

University of Georgia

Herbicide tolerance for Roundup Ready cotton

Trial ID: C23-05
 Location: Ponder

Study Dir.: Culpepper
 Investigator: Stanley Culpepper

Reps: 4 Plots: 12 by 25 feet
 Spray vol: 14.8 gal/ac Mix size: 2 liters (min 1.5434)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Grow Stg	Appl Code	Amt to Measure	Plot No. By Rep			
									1	2	3	4
1	No Roundup PHY310R								101	210	306	404
2	No Roundup PHY370WR								102	207	308	405
3	No Roundup PHY470WR								103	209	310	401
4	No Roundup PHY480WR								104	208	307	407
5	No Roundup ST4793R								105	206	309	409
6	WeatherMax	4.5 L		0.75 lb ai/a		1 lf	A	22.52 ml/mx	106	205	301	403
	WeatherMax	4.5 L		0.75 lb ai/a		4 lf	B	22.52 ml/mx				
	WeatherMax	4.5 L		0.75 lb ai/a		4 lf+10d	C	22.52 ml/mx				
	WeatherMax	4.5 L		0.75 lb ai/a		4 lf+20d	D	22.52 ml/mx				
PHY310R												
7	WeatherMax	4.5 L		0.75 lb ai/a		1 lf	A	22.52 ml/mx	107	202	303	406
	WeatherMax	4.5 L		0.75 lb ai/a		4 lf	B	22.52 ml/mx				
	WeatherMax	4.5 L		0.75 lb ai/a		4 lf+10d	C	22.52 ml/mx				
	WeatherMax	4.5 L		0.75 lb ai/a		4 lf+20d	D	22.52 ml/mx				
PHY370WR												
8	WeatherMax	4.5 L		0.75 lb ai/a		1 lf	A	22.52 ml/mx	108	204	305	402
	WeatherMax	4.5 L		0.75 lb ai/a		4 lf	B	22.52 ml/mx				
	WeatherMax	4.5 L		0.75 lb ai/a		4 lf+10d	C	22.52 ml/mx				
	WeatherMax	4.5 L		0.75 lb ai/a		4 lf+20d	D	22.52 ml/mx				
PHY470WR												
9	WeatherMax	4.5 L		0.75 lb ai/a		1 lf	A	22.52 ml/mx	109	203	302	408
	WeatherMax	4.5 L		0.75 lb ai/a		4 lf	B	22.52 ml/mx				
	WeatherMax	4.5 L		0.75 lb ai/a		4 lf+10d	C	22.52 ml/mx				
	WeatherMax	4.5 L		0.75 lb ai/a		4 lf+20d	D	22.52 ml/mx				
PHY480WR												
10	WeatherMax	4.5 L		0.75 lb ai/a		1 lf	A	22.52 ml/mx	110	201	304	410
	WeatherMax	4.5 L		0.75 lb ai/a		4 lf	B	22.52 ml/mx				
	WeatherMax	4.5 L		0.75 lb ai/a		4 lf+10d	C	22.52 ml/mx				
	WeatherMax	4.5 L		0.75 lb ai/a		4 lf+20d	D	22.52 ml/mx				
ST4793R												

Sort Order: Treatment

Product quantities required for listed treatments and applications in one trial:

Amount*	Unit	Treatment Name	Lot Code
563.004	ml	WeatherMax 4.5 L	

* 'Per area' calculations based on spray volume= 14.8 gal/ac, mix size= 2 liters (mix size basis).
 * Product amount calculations increased 25 % for overage adjustment.

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Trial Comments

OBJECTIVE: Compare stand counts, yield, and cotton boll set of several RR cultivars treated and not treated with glyphosate.

Results (main effects were significant and reported):

Stand Count:

1. At 11 DAP, emergence by PHY 470WR was greater than any other cultivar and ST4793R was generally the lowest.
2. By 22 DAP, cotton emergence was similar among all cultivars except ST4793R which had the lowest emergence.

Fiber Samples:

1. 25 bolls were randomly sampled from each plot and weighed.
2. Weights of the 25 boll samples were greater with PHY 310R, 370WR, and ST4793R than with PHY470WR or 480WR.

