defoliation ( $\leq 75$  percent); 8 = very numerous lesions on few remaining leaves with heavy defoliation ( $\leq 90$  percent); 9 = very few remaining leaves covered with lesions ( $\leq 95$  percent); 10 = completely defoliated or dead plants.

Counts of stem rot hits (one hit was defined as  $\leq 1$  foot of consecutive symptoms and signs of the disease) were made on October 10 immediately after plot inversion. Plots were harvested on October 15 and yields were reported at 9.8 percent moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ( $P=0.05$ ).

**Weather:** During the 2008 peanut production season, temperatures and monthly rainfall totals were at or near normal throughout the season.

**Results:** Leaf spot severity progressed during the season, and at the time of inversion the untreated control plots were almost completely defoliated (data not shown). The Bravo/Topguard (7.0 fluid ounces) + Bravo program gave significantly better leaf spot control than all other treatments except for the Bravo/Topguard (28.0 fluid ounces) treatment and the Bravo/Abound program. With the exception of the Bravo/Topguard (7 fluid ounces), Headline/Folicur/Headline/Bravo, and Bravo/Folicur regimes, all other programs gave similar leaf spot control as the standard season-long Bravo WS program. Incidence of stem rot was higher than in previous years and none of the remaining treatments provided significantly better stem rot control than the Bravo WS standard. Yield responses for all fungicide programs, with the exception of the Bravo/Unicorn (4.0 pound) program, were similar.

<b>EVALUATION OF TOPGUARD AND UNICORN FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHEAST ALABAMA, WREC</b>				
Treatment and rate/A	Application timing <sup>1</sup>	-Disease ratings-		Yield
		LS <sup>2</sup>	SR <sup>3</sup>	lb/A
Bravo WS 24.0 fl oz.....	1,2,7	4.3	8.2	3481
Topguard 7.0 fl oz	3,4,5,6			
Bravo WS 24.0 fl oz.....	1,2,7	3.5	8.7	3574
Topgurad 10.0 fl oz	3,4,5,6			
Bravo WS 24.0 fl oz.....	1,2,7	3.8	6.8	3545
Topgurad 14.0 fl oz	3,4,5,6			
Bravo WS 24.0 fl oz.....	1,2,7	3.3	8.5	3795
Topgurad 28.0 fl oz	3,4,5,6			
Bravo WS 24.0 fl oz.....	1,2,7	2.9	6.3	3578
Topguard 7.0 fl oz + Bravo WS 16.0 fl oz	3,4,5,6			
Bravo WS 24.0 fl oz.....	1,2,7	4.2	3.8	3836
Folicur 3.6F 7.2 fl oz	3,4,5,6			
Bravo WS 24.0 fl oz.....	1,2,4,6,7	3.3	6.8	3517
Abound 2.08SC 18.5 fl oz	3,5			
Bravo WS 24.0 fl oz.....	1,2,4,6,7	3.8	5.3	3743
Bravo WS 24.0 fl oz + Moncut 70DF 1.1 lb	3,5			
Headline 2.09EC 6.0 fl oz.....	1,2	4.7	5.8	3493
Folicur 3.6F 7.2 fl oz	3,5			
Headline 2.09EC 9.0 fl oz	4			
Bravo WS 24.0 fl oz	6,7			
Bravo WS 24.0 fl oz.....	1,2,7	3.8	8.2	3319
Unicorn 4.0 lb	3,4,5,6			
Bravo WS 24.0 fl oz.....	1,2,7	3.5	5.0	3787
Unicorn 5.0 lb	3,4,5,6			
Bravo WS 24.0 fl oz.....	1-7	3.5	5.2	4074
<b>LSD (P=0.05)</b>		<b>0.6</b>	<b>3.9</b>	<b>667</b>

<sup>1</sup> Fungicide applications were made at 14-day intervals unless otherwise indicated.

<sup>2</sup> Early and late leaf spot (LS) were assessed using the Florida leaf spot scoring system (1 = no disease;... 10 = completely dead plants).

<sup>3</sup> Stem rot (SR) incidence is expressed as the number of disease hits per 60 feet of row.

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



## EVALUATION OF THE EXPERIMENTAL FUNGICIDES DPX LEM 17 200SC AND QFA61 LEM/BRAVO FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHEAST ALABAMA, WREC

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

**Objective:** To evaluate the experimental fungicides DPX LEM17 200SC and QFA61 LEM/Bravo and compare them with currently registered fungicides for control of early and late leaf spot and stem rot and yield response in an irrigated peanut production system in southeast Alabama.

**Methods:** Peanut cultivar AT3085RO was planted on May 21 at the Wiregrass Research and Extension Center in Headland, Alabama, in a field with a history of peanut production. Seed were sown at a rate of approximately five seed per foot of row, and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. The soil type was a Dothan sandy loam (organic matter <1 percent). On May 6, 0.45 ounces per acre of Strongarm + 1 quart per acre of Sonalan were applied to the test area for preemergent weed control. Thrips were controlled with an in-furrow application of 6.7 pounds per acre of Temik 15G at planting. On June 24, 8 ounces per acre of Gramoxone + 8 ounces per acre of Basagran + 1.5 pints per acre of 2,4 DB were applied to the test area for postemergent weed control.

Plots, which consisted of four 30-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replications. Plots were located under a central pivot irrigation system and irrigated 0.5 inch on June 6, 1 inch on July 24 and August 4, and 0.5 inch on September 8 and September 30. Fungicides were applied on a 14-day schedule on July 3, July 17, July 31, August 14, September 2, September 15, and October 1 using a four-row, tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

**Disease Assessment:** Early and late leaf spot were visually rated on September 29 using the Florida leaf spot scoring system [ 1= no disease; 2 = very few lesions in lower canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation ( $\leq 10$  percent); 5 = lesions noticeable in upper canopy with some defoliation ( $\leq 25$  percent); 6 = lesions numerous with significant defoliation ( $\leq 50$  percent); 7 = lesions numerous with heavy defoliation ( $\leq 75$  percent); 8 = very numerous lesions on few remaining leaves with heavy defoliation ( $\leq 90$  percent); 9 = very few remaining leaves covered with lesions ( $\leq 95$  percent); 10 = completely defoliated or dead plants.

Counts of stem rot hits (one hit was defined as  $\leq 1$  foot of consecutive symptoms and signs of the disease) were made on October 10 immediately after plot inversion. Plots were harvested on October 15 and yields were reported at 9.8 percent moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ( $P=0.05$ ).

**Weather:** During the 2008 peanut production season, temperatures were normal and monthly rainfall totals were at or near normal throughout the season.

**Results:** Leaf spot severity progressed during the season, and at the time of inversion the untreated control plots were almost completely defoliated (data not shown). The Headline/Folicur/Headline/Bravo, Tilt + Bravo/DPX LEM/Bravo, and Tilt + Bravo/Abound/Bravo programs gave significantly better leaf spot control than all other treatments except for Bravo/Abound. Only the DPX LEM 17 200SC (9.6 fluid ounces) and Bravo/Folicur had significantly higher leaf spot severity than the standard season-long Bravo WS standard program. Incidence of stem rot was higher than in previous years, and all the treatment regimes had significantly lower incidence of stem rot than did the Bravo WS standard. Yield response for all fungicide programs was significantly higher than the Bravo WS full-season standard.

**EVALUATION OF THE EXPERIMENTAL FUNGICIDES DPX LEM 17 200SC AND QFA61 LEM/BRAVO FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHEAST ALABAMA, WREC**

Treatment and rate/A	Application timing <sup>1</sup>	-Disease ratings-		Yield
		LS <sup>2</sup>	SR <sup>3</sup>	lb/A
DPX LEM 17 200SC 9.6 fl oz .....	1-7	4.0	4.0	4513
QFA61 LEM/Bravo 19.2 fl oz .....	1-7	3.5	3.7	4070
DPX LEM 17 200SC 16.8 fl oz .....	1-7	3.1	1.7	5034
Tilt 3.6EC 2.0 fl oz + Bravo WS 16.0 fl oz .....	1,2	2.5	4.7	4340
DPX LEM 17 200SC 16.8 fl oz	3,5			
Bravo WS 24.0 fl oz	4,6,7			
Tilt 3.6EC 2.0 fl oz + Bravo WS 16.0 fl oz .....	1,2	2.6	4.8	4566
Abound 2.08SC 18.2 fl oz	3,5			
Bravo WS 24.0 fl oz	4,6,7			
Bravo WS 24.0 fl oz .....	1,2,4,6,7	2.8	5.2	4175
Abound 2.08SC 18.2 fl oz	3,5			
Bravo WS 24.0 fl oz .....	1,2,7	4.3	3.3	4800
Folicur 3.6F 7.2 fl oz	3,4,5,6			
Bravo WS 24.0 fl oz .....	1,2,4,6,7	3.8	3.3	4493
Bravo WS 24.0 fl oz + Moncut 70DF 1.1 lb	3,5			
Headline 2.09EC 6.0 fl oz .....	1,2	2.4	5.2	4364
Folicur 3.6F 7.2 fl oz	3,5			
Headline 2.09EC 9.0 fl oz	4			
Bravo WS 24.0 fl oz	6,7			
Bravo WS 24.0 fl oz .....	1-7	3.1	9.1	3243
<b>LSD (P=0.05)</b>		<b>0.5</b>	<b>3.1</b>	<b>788</b>

<sup>1</sup> Fungicide applications were made at 14-day intervals unless otherwise indicated.

<sup>2</sup> Early and late leaf spot (LS) were assessed using the Florida leaf spot scoring system (1 = no disease;... 10 = completely dead plants).

<sup>3</sup> Stem rot (SR) incidence is expressed as the number of disease hits per 60 feet of row.

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

## EVALUATION OF PROVOST 433SC AND ELAST FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHEAST ALABAMA, WREC

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

**Objective:** To evaluate new and experimental fungicides and compare them with currently registered fungicides for control of early and late leaf spot and stem rot as well as yield of peanut in an irrigated peanut production system in southeast Alabama.

**Methods:** Peanut cultivar AT3085RO was planted on May 21 at the Wiregrass Research and Extension Center in Headland, Alabama, in a field with a history of peanut production. Seed were sown at a rate of approximately five seed per foot of row, and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. The soil type was a Dothan sandy loam (organic matter <1 percent). On May 6, 0.45 ounce per acre of Strongarm + 1 quart per acre of Sonalan were applied to the test area and incorporated for preemergent weed control. Thrips were controlled with an in-furrow application of 6.7 pounds per acre of Temik 15G at planting. On June 24, 8 ounces per acre of Gramoxone + 8 ounces per acre of Basagran + 1.5 pints per acre of 2,4 DB were applied for postemergent weed control.

Plots, which consisted of four 30-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replications. Plots were located under a central pivot irrigation system and irrigated as needed. In-furrow fungicide applications were applied with a drop sprayer calibrated to deliver 15 gallons per acre in-furrow at planting. Fungicides were applied on a 14-day schedule on July 2, July 7, July 17, July 31, August 14, September 2, September 15, and October 1 using a four-row, tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

**Disease Assessment:** Early and late leaf spot were visually rated on September 29 using the Florida leaf spot scoring system [1 = no disease; 2 = very few lesions in lower canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation ( $\leq 10$  percent); 5 = lesions noticeable in upper canopy with some defoliation ( $\leq 25$  percent); 6 = lesions numerous with significant defoliation ( $\leq 50$  percent); 7 = lesions numerous with heavy defoliation ( $\leq 75$  percent); 8 = very few lesions on few remaining leaves with heavy defoliation ( $\leq 90$  percent); 9 = very few remaining leaves covered with lesions ( $\leq 95$  percent); 10 = completely defoliated or dead plants.

Counts of stem rot hits (one hit was defined as  $\leq 1$  foot of consecutive symptoms and signs of the disease) were made on October 10 immediately after plot inversion. Plots were harvested on October 15 and yields were reported at 9.8 percent moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ( $P=0.05$ ).

**Weather:** During the 2008 peanut production season, temperatures were near normal and monthly rainfall totals were at or near normal throughout the season.

**Results:** Leaf spot severity progressed during the season, and at the time of inversion the untreated control plots were almost completely defoliated (data not shown). All of the treatment programs except for the Echo/Folicur, Echo/Abound, Echo/Moncut, and Elast/Folicur gave significantly better leaf spot control than Echo 720 season-long standard. No significant differences in stem rot control among any of the treatment programs were noted. Yield response with the Echo/Provost (10.7 fluid ounces) program was significantly better than the Absolute/Folicur, Echo/Echo + Folicur, Echo/Moncut, and Echo 720 full-season treatments. Lowest yields were recorded for the Elast/Folicur program and the highest yield was with Echo/Provost (10.7 fluid ounces).

