

# University of Georgia

Measuring the potential for weed competition with a second weed flush.

Trial ID: C28-03  
Location: Ponder farm

Study Director: Blaine Walden  
Investigator: Stanley Culpepper

## General Trial Information

**Study Director:** Blaine Waldon **Title:** Graduate student  
**Affiliation:** University of Georgia  
**Postal Code:** 31794  
**Investigator:** Stanley Culpepper **Title:** Extension Agronomist  
**Affiliation:** University of Georgia  
**Postal Code:** 31794

## Trial Location

**City:** TyTy **Trial Status:** completed  
**State/Prov.:** GA **Trial Reliability:** fair  
**Postal Code:** 31794 **Initiation Date:** May-20-03  
**Country:** USA  
**Directions:**

**Objectives:**

**Conclusions:**

## Crop Description

**Crop 1:** GOSHI *Gossypium hirsutum* Cotton, American upland  
**Variety:** Roundup Ready Flex  
**BBCH Scale:** BCOT **Planting Date:** May-20-03  
**Planting Method:** conventional **Rate, Unit:** 3 per foot  
**Depth, Unit:** 0.5 in  
**Row Spacing, Unit:** 36 inch **Spacing Within Row, Unit:** 4 inch  
**Seed Bed:** bedded **Soil Temperature, Unit:** 80 F  
**Soil Moisture:** moist **Emergence Date:** May-10-03

## Pest Description

**Pest 1 Type:** W **Code:** IAQTA *Jacquemontia tamnifolia*  
**Common Name:** Morningglory, smallflower  
**Pest 2 Type:** W **Code:** CASOB *Cassia obtusifolia*  
**Common Name:** Sickle pod  
**Pest 3 Type:** W **Code:** PANTE *Panicum texanum*  
**Common Name:** Conchograss  
**Description:** Texas panicum  
**Pest 4 Type:** W **Code:** IPOSS *Ipomoea* sp.  
**Common Name:** Morning glory  
**Description:** Pitted and entireleaf

## Site and Design

**Plot Width, Unit:** 12 FT **Site Type:** research station  
**Plot Length, Unit:** 25 FT **Tillage Type:** conventional  
**Replications:** 4 **Study Design:** Randomized Complete Block

**Trial Initiation Comments:**

**Field Prep./Maintenance:**

## Soil Description

**% Sand:** 94 **% OM:** 1.3 **Texture:** sand  
**% Silt:** 2 **pH:** 5.7 **Soil Name:** Tifton sandy loam  
**% Clay:** 4

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## Moisture Conditions

Overall Moisture Conditions: wet

### Application Description

	A	B	C	D	E
<b>Application Date:</b>	May-20-03	Jun-04-03	Jun-13-03	Jun-20-03	Jul-04-03
<b>Time of Day:</b>	11 am	3 pm	2 pm	9 am	9 am
<b>Application Method:</b>	broadcast	broadcast	broadcast	broadcast	broadcast
<b>Application Timing:</b>	PRE	1-leaf	4-leaf	7-leaf	10-leaf
<b>Application Placement:</b>	on soil	overtop	overtop	overtop	overtop
<b>Applied By:</b>	culpepper	culpepper	culpepper	culpepper	culpepper
<b>Air Temperature, Unit:</b>	78 F	92 F	88 F	78 F	78 F
<b>% Relative Humidity:</b>	60	39	39	67	70
<b>Wind Velocity, Unit:</b>	2 mph	3 mph	2 mph	3 mph	0 mph
<b>Dew Presence (Y/N):</b>	n	n	n	n	y
<b>Soil Temperature, Unit:</b>	76 F	94 F	92 F	82 F	81 F
<b>Soil Moisture:</b>	moist	fair	moist	wet	wet
<b>% Cloud Cover:</b>	25	45	50	30	90
	<b>F</b>				
<b>Application Date:</b>	Jul-12-03				
<b>Time of Day:</b>	10 am				
<b>Application Method:</b>	broadcast				
<b>Application Timing:</b>	layby				
<b>Application Placement:</b>	directed				
<b>Applied By:</b>	culpepper				
<b>Air Temperature, Unit:</b>	83 F				
<b>% Relative Humidity:</b>	56				
<b>Wind Velocity, Unit:</b>	2 mph				
<b>Dew Presence (Y/N):</b>	n				
<b>Soil Temperature, Unit:</b>	83 F				
<b>Soil Moisture:</b>	moist				
<b>% Cloud Cover:</b>	50				