Field seed yield:

1. Pooled over cultivars, cotton treated with Roundup yielded less than when not treated with Roundup.

Total seed yield (contains plot yield and fiber samples):

1. Pooled over cultivars, cotton treated with Roundup yielded less than when not treated with Roundup.

Plant Mapping:

1. 10 plants per plot have been mapped. Data is not reported.

GENERAL COMMENTS:

1. May 1: Prowl + Cotoran applied PRE over the trial to minimize weed emergence.
2. May 24: Select + Crop Oil applied topically over entire trial area.
3. June 24: Direx + MSMA directed over the entire trial area.

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Weed Code		GOSHI	GOSHI	GOSHI	Seed YLD	GOSHI	GOSHI	Total	Total				
Crop Code		stand ct	stand ct	stand ct	GOSHI	GOSHI	GOSHI	Seed	Seed				
Rating Data Type		#/20ft	#/20ft	#/20ft	weight/plot	fiber sampl	fiber sampl	Yield	Yield				
Rating Unit					lbs	wt/lbs	wt/lbs	lb/plot	lb/A				
Rating Date		May-06-05	May-09-05	May-20-05	Sep-21-05	Sep-23-05	Sep-23-05	Sep-23-05	Sep-23-05				
Trt-Eval Interval		-10 DA-A	-7 DA-A	4 DA-A	128 DA-A								
ARM Action Codes							T3	T1	TY2				
# Subsamples, Dec.							3	3	2				
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate				
		Unit	Unit	Unit	Unit	Unit	Unit	Unit	Unit				
		1	2	3	4	5	6	7	8				
1	No Roundup PHY310R	6	41	53	13	0	0.190	13.045	3788.27				
2	No Roundup PHY370WR	3	36	59	13	0	0.185	12.895	3744.71				
3	No Roundup PHY470WR	6	47	58	13	0	0.164	13.154	3819.85				
4	No Roundup PHY480WR	6	39	58	13	0	0.164	13.339	3873.57				
5	No Roundup ST4793R	6	31	41	11	0	0.181	11.566	3358.84				
6	WeatherMax WeatherMax WeatherMax WeatherMax PHY310R	0.75 lb ai/a	0.75 lb ai/a	0.75 lb ai/a	0.75 lb ai/a	7	42	59	11	0	0.180	11.585	3364.28
7	WeatherMax WeatherMax WeatherMax WeatherMax PHY370WR	0.75 lb ai/a	0.75 lb ai/a	0.75 lb ai/a	0.75 lb ai/a	4	37	51	11	0	0.176	11.441	3322.54
8	WeatherMax WeatherMax WeatherMax WeatherMax PHY470WR	0.75 lb ai/a	0.75 lb ai/a	0.75 lb ai/a	0.75 lb ai/a	9	48	64	12	0	0.166	12.046	3498.23
9	WeatherMax WeatherMax WeatherMax WeatherMax PHY480WR	0.75 lb ai/a	0.75 lb ai/a	0.75 lb ai/a	0.75 lb ai/a	6	34	57	12	0	0.166	12.146	3527.27
10	WeatherMax WeatherMax WeatherMax WeatherMax ST4793R	0.75 lb ai/a	0.75 lb ai/a	0.75 lb ai/a	0.75 lb ai/a	5	28	41	11	0	0.180	11.698	3396.95
LSD (P=.05)		7.9	9.5	8.7	2.1	0.0	0.0089	1.9169	556.694				
Standard Deviation		5.5	6.5	6.0	1.5	0.0	0.0061	1.3211	383.667				
CV		97.15	17.04	11.06	12.25	3.51	3.51	10.75	10.75				

Means followed by same letter do not significantly differ (P=.05, LSD)

Column 6: T3 = [5]+0

Column 7: T1 = [C4]+[C5]

Column 8: TY2 = 290.4*[C7]

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GENERAL TRIAL INFORMATION

Study Director: Stanley Culpepper
Affiliation: Univ. of Georgia
Postal Code: 31794

Title: Ext. Weed Science

Investigator: Stanley Culpepper
Affiliation: Univ. of Georgia
Postal Code: 31794

Title: Ext. Weed Science

TRIAL LOCATION

City: TyTy
State/Prov.: GA
Postal Code: 31794
Country: USA
E-Longitude of LL Corner °: _____ N-Latitude of LL Corner °: _____
Altitude of LL Corner: _____ Unit: _____ Angle y-axis to North °: _____
Directions:

Trial Status: completed
Trial Reliability: excellent
Initiation Date: Apr-29-05
Planned Completion Date: _____

COOPERATOR/LANDOWNER

Cooperator: _____ Country: _____
Org: _____ Phone No: _____
Address 1: _____ Fax No: _____
Address 2: _____
City: _____
State/Prov: _____
Postal Code: _____

Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N
Guidelines: _____ Guideline Description: _____

Objective:

Conclusions:

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	.		