<b>EVALUATION OF PROVOST 433SC AND ELAST FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHEAST ALABAMA, WREC</b>				
Treatment and rate/A	Application timing <sup>1</sup>	-Disease ratings-		Yield lb/A
		LS <sup>2</sup>	SR <sup>3</sup>	
Echo 720 24.0 fl oz.....	1,2,7	2.9	2.2	4086
Provost 433SC 8.0 fl oz	3,4,5,6			
Proline 480SC 5.7 fl oz.....	In-furrow	2.7	2.8	4287
Echo 720 24.0 fl oz	1,2,7			
Provost 433SC 8.0 fl oz	3,4,5,6			
Echo 720 24.0 fl oz.....	1,2,7	2.7	1.5	4614
Provost 433 10.7 fl oz	3,4,5,6			
Absolute 500SC 3.5 fl oz.....	1,2,7	3.5	2.5	3747
Folicur 3.6F 7.2 fl oz	3,4,5,6			
Echo 720 24.0 fl oz.....	1,2,7	3.3	2.5	4279
Absolute 500SC 3.5 fl oz + Folicur 3.6F 5.2 fl oz	3,4,5,6			
Echo 720 24.0 fl oz.....	1,2,7	3.3	1.8	3973
Echo 720 16.0 fl oz + Folicur 3.6F 7.2 fl oz	3,4,5,6			
Echo 720 24.0 fl oz.....	1,2,7	4.2	3.2	4017
Folicur 3.6F 7.2 fl oz	3,4,5,6			
Echo 720 24.0 fl oz.....	1,2,4,6,7	4.0	2.5	4106
Abound 2.08SC 18.2 fl oz	3,5			
Echo 720 24.0 fl oz.....	1,2,4,6,7	4.5	3.0	3707
Echo 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5			
Headline 2.09EC 6.0 fl oz.....	1,2	2.8	2.3	4195
Folicur 3.6F 7.2 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.....	1,2,7	3.6	2.0	3618
Elast 12.8 fl oz + Folicur 3.6F 7.2 fl oz	3,4,5,6			
Elast 15.0 fl oz.....	1,2,7	3.8	2.0	4143
Folicur 3.6F 7.2 fl oz	3,4,5,6			
Echo 720 24.0 fl oz.....	1-7	4.5	2.1	3997
<b>LSD (P=0.05)</b>		<b>0.8</b>	<b>NS</b>	<b>600</b>

<sup>1</sup> Fungicide applications were made at 14-day intervals unless otherwise indicated.

<sup>2</sup> Early and late leaf spot (LS) were assessed using the Florida leaf spot scoring system (1 = no disease;... 10 = completely dead plants).

<sup>3</sup> Stem rot (SR) incidence is expressed as the number of disease hits per 60 feet of row.

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

## EVALUATION OF NEW FUNGICIDES EQUUS 720 SST AND ORIUS 3.6F FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHEAST ALABAMA, WREC

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

**Objective:** To evaluate Equus 720 SST and Orius 3.6F and compare them with currently registered fungicides for control of early and late leaf spot and stem rot and for their effect on yield in an irrigated peanut production system in southeast Alabama.

**Methods:** Peanut cultivar AT3085RO was planted on May 21 at the Wiregrass Research and Extension Center in Headland, Alabama, in a field with a history of peanut production. Seed were sown at a rate of approximately five seed per foot of row, and recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. The soil type was a Dothan sandy loam (organic matter <1 percent). On May 6, 0.45 ounce per acre of Strongarm + 1 quart per acre of Sonalan were applied to the test area and incorporated for preemergent weed control. Thrips were controlled with an in-furrow application of 6.7 pounds per acre of Temik 15G at planting. On June 24, 8 ounces per acre of Gramoxone + 8 ounces per acre of Basagran + 1.5 pints per acre of 2,4 DB were applied for postemergent weed control.

Plots, which consisted of four 30-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replications. Plots were located under a central pivot irrigation system and irrigated as needed. Fungicides were applied on a 14-day schedule on July 3, July 17, July 31, August 15, September 3, September 16, and October 1 using a four-row, tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

**Disease Assessment:** Early and late leaf spot were visually rated on September 29 using the Florida leaf spot scoring system [1 = no disease; 2 = very few lesions in lower canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation ( $\leq 10$  percent); 5 = lesions noticeable in upper canopy with some defoliation ( $\leq 25$  percent); 6 = lesions numerous with significant defoliation ( $\leq 50$  percent); 7 = lesions numerous with heavy defoliation ( $\leq 75$  percent); 8 = very few lesions on few remaining leaves with heavy defoliation ( $\leq 90$  percent); 9 = very few remaining leaves covered with lesions ( $\leq 95$  percent); 10 = completely defoliated or dead plants.

Counts of stem rot hits (one hit was defined as  $\leq 1$  foot of consecutive symptoms and signs of the disease) were made on October 10 immediately after plot inversion. Plots were harvested on October 15 and yields were reported at 9.8 percent moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ( $P=0.05$ ).

**Weather:** During the 2008 peanut production season, temperatures were near normal and monthly rainfall totals were at or near normal throughout the season.

**Results:** Leaf spot severity progressed during the season, and at the time of inversion the untreated control plots were almost completely defoliated. In test 1, (Table 1) the best leaf spot control was with the full season Orius 3.6F + Equus 720 SST tank mix. The worst leaf spot control was with Equus/Orius treatment regime. However, neither was significantly different than the full-season Equus-only treatment. The best stem rot control was with the Equus/Orius treatment and the worst stem rot control was with Equus applied full season. There were no statistical differences among any of the treatments; however, the Equus/Orius treatment yielded highest.

In test 2 (Table 2), the best leaf spot control was with the Equus/Headline treatment. The Equus/Folicur, Equus/Orius, and Equus-only treatments had similar levels of control. The lowest incidence of stem rot was with the Equus/Orius treatment and all other treatments gave similar levels of stem rot control. Highest yield was recorded with the Equus/Orius treatment. All other treatments had statistically similar yields.

**TABLE 1. EVALUATION OF NEW FUNGICIDES EQUUS 720 SST AND ORIUS 3.6F FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHEAST ALABAMA, WREC**

Treatment and rate/A	Application timing <sup>1</sup>	–Disease ratings–		Yield
		LS <sup>2</sup>	SR <sup>3</sup>	lb/A
Equus 720 SST 24.0 fl oz.....	1-7	3.8	6.0	4061
Orius 3.6F 7.2 fl oz + Equus 720 SST 24.0 fl oz .....	1-7	3.5	3.3	4501
Equus 720 SST 24.0 fl oz.....	1,2,7	4.5	2.3	4650
Orius 3.6F 7.2 fl oz	3,4,5,6			
<b>LSD (P=0.05)</b>		<b>0.9</b>	<b>3.3</b>	<b>1084</b>

<sup>1</sup> Fungicide applications were made at 14-day intervals unless otherwise indicated.

<sup>2</sup> Early and late leaf spot (LS) were assessed using the Florida leaf spot scoring system (1 = no disease;... 10 = completely dead plants).

<sup>3</sup> Stem rot (SR) incidence is expressed as the number of disease hits per 60 feet of row.

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

**TABLE 2. EVALUATION OF NEW FUNGICIDES EQUUS 720 SST AND ORIUS 3.6F FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHEAST ALABAMA, WREC**

Treatment and rate/A	Application timing <sup>1</sup>	–Disease ratings–		Yield
		LS <sup>2</sup>	SR <sup>3</sup>	lb/A
Equus 720 SST 24.0 fl oz.....	1,2,7	4.1	4.8	4493
Folicur 3.6F 7.2 fl oz	3,4,5,6			
Equus 720 SST 24.0 fl oz.....	1,2,7	3.7	1.3	5284
Orius 3.6F 7.2 fl oz	3,4,5,6			
Equus 720 24.0 fl oz.....	1,2,4,6,7	2.3	6.0	4376
Headline 2.09EC 12.0 fl oz	3,5			
Equus 720 SST 24.0 fl oz.....	1-7	3.7	6.0	4638
<b>LSD (P=0.05)</b>		<b>0.6</b>	<b>3.8</b>	<b>724</b>

<sup>1</sup> Fungicide applications were made at 14-day intervals unless otherwise indicated.

<sup>2</sup> Early and late leaf spot (LS) were assessed using the Florida leaf spot scoring system (1 = no disease;... 10 = completely dead plants).

<sup>3</sup> Stem rot (SR) incidence is expressed as the number of disease hits per 60 feet of row.

Mean separation within columns was according to Fisher's protected least significant difference

## EVALUATION OF EVITO 480SC, TEBUZOL 3.6F, AND TOPSIN M FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHEAST ALABAMA, WREC

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

**Objective:** To evaluate the new fungicides Evito 480SC, Tebuzol 3.6F, and Topsin M and compare them with currently registered fungicides for control of early and late leaf spot and stem rot of peanut and for their effect on yield in an irrigated production system in southeast Alabama.

**Methods:** Peanut cultivar AT3085RO was planted on May 21 in a field with a history of peanut production at the Wiregrass Research and Extension Center in Headland, Alabama. Seed were sown at a rate of approximately five seed per foot of row. The soil type was a Dothan sandy loam (organic matter <1 percent). Recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. On May 5, the test area was sprayed with 0.45 ounce per acre of Strongarm + 1 quart per acre of Sonalan, which were incorporated for preemergent weed control. Thrips were controlled with an in-furrow application of 6.7 pounds per acre of Temik 15G at planting. On June 24, 8 ounces per acre of Gramoxone + 8 ounces per acre of Basagaran + 1.5 pints per acre of Sonalan were applied for postemergent weed control.

Plots, which consisted of four 30-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replications. Plots were located under a central pivot irrigation system and irrigated 0.5 inch on June 6, 1 inch on June 24 and August 4, and 0.5 inch on September 8 and September 30. Fungicides were applied on a 14-day schedule on July 2, July 15, July 30, August 14, September 3, September 16, and October 1 using a four-row, tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

**Disease Assessment:** Early and late leaf spot were visually rated on September 29 using the Florida leaf spot scoring system [1 = no disease; 2 = very few lesions in lower canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation ( $\leq 10$  percent); 5 = lesions noticeable in upper canopy with some defoliation ( $\leq 25$  percent); 6 = lesions numerous with significant defoliation ( $\leq 50$  percent); 7 = lesions numerous with heavy defoliation ( $\leq 75$  percent); 8 = very numerous lesions on few remaining leaves with heavy defoliation ( $\leq 90$  percent); 9 = very few remaining leaves covered with lesions ( $\leq 95$  percent); 10 = completely defoliated or dead plants.

Counts of stem rot hits (one hit was defined as  $\leq 1$  foot of consecutive symptoms and signs of the disease) were made on October 10 immediately after plot inversion. Plots were harvested on October 15 and yields were reported at 9.8 percent moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ( $P=0.05$ ).

**Weather:** During the 2008 peanut production season, temperatures were near normal and monthly rainfall totals were at or near normal throughout the season.

**Results:** Leaf spot severity progressed during the season, and at the time of inversion the untreated control plots were almost completely defoliated (data not shown). Poorest leaf spot control was observed with the Equus/Tebuzol and Equus/Folicur programs, which gave disease control similar to the season-long Echo 720 standard. The best leaf spot control was observed with Headline/Folcur/Headline/Equus. Among the fungicide treatments, incidence of stem rot was higher for the Equus/Evito (5.7 fluid ounces) program than all other fungicide programs, which gave similar stem rot control. The best yield response was with the Equus/Provost program; however, it was not significantly higher than the season-long Equus 720 standard. Only the Equus/Evito (5.7 fluid ounces) program yielded significantly less than the Equus 720 standard.

