University of Georgia

Tropical spiderwort response to directed herbicides.

Trial ID: C26-03 Study Dir.: Tim Flanders
Location: Grady Co. (Loc 1) Investigator: Stanley Culpepper

GENERAL TRIAL INFORMATION

Study Director: Tim Flanders Title: Grady Ext. Coordinator

Affiliation: UGA

Postal Code: .

Affiliation: UGA Postal Code: 31794

TRIAL LOCATION

City:CairoTrial Status:completedState/Prov.:GATrial Reliability:excellentPostal Code:31794Initiation Date:Apr-30-03

Country: USA

Conducted Under GLP (Y/N): N Conducted Under GEP (Y/N): N

CROP AND WEED DESCRIPTION

Weed	Code	Common Name		Scientific	Name
1.	COMBE	tropical	spiderwort		

Planting Date: Apr-30-03 Planting Method: conventional

Rate: 2.5 seed/ft Depth: 0.75 in

Row Spacing: 36 inch Seed Bed: bedded

Soil Moisture: irrigated Emergence Date: Apr-04-03

SITE AND DESIGN

Plot Width, Unit: 6 FT Plot Length, Unit: 22 FT Reps: 4

Site Type: on farm

Tillage Type: conventional Study Design: RANDOMIZED COMPLETE BLOCK

SOIL DESCRIPTION

% Sand: 84 **% OM:** 1.97 **Texture:** Loamy Sand

% Silt: 8 pH: 6.4

% Clay: 8

Overall Moisture Conditions: .

APPLICATION DESCRIPTION

	APPLIC			
	A			
Application Date:	Jun-21-03			
Time of Day:	10 am			
Application Method:	broadcast			
Application Timing:	LPD			
Applic. Placement:	directed			
Air Temp., Unit:	84 F			
% Relative Humidity:	57			
Wind Velocity, Unit:	2 mph			
Dew Presence (Y/N):	n			
Soil Temp., Unit:	86 F			
Soil Moisture:	wet			
% Cloud Cover:	25			

CROP STAGE AT EACH APPLICATION

	A		
Crop 1 Code, Stage:	GOSHI LPD		
Stage Scale:	V13		
Height, Unit:	25 inch		

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WEED STAGE AT EACH APPLICATION

	A		
Weed 1 Code, Stage:	COMBE LPD		
Stage Scale:	<5inch		
Density, Unit:	100 ydsq		

APPLICATION EQUIPMENT

	A			
Appl. Equipment:	backpack			
Operating Pressure:	18			
Nozzle Type:	flat fan			
Nozzle Size:	11002			
Nozzle Spacing, Unit:	18 inch			
Nozzles/Row:	3			
Boom Length, Unit:	24 inch			
Boom Height, Unit:	15 inch			
Ground Speed, Unit:	3 mph			
Carrier:	water			
Spray Volume, Unit:	14.8 GPA			
Propellant:	CO2			
Tank Mix (Y/N):	Y			

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Location: Grady Co. (Loc 1) Investigator: Stanley Culpepper