### Crop Stage At Each Application

	A	B	C	D
<b>Crop 1 Code, BBCH Scale:</b>	GOSHI BCOT	GOSHI BCOT	GOSHI BCOT	GOSHI BCOT
<b>Stage Scale Used:</b>	PRE	1-leaf	4-leaf	7-leaf
<b>Stage Majority, Percent:</b>	. 0	V1-V2 100	V4 100	V6-V7 100
<b>Stage Minimum, Percent:</b>	. 0	. 0	. 0	. 0
<b>Stage Maximum, Percent:</b>	. 0	. 0	. 0	. 0
<b>Diameter, Unit:</b>	0. in	0 in	0. in	0. in
<b>Height, Unit:</b>	0. in	3.5 in	6.5 in	12 in
<b>Height Minimum, Maximum:</b>	0 0	3 4	6 7	10 14
	<b>E</b>	<b>F</b>		
<b>Crop 1 Code, BBCH Scale:</b>	GOSHI BCOT	GOSHI BCOT		
<b>Stage Scale Used:</b>	10-leaf	layby		
<b>Stage Majority, Percent:</b>	V10 100	V13 100		
<b>Stage Minimum, Percent:</b>	. 0	. 0		
<b>Stage Maximum, Percent:</b>	. 0	. 0		
<b>Diameter, Unit:</b>	0. in	0. in		
<b>Height, Unit:</b>	26 in	36 in		
<b>Height Minimum, Maximum:</b>	24 30	32 40		

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## Pest Stage At Each Application

	A		B		C		D	
<b>Pest 1 Code, Disc., Scale:</b>	IAQTA	W PRE	IAQTA	W 1-1f	IAQTA	W 4-1f	IAQTA	W 7-1f
<b>Stage Majority, Percent:</b>	. 0		1-3lf	100	. 0		. 0	
<b>Stage Minimum, Percent:</b>	. 0		. 0		. 0		. 0	
<b>Stage Maximum, Percent:</b>	. 0		. 0		. 0		. 0	
<b>Diameter, Unit:</b>	0.	in	0.	in	0.	in	0.	in
<b>Height, Unit:</b>	0.	in	2	in	4.5	in	5	in
<b>Height Minimum, Maximum:</b>	0.	0.	0.25	3	3	6	3	6
<b>Density, Unit:</b>	0.	in	4	ydsq	4	ydsq	4	ydsq
<b>Coverage, Unit:</b>	. in		. in		. in		. in	
<b>Pest 2 Code, Disc., Scale:</b>	CASOB	W PRE	CASOB	W 1-1f	CASOB	W 4-1f	CASOB	W 7-1f
<b>Stage Majority, Percent:</b>	. 0		1-3lf	100	. 0		. 0	
<b>Stage Minimum, Percent:</b>	. 0		. 0		. 0		. 0	
<b>Stage Maximum, Percent:</b>	. 0		. 0		. 0		. 0	
<b>Diameter, Unit:</b>	0.	in	0.	in	0.	in	0.	in
<b>Height, Unit:</b>	0.	in	2	in	4	in	8	in
<b>Height Minimum, Maximum:</b>	0.	0.	0.25	3	2	6	6	12
<b>Density, Unit:</b>	0.	in	2	ydsq	2	ydsq	2	ydsq
<b>Coverage, Unit:</b>	. in		. in		. in		. in	
<b>Pest 3 Code, Disc., Scale:</b>	PANTE	W PRE	PANTE	W 1-1f	PANTE	W 4-1f	PANTE	W 7-1f
<b>Stage Majority, Percent:</b>	. 0		1-3lf	100	. 0		. 0	
<b>Stage Minimum, Percent:</b>	. 0		. 0		. 0		. 0	
<b>Stage Maximum, Percent:</b>	. 0		. 0		. 0		. 0	
<b>Diameter, Unit:</b>	0.	in	0.	in	0.	in	0.	in
<b>Height, Unit:</b>	0.	in	2	in	5	in	8	in
<b>Height Minimum, Maximum:</b>	0.	0.	0.25	3	4	5	6	12
<b>Density, Unit:</b>	0.	in	15	ydsq	15	ydsq	15	ydsq
<b>Coverage, Unit:</b>	. in		. in		. in		. in	
<b>Pest 4 Code, Disc., Scale:</b>	IPOSS	W PRE	IPOSS	W 1-1f	IPOSS	W 4-1f	IPOSS	W 7-1f
<b>Stage Majority, Percent:</b>	. 0		1-3lf	100	. 0		. 0	
<b>Stage Minimum, Percent:</b>	. 0		. 0		. 0		. 0	
<b>Stage Maximum, Percent:</b>	. 0		. 0		. 0		. 0	
<b>Diameter, Unit:</b>	0.	in	0.	in	0.	in	0.	in
<b>Height, Unit:</b>	0.	in	2	in	5	in	5	in
<b>Height Minimum, Maximum:</b>	0.	0.	0.25	3	4	6	3	6
<b>Density, Unit:</b>	0.	in	4	ydsq	4	ydsq	3	ydsq
<b>Coverage, Unit:</b>	. in		. in		. in		. in	