**EVALUATION OF EVITO 480SC, TEBUZOL 3.6F, AND TOPSIN M FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHEAST ALABAMA, WREC**

Treatment and rate/A	Application timing <sup>1</sup>	-Disease ratings-		Yield
		LS <sup>2</sup>	SR <sup>3</sup>	lb/A
Equus 720 24.0 fl oz.....	1,2,4,6,7	3.3	7.7	3872
Evito 5.7 fl oz				
Equus 720 24.0 fl oz.....	1,2,4,6,7	3.7	5.3	4122
Evito 3.8 fl oz	3,5			
Equus 720 24.0 fl oz.....	1,2,4,6,7	3.7	2.7	4659
Evito T 9.0 fl oz	3,5			
Equus 720 24.0 fl oz.....	1,2,7	4.2	4.0	4453
Tebuzol 3.6F 7.2 fl oz	3,4,5,6			
Equus 720 24.0 fl oz.....	1,2,7	2.8	2.8	4453
Tebuzol 3.6F 7.2 fl oz + Topsin M 5.0 fl oz	3,4,5,6			
Equus 720 24.0 fl oz.....	1,2,7	3.5	3.3	4461
Equus 720 16.0 fl oz + Tebuzol 3.6F 7.2 fl oz	3,4,5,6			
Equus 720 24.0 fl oz.....	1,2,4,6,7	3.0	4.0	4332
Abound 2.08EC 18.5 fl oz	3,5			
Equus 720 24.0 fl oz.....	1,2,7	4.2	2.8	4380
Folicur 3.6F 7.2 fl oz	3,4,5,6			
Equus 720 24.0 fl oz.....	1,2,7	3.3	2.2	4767
Provost 433SC 8.0 fl oz	3,4,5,6			
Equus 720 24.0 fl oz.....	1,2,4,6,7	3.8	2.3	4497
Equus 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5			
Headline 2.09EC 9.0 fl oz.....	1,2	2.6	3.0	4686
Folicur 3.6F 7.2 fl oz	3,5			
Headline 2.09EC 6.0 fl oz	4			
Equus 720 24.0 fl oz	6,7			
Equus 720 24.0 fl oz.....	1-7	3.8	4.2	4417
<b>LSD (P=0.05)</b>		<b>0.5</b>	<b>2.1</b>	<b>435</b>

<sup>1</sup> Fungicide applications were made at 14-day intervals unless otherwise indicated.

<sup>2</sup> Early and late leaf spot (LS) were assessed using the Florida leaf spot scoring system (1 = no disease;... 10 = completely dead plants).

<sup>3</sup> Stem rot (SR) incidence is expressed as the number of disease hits per 60 feet of row.

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



## EVALUATION OF ARTISAN AND CONVOY FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHEAST ALABAMA, WREC

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

**Objective:** To evaluate Artisan and Convoy at various rates and application timing and compare them with other currently registered fungicides for control of early and late leaf spot and stem rot of peanut and for yield response in an irrigated production system in southeast Alabama.

**Methods:** Peanut cultivar AT3085RO was planted on May 21 in a field with a history of peanut production at the Wiregrass Research and Extension Center in Headland, Alabama. Seed were sown at a rate of approximately five seed per foot of row. The soil type was a Dothan sandy loam (organic matter <1 percent). Recommendations of the Alabama Cooperative Extension System for tillage, fertility, weed, and nematode control were followed. On May 5, 0.45 ounce per acre of Strongarm + 1 quart per acre of Sonalan was applied to the test area and incorporated for preemergent weed control. Thrips were controlled with an in-furrow application of Temik 15G at planting. On June 24, 8 ounces per acre of Gramoxone + 8 ounces per acre of Basagran + 1.5 pints per acre of 2,4 DB were applied for postemergent weed control.

Plots, which consisted of four 30-foot rows spaced 3 feet apart, were arranged in a randomized complete block with six replications. Plots were located under a central pivot irrigation system and irrigated 0.5 inch on June 6, 1 inch on June 24 and August 4, and 0.5 inch on September 8 and September 30. Fungicides were applied on a 14- to 21-day schedule on July 7, July 15, July 17, July 31, August 15, August 21, September 3, September 17, and October 1 using a four-row, tractor-mounted boom sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

**Disease Assessment:** Early and late leaf spot were visually rated on September 29 using the Florida leaf spot scoring system [1 = no disease; 2 = very few lesions in lower canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation ( $\leq 10$  percent); 5 = lesions noticeable in upper canopy with some defoliation ( $\leq 25$  percent); 6 = lesions numerous with significant defoliation ( $\leq 50$  percent); 7 = lesions numerous with heavy defoliation ( $\leq 75$  percent); 8 = very numerous lesions on few remaining leaves with heavy defoliation ( $\leq 90$  percent); 9 = very few remaining leaves covered with lesions ( $\leq 95$  percent); 10 = completely defoliated or dead plants.

Counts of stem rot hits (one hit was defined as  $\leq 1$  ft of consecutive symptoms and signs of the disease) were made on October 10 immediately after plot inversion. Plots were harvested on October 15 and yields were reported at 9.8 percent moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ( $P=0.05$ ).

**Weather:** During the 2008 peanut production season, temperatures were near normal and monthly rainfall totals were at or near normal throughout the season.

**Results:** Leaf spot severity progressed during the season, and at the time of inversion the untreated control plots were almost completely defoliated (data not shown). Best leaf spot control was obtained with the Headline/Folicur/Headline/Echo treatment program. The Headline/Folicur/Headline/Echo treatment and the Echo 720 treatment were equally effective in controlling leaf spot. Only the Headline/Convoy (21 fluid ounces) + Echo/Topsin + Echo program gave significantly poorer leaf spot control than the Echo 720 standard. Only the Echo/Provost and Echo + Eminent/Echo + Muscle programs had lower stem rot hit counts than did the full-season Echo 720 standard. Incidence of stem rot was similar for all other programs. Highest yields were reported for the Headline/Artisan + Echo/Topsin + Echo, Headline/Convoy + Echo/Echo, Echo/Provost, Echo/Moncut, Headline/Folicur/Headline, and Echo + Eminent/Echo + Muscle programs. Yields for the other fungicide programs were similar to the season-long Echo 720 standard.

<b>EVALUATION OF ARTISAN AND CONVOY FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHEAST ALABAMA, WREC</b>				
Treatment and rate/A	Application timing <sup>1</sup>	-Disease ratings-		Yield lb/A
		LS <sup>2</sup>	SR <sup>3</sup>	
Headline 2.09Ec 9.0 fl oz.....	1,5	3.8	2.8	4731
Artisan 26.0 fl oz + Echo 720 16.0 fl oz	3,4,5			
Topsin M 5.0 fl oz + Echo 720 16.0 fl oz	6			
Headline 2.09EC 9.0 fl oz.....	1,5			
Echo 720 16.0 fl oz + Artisan 18.0 fl oz	3,4,5,6	3.9	5.8	4324
Topsin M 5.0 fl oz + Echo 720 16.0 fl oz	7			
Headline 2.09EC 9.0 fl oz.....	1,5			
Echo 720 16.0 fl oz + Artisan 16.0 fl oz	3,4,5,6	4.2	6.3	4445
Echo 720 24.0 fl oz	7			
Headline 2.09Ec 9.0 fl oz.....	1,5	4.7	3.5	4287
Convoy 21.0 fl oz + Echo 720 24.0 fl oz	3,4,5			
Topsin M 5.0 fl oz + Echo 720 16.0 fl oz	6			
Headline 2.09Ec 9.0 fl oz.....	1,5	4.2	4.0	4292
Convoy 15.0 fl oz + Echo 720 24.0 fl oz	3,4,5,6			
Topsin M 5.0 fl oz + Echo 720 16.0 fl oz	7			
Headline 2.09EC 9.0 fl oz.....	1,5	4.0	4.7	4529
Convoy 13.0 fl oz + Echo 720 16.0 fl oz	3,4,5,6			
Echo 720 24.0 fl oz	7			
Echo 720 24.0 fl oz.....	1,2,7	3.5	3.0	4536
Folicur 3.6F 7.2 fl oz	3,4,5,6			
Echo 720 24.0 fl oz.....	1,2,7	3.3	3.7	4550
Provost 433SC 8.0 fl oz	3,4,5,6			
Echo 720 24.0 fl oz.....	1,2,4,6,7	3.7	5.7	4421
Abound 2.08SC 18.5 fl oz	3,5			
Echo 720 24.0 fl oz.....	1,2,4,6,7	4.0	4.0	4622
Echo 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5			
Headline 2.09EC 9.0 fl oz.....	1,5	3.2	2.0	4715
Folicur 3.6F 7.2 fl oz	3,5			
Headline 2.09 EC 6.0 fl oz	4,6			
Echo 720 24.0 fl oz	7			
Echo 720 24.0 fl oz.....	1,2,7	3.8	3.3	4223
Echo 720 16.0 fl oz + Muscle 3.6F 7.2 fl oz	3,4,5,6			
Echo 720 16.0 fl oz + Eminent 125SL 7.2 fl oz.....	1,2,7	3.7	2.2	4642
Echo 720 16.0 fl oz + Muscle 3.6F 7.2 fl oz	3,4,5,6			
Echo 720 24.0 fl oz.....	1-7	3.7	5.3	3977
<b>LSD (P=0.05)</b>		<b>0.6</b>	<b>3.0</b>	<b>492</b>

<sup>1</sup> Fungicide applications were made at 14-day intervals unless otherwise indicated.

<sup>2</sup> Early and late leaf spot (LS) were assessed using the Florida leaf spot scoring system (1 = no disease;... 10 = completely dead plants).

<sup>3</sup> Stem rot (SR) incidence is expressed as the number of disease hits per 60 feet of row.

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

## EVALUATION OF TOPGUARD AND UNICORN FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHWEST ALABAMA, GCREC

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

**Objective:** To evaluate new fungicides Topguard and Unicorn and compare them against currently registered fungicides for control of early and late leaf spot, rust, and stem rot of peanut in a dryland production system in southwest Alabama.

**Methods:** Peanut cultivar AT3085RO was planted at the Gulf Coast Research and Extension Center near Fairhope, Alabama, on May 20 at a rate of five seed per foot of row in raised beds with bed knockers in a field that had previously cropped to peanut production. The soil type was a Malbis fine sandy loam (organic matter <1 percent). Recommendations of the Alabama Cooperative Extension System for fertility and weed control were followed. On March 21, Roundup Weathermax was applied to the test area for burn down. On April 15, 2 pints per acre of Prowl was applied and incorporated for preemergent weed control. On June 10, 8 ounces per acre of Gramoxone + 1 pint per acre of Storm + 1 pint per acre of 2,4 DB was applied for postemergent weed control. On June 25, 2 ounces per acre of Cadre + 0.45 ounce per acre of Strongarm + Induce were applied for weed control. Thrips were controlled with an in-furrow application of 6 to 7 pounds per acre of Temik 15G at planting. Rhizobium inoculant was applied in furrow at planting at 10 pounds per acre.

Plots, which consisted of four 30-foot rows on 38-inch centers, were arranged in a randomized complete block with six replications. Plots were not irrigated. Foliar fungicides were applied at 14-day intervals on June 25, July 10, July 24, August 5, August 18, September 5, and September 18 as a full canopy spray using a four-row, ATV-mounted CO<sub>2</sub> sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

**Disease Assessment:** Early and late leaf spot were visually rated on September 24 using the Florida leaf spot scoring system [1 = no disease; 2 = very few lesions in lower canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation ( $\leq 10$  percent); 5 = lesions noticeable in upper canopy with some defoliation ( $\leq 25$  percent); 6 = lesions numerous with significant defoliation ( $\leq 50$  percent); 7 = lesions numerous with heavy defoliation ( $\leq 75$  percent); 8 = very numerous lesions on few remaining leaves with heavy defoliation ( $\leq 90$  percent); 9 = very few remaining leaves covered with lesions ( $\leq 95$  percent); 10 = completely defoliated or dead plants. Rust was also rated on September 24 using 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 withering).

Counts of stem rot hits were made on September 25 immediately after plot inversion (one hit is defined as  $\leq 1$  foot of consecutive symptoms and signs of the disease). Plots were harvested on September 29 and yields were reported at 10.0 percent moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant (LSD) test ( $P=0.05$ ).

**Weather:** During the 2008 peanut production season, temperatures were at or near normal and monthly rainfall totals were normal throughout the growing season.

**Results:** Foliar disease severity increased throughout the growing season. Late leaf spot and rust were the dominant diseases observed. Poorest leaf spot control was obtained with the Bravo/Topguard (7.0 fluid ounces) program, while the best leaf spot control was obtained with the Bravo/Unicorn (5.0 pound) program. Rust appeared in late August and progressively intensified through September. Headline/Folicur/Headline/Bravo, Bravo/Topguard (14 fluid ounces), Bravo/Abound, and Bravo/Topguard + Bravo programs gave significantly better rust control than the Bravo/Topguard at the 7- and 10-fluid-ounces-per-acre rates. The level of rust control provided by the full-season Bravo standard and all other fungicide programs was similar. Stem rot severity was lower than had been observed in previous years. The Bravo/Topguard (7.0 fluid ounces) program had significantly higher stem rot infection than did the Bravo/Abound and Bravo/Moncut programs. Yields of the Bravo/Moncut and Bravo/

Abound programs were higher than the Bravo/Topguard (10 fluid ounces) program. Yields for the remaining programs were similar, including those of the season-long Bravo WS standard.