Veed Code	Location: Grady Co. (Loc 1)			Inve	stigator	: Stanley	Culpeppe.	r	
Rating Data Type Rating Unit Rating Unit Rating Unit Rating Unit Rating Unit Rating Unit Rating Date Jun-26-03 Jun-28-03 Jun-28-	Wee	ed Code			COMBE	COMBE	COMBE	COMBE	
Rating Unit Rating Date Dun-26-03 Jul-04-03 Ju	Cro	o Code	GOSHI	GOSHI					
Rating Date Jun-26-03 Jul-04-03 Ju	Rating Data Type		injury	injury	control	control	control	control	
Trt-Eval Interval				percent	percent	percent	percent	percent	percent
Trt Treatment No. Name				Jun-26-03	Jul-04-03	Jun-26-03	Jul-04-03	Jul-28-03	Oct-07-03
Trt Treatment No. Name	Trt-E	Eval Interval		5 DA-A	13 DA-A	5 DA-A	13 DA-A	37 DA-A	108 DA-A
1 Gramoxone Max 0.75 pt/a 0.25 % v/v	Trt	Treatment	Rate						
NIS	No.	Name	Rate Unit						
2 Gramoxone Max 1.5 pt/a 0.25 % v/v	1	Gramoxone Max	0.75 pt/a	43.5	32.5	94.5	86.3	84.8	52.5
NIS		NIS		V					
S Gramoxone Max	2	Gramoxone Max			58.8	94.8	86.5	85.0	56.3
NIS									
Direx	3	Gramoxone Max			65.0	97.5	88.8	81.0	48.8
4 Roundup WeatherMax 21.3 oz/a 0.0 2.3 80.8 78.3 78.0 63.8 5 Roundup WeatherMax Aim 1.5 oz/a 5.0 0.0 95.0 89.5 87.3 68.8 6 Roundup WeatherMax Aylor 1.5 oz/a 0.0 5.5 86.0 86.8 93.0 82.5 7 Roundup WeatherMax Aylor 21.3 oz/a 2.5 0.0 86.5 87.5 88.8 61.3 ET751 1 oz/a 0.8 0.8 82.5 91.8 96.0 87.5 8 Roundup WeatherMax Dual Magnum 0.75 pt/a 0.8 0.8 82.5 91.8 96.0 87.5 9 Roundup WeatherMax Dual Magnum 21.3 oz/a 4.3 5.0 94.0 97.5 94.5 86.3 10 Roundup WeatherMax Dual Magnum 21.3 oz/a 6.3 0.0 94.0 98.5 96.5 92.5 11 Roundup WeatherMax Dual Magnum 0.75 pt/a 0.0 0.0 94.0 98.5 96.5 92.5 12 Non-treated 0.0 <t< td=""><td></td><td>NIS</td><td>0.25 % v/</td><td>v</td><td></td><td></td><td></td><td></td><td></td></t<>		NIS	0.25 % v/	v					
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Aim 1.5 oz/a 0.0 5.5 86.0 86.8 93.0 82.5 6 Roundup WeatherMax Valor 1 oz/a 2.5 0.0 86.5 87.5 88.8 61.3 7 Roundup WeatherMax ET751 1 oz/a 0.8 0.8 82.5 91.8 96.0 87.5 8 Roundup WeatherMax Dual Magnum 0.75 pt/a 0.8 0.8 82.5 91.8 96.0 87.5 9 Roundup WeatherMax Dual Magnum 0.75 pt/a 0.8 0.8 94.0 97.5 94.5 86.3 10 Roundup WeatherMax Dual Magnum 0.75 pt/a 0.0 94.0 98.5 96.5 92.5 11 Roundup WeatherMax Dual Magnum 0.75 pt/a 0.0 94.0 98.5 96.5 92.5 11 Roundup WeatherMax Dual Magnum 0.75 pt/a 0.0 94.0 98.5 96.5 92.5 12 Non-treated 0.0 0.0 0.0 0.0 0.0 0.0 0.0 12 Non-treated 0.0 0.0 0.0 0.0 0.0	4	Roundup WeatherMax	21.3 oz/a		2.3				
6 Roundup WeatherMax 21.3 oz/a 0.0 5.5 86.0 86.8 93.0 82.5 7 Roundup WeatherMax 21.3 oz/a 2.5 0.0 86.5 87.5 88.8 61.3 ET751 1 oz/a 0.8 0.8 82.5 91.8 96.0 87.5 8 Roundup WeatherMax 21.3 oz/a 0.8 0.8 82.5 91.8 96.0 87.5 9 Roundup WeatherMax 21.3 oz/a 4.3 5.0 94.0 97.5 94.5 86.3 Aim 1.5 oz/a 0.0 94.0 97.5 94.5 86.3 Dual Magnum 0.75 pt/a 0.0 94.0 98.5 96.5 92.5 11 Roundup WeatherMax 21.3 oz/a 0.0 94.0 98.5 96.5 92.5 11 Roundup WeatherMax 21.3 oz/a 3.3 2.5 83.5 94.3 93.8 85.0 ET751 1 oz/a 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	5	Roundup WeatherMax		5.0	0.0	95.0	89.5	87.3	68.8
Valor 1 oz/a 21.3 oz/a 2.5 0.0 86.5 87.5 88.8 61.3 ET751 1 oz/a 0.8 0.8 0.8 82.5 91.8 96.0 87.5 8 Roundup WeatherMax Dual Magnum 0.75 pt/a 0.8 0.8 82.5 91.8 96.0 87.5 9 Roundup WeatherMax Aim Dual Magnum 1.5 oz/a Dual Magnum 0.75 pt/a 0.0 94.0 97.5 94.5 86.3 10 Roundup WeatherMax Aim Dual Magnum 1 oz/a Dual Magnum 0.75 pt/a 0.0 94.0 98.5 96.5 92.5 11 Roundup WeatherMax Einz Dual Magnum 21.3 oz/a Dual Magnum 3.3 2.5 83.5 94.3 93.8 85.0 12 Non-treated 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 12 Non-treated 0.0 0.0 0.0 87.8 95.3 91.8 88.3 LSD (P=.05) 14.02 15.74 5.80 6.09 4.34 7.28 Standard Deviatio		Aim							