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	<b>E</b>		<b>F</b>	
<b>Pest 1 Code, Disc., Scale:</b>	IAQTA	W 10lf	IAQTA	W layb
<b>Stage Majority, Percent:</b>	.	0	.	0
<b>Stage Minimum, Percent:</b>	.	0	.	0
<b>Stage Maximum, Percent:</b>	.	0	.	0
<b>Diameter, Unit:</b>	0.	in	0.	in
<b>Height, Unit:</b>	12	in	8	in
<b>Height Minimum, Maximum:</b>	6	18	4	12
<b>Density, Unit:</b>	4	ydsq	4	ydsq
<b>Coverage, Unit:</b>	.	in	.	in
<b>Pest 2 Code, Disc., Scale:</b>	CASOB	W 10lf	CASOB	W layb
<b>Stage Majority, Percent:</b>	.	0	.	0
<b>Stage Minimum, Percent:</b>	.	0	.	0
<b>Stage Maximum, Percent:</b>	.	0	.	0
<b>Diameter, Unit:</b>	0.	in	0.	in
<b>Height, Unit:</b>	12	in	8	in
<b>Height Minimum, Maximum:</b>	1	18	4	12
<b>Density, Unit:</b>	1	ydsq	1	ydsq
<b>Coverage, Unit:</b>	.	in	.	in
<b>Pest 3 Code, Disc., Scale:</b>	PANTE	W 10lf	PANTE	W layb
<b>Stage Majority, Percent:</b>	.	0	.	0
<b>Stage Minimum, Percent:</b>	.	0	.	0
<b>Stage Maximum, Percent:</b>	.	0	.	0
<b>Diameter, Unit:</b>	0.	in	0.	in
<b>Height, Unit:</b>	12	in	8	in
<b>Height Minimum, Maximum:</b>	1	18	4	12
<b>Density, Unit:</b>	12	ydsq	12	ydsq
<b>Coverage, Unit:</b>	.	in	.	in
<b>Pest 4 Code, Disc., Scale:</b>	IPOSS	W 10lf	IPOSS	W layb
<b>Stage Majority, Percent:</b>	.	0	.	0
<b>Stage Minimum, Percent:</b>	.	0	.	0
<b>Stage Maximum, Percent:</b>	.	0	.	0
<b>Diameter, Unit:</b>	0.	in	0.	in
<b>Height, Unit:</b>	14	in	8	in
<b>Height Minimum, Maximum:</b>	1	18	4	12
<b>Density, Unit:</b>	2	ydsq	2	ydsq
<b>Coverage, Unit:</b>	.	in	.	in