<b>EVALUATION OF TOPGUARD AND UNICORN FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHWEST ALABAMA, GCRC</b>					
Treatment and rate/A	Application timing <sup>1</sup>	LS <sup>2</sup>	-Disease ratings-		Yield lb/A
			Rust <sup>3</sup>	SR <sup>4</sup>	
Bravo WS 24.0 fl oz.....	1,2,7	5.0	5.3	2.8	4779
Topguard 7.0 fl oz	3,4,5,6				
Bravo WS 24.0 fl oz.....	1,2,7	4.7	5.3	2.5	4473
Topguard 10.0 fl oz	3,4,5,6				
Bravo WS 24.0 fl oz.....	1,2,7	4.3	4.2	1.7	4863
Topguard 14.0 fl oz	3,4,5,6				
Bravo WS 24.0 fl oz.....	1,2,7	4.0	4.7	1.3	4902
Topguard 28.0 fl oz	3,4,5,6				
Bravo WS 24.0 fl oz.....	1,2,7	4.0	4.2	2.2	4779
Topguard 7.0 fl oz + Bravo WS 16.0 fl oz	3,4,5,6				
Bravo WS 24.0 fl oz.....	1,2,7	4.8	5.0	2.0	4810
Folicur 7.2 fl oz	3,4,5,6				
Bravo WS 24.0 fl oz.....	1,2,4,6,7	4.3	4.2	1.3	5024
Abound 2.08SC 18.5 fl oz	3,5				
Bravo WS 24.0 fl oz.....	1,2,4,6,7	4.0	4.3	1.3	5146
Bravo WS 24.0 fl oz + Moncut 70DF 1.1 lb	3,5				
Headline 2.09EC 6.0 fl oz.....	1,2	4.0	4.0	1.7	4970
Folicur 3.6F 7.2 fl oz	3,5				
Headline 2.09EC 9.0 fl oz	4				
Bravo WS 24.0 fl oz	6,7				
Bravo WS 24.0 fl oz.....	1,2,7	4.0	5.0	1.8	4802
Unicorn 4.0 lb	3,4,5,6				
Bravo WS 24.0 fl oz.....	1,2,7	3.7	4.3	2.3	4902
Unicorn 5.0 lb	3,4,5,6				
Bravo WS 24.0 fl oz.....	1-7	4.3	4.7	2.2	4779
<b>LSD (P=0.05)</b>		<b>0.6</b>	<b>1.1</b>	<b>1.3</b>	<b>466</b>

<sup>1</sup> Fungicide applications were made at 14-day intervals unless otherwise indicated.

<sup>2</sup> Early and late leaf spot (LS) were assessed using the Florida leaf spot scoring system (1 = no disease;... 10 = completely dead plants).

<sup>3</sup> Rust rated using the ICRISAT 1-9 rating scale (1 = no disease, ... 9 = plants severely affected, 80-100 percent leaves withering).

<sup>4</sup> Stem rot (SR) incidence is expressed as the number of disease hits per 60 feet of row.

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

## EVALUATION OF DPX LEM 17 200SC AND QFA61 LEM/BRAVO 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 experimental fungicides DPX LEM 17 200SC and QFA61/LEM/Bravo and compare them against currently registered fungicides for control of early and late leaf spot, rust, and stem rot of peanut and for their effect on yield in a dryland production system in southwest Alabama.

**Methods:** Peanut cultivar AT3085RO was planted on May 20 at the Gulf Coast Research and Extension Center near Fairhope, Alabama, at a rate of five seed per foot of row in raised beds with bed knockers in a field that had previously cropped to peanut production. The soil type was a Malbis fine sandy loam (organic matter <1 percent). Recommendations of the Alabama Cooperative Extension System for fertility and weed control were followed. On March 21, Roundup Weathermax was applied to the test area for burn down. On April 15, 2 pints per acre of Prowl was applied and incorporated for preemergent weed control. On June 10, 8 ounces per acre of Gramoxone + 1 pint per acre of Storm + 1 pint per acre of 2,4 DB was applied for postemergent weed control. On June 25, 2 ounces per acre of Cadre + 0.45 ounce per acre of Strongarm + Induce was applied for weed control. Thrips were controlled with an in-furrow application of 6 to 7 pounds per acre of Temik 15G at planting. Rhizobium inoculant was applied in-furrow at planting at a rate of 10 pounds per acre.

Plots, which consisted of four 30-foot rows on 38-inch centers, were arranged in a randomized complete block with six replications. Plots were not irrigated. Foliar fungicides were applied at 14-day intervals on June 25, July 10, July 24, August 5, August 18, September 5, and September 18 as a full canopy spray using a four-row, ATV-mounted CO<sub>2</sub> sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

**Disease Assessment:** Early and late leaf spot were visually rated on September 24 using the Florida leaf spot scoring system [1 = no disease; 2 = very few lesions in lower canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation ( $\leq 10$  percent); 5 = lesions noticeable in upper canopy with some defoliation ( $\leq 25$  percent); 6 = lesions numerous with significant defoliation ( $\leq 50$  percent); 7 = lesions numerous with heavy defoliation ( $\leq 75$  percent); 8 = very numerous lesions on few remaining leaves with heavy defoliation ( $\leq 90$  percent); 9 = very few remaining leaves covered with lesions ( $\leq 95$  percent); 10 = completely defoliated or dead plants. Rust was also rated on September 24 using 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 withering).

Counts of stem rot hits were made on September 25 immediately after plot inversion (one hit is defined as  $\leq 1$  foot of consecutive symptoms and signs of the disease). Plots were harvested on September 29 and yields were reported at 10.0 percent moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant (LSD) test ( $P=0.05$ ).

**Weather:** During the 2008 peanut production season, temperatures were at or near normal and monthly rainfall totals were normal throughout the growing season.

**Results:** Late leaf spot and rust were the primary foliar diseases observed. The QFA61 LEM/Bravo, Bravo/Folicur, and Headline/Folicur/Headline/Bravo programs gave the poorest leaf spot control. The level of late leaf spot control with the season-long Bravo standard and remaining fungicide programs was similar. Rust appeared in late August and progressively intensified through September. The DPX LEM 17 200SC (16.8) program gave better rust control than all fungicide programs except for the season-long Bravo WS standard. Poorest rust control was obtained with the QFA61 LEM/Bravo program. Stem rot severity was lower than had been observed in previous years. However, the DPX LEM 17 200SC program had significantly lower stem rot disease hit counts than the season-long Bravo standard. Yields were higher for the DPX LEM 17 200SC program compared with the other programs. The season-long Bravo standard and remaining fungicide programs had similar yields.

**EVALUATION OF DPX LEM 17 200SC AND QFA61 LEM/BRAVO FOR CONTROL OF FO-LIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHWEST ALABAMA, GCREC**

Treatment and rate/A	Application timing <sup>1</sup>	-Disease ratings-			Yield lb/A
		LS <sup>2</sup>	Rust <sup>3</sup>	SR <sup>4</sup>	
DPX LEM 17 200SC 9.6 fl oz .....	1-7	3.2	2.8	1.3	5636
QFA61 LEM/Bravo 19.2 fl oz .....	1-7	4.7	4.2	1.8	5192
DPX LEM 17 200SC 16.8 fl oz .....	1-7	2.8	2.0	1.0	6094
Tilt 3.6EC 2.0 fl oz + Bravo WS 16.0 fl oz .....	1,2	3.0	2.8	1.5	5620
DPX LEM 17 200SC 16.8 fl oz	3,5				
Bravo WS 24.0 fl oz	4,6,7				
Tilt 3.6EC + Bravo WS 16.0 fl oz .....	1,2	3.3	3.0	1.5	5414
Abound 2.08SC 18.2 fl oz	3,5				
Bravo WS 24.0 fl oz	4,6,7				
Bravo WS 24.0 fl oz .....	1,2,4,6,7	3.3	3.0	2.3	5490
Abound 2.08SC 18.2 fl oz	3,5				
Bravo WS 24.0 fl oz .....	1,2,7	4.3	3.8	1.2	5269
Folicur 3.6F 7.2 fl oz	3,4,5,6				
Bravo WS 24.0 fl oz .....	1,2,4,6,7	3.2	2.8	3.2	5444
Bravo WS 24.0 fl oz + Moncut 70DF 1.1 lb	3,5				
Headline 2.09EC 6.0 fl oz .....	1,2	4.2	3.5	2.5	5307
Folicur 3.6F 7.2 fl oz	3,5				
Headline 2.09EC 9.0 fl oz	4				
Bravo WS 24.0 fl oz	6,7				
Bravo WS 24.0 fl oz .....	1-7	3.0	2.2	2.5	5345
<b>LSD (P=0.05)</b>		<b>0.6</b>	<b>0.7</b>	<b>1.3</b>	<b>417</b>

<sup>1</sup> Fungicide applications were made at 14-day intervals unless otherwise indicated.

<sup>2</sup> Early and late leaf spot (LS) were assessed using the Florida leaf spot scoring system (1 = no disease;... 10 = completely dead plants).

<sup>3</sup> Rust rated using the ICRISAT 1-9 rating scale (1 = no disease, ... 9 = plants severely affected, 80-100 percent leaves withering).

<sup>4</sup> Stem rot (SR) incidence is expressed as the number of disease hits per 60 feet of row.

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

## EVALUATION OF PROVOST 433SC AND ELAST 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 Provost 433SC and Elast and compare them against other currently registered fungicides at 14-day application intervals for their efficacy in controlling early and late leaf spot, rust, and stem rot of peanut in a dryland production system in southwest Alabama.

**Methods:** Peanut cultivar AT3085RO was planted on May 20 at the Gulf Coast Research and Extension Center near Fairhope, Alabama, at a rate of five seed per foot of row in raised beds with bed knockers in a field that had previously cropped to peanut production. The soil type was a Malbis fine sandy loam (organic matter <1 percent). Recommendations of the Alabama Cooperative Extension System for fertility and weed control were followed. On March 21, Roundup Weathermax was applied to the test area for burn down. On April 15, 2 pints per acre of Prowl was applied and incorporated for preemergent weed control. On June 10, 8 ounces per acre of Gramoxone + 1 pint per acre of Storm + 1 pint per acre of 2,4 DB was applied for postemergent weed control. On June 25, 2 ounces per acre of Cadre + 0.45 ounce per acre of Strongarm + Induce were applied for weed control. Thrips were controlled with an in-furrow application of 6 to 7 pounds per acre of Temik 15G at planting. Rhizobium inoculant was applied in-furrow at planting at a rate of 10 pounds per acre.

Plots, which consisted of four 30-foot rows on 38-inch centers, were arranged in a randomized complete block with six replications. Plots were not irrigated. In-furrow fungicides were applied using a four-row, ATV-mounted CO<sub>2</sub> sprayer mounted with 8001 nozzles calibrated to deliver 5 gallons per acre. Foliar fungicides were applied at 14-day intervals on June 25, July 10, July 24, August 5, August 18, September 5, and September 18 as a full canopy spray using a four-row, ATV-mounted CO<sub>2</sub> sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

**Disease Assessment:** Early and late leaf spot were visually rated on September 24 using the Florida leaf spot scoring system [1 = no disease; 2 = very few lesions in lower canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation ( $\leq 10$  percent); 5 = lesions noticeable in upper canopy with some defoliation ( $\leq 25$  percent); 6 = lesions numerous with significant defoliation ( $\leq 50$  percent); 7 = lesions numerous with heavy defoliation ( $\leq 75$  percent); 8 = very numerous lesions on few remaining leaves with heavy defoliation ( $\leq 90$  percent); 9 = very few remaining leaves covered with lesions ( $\leq 95$  percent); 10 = completely defoliated or dead plants. Rust was also rated on September 24 using 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 withering).

Counts of stem rot hits were made on September 25 immediately after plot inversion (one hit is defined as  $\leq 1$  foot of consecutive symptoms and signs of the disease). Plots were harvested on September 29 and yields were reported at 10.0 percent moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant (LSD) test ( $P=0.05$ ).

**Weather:** During the 2008 peanut production season, temperatures were at or near normal and monthly rainfall totals were normal throughout the growing season.

**Results:** Late leaf spot and rust were the primary foliar diseases noted. The Echo/Provost (10.7 fluid ounces) program gave better leaf spot control than all other fungicide programs except for Proline/Echo/Provost and Echo/Echo + Moncut. The Absolute/Folicur, Headline/Folicur/Headline/Echo, and Elast/Folicur programs gave equally poor leaf spot control and all were less effective than the season-long Echo standard. Rust appeared in late August and progressively intensified through September. The best rust control was observed with the Echo/Provost (10.7 fluid ounces) program and the poorest was with the Absolute/Folicur, Echo/Folicur, and Elast/Folicur treatment programs. Stem rot severity was lower than had been observed in previous years and all treatment programs had

similar stem rot hit counts. Yield response with the Proline IF/Echo/Provost program was significantly below that obtained with Echo/Provost (8.0 fluid ounces), Echo/Provost (10.7 fluid ounces), and Echo/Elast + Folicur. Yields for the season-long Echo standard and all other fungicide programs were similar.