7 Roundup WeatherMax 21.3 oz/a 2.5 0.0 86.5 87.5 88.8 61.3 8 Roundup WeatherMax 21.3 oz/a 0.8 0.8 82.5 91.8 96.0 87.5 9 Roundup WeatherMax 21.3 oz/a 4.3 5.0 94.0 97.5 94.5 86.3 10 Roundup WeatherMax 21.3 oz/a 6.3 0.0 94.0 98.5 96.5 92.5 10 Roundup WeatherMax 21.3 oz/a 6.3 0.0 94.0 98.5 96.5 92.5 11 Roundup WeatherMax 21.3 oz/a 3.3 2.5 83.5 94.3 93.8 85.0 ET751 1 oz/a 1 oz/a 1 oz/a 94.3 93.8 85.0 Dual Magnum 0.75 pt/a 0.0	6	Roundup WeatherMax	21.3 oz/a	0.0	5.5	86.0	86.8	93.0	82.5
ET751 1 oz/a 0.8 0.8 0.8 82.5 91.8 96.0 87.5 9 Roundup WeatherMax Dual Magnum Dual Magn									
8 Roundup WeatherMax 21.3 oz/a Dual Magnum 0.8 0.8 0.8 0.8 0.8 0.8 0.0 0.0 0.0 0.0	7	Roundup WeatherMax	21.3 oz/a	2.5	0.0	86.5	87.5	8.88	61.3
Dual Magnum 0.75 pt/a 4.3 pt/a 5.0 pt/a 94.0 pt/a 97.5 pt/a 94.5 pt/a 86.3 pt/a 96.5 pt/a <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>									
9 Roundup WeatherMax 21.3 oz/a Aim 4.3 5.0 94.0 97.5 94.5 86.3 Dual Magnum 0.75 pt/a 0.0 94.0 98.5 96.5 92.5 Valor Valor Dual Magnum 1 oz/a Dual Magnum 0.75 pt/a 3.3 2.5 83.5 94.3 93.8 85.0 ET751 Dual Magnum 0.75 pt/a 0.0 0.0 0.0 0.0 0.0 0.0 0.0 12 Non-treated 0.0 0.0 87.8 95.3 91.8 88.3 LSD (P=.05) 14.02 15.74 5.80 6.09 4.34 7.28 Standard Deviation 9.81 11.02 4.06 4.26 3.03 5.10 CV 70.45 83.13 4.9 5.12 3.69 7.59 Bartlett's X2 28.649 28.532 15.46 35.588 16.935 27.69	8	Roundup WeatherMax	21.3 oz/a	0.8	0.8	82.5	91.8	96.0	87.5
Aim Dual Magnum 1.5 oz/a Dual Magnum 0.75 pt/a 10 Roundup WeatherMax 21.3 oz/a Dual Magnum 6.3 o.0		Dual Magnum	0.75 pt/a						
Dual Magnum 0.75 pt/a 0.75 pt/a 0.00 pt/a 94.0 pt/a 98.5 pt/a 96.5 pt/a 92.5 pt/a 10 Roundup WeatherMax Valor Dual Magnum 0.75 pt/a 3.3 pt/a 2.5 pt/a 83.5 pt/a 94.3 pt/a 93.8 pt/a 85.0 pt/a 11 Roundup WeatherMax ET751	9	Roundup WeatherMax	21.3 oz/a	4.3	5.0	94.0	97.5	94.5	86.3
10 Roundup WeatherMax 21.3 oz/a Valor 6.3 0.0 94.0 98.5 96.5 92.5 11 Roundup WeatherMax ET751 21.3 oz/a Dual Magnum 3.3 2.5 83.5 94.3 93.8 85.0 12 Non-treated 0.0 0.0 0.0 0.0 0.0 0.0 0.0 13 2,4-D 1.25 pt/a 0.0 0.0 87.8 95.3 91.8 88.3 LSD (P=.05) 14.02 15.74 5.80 6.09 4.34 7.28 Standard Deviation 9.81 11.02 4.06 4.26 3.03 5.10 CV 70.45 83.13 4.9 5.12 3.69 7.59 Bartlett's X2 28.649 28.532 15.46 35.588 16.935 27.69		Aim	1.5 oz/a						
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Dual Magnum 0.75 pt/a 3.3 pt/a 3.3 pt/a 3.3 pt/a 3.5 pt/a 94.3 pt/a 93.8 pt/a 85.0 pt/a 11 Roundup WeatherMax ET751 pt/a pual Magnum 1 oz/a pual Magnum 0.75 pt/a 0.0 pt/a	10	Roundup WeatherMax	21.3 oz/a	6.3	0.0	94.0	98.5	96.5	92.5
11 Roundup WeatherMax 21.3 oz/a ET751 3.3 2.5 83.5 94.3 93.8 85.0 Dual Magnum 0.75 pt/a 0.0		Valor	1 oz/a						
ET751 1 oz/a Dual Magnum 0.75 pt/a 0.0 <		Dual Magnum	0.75 pt/a						
Dual Magnum 0.75 pt/a 0.0	11	Roundup WeatherMax	21.3 oz/a	3.3	2.5	83.5	94.3	93.8	85.0
12 Non-treated 0.0 0.0 0.0 0.0 0.0 0.0 0.0 13 2,4-D 1.25 pt/a 0.0 0.0 87.8 95.3 91.8 88.3 LSD (P=.05) 14.02 15.74 5.80 6.09 4.34 7.28 Standard Deviation 9.81 11.02 4.06 4.26 3.03 5.10 CV 70.45 83.13 4.9 5.12 3.69 7.59 Bartlett's X2 28.649 28.532 15.46 35.588 16.935 27.69		ET751	1 oz/a						
13 2,4-D 1.25 pt/a 0.0 0.0 87.8 95.3 91.8 88.3 LSD (P=.05) 14.02 15.74 5.80 6.09 4.34 7.28 Standard Deviation 9.81 11.02 4.06 4.26 3.03 5.10 CV 70.45 83.13 4.9 5.12 3.69 7.59 Bartlett's X2 28.649 28.532 15.46 35.588 16.935 27.69			0.75 pt/a						
LSD (P=.05) 14.02 15.74 5.80 6.09 4.34 7.28 Standard Deviation 9.81 11.02 4.06 4.26 3.03 5.10 CV 70.45 83.13 4.9 5.12 3.69 7.59 Bartlett's X2 28.649 28.532 15.46 35.588 16.935 27.69									
Standard Deviation 9.81 11.02 4.06 4.26 3.03 5.10 CV 70.45 83.13 4.9 5.12 3.69 7.59 Bartlett's X2 28.649 28.532 15.46 35.588 16.935 27.69	13	2,4-D	1.25 pt/a	0.0	0.0	87.8	95.3	91.8	88.3
CV 70.45 83.13 4.9 5.12 3.69 7.59 Bartlett's X2 28.649 28.532 15.46 35.588 16.935 27.69						5.80			
Bartlett's X2 28.649 28.532 15.46 35.588 16.935 27.69									
				70.45	83.13	4.9	5.12	3.69	7.59
P(Bartlett's X2)	Bartlett's X2			28.649				16.935	27.69
	P(Bartlett's X2)			0.001*	0.001*	0.116	0.001*	0.11	0.004*