### Application Equipment

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Appl. Equipment:</b>	backpack	backpack	backpack	backpack	backpack	backpack
<b>Operating Pressure:</b>	22	22	22	22	22	18
<b>Pressure Unit:</b>	psi	psi	psi	psi	psi	psi
<b>Nozzle Type:</b>	flat fan	flat fan	flat fan	flat fan	flat fan	flat fan
<b>Nozzle Size:</b>	11002	11002	11002	11002	11002	11002
<b>Nozzle Spacing, Unit:</b>	18 inch	18 inch	18 inch	18 inch	18 inch	12 inch
<b>Nozzles/Row:</b>	2	2	2	2	2	3
<b>Boom Length, Unit:</b>	4.5 feet	4.5 feet	4.5 feet	4.5 feet	4.5 feet	2 feet
<b>Boom Height, Unit:</b>	15 inch	15 inch	15 inch	15 inch	15 inch	12 inch
<b>Ground Speed, Unit:</b>	3 mph	3 mph	3 mph	3 mph	3 mph	3 mph
<b>Carrier:</b>	water	water	water	water	water	water
<b>Spray Volume:</b>	14.8	14.8	14.8	14.8	14.8	14.8
<b>Volume Unit:</b>	GAL/AC	GAL/AC	GAL/AC	GAL/AC	GAL/AC	GAL/AC
<b>Propellant:</b>	CO2	CO2	CO2	CO2	CO2	CO2
<b>Tank Mix (Y/N):</b>	Y	Y	Y	Y	Y	Y

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**Measuring the potential for weed competition with a second weed flush.**

Trial ID: C28-03

Study Director: Blaine Walden

Location: Ponder farm

Investigator: Stanley Culpepper

				W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	
				IAQTA	IAQTA	IAQTA	IAQTA	CASOB	CASOB	
Pest Type										
Pest Code										
Crop Code			GOSHI							
BBCH Scale			BCOT							
Rating Date			Jun-12-03	Jun-12-03	Jul-03-03	Jul-31-03	Aug-22-03	Jun-12-03	Jul-03-03	
Rating Data Type			STUNTING	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	
Rating Unit			%	%	%	%	%	%	%	
Days After Last Applic.			8	8	13	19	41	8	13	
Trt-Eval Interval			23 DA-A	23 DA-A	44 DA-A	72 DA-A	94 DA-A	23 DA-A	44 DA-A	
Trt No.	Treatment Name	Rate	Unit	1	2	3	4	5	6	7
1	Roundup WeatherMax	0.38	lb ae/a	2.5	100.0	97.5	100.0	100.0	100.0	100.0
	Roundup WeatherMax	0.75	lb ae/a							
	Roundup WeatherMax	0.75	lb ae/a							
2	Roundup WeatherMax	0.38	lb ae/a	18.8	100.0	97.5	100.0	100.0	100.0	100.0
	Roundup WeatherMax	1	lb ae/a							
	Roundup WeatherMax	0.75	lb ae/a							
3	Roundup WeatherMax	0.38	lb ae/a	12.5	100.0	22.5	100.0	100.0	100.0	25.0
	Roundup WeatherMax	1.25	lb ae/a							
	Roundup WeatherMax	0.75	lb ae/a							
4	Prowl	2	pt/a			93.8	99.5	100.0		95.0
	Roundup WeatherMax	0.75	lb ae/a							
	Roundup WeatherMax	0.75	lb ae/a							
5	Prowl	2	pt/a			93.8	100.0	100.0		100.0
	Roundup WeatherMax	1	lb ae/a							
	Roundup WeatherMax	0.75	lb ae/a							
6	Prowl	2	pt/a			0.0	100.0	100.0		0.0
	Roundup WeatherMax	1.25	lb ae/a							
	Roundup WeatherMax	0.75	lb ae/a							
7	Roundup WeatherMax	0.38	lb ae/a	15.0	100.0	100.0	100.0	100.0	100.0	100.0
	Dual Magnum	1	pt/a							
	Roundup WeatherMax	1	lb ae/a							
	Roundup WeatherMax	0.75	lb ae/a							
8	Roundup WeatherMax	0.38	lb ae/a	15.0	100.0	92.5	100.0	100.0	100.0	81.3
	Dual Magnum	1	pt/a							
	Roundup WeatherMax	1.25	lb ae/a							
	Roundup WeatherMax	0.75	lb ae/a							
9	non-treated					0.0	0.0	0.0		0.0
LSD (P=.05)				18.79	0.00	22.43	0.49	0.00	0.00	28.15
Standard Deviation				12.20	0.00	15.37	0.33	0.00	0.00	19.29
CV				95.66	0.0	23.15	0.38	0.0	0.0	28.87
Bartlett's X2				3.276	0.0	29.376	0.0	0.0	0.0	6.307
P(Bartlett's X2)				0.513	.	0.001*	.	.	.	0.043*