<b>EVALUATION OF PROVOST 433SC AND ELAST FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHWEST ALABAMA, GCREC</b>					
Treatment and rate/A	Application timing <sup>1</sup>	-Disease ratings-			Yield lb/A
		LS <sup>2</sup>	Rust <sup>3</sup>	SR <sup>4</sup>	
Echo 720 24.0 fl oz.....	1,2,7	3.7	3.3	2.0	6087
Provost 433SC 8.0 fl oz	3,4,5,6				
Proline 480SC 5.7 fl oz.....	In-furrow	3.3	3.2	1.3	5207
Echo 720 24.0 fl oz	1,2,7				
Provost 433SC 8.0 fl oz	3,4,5,6				
Echo 720 24.0 fl oz.....	1,2,7	2.7	2.3	1.5	5987
Provost 433SC 10.7 fl oz	3,4,5,6				
Absolute 500SC 3.5 fl oz.....	1,2,7	4.8	4.0	2.0	5681
Folicur 3.6F 7.2 fl oz	3,4,5,6				
Echo 720 24.0 fl oz.....	1,2,7	3.7	3.2	1.5	5842
Absolute 500SC 3.5 fl oz + Folicur 3.6F 5.2 fl oz	3,4,5,6				
Echo 720 24.0 fl oz.....	1,2,7	3.7	3.3	1.0	5766
Echo 720 16.0 fl oz + Folicur 3.6F 7.2 fl oz	3,4,5,6				
Echo 720 24.0 fl oz.....	1,2,7	4.5	4.0	2.0	5651
Folicur 3.6F 7.2 fl oz	3,4,5,6				
Echo 720 24.0 fl oz.....	1,2,4,6,7	4.0	3.7	1.5	5957
Abound 2.08SC 18.2 fl oz	3,5				
Echo 720 24.0 fl oz.....	1,2,4,6,7	3.3	3.2	1.7	5682
Echo 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5				
Headline 2.09EC 6.0 fl oz.....	1,2	4.2	3.7	2.7	5812
Folicur 3.6F 7.2 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.....	1,2,7	3.5	2.8	1.0	6041
Elast 15.0 fl oz + Folicur 3.6F 7.2 fl oz	3,4,5,6				
Elast 15.0 fl oz.....	1,2,7	4.5	4.0	2.2	5391
Folicur 3.6F 7.2 fl oz	3,4,5,6				
Echo 720 24.0 fl oz.....	1-7	3.5	3.5	2.5	5536
<b>LSD (P=0.05)</b>		<b>0.7</b>	<b>1.0</b>	<b>1.5</b>	<b>651</b>

<sup>1</sup> Fungicide applications were made at 14-day intervals unless otherwise indicated.

<sup>2</sup> Early and late leaf spot (LS) were assessed using the Florida leaf spot scoring system (1 = no disease;... 10 = completely dead plants).

<sup>3</sup> Rust rated using the ICRISAT 1-9 rating scale (1 = no disease, ... 9 = plants severely affected, 80-100 percent leaves withering).

<sup>4</sup> Stem rot (SR) incidence is expressed as the number of disease hits per 60 feet of row.

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



## EVALUATION OF NEW FUNGICIDES EQUUS 720 SST AND ORIUS 3.6F 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 Equus 720 SST and Orius 3.6F and compare them with currently registered fungicides for control of early and late leaf spot, rust, and stem rot and for their effect on yield in a dryland peanut production system in southwest Alabama.

**Methods:** Peanut cultivar AT3085RO was planted at the Gulf Coast Research and Extension Center near Fairhope, Alabama, on May 20 at a rate of five seed per foot of row in raised beds with bed knockers in a field that had previously cropped to peanut production. The soil type was a Malbis fine sandy loam (organic matter <1 percent). Recommendations of the Alabama Cooperative Extension System for fertility and weed control were followed. On March 21, Roundup Weathermax was applied to the test area for burn down. On April 15, 2 pints per acre of Prowl was applied and incorporated for preemergent weed control. On June 10, 8 ounces per acre of Gramoxone + 1 pint per acre of Storm + 1 pint per acre of 2,4 DB were applied for postemergent weed control. On June 25, 2 ounces per acre of Cadre + 0.45 ounce per acre of Strongarm + Induce were applied for weed control. Thrips were controlled with an in-furrow application of 6 to 7 pounds per acre of Temik 15G at planting. Rhizobium inoculant was applied in furrow at planting at 10 pounds per acre.

Plots, which consisted of four 30-foot rows on 38-inch centers, were arranged in a randomized complete block with six replications. Plots were not irrigated. Foliar fungicides were applied at 14-day intervals on June 25, July 10, July 24, August 5, August 18, September 5, and September 18 as a full canopy spray using a four-row, ATV-mounted CO<sub>2</sub> sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

**Disease Assessment:** Early and late leaf spot were visually rated on September 24 using the Florida leaf spot scoring system [1 = no disease; 2 = very few lesions in lower canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation ( $\leq 10$  percent); 5 = lesions noticeable in upper canopy with some defoliation ( $\leq 25$  percent); 6 = lesions numerous with significant defoliation ( $\leq 50$  percent); 7 = lesions numerous with heavy defoliation ( $\leq 75$  percent); 8 = very numerous lesions on few remaining leaves with heavy defoliation ( $\leq 90$  percent); 9 = very few remaining leaves covered with lesions ( $\leq 95$  percent); 10 = completely defoliated or dead plants. Rust was also rated on September 24 using 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 withering).

Counts of stem rot hits were made on September 25 immediately after plot inversion (one hit is defined as  $\leq 1$  foot of consecutive symptoms and signs of the disease). Plots were harvested on September 29 and yields were reported at 10.0 percent moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant (LSD) test ( $P=0.05$ ).

**Weather:** During the 2008 peanut production season, temperatures were at or near normal and monthly rainfall totals were normal throughout the growing season.

**Results:** Foliar disease severity increased throughout the growing season. Late leaf spot and rust were the dominant diseases observed. In test 1 (Table 1), the best leaf spot control was obtained with the Orius 3.6F + Equus 720 treatment regime, which was significantly better than both the Equus 720 full-season treatment and the Equus/Orius treatment regime. The poorest rust control was with the Equus/Orius treatment and the best was with the Orius 3.6F + Equus 720 treatment. Stem rot incidence was low and all of the treatments gave similar levels of stem rot control. There were no significant differences among any of the treatments for yield response.

In test 2 (Table 2), the best leaf spot control was with the full-season Equus-only treatment; the best rust control was with the Equus 720/Headline treatment. No significant differences were observed among any of the

treatment regimes for stem rot control. The highest yield response was with the Equus/Headline treatment, and it was significantly higher than all other treatments except the Equus 720 full-season treatment.

**TABLE 1. EVALUATION OF NEW FUNGICIDES EQUUS 720 SST AND ORIUS 3.6F FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHWEST ALABAMA, GCREC**

Treatment and rate/A	Application timing <sup>1</sup>	–Disease ratings–			Yield lb/A
		LS <sup>2</sup>	Rust <sup>3</sup>	SR <sup>4</sup>	
Equus 720 SST 24.0 fl oz.....	1-7	4.3	3.8	4.0	4565
Orius 3.6F 7.2 fl oz+ Equus 720 SST 24.0 fl oz .....	1-7	3.3	3.3	2.5	5276
Equus 720 SST 24.0 fl oz.....	1,2,7	5.0	4.7	2.3	4985
Orius 3.6F 7.2 fl oz	3,4,5,6				
<b>LSD (P=0.05)</b>		<b>0.9</b>	<b>0.9</b>	<b>NS</b>	<b>NS</b>

<sup>1</sup> Fungicide applications were made at 14-day intervals unless otherwise indicated.

<sup>2</sup> Early and late leaf spot (LS) were assessed using the Florida leaf spot scoring system (1 = no disease;... 10 = completely dead plants).

<sup>3</sup> Rust rated using the ICRISAT 1-9 rating scale (1 = no disease, ... 9 = plants severely affected, 80-100 percent leaves withering).

<sup>4</sup> Stem rot (SR) incidence is expressed as the number of disease hits per 60 feet of row.

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

**TABLE 2. EVALUATION OF NEW FUNGICIDES EQUUS 720 SST AND ORIUS 3.6F FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHWEST ALABAMA, GCREC**

Treatment and rate/A	Application timing <sup>1</sup>	–Disease ratings–			Yield lb/A
		LS <sup>2</sup>	Rust <sup>3</sup>	SR <sup>4</sup>	
Equus 720 SST 24.0 fl oz.....	1,2,7	5.5	4.0	2.3	4619
Folicur 3.6F 7.2 fl oz	3,4,5,6				
Equus 720 SST 24.0 fl oz.....	1,2,7	5.5	4.2	2.5	4764
Orius 3.6F 7.2 fl oz	3,4,5,6				
Equus 720 SST 24.0 fl oz.....	1,2,4,6,7	4.3	3.2	3.1	5467
Headline 2.09EC 12.0 fl oz	3,5				
Equus 720 SST 24.0 fl oz.....	1-7	3.7	3.3	2.8	5223
<b>LSD (P=0.05)</b>		<b>0.7</b>	<b>0.8</b>	<b>NS</b>	<b>467</b>

<sup>1</sup> Fungicide applications were made at 14-day intervals unless otherwise indicated.

<sup>2</sup> Early and late leaf spot (LS) were assessed using the Florida leaf spot scoring system (1 = no disease;... 10 = completely dead plants).

<sup>3</sup> Rust rated using the ICRISAT 1-9 rating scale (1 = no disease, ... 9 = plants severely affected, 80-100 percent leaves withering).

<sup>4</sup> Stem rot (SR) incidence is expressed as the number of disease hits per 60 feet of row.

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

## EVALUATION OF EVITO, TEBUZOL, AND TOPSIN M 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 Evito 480SC, Tebuzol 3.6F, and Topsin M and compare them with other currently registered fungicides for control of early and late leaf spot, rust, and stem rot of peanut in a dryland production system in southwest Alabama.

**Methods:** Peanut cultivar AT3085RO was planted at the Gulf Coast Research and Extension Center near Fairhope, Alabama, on May 20 at a rate of five seed per foot of row in raised beds with bed knockers in a field that had previously cropped to peanut production. The soil type was a Malbis fine sandy loam (organic matter <1 percent). Recommendations of the Alabama Cooperative Extension System for fertility and weed control were followed. On March 21, Roundup Weathermax was applied to the test area for burn down. On April 15, 2 pints per acre of Prowl were applied and incorporated for preemergent weed control. On June 10, 8 ounces per acre of Gramoxone + 1 pint per acre of Storm + 1 pint per acre of 2,4 DB were applied for postemergent weed control. On June 25, 2 ounces per acre of Cadre + 0.45 ounce per acre of Strongarm + Induce were applied for weed control. Thrips were controlled with an in-furrow application of 6 to 7 pounds per acre of Temik 15G at planting. Rhizobium inoculant was applied in furrow at planting at 10 pounds per acre.

Plots, which consisted of four 30-foot rows on 38-inch centers, were arranged in a randomized complete block with six replications. Plots were not irrigated. Foliar fungicides were applied at 14-day intervals on June 25, July 10, July 23, August 5, August 18, September 5, and September 18 as a full canopy spray using a four-row, ATV-mounted CO<sub>2</sub> sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

**Disease Assessment:** Early and late leaf spot were visually rated on September 24 using the Florida leaf spot scoring system [1 = no disease; 2 = very few lesions in lower canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation ( $\leq 10$  percent); 5 = lesions noticeable in upper canopy with some defoliation ( $\leq 25$  percent); 6 = lesions numerous with significant defoliation ( $\leq 50$  percent); 7 = lesions numerous with heavy defoliation ( $\leq 75$  percent); 8 = very numerous lesions on few remaining leaves with heavy defoliation ( $\leq 90$  percent); 9 = very few remaining leaves covered with lesions ( $\leq 95$  percent); 10 = completely defoliated or dead plants. Rust was also rated on September 24 using 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 withering).

Counts of stem rot hits were made on September 25 immediately after plot inversion (one hit was defined as  $\leq 1$  foot of consecutive symptoms and signs of the disease). Plots were harvested on September 29 and yields were reported at 10.0 percent moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant (LSD) test ( $P=0.05$ ).