Crop 1: GOSHI cotton Variety: various, see plot plan
Planting Date: Apr-29-05 Planting Method: seeded
Rate: 3.5 per ft Depth: 0.5 in Perennial Age: _____
Row Spacing: 36 inch Spacing Within Row: 3.4 in Seed Bed: bedded
Soil Temperature: 72 F Soil Moisture: moist Emergence Date: May-05-05

SITE AND DESIGN

Plot Width, Unit: 12 FT Plot Length, Unit: 25 FT Reps: 4
Site Type: research station
Tillage Type: conventional Study Design: SPLIT-PLOT

Trial Initiation Comments:

	Previous Crops	Previous Pesticides	Year
1.			

MAINTENANCE

Field Prep./Maintenance:

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No.	Date	Maintenance Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit
1.							

SOIL DESCRIPTION

% Sand: 94 % OM: 1.3 Texture: sand
 % Silt: 2 pH: 5.9 Soil Name: Tifton sandy loam
 % Clay: 4 CEC: _____ Fert. Level: _____

ADDITIONAL MEASURED ELEMENTS

Element	Quantity	Unit

MOISTURE CONDITIONS

No.	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: irrigated

Closest Weather Station: _____ Distance: _____ Unit: __

APPLICATION DESCRIPTION

	A	B	C	D
Application Date:	May-16-05	May-24-05	Jun-04-05	Jun-13-05
Time of Day:	8 am	7 am	12 pm	11 am
Application Method:	broadcast	broadcast	broadcast	broadcast
Application Timing:	1 lf	4 lf	4lf+10d	4lf+20d
Applic. Placement:	overtop	overtop	directed	directed
Air Temp., Unit:	74 F	64 F	82 F	87 F
% Relative Humidity:	54	26	75	54
Wind Velocity, Unit:	2 mph	2 mph	0 mph	2 mph
Dew Presence (Y/N):	y	n	n	n
Water Hardness:				
Soil Temp., Unit:	72 F	70 F	79 F	85 F
Soil Moisture:	irrigated	irrigated	irrigated	wet/irrig
% Cloud Cover:	30	0	100	45

CROP STAGE AT EACH APPLICATION

	A	B	C	D
Crop 1 Code, Stage:	GOSHI 1 lf	GOSHI 4 lf	GOSHI 4lf+10d	GOSHI 4lf+20d
Stage Scale:	1 lf	3-4 leaf	7 leaf	10 leaf
Height, Unit:	1.5 inch	4.5 inch	8 inch	13.5 inch

WEED STAGE AT EACH APPLICATION

	A	B	C	D
Weed 1 Code, Stage:	.			
Stage Scale:	.			
Density, Unit:	.	.		

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APPLICATION EQUIPMENT

	A	B	C	D
Appl. Equipment:	backpack	backpack	backpack	backpack
Operating Pressure:	23	23	18	18
Nozzle Type:	flat fan	flat fan	flat fan	flat fan
Nozzle Size:	11002	11002	11002	11002
Nozzle Spacing, Unit:	18 inch	18 inch	12 inch	12 inch
Nozzles/Row:	2	2	3	3
Band Width, Unit:				
Boom Length, Unit:	4.5 feet	4.5 feet	2 feet	2 feet
Boom Height, Unit:	15 inch	15 inch	12 inch	12 inch
Ground Speed, Unit:	3 mph	3 mph	3 mph	3 mph
Incorporation Equip.:				
Hours to Incorp.:				
Incorp. Depth, Unit:				
Carrier:	water	water	water	water
Spray Volume, Unit:	14.8 GPA	14.8 GPA	14.8 GPA	14.8 GPA
Spray pH:				
Propellant:	CO2	CO2	CO2	CO2
Tank Mix (Y/N):	Y	Y	Y	Y

Trt No	Treatment Application Comment