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	CASOB	CASOB	PANTE	PANTE	PANTE	PANTE	IPOSS			
Crop Code										
BBCH Scale										
Rating Date	Jul-31-03	Aug-22-03	Jun-12-03	Jul-03-03	Jul-31-03	Aug-22-03	Jun-12-03			
Rating Data Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO			
Rating Unit	%	%	%	%	%	%	%			
Days After Last Applic.	19	41	8	13	19	41	8			
Trt-Eval Interval	72 DA-A	94 DA-A	23 DA-A	44 DA-A	72 DA-A	94 DA-A	23 DA-A			
Trt No.	Treatment Name	Rate	Unit	8	9	10	11	12	13	14
1	Roundup WeatherMax	0.38	lb ae/a	100.0	100.0	100.0	100.0	100.0	100.0	98.8
	Roundup WeatherMax	0.75	lb ae/a							
	Roundup WeatherMax	0.75	lb ae/a							
2	Roundup WeatherMax	0.38	lb ae/a	100.0	100.0	100.0	100.0	100.0	100.0	99.5
	Roundup WeatherMax	1	lb ae/a							
	Roundup WeatherMax	0.75	lb ae/a							
3	Roundup WeatherMax	0.38	lb ae/a	100.0	100.0	100.0	12.5	100.0	100.0	98.3
	Roundup WeatherMax	1.25	lb ae/a							
	Roundup WeatherMax	0.75	lb ae/a							
4	Prowl	2	pt/a	98.8	100.0		97.5	100.0	100.0	
	Roundup WeatherMax	0.75	lb ae/a							
	Roundup WeatherMax	0.75	lb ae/a							
5	Prowl	2	pt/a	100.0	100.0		98.8	100.0	100.0	
	Roundup WeatherMax	1	lb ae/a							
	Roundup WeatherMax	0.75	lb ae/a							
6	Prowl	2	pt/a	100.0	100.0		0.0	100.0	100.0	
	Roundup WeatherMax	1.25	lb ae/a							
	Roundup WeatherMax	0.75	lb ae/a							
7	Roundup WeatherMax	0.38	lb ae/a	100.0	100.0	100.0	100.0	100.0	100.0	99.5
	Dual Magnum	1	pt/a							
	Roundup WeatherMax	1	lb ae/a							
	Roundup WeatherMax	0.75	lb ae/a							
8	Roundup WeatherMax	0.38	lb ae/a	100.0	100.0	100.0	100.0	100.0	100.0	99.5
	Dual Magnum	1	pt/a							
	Roundup WeatherMax	1.25	lb ae/a							
	Roundup WeatherMax	0.75	lb ae/a							
9	non-treated			0.0	0.0		0.0	0.0	0.0	
LSD (P=.05)				1.22	0.00	0.00	12.52	0.00	0.00	2.08
Standard Deviation				0.83	0.00	0.00	8.58	0.00	0.00	1.35
CV				0.94	0.0	0.0	12.68	0.0	0.0	1.36
Bartlett's X2				0.0	0.0	0.0	13.577	0.0	0.0	5.338
P(Bartlett's X2)				.	.	.	0.001*	.	.	0.254