**Weather:** During the 2008 peanut production season, temperatures were at or near normal and monthly rainfall totals were normal throughout the growing season.

**Results:** Late leaf spot and rust were the primary foliar diseases noted. Poorest leaf spot control was obtained with the Equus/Folicur and Equus/Tebuzol programs. The best leaf spot control was obtained with the Equus/Provost program. Disease ratings for the remaining programs were similar to the full-season Equus 720 standard. Rust appeared in late August and progressively intensified through September. As for leaf spot control, the best rust control was provided by the Equus/Provost program while poorest rust control was obtained with the Equus/Tebuzol, Equus/Folicur, Equus/Equus + Moncut, and Headline/Folicur/Headline/Equus programs. Stem rot severity was lower than had been observed in previous years. However, the Equus/Evito (5.7 fluid ounces), Equus/Equus + Tebuzol, and Headline/Folicur/Headline/Equus treatments had lower stem rot infection than did the Equus-only program. Yields for the season-long Equus standard were lowest compared with the other fungicide programs.

**EVALUATION OF EVITO, TEBUZOL, AND TOPSIN M FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN SOUTHWEST ALABAMA, GCREC**

Treatment and rate/A	Application timing <sup>1</sup>	-Disease ratings-			Yield lb/A
		LS <sup>2</sup>	Rust <sup>3</sup>	SR <sup>4</sup>	
Equus 720 24.0 fl oz.....	1,2,4,6,7	4.7	4.5	1.7	5116
Evito 5.7 fl oz	3,5				
Equus 720 24.0 fl oz.....	1,2,4,6,7	4.7	4.5	3.3	5085
Evito 3.8 fl oz	3,5				
Equus 720 24.0 fl oz.....	1,2,4,6,7	4.5	4.7	2.2	5162
Evito T 9.0 fl oz	3,5				
Equus 720 24.0 fl oz.....	1,2,7	5.3	5.5	2.2	5093
Tebuzol 3.6F 7.2 fl oz	3,4,5,6				
Equus 720 24.0 fl oz.....	1,2,7	4.0	3.7	2.2	5307
Tebuzol 3.6F 7.2 fl oz + Topsin M 5.0 fl oz	3,4,5,6				
Equus 720 24.0 fl oz.....	1,2,7	4.7	4.3	1.8	5100
Equus 720 16.0 fl oz + Tebuzol 3.6F 7.2 fl oz	3,4,5,6				
Equus 720 24.0 fl oz.....	1,2,4,6,7	4.3	4.0	2.2	5154
Abound 2.08SC 18.5 fl oz	3,5				
Equus 720 24.0 fl oz.....	1,2,7	5.5	5.2	3.0	5116
Folicur 3.6F 7.2 fl oz	3,4,5,6				
Equus 720 24.0 fl oz.....	1,2,7	3.5	3.5	3.2	5360
Provost 433SC 8.0 fl oz	3,4,5,6				
Equus 720 24.0 fl oz.....	1,2,4,6,7	4.5	5.2	2.5	5221
Equus 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5				
Headline 2.09EC 6.0 fl oz.....	1,2	4.3	5.5	1.8	5406
Folicur 3.6F 7.2 fl oz	3,5				
Headline 2.09EC 9.0 fl oz	4				
Equus 720 24.0 fl oz	6,7				
Equus 720 24.0 fl oz.....	1-7	4.3	5.0	3.3	4802
<b>LSD (P=0.05)</b>		<b>0.8</b>	<b>1.0</b>	<b>1.2</b>	<b>360</b>

<sup>1</sup> Fungicide applications were made at 14-day intervals unless otherwise indicated.

<sup>2</sup> Early and late leaf spot (LS) were assessed using the Florida leaf spot scoring system (1 = no disease;... 10 = completely dead plants).

<sup>3</sup> Rust rated using the ICRISAT 1-9 rating scale (1 = no disease, ... 9 = plants severely affected, 80-100 percent leaves withering).

<sup>4</sup> Stem rot (SR) incidence is expressed as the number of disease hits per 60 feet of row.

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

## EVALUATION OF ARTISAN AND CONVOY 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 Artisan and the new fungicide Convoy and compare them against currently registered fungicides for their efficacy when applied at varying application intervals for control of early and late leaf spot, rust, and stem rot of peanut in a dryland production system in southwest Alabama.

**Methods:** Peanut cultivar AT3085RO was planted at the Gulf Coast Research and Extension Center near Fairhope, Alabama, on May 20 at a rate of five seed per foot of row in raised beds with bed knockers in a field that had previously cropped to peanut production. The soil type was a Malbis fine sandy loam (organic matter <1 percent). Recommendations of the Alabama Cooperative Extension System for fertility and weed control were followed. On March 21, Roundup Weathermax was applied to the test area for burn down. On April 15, 2 pints per acre of Prowl were applied and incorporated for preemergent weed control. On June 10, 8 ounces per acre of Gramoxone + 1 pint per acre of Storm + 1 pint per acre of 2,4 DB were applied for postemergent weed control. On June 25, 2 ounces per acre of Cadre + 0.45 ounce per acre of Strongarm + Induce were applied for weed control. Thrips were controlled with an in-furrow application of 6 to 7 pounds per acre of Temik 15G at planting. Rhizobium inoculant was applied in furrow at planting at 10 pounds per acre.

Plots, which consisted of four 30-foot rows on 38-inch centers, were arranged in a randomized complete block with six replications. Plots were not irrigated. Foliar fungicides were applied at 14-day intervals on June 25, July 10, July 23, August 5, August 18, September 5, and September 18 as a full canopy spray using a four-row, ATV-mounted CO<sub>2</sub> sprayer with three TX8 nozzles per row calibrated to deliver 15 gallons per acre.

**Disease Assessment:** Early and late leaf spot were visually rated on September 24 using the Florida leaf spot scoring system [1 = no disease; 2 = very few lesions in lower canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation ( $\leq 10$  percent); 5 = lesions noticeable in upper canopy with some defoliation ( $\leq 25$  percent); 6 = lesions numerous with significant defoliation ( $\leq 50$  percent); 7 = lesions numerous with heavy defoliation ( $\leq 75$  percent); 8 = very numerous lesions on few remaining leaves with heavy defoliation ( $\leq 90$  percent); 9 = very few remaining leaves covered with lesions ( $\leq 95$  percent); 10 = completely defoliated or dead plants. Rust was also rated on September 24 using 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 withering).

Counts of stem rot hits were made on September 25 immediately after plot inversion (one hit was defined as  $\leq 1$  foot of consecutive symptoms and signs of the disease). Plots were harvested on September 29 and yields were reported at 10.0 percent moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant (LSD) test ( $P=0.05$ ).

**Weather:** During the 2008 peanut production season, temperatures were at or near normal and monthly rainfall totals were normal throughout the growing season.

**Results:** Late leaf spot and rust were the primary foliar diseases noted. Poorest leaf spot control was observed with the Headline/Folicur/Headline/Echo program. The Echo/Provost and Echo + Eminent/Echo + Muscle programs proved equally effective in controlling late leaf spot. The season-long Echo standard gave better leaf spot control than the Headline/Echo + Artisan/Topsin + Echo, Headline/Convoy + Echo/Topsin + Echo, Headline/Convoy + Echo/Echo programs. Rust appeared in late August and progressively intensified through September. The best rust control was with the Echo + Eminent/Echo + Muscle and Echo/Provost programs. The Headline/Folicur/Headline/Echo program resulted in the poorest rust control. Stem rot severity was lower than had been observed in previous years. However, the effect of the Headline/Folicur/Headline/Echo program was not significantly different than the Echo-only program. The yield for the Headline/Convoy + Echo/Echo program was significantly higher compared with the season-long Echo standard, and the Echo/Folicur program yielded lowest.

<b>EVALUATION OF ARTISAN AND CONVOY FOR CONTROL OF FOLIAR AND SOIL-BORNE DISEASES OF PEANUT IN IN SOUTHWEST ALABAMA, GCREC</b>					
Treatment and rate/A	Application timing <sup>1</sup>	–Disease ratings–			Yield lb/A
		LS <sup>2</sup>	Rust <sup>3</sup>	SR <sup>4</sup>	
Headline 2.09EC 9.0 fl oz.....	1.5	4.0	4.0	1.5	5123
Artisan 26.0 fl oz + Echo 720 16.0 fl oz	3,4,5				
Topsin M 5.0 fl oz + Echo 720 16.0 fl oz	6				
Headline 2.09EC 9.0 fl oz.....	1.5	4.3	4.7	1.5	5032
Echo 720 16.0 fl oz + Artisan 18.0 fl oz	3,4,5,6				
Topsin M 5.0 fl oz + Echo 720 16.0 fl oz	7				
Headline 2.09EC 9.0 fl oz.....	1.5	4.2	4.0	1.3	5307
Echo 720 16.0 fl oz + Artisan 16.0 fl oz	3,4,5,6				
Echo 720 24.0 fl oz	7				
Headline 2.09EC 9.0 fl oz.....	1.5	4.0	3.8	2.5	5162
Convoy 21.0 fl oz + Echo 720 24.0 fl oz	3,4,5				
Topsin M 5.0 fl oz + Echo 720 16.0 fl oz	6				
Headline 2.09Ec 9.0 fl oz.....	1.5	4.5	4.7	1.5	5429
Convoy 15.0 fl oz + Echo 720 24.0 fl oz	3,4,5,6				
Topsin M 5.0 fl oz + Echo 720 16.0 fl oz	7				
Headline 2.09EC 9.0 fl oz.....	1.5	4.5	4.8	2.0	5544
Convoy 13.0 fl oz + Echo 720 16.0 fl oz	3,4,5,6				
Echo 720 24.0 fl oz	7				
Echo 720 24.0 fl oz.....	1,2,7	4.3	4.3	2.2	4978
Folicur 3.6F 7.2 fl oz	3,4,5,6				
Echo 720 24.0 fl oz.....	1,2,7	3.0	3.0	1.8	5322
Provost 433SC 8.0 fl oz	3,4,5,6				
Echo 720 24.0 fl oz.....	1,2,4,6,7	4.0	3.7	2.2	5116
Abound 2.08SC 18.5 fl oz	3,5				
Echo 720 24.0 fl oz.....	1,2,4,6,7	3.5	3.2	2.2	5162
Echo 720 24.0 fl oz + Moncut 70DF 1.1 lb	3,5				
Headline 2.09EC 9.0 fl oz.....	1.5	5.2	5.5	2.7	5039
Folicur 3.6F 7.2 fl oz	3,5				
Headline 2.09 EC 6.0 fl oz	4,6				
Echo 720 24.0 fl oz	7				
Echo 720 24.0 fl oz.....	1,2,7	3.4	3.3	0.8	5391
Echo 720 16.0 fl oz + Muscle 3.6F 7.2 fl oz	3,4,5,6				
Echo 720 16.0 fl oz + Eminent 125SL 7.2 fl oz .....	1,2,7	3.1	2.8	1.5	5376
Echo 720 16.0 fl oz + Muscle 3.6F 7.2 fl oz	3,4,5,6				
Echo 720 24.0 fl oz	1-7	3.7	4.0	3.7	5016
<b>LSD (P=0.05)</b>		<b>0.6</b>	<b>0.9</b>	<b>1.1</b>	<b>417</b>

<sup>1</sup> Fungicide applications were made at 14-day intervals unless otherwise indicated.

<sup>2</sup> Early and late leaf spot (LS) were assessed using the Florida leaf spot scoring system (1 = no disease;... 10 = completely dead plants).

<sup>3</sup> Rust rated using the ICRISAT 1-9 rating scale (1 = no disease, ... 9 = plants severely affected, 80-100 percent leaves withering).

<sup>4</sup> Stem rot (SR) incidence is expressed as the number of disease hits per 60 feet of row. Mean separation within columns was according to Fisher's protected least significant difference (LSD) test (P=0.05).

## YIELD AND REACTION OF COMMERCIAL RUNNER PEANUT CULTIVARS TO DISEASES AND SOIL INSECTICIDES IN SOUTHEAST ALABAMA, WREC

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

**Objective:** To determine the reaction of commercial peanut cultivars to leaf spot diseases, rust, white mold, and tomato spotted wilt as well as the impact of soil insecticides on the occurrence of tomato spotted wilt, other diseases, and peanut yield.