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

Trial Comments

OBJECTIVE: Evaluate several potential hooded or directed applications in cotton for control of spiderwort. Treatments were applied as directed applications as weed control was the focus of the study. Roundup was applied overtop at the 4to 5 leaf stage of growth.

RESULTS:

Cotton Injury:

- 1) Gramoxone treatments caused severe injury as expected.
- 2) Injury from other treatments was not significant.

Tropical spiderwort control:

- 1) Greater than 90% control was noted at 5 DAT with Gramoxone and Aim treatments as well as Roundup plus Valor plus Dual Magnum.
- 2) By 2 WAT, greater than 90% control was noted with Roundup plus Aim, 2,4-D, and with all treatments including Dual Magnum.
- 3) By 5 WAT, greater than 90% control was noted with Roundup plus Valor, 2,4-D, and any treatment containing Dual Magnum.
- 4) At harvest, greatest control was noted in plots treated with Dual Mangum. Glyphosate plus Valor was similarly effective.

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Conclusions:

1) Good to excellent control of emerged plants was noted with Gramoxone, Aim, Valor, and 2,4-D treatments. Late-season control was poor with all treatments that did not provide residual control. Not sure whycontrol in the 2,4-D plot was so effective at seasons end....may have been an indirect effect making the cotton grow at least 2 foot larger than other plots due to boll loss.