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

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Pest Type	W Weed	W Weed	W Weed			
Pest Code	IPOSS	IPOSS	IPOSS			
Crop Code						
BBCH Scale						
Rating Date	Jul-03-03	Jul-31-03	Aug-22-03			
Rating Data Type	CONTRO	CONTRO	CONTRO			
Rating Unit	%	%	%			
Days After Last Applic.	13	19	41			
Trt-Eval Interval	44 DA-A	72 DA-A	94 DA-A			
Trt No.	Treatment Name	Rate	Unit	15	16	17
1	Roundup WeatherMax	0.38	lb ae/a	92.5	100.0	100.0
	Roundup WeatherMax	0.75	lb ae/a			
	Roundup WeatherMax	0.75	lb ae/a			
2	Roundup WeatherMax	0.38	lb ae/a	90.0	99.0	100.0
	Roundup WeatherMax	1	lb ae/a			
	Roundup WeatherMax	0.75	lb ae/a			
3	Roundup WeatherMax	0.38	lb ae/a	18.8	99.5	100.0
	Roundup WeatherMax	1.25	lb ae/a			
	Roundup WeatherMax	0.75	lb ae/a			
4	Prowl	2	pt/a	67.5	97.5	100.0
	Roundup WeatherMax	0.75	lb ae/a			
	Roundup WeatherMax	0.75	lb ae/a			
5	Prowl	2	pt/a	78.8	99.5	100.0
	Roundup WeatherMax	1	lb ae/a			
	Roundup WeatherMax	0.75	lb ae/a			
6	Prowl	2	pt/a	0.0	97.0	100.0
	Roundup WeatherMax	1.25	lb ae/a			
	Roundup WeatherMax	0.75	lb ae/a			
7	Roundup WeatherMax	0.38	lb ae/a	93.8	98.8	100.0
	Dual Magnum	1	pt/a			
	Roundup WeatherMax	1	lb ae/a			
	Roundup WeatherMax	0.75	lb ae/a			
8	Roundup WeatherMax	0.38	lb ae/a	67.5	100.0	100.0
	Dual Magnum	1	pt/a			
	Roundup WeatherMax	1.25	lb ae/a			
	Roundup WeatherMax	0.75	lb ae/a			
9	non-treated			0.0	0.0	0.0
LSD (P=.05)				24.09	1.96	0.00
Standard Deviation				16.51	1.35	0.00
CV				29.2	1.53	0.0
Bartlett's X2				11.156	6.337	0.0
P(Bartlett's X2)				0.084	0.275	.

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

### Trial Comments

OBJECTIVE: Evaluate potential programs for Roundup Ready Flex cotton.

#### GENERAL COMMENTS:

1) Weed sizes at 7-leaf, 10-leaf, and layby entered in site description are behind PRE's. Following a one-leaf glyphosate, the largest weed size was 4 inches.

#### RESULTS AND DISCUSSION:

#### CROP RESPONSE:

1) Percent cotton stunting was from Cadre carryover and not from treatments. Because of herbicide carryover to cotton, the trial could not be harvested.

#### WEED RESPONSE:

Smallflower morningglory, Sicklepod, Panicum, Pitted morningglory:

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- 1) Systems containing an initial glyphosate application at 1-leaf cotton were relatively clean throughout the season.
- 2) Excellent control was noted with all systems, even when weeds were large at time of application.
- 3) Although Dual in the system did not appear to be beneficial, it did reduce weed sizes by 20 to 40% at time of applications. Thus, a non-timely grower would likely benefit from this program.

**CONCLUSION:**

- 1) Initial application at 1 to 2-leaf cotton will greatly enhance flexibility in the Flex system for late-season control.
- 2) Environment was perfect for good control by glyphosate in this trial. Additionally, cotton grew very aggressively aiding control with plant canopy.
- 3) Dual was of little value in this trial.
- 4) No weeds extremely difficult to control by glyphosate were present.