**Methods:** The study site was paratilled and turned March 25. On May 22, commercial runner-market type peanut cultivars were planted at a rate of six seed per foot of row using conventional tillage practices in a Dothan fine sandy loam (organic matter <1 percent) soil in a field cropped to peanut every third year at the Wiregrass Research and Extension Center in Headland, Alabama. A tank mixture of Strongarm at 0.45 ounce per acre + Sonalan at 1 quart per acre was broadcast and lightly incorporated with a disk harrow. The test area received 1.0 acre inch of water via a center pivot on June 10, July 21, August 4, September 9, and October 1. A split plot design with cultivars as whole plots and an at-plant soil insecticide treatment as sub-plots was used. Whole plots were randomized in four complete blocks. Individual sub-plots consisted of four 40-foot rows spaced 3 feet apart. Subplot insecticides, which were applied at-planting as in-furrow treatments, were 4 pounds per acre of Thimet 20G, 6.5 pounds per acre of Temik 15G, and a non-treated control. Two full canopy sprays of Bravo Weather Stik 6F at 1.5 pints per acre were followed by applications of Bravo Weather Stik at 1 pint per acre + Folicur at 7.2 fluid ounces per acre, Abound 2SC at 20 fluid ounces per acre, Bravo Weather Stik 6F at 1.0 pint per acre + Folicur 3.6F at 7.2 fluid ounces per acre, Abound 2SC at 20 fluid ounces per acre, and Bravo Weather Stik 6F at 1.5 pints per acre. Fungicides were applied with a tractor-mounted boom sprayer with three TX-8 nozzles per row calibrated to deliver 15 gallons per acre of spray volume at 45 psi.

**Disease Assessment:** Final tomato spotted wilt virus (TSWV) hit counts (one hit was defined as  $\leq 1$  foot of consecutive TSWV-damaged plants per row) were made on October 3. Early and late leaf spot were rated on October 2 using the 1-10 Florida peanut leaf spot scoring system [1 = no disease; 2 = very few lesions in lower canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation ( $\leq 10$  percent); 5 = lesions noticeable in upper canopy with some defoliation ( $\leq 25$  percent); 6 = lesions numerous with significant defoliation ( $\leq 50$  percent); 7 = lesions numerous with heavy defoliation ( $\leq 75$  percent); 8 = very numerous lesions on few remaining leaves with heavy defoliation ( $\leq 90$  percent); 9 = very few remaining leaves covered with lesions ( $\leq 95$  percent); 10 = completely defoliated or dead plants].

White mold hit counts (one hit was defined as  $\leq 1$  foot of consecutive white mold-damaged plants per row) were made immediately after plot inversion on October 5 for all cultivars except for York. White mold hit counts for York were recorded on October 23. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ( $P=0.05$ ).

**Weather:** Rainfall totals were below the historical average in June and September but were average to well above average for July and August.

**Results:** While TSWV pressure was noticeably lower in 2008 than had been seen in previous years at Headland, significant differences in the disease levels were found between peanut cultivars (Table 1). Georgia Green and McCloud had higher TSWV hit counts than all of the other peanut cultivars except for GA03L. Fewest TSWV hits were recorded on Tifguard and York. Significant differences in the level of leaf spotting and premature defoliation were noted between peanut cultivars. As indicated by a leaf spot rating of 5.7, Georgia Green suffered from considerable leaf spotting and more than 40 percent premature leaf loss (Table 1). In addition, AT3085RO had a higher leaf spot rating than the remaining seven peanut cultivars. In contrast, light to moderate leaf spotting with little or no premature leaf loss was seen on Tifguard and York. Highest white mold hit counts were found on Georgia Green. McCloud and AT3085RO also proved susceptible to white mold. The lowest incidence of white mold was seen on York. Equally high yields were recorded for Tifguard, York, Florida 07, and GA03L. Georgia Green, Mc-

Cloud, and AT3085R—all of which had among the highest TSWV, leaf spot, and white mold ratings—had among the lowest yields.

Since the soil insecticide treatment  $\times$  cultivar interactions for TSWV, leaf spot diseases, white mold, yield, and grade were not significant ( $P \leq 0.05$ ), data for these variables that are presented in Table 2 were pooled across peanut cultivars. Overall, TSWV incidence was lower for peanuts treated with Temik 15G than for the non-treated control, while the rating for peanuts treated with Thimet 20G was intermediate between the latter treatments. In contrast, leaf spot ratings were lower for peanuts treated with Thimet 20G compared with peanuts treated with Temik 15G and the non-treated controls. Soil insecticide treatment did not significantly influence the incidence of white mold, peanut yield, or grade.

For AT3085RO, Florida 07, Tifguard, and York, TSWV, leaf spot, and white mold ratings as well as pod yields were similar for all soil treatments (Table 3). On AP-3, TSWV ratings were lower for both soil insecticide treatments than the non-treated control. The Temik 15G-treated GA03L peanut had lower TSWV hit counts compared with the Thimet 20G-treated peanuts and the non-treated control. Incidence of TSWV on Georgia Green and McCloud was not influenced by soil treatment. Leaf spot ratings were lower for the Thimet 20G- than the Temik 15G-treated GA03L and non-treated Georgia Green peanuts. Leaf spot ratings were similar across all soil treatments on AP-3 and McCloud. On Georgia Green, white mold incidence was higher for the Temik 15G treatment compared with the Thimet 20G treatment and the non-treated control. Similar white mold hit counts were recorded for AP-3, GA03L, and McCloud. On Georgia Green, the non-treated control had higher yield than the Temik 15G-treated peanuts.

**Summary:** Peanut cultivars varied considerably in their reaction to TSWV, leaf spot diseases, and white mold. Of the eight cultivars, Tifguard and York had among the lowest ratings for all of the above diseases. Other cultivars that may have partial resistance to TSWV, leaf spot, and white mold were GA03L and Florida 07. Generally, cultivars that displayed good disease resistance had the highest yields. However, peanut grade did not appear to be associated with reduced disease damage. Georgia Green, which suffered considerable TSWV, leaf spot, and white mold damage, was the lowest yielding peanut cultivar. Due to low TSWV pressure, the Thimet 20G soil treatment had little impact on disease incidence and on peanut yield. Reduction in TSWV incidence obtained with Temik 15G and lower leaf spot ratings on the Thimet 20G-treated peanuts had no influence on peanut yield or grade.

**TABLE 1. AVERAGE YIELD AND DISEASE RESPONSE FOR COMMERCIAL RUNNER PEANUT VARIETIES, WREC**

	TSWV rating <sup>1</sup>	Leaf spot rating <sup>2</sup>	WM rating <sup>1</sup>	Yield lb/A	Grade
<b>Mid-season (mature 130-145 DAP)</b>					
AP-3.....	4.4 b	4.1 c	3.9 d	4883 bc	70.0 c
AT3085RO .....	3.9 b	5.0 b	6.8 bc	4673 c	70.9 c
Florida 07.....	3.6 bc	3.9 c	5.6 cd	5039 ab	70.3 c
GA03L .....	5.1 ab	4.2 c	4.6 d	5019 ab	70.8 c
Georgia Green.....	5.8 a	5.7 a	10.0 a	4114 d	73.3 ab
McCloud .....	5.9 a	4.2 c	7.9 b	4590 c	72.8 b
Tifguard .....	1.2 d	3.3 d	4.1 d	5216 a	73.9 a
<b>Late season (mature 140-165 DAP)</b>					
York .....	2.1 cd	3.2 d	1.3 e	5202 ab	68.8 d

<sup>1</sup> TSWV and white mold (WM) incidence is expressed as the number of hits per 80 feet of row.

<sup>2</sup> Leaf spot was rated using the Florida 1 to 10 rating scale.

Mean separation in each column was according to analysis of variance and Fisher's protected least significant difference (LSD) test ( $P \leq 0.05$ ).



**TABLE 2. IMPACT OF SOIL INSECTICIDE TREATMENTS ON PEANUT YIELD AND DISEASE INTENSITY AVERAGED ACROSS PEANUT CULTIVARS, WREC**

	TSWV rating <sup>1</sup>	Leaf spot rating <sup>2</sup>	WM rating <sup>1</sup>	Yield lb/A	Grade
Temik 15G 6.5 lb/A .....	3.3 b	4.3 a	5.8 a	4826 a	71.6 a
Thimet 20G 4 lb/A .....	3.8 ab	4.0 b	5.6 a	4843 a	71.2 a
Non-treated control.....	4.8 a	4.8 a	5.1 a	4853 a	71.3 a

<sup>1</sup> TSWV and white mold (WM) incidence is expressed as the number of hits per 80 feet of row.

<sup>2</sup> Leaf spot was rated using the Florida 1 to 10 rating scale.

Mean separation in each column was according to analysis of variance and Fisher's protected least significant difference (LSD) test ( $P \leq 0.05$ ).

**TABLE 3. IMPACT OF SOIL INSECTICIDE TREATMENTS ON DISEASE INTENSITY AND YIELD BY PEANUT CULTIVAR, WREC**

Peanut cultivar Soil insecticide and rate/A	TSWV rating <sup>1</sup>	Leaf spot rating <sup>2</sup>	WM rating <sup>1</sup>	Yield lb/A
<b>AP-3</b>				
Temik 15G 6.5 lb/A .....	3.0	4.0	2.3	5112
Thimet 20G 4 lb/A .....	2.8	4.2	4.8	4707
Non-treated control .....	6.3	4.0	4.7	4831
<b>AT3085RO</b>				
Temik 15G 6.5 lb/A .....	3.7	5.2	7.5	4550
Thimet 20G 4 lb/A .....	4.5	4.7	6.5	4890
Non-treated control .....	3.7	5.2	6.3	4616
<b>Florida 07</b>				
Temik 15G 6.5 lb/A .....	3.0	4.0	5.0	4928
Thimet 20G 4 lb/A .....	3.2	3.8	7.0	5031
Non-treated control .....	4.7	3.8	4.8	5158
<b>GA03L</b>				
Temik 15G 6.5 lb/A .....	2.7	4.8	5.0	5058
Thimet 20G 4 lb/A .....	6.2	3.5	3.3	5251
Non-treated control .....	6.5	4.3	5.3	4746
<b>Georgia Green</b>				
Temik 15G 6.5 lb/A .....	5.8	5.8	13.5	3687
Thimet 20G 4 lb/A .....	5.5	5.2	8.8	4165
Non-treated control .....	6.2	6.0	7.7	4489
<b>McCloud</b>				
Temik 15G 6.5 lb/A .....	3.2	4.2	7.3	4976
Thimet 20G 4 lb/A .....	3.7	4.0	8.3	4338
Non-treated control .....	2.5	4.5	8.0	4456
<b>Tifguard</b>				
Temik 15G 6.5 lb/A .....	1.2	3.5	5.7	5109
Thimet 20G 4 lb/A .....	1.0	3.3	3.7	5197
Non-treated control .....	1.5	3.2	3.0	5342
<b>York</b>				
Temik 15G 6.5 lb/A .....	2.2	3.2	0.5	5185
Thimet 20G 4 lb/A .....	2.2	3.3	2.5	5173
Non-treated control.....	1.8	3.2	1.0	5256

<sup>1</sup> TSWV and white mold (WM) incidence is expressed as the number of hits per 80 feet of row.

<sup>2</sup> Leaf spot was rated using the Florida 1 to 10 rating scale.

## YIELD AND REACTION OF COMMERCIAL RUNNER PEANUT CULTIVARS TO DISEASES AS INFLUENCED BY SOIL INSECTICIDE TREATMENT IN SOUTHWEST ALABAMA, GCREC

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

**Objective:** To determine the yield and reaction of commercial peanut cultivars to leaf spot diseases, rust, white mold, and tomato spotted wilt as influenced by soil insecticides.

**Methods:** On May 22, commercial runner-market type peanut cultivars were planted at a rate of six seed per foot of row using conventional tillage practices in a Malbis fine sandy loam (organic matter <1 percent) soil in a field cropped to peanut every third year at the Gulf Coast Research and Extension Center in Fairhope, Alabama. Weed control and soil fertility recommendations of the Alabama Cooperative Extension System were followed. The test area was not irrigated. A split plot design with cultivars as whole plots and an at-plant soil insecticide treatment as sub-plots was used. Whole plots were randomized in four complete blocks. Individual sub-plots consisted of four 30-foot rows spaced 3.2 feet apart. Sub-plot insecticides, which were applied at-planting as in-furrow treatments were 4 pounds per acre of Thimet 20G, 6.5 pounds per acre of Temik 15G, and a non-treated control. Full canopy sprays of Tilt 3.6E at 4 fluid ounces per acre + Bravo Weather Stik 6F at 1 pint per acre on July 2 and July 16 were followed by applications of Abound 2SC at 18.5 fluid ounces per acre on July 29, Bravo Weather Stik 6F at 1.5 pints per acre on August 6, Abound 2SC at 18.5 fluid ounces per acre on August 28, and Bravo Weather Stik 6F at 1.5 pints per acre on September 8 and September 24. Fungicides were applied with an ATV-mounted boom sprayer with three TX-8 nozzles per row at 10 gallons per acre of spray volume at 45 psi.

**Disease Assessment:** Final TSWV hit counts (one hit was defined as  $\leq 1$  foot of consecutive TSWV-damaged plants per row) were made on October 10. Early and late leaf spot were rated on September 30 using the 1-10 Florida peanut leaf spot scoring system [1 = no disease; 2 = very few lesions in lower canopy; 3 = few lesions in lower and upper canopy; 4 = some lesions with slight defoliation ( $\leq 10$  percent); 5 = lesions noticeable in upper canopy with some defoliation ( $\leq 25$  percent); 6 = lesions numerous with significant defoliation ( $\leq 50$  percent); 7 = lesions numerous with heavy defoliation ( $\leq 75$  percent); 8 = very numerous lesions on few remaining leaves with heavy defoliation ( $\leq 90$  percent); 9 = very few remaining leaves covered with lesions ( $\leq 95$  percent); 10 = completely defoliated or dead plants.

Rust severity was assessed using the ICRISAT 1-9 rating scale where 1 = no disease and 9 = 80 to 100 percent of leaves withered on September 30. White mold hit counts (one hit was defined as  $\leq 1$  foot of consecutive white mold damaged plants per row) were made immediately after plots were dug on October 14. Yields were reported at 10 percent moisture. Significance of treatment effects was tested by analysis of variance and Fisher's protected least significant difference (LSD) test ( $P \leq 0.05$ ). Data presented in Table 1 for each cultivar were averaged across soil insecticide treatments.

**Weather:** Rainfall totals for May, August, and September were above the 30-year average but totals for June and July were below average.

**Results:** While significant differences in TSWV incidence were noted between cultivars, disease incidence was considerably lower than had been seen in previous years. Highest TSWV incidence was noted on Georgia Green (Table 1). In contrast, TSWV-infection levels in AP-3 and AT3085RO were very low. The least spotting from late leaf spot with no premature defoliation was noted on GA03L, GA02C, and York. Highest leaf spot and rust ratings were recorded for AT3085RO. Rust ratings for McCloud and AT3085RO were similar. Peanut cultivars with equally low rust ratings were AP-3, GA02C, GA03L, Georgia Green, and York. In addition, all of the latter cultivars suffered little white mold damage. White mold incidence was significantly higher on AT3085RO than all of the other peanut cultivars. Highest yields were recorded for Georgia Green, Florida 07, GA02C, and McCloud. Despite generally low disease ratings, AP-3 and GA03L yielded significantly less than the above peanut cultivars. Low yields for AT3085RO are a reflection of the susceptibility of this cultivar to leaf spot diseases, rust, and white mold.

Soil insecticide treatment had a significant impact on the occurrence of several diseases and on peanut yield (Table 2). The Thimet 20G-treated peanuts had lower TSWV and leaf spot rating compared with the Temik 15G-treated peanuts and the non-treated control. Ratings for white mold and rust were similar for all soil treatments. Yields were also higher for the Thimet 20G-treated peanuts compared with Temik 15G-treated peanuts or the non-treated control.

On the individual cultivars, a reduction in TSWV incidence with Thimet 15G was noted only on Georgia Green when compared with both Temik 15G and non-treated control (Table 3). Yield gains with Thimet 15G were noted only on GA03L. Ratings for leaf spot, rust, and white mold on the individual cultivars were not influenced by soil treatments.

**Summary:** The unusually low yield of AT3085RO is directly attributed to heavy damage from white mold, late leaf spot, and rust. Peanut cultivars that had partial resistance to TSWV, leaf spot, rust, and white mold were GA02C, York, GA03L, and Florida 07. Highest yields were recorded for Florida 07, Georgia Green, GA02C, and McCloud. Despite low TSWV pressure, a significant yield gain and reduction in TSWV incidence was obtained with Thimet 20G soil insecticide.

**TABLE 1. AVERAGE YIELD AND DISEASE RESPONSE FOR COMMERCIAL RUNNER PEANUT VARIETIES, GCREC**

	TSWV rating <sup>1</sup>	Leaf spot rating <sup>2</sup>	Rust <sup>3</sup>	WM rating <sup>1</sup>	Yield lb/A
<b>Mid-season (mature 130-145 DAP)</b>					
AP-3.....	0.4 d	4.1 b	2.7 cd	2.2 bc	4634 c
AT3085RO.....	0.2 d	5.5 a	3.7 a	17.6 a	2631 d
Florida 07.....	1.7 bc	3.8 c	2.8 c	2.7 b	5006 a
GA03L.....	1.6 bc	2.9 e	2.4 d	0.4 d	4642 c
Georgia Green.....	4.4 a	3.4 d	2.5 cd	1.5 bd	5116 a
McCloud.....	2.3 b	3.6 cd	3.3 b	2.3 b	4914 ab
<b>Late season (mature 140-165 DAP)</b>					
GA02C.....	2.2 b	2.9 e	2.7 cd	0.7 d	4950 a
York.....	1.1 cd	2.9 e	2.4 d	0.8 cd	4853 bc

<sup>1</sup> TSWV and white mold (WM) incidence is expressed as the number of hits per 80 feet of row.

<sup>2</sup> Leaf spot was rated using the Florida 1 to 10 rating scale.

<sup>3</sup> Rust severity was assessed using the ICRISAT 1 to 9 rating scale.

Mean separation in each column was according to analysis of variance and Fisher's protected least significant difference (LSD) test ( $P \leq 0.05$ ).

**TABLE 2. IMPACT OF SOIL INSECTICIDE TREATMENTS ON PEANUT YIELD AND DISEASE INTENSITY AVERAGED ACROSS PEANUT CULTIVARS, GCREC**

	TSWV rating <sup>1</sup>	Leaf spot rating <sup>2</sup>	Rust <sup>3</sup>	WM rating <sup>1</sup>	Yield lb/A
Temik 15G 6.5 lb/A.....	2.1 a	3.7 a	2.9 a	3.8 a	4502 b
Thimet 20G 4 lb/A.....	1.1 b	3.5 b	2.7 a	3.2 a	4759 a
Non-treated control.....	2.0 a	3.7 a	2.9 a	3.5 a	4518 b

<sup>1</sup> TSWV and white mold (WM) incidence is expressed as the number of hits per 80 feet of row.

<sup>2</sup> Leaf spot was rated using the Florida 1 to 10 rating scale.

<sup>3</sup> Rust severity was assessed using the ICRISAT 1 to 9 rating scale.

Mean separation in each column was according to analysis of variance and Fisher's protected least significant difference (LSD) test ( $P \leq 0.05$ ).

**TABLE 3. IMPACT OF SOIL INSECTICIDE TREATMENTS ON DISEASE INTENSITY AND YIELD BY PEANUT CULTIVAR, WREC**

<b>Peanut cultivar</b> Soil insecticide and rate/A	TSWV rating <sup>1</sup>	Leaf spot rating <sup>2</sup>	Rust	WM rating <sup>1</sup>	Yield lb/A
<b>AP-3</b>					
Temik 15G 6.5 lb/A .....	0.7	4.2	2.8	2.5	4504
Thimet 20G 4 lb/A .....	0.3	3.8	2.3	1.3	4726
Non-treated control .....	0.3	4.2	2.8	2.7	4672
<b>AT3085RO</b>					
Temik 15G 6.5 lb/A .....	0.2	6.0	4.2	19.2	2447
Thimet 20G 4 lb/A .....	0.0	5.0	3.3	16.7	2913
Non-treated control.....	0.5	5.5	3.5	16.8	2531
<b>Florida 07</b>					
Temik 15G 6.5 lb/A .....	1.8	4.2	2.8	2.5	4909
Thimet 20G 4 lb/A.....	1.2	3.7	3.2	2.8	5169
Non-treated control.....	2.2	3.7	2.5	2.8	4940
<b>GA02C</b>					
Temik 15G 6.5 lb/A .....	2.7	2.9	2.7	1.0	4917
Thimet 20G 4 lb/A .....	1.0	3.0	2.7	0.2	4947
Non-treated control.....	2.8	3.0	2.8	0.8	4986
<b>GA03L</b>					
Temik 15G 6.5 lb/A .....	1.3	2.7	2.2	0.7	4420
Thimet 20G 4 lb/A .....	1.2	2.9	2.5	0.5	5016
Non-treated control.....	2.1	3.0	2.5	0.2	4489
<b>Georgia Green</b>					
Temik 15G 6.5 lb/A .....	5.8	3.2	2.8	1.2	5039
Thimet 20G 4 lb/A.....	2.7	3.3	2.3	2.0	5406
Non-treated control.....	4.7	3.7	2.3	1.2	4902
<b>McCloud</b>					
Temik 15G 6.5 lb/A .....	2.8	3.7	3.2	2.3	5032
Thimet 20G 4 lb/A.....	2.2	3.7	3.2	2.0	5016
Non-treated control.....	2.0	3.5	3.7	2.5	4695
<b>York</b>					
Temik 15G 6.5 lb/A .....	1.3	2.8	2.5	1.2	4749
Thimet 20G 4 lb/A.....	0.5	2.7	2.2	0.5	4879
Non-treated control.....	1.5	3.2	2.7	0.8	4932

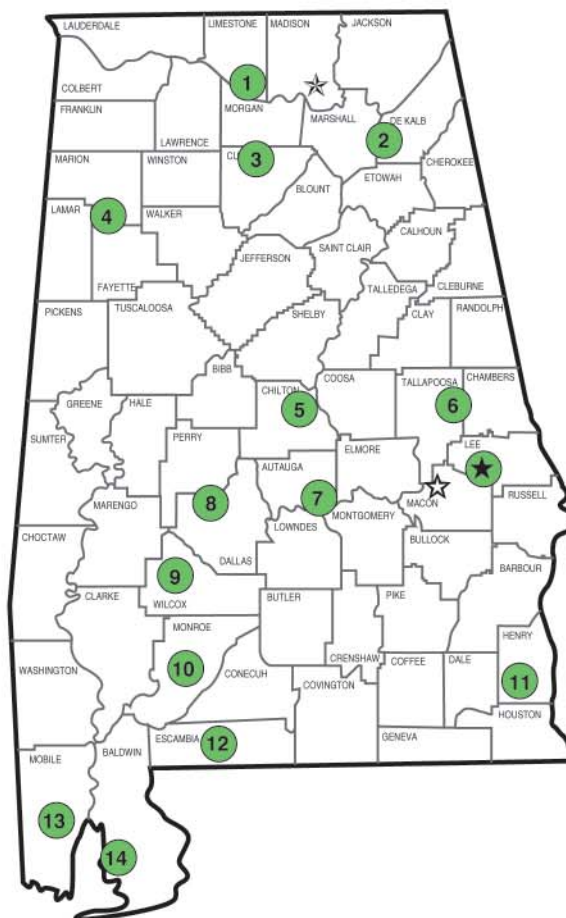
<sup>1</sup> TSWV and white mold (WM) incidence is expressed as the number of hits per 80 feet of row.

<sup>2</sup> Leaf spot was rated using the Florida 1 to 10 rating scale.

<sup>3</sup> Rust severity was assessed using the ICRISAT 1 to 9 rating scale.

## Alabama's Agricultural Experiment Station AUBURN UNIVERSITY

With an agricultural research unit in every major soil area, Auburn University serves the needs of field crop, livestock, forestry, and horticultural producers in each region in Alabama. Every citizen of the state has a stake in this research program, since any advantage from new and more economical ways of producing and handling farm products directly benefits the consuming public.



### Research Unit Identification

- ★ Main Agricultural Experiment Station, Auburn.
- ☆ Alabama A&M University.
- ☆ E. V. Smith Research Center, Shorter.

1. Tennessee Valley Research and Extension Center, Belle Mina.
2. Sand Mountain Research and Extension Center, Crossville.
3. North Alabama Horticulture Research Center, Cullman.
4. Upper Coastal Plain Agricultural Research Center, Winfield.
5. Chilton Research and Extension Center, Clanton.
6. Piedmont Substation, Camp Hill.
7. Prattville Agricultural Research Unit, Prattville.
8. Black Belt Research and Extension Center, Marion Junction.
9. Lower Coastal Plain Substation, Camden.
10. Monroeville Agricultural Research Unit, Monroeville.
11. Wiregrass Research and Extension Center, Headland.
12. Brewton Agricultural Research Unit, Brewton.
13. Ornamental Horticulture Research Center, Spring Hill.
14. Gulf Coast Research and Extension Center, Fairhope.