

University of Georgia

Cotton and weed response to layby herbicide treatments.

Trial ID: C8-06
 Location: Attapulgus

Study Dir.: Stanley Culpepper
 Investigator: Stanley Culpepper

Reps: 3 Plots: 9 by 25 feet
 Spray vol: 14.8 gal/ac Mix size: 1.5 liters (min .86814)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate	Grow Unit	Appl Stg	Appl Code	Amt Product to Measure	Plot No. By Rep		
										1	2	3
1	Roundup WeatherMax	4.5	L		0.93	LB A/A	2 lf	A	20.94 ml/mx	101	202	309
	Roundup WeatherMax	4.5	L		0.93	LB A/A	6 lf	B	20.94 ml/mx			
2	Roundup WeatherMax	4.5	L		0.93	LB A/A	2 lf	A	20.94 ml/mx	102	207	302
	Roundup WeatherMax	4.5	L		0.93	LB A/A	6 lf	B	20.94 ml/mx			
	Layby Pro	4	L		1	LB A/A	layby	C	25.34 ml/mx			
	COC		L		1	% V/V	layby	C	15.0 ml/mx			
3	Roundup WeatherMax	4.5	L		0.93	LB A/A	2 lf	A	20.94 ml/mx	103	208	303
	Roundup WeatherMax	4.5	L		0.93	LB A/A	6 lf	B	20.94 ml/mx			
	Direx	4	L		1	LB A/A	layby	C	25.34 ml/mx			
	COC		L		1	% V/V	layby	C	15.0 ml/mx			
4	Roundup WeatherMax	4.5	L		0.93	LB A/A	2 lf	A	20.94 ml/mx	104	203	305
	Roundup WeatherMax	4.5	L		0.93	LB A/A	6 lf	B	20.94 ml/mx			
	Layby Pro	4	L		1	LB A/A	layby	C	25.34 ml/mx			
	COC		L		1	% V/V	layby	C	15.0 ml/mx			
	MSMA	6	L		1.5	LB A/A	layby	C	25.34 ml/mx			
5	Roundup WeatherMax	4.5	L		0.93	LB A/A	2 lf	A	20.94 ml/mx	105	204	307
	Roundup WeatherMax	4.5	L		0.93	LB A/A	6 lf	B	20.94 ml/mx			
	Direx	4	L		1	LB A/A	layby	C	25.34 ml/mx			
	COC		L		1	% V/V	layby	C	15.0 ml/mx			
	MSMA	6	L		1.5	LB A/A	layby	C	25.34 ml/mx			
6	Roundup WeatherMax	4.5	L		0.93	LB A/A	2 lf	A	20.94 ml/mx	106	210	306
	Roundup WeatherMax	4.5	L		0.93	LB A/A	6 lf	B	20.94 ml/mx			
	Roundup WeatherMax	4.5	L		0.93	LB A/A	layby	C	20.94 ml/mx			
	Layby Pro	4	L		1	LB A/A	layby	C	25.34 ml/mx			
7	Roundup WeatherMax	4.5	L		0.93	LB A/A	2 lf	A	20.94 ml/mx	107	205	304
	Roundup WeatherMax	4.5	L		0.93	LB A/A	6 lf	B	20.94 ml/mx			
	Roundup WeatherMax	4.5	L		0.93	LB A/A	layby	C	20.94 ml/mx			
	Direx	4	L		1	LB A/A	layby	C	25.34 ml/mx			
8	Roundup WeatherMax	4.5	L		0.93	LB A/A	2 lf	A	20.94 ml/mx	108	206	308
	Roundup WeatherMax	4.5	L		0.93	LB A/A	6 lf	B	20.94 ml/mx			
	Roundup WeatherMax	4.5	L		0.93	LB A/A	layby	C	20.94 ml/mx			
	Direx	4	L		0.5	LB A/A	layby	C	12.67 ml/mx			
9	Roundup WeatherMax	4.5	L		0.93	LB A/A	2 lf	A	20.94 ml/mx	109	211	310
	Roundup WeatherMax	4.5	L		0.93	LB A/A	6 lf	B	20.94 ml/mx			
	Roundup WeatherMax	4.5	L		0.93	LB A/A	layby	C	20.94 ml/mx			
	Layby Pro	4	L		0.5	LB A/A	layby	C	12.67 ml/mx			
10	Roundup WeatherMax	4.5	L		0.93	LB A/A	2 lf	A	20.94 ml/mx	110	201	311
	Roundup WeatherMax	4.5	L		0.93	LB A/A	6 lf	B	20.94 ml/mx			
	Roundup WeatherMax	4.5	L		0.93	LB A/A	layby	C	20.94 ml/mx			
	Valor	51	WDG	0.032	LB A/A	layby	C	0.762 g/mx				
11	Non-treated								111	209	301	
12	Roundup WeatherMax	4.5	L		0.93	LB A/A	2 lf	A	20.94 ml/mx	112	212	312
	Roundup WeatherMax	4.5	L		0.93	LB A/A	6 lf	B	20.94 ml/mx			

Sort Order: Treatment

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

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
706.851	ml	Roundup WeatherMax	4.5	L	

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Reps: 3 Plots: 9 by 25 feet
 Spray vol: 14.8 gal/ac Mix size: 1.5 liters (min .86814)

Trt No.	Tr> N>	Form Conc	Form Unit	Form Type	Rate	Plot No. By Rep
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Product quantities required for listed treatments and applications in one trial:

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
110.841	ml	Layby Pro	4	L	
74.992	ml	COC		L	
110.841	ml	Direx	4	L	
63.338	ml	MSMA	6	L	
0.953	g	Valor	51	WDG	

- * 'Per area' calculations based on spray volume= 14.8 gal/ac, mix size= 1.5 liters (mix size basis).
- * Product amount calculations increased 25 % for overage adjustment.
- * 'Per volume' calculations use spray volume= 14.8 gal/ac, mix size= 1.5 liters.

Trial Comments

OBJECTIVE: Compare layby herbicide options for cotton and weed response.

VISUAL COTTON RESPONSE:

1. Stem necrosis or leaf chlorosis was less than 9% throughout the season and was insignificant.

WEED RESPONSE:

1. All systems including layby applications excellent late-season control. Applications were timely.
2. Sequential glyphosate applications at 2 and 6 leaf without a layby application provided only fair late-season control.

SEED COTTON YIELD:

1. Yields were very uniform.
2. With excellent early and mid-season control with all herbicide programs, seed cotton yields were not really different among herbicide treated plots.

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Cotton and weed response to layby herbicide treatments.

Trial ID: C8-06

Study Dir.: Stanley Culpepper

Location: Attapulgus

Investigator: Stanley Culpepper

Weed Code			GOSHI	GOSHI	PANTE	PANTE	ACHNI	ACHNI	DEDTO	DEDTO	
Crop Code			injury	injury	control	control	control	control	control	control	
Rating Data Type			percent	percent	percent	percent	percent	percent	percent	percent	
Rating Unit											
Rating Date			Jul-10-06	Aug-02-06	Jul-10-06	Aug-02-06	Jul-10-06	Aug-02-06	Jul-10-06	Aug-02-06	
Trt-Eval Interval			40 DA-A	63 DA-A	40 DA-A	63 DA-A	40 DA-A	63 DA-A	40 DA-A	63 DA-A	
ARM Action Codes											
# Subsamples, Dec.											
Trt No.	Treatment Name	Rate	Unit								
				1	2	3	4	5	6	7	8
1	Roundup WeatherMax	0.93	LB A/A	0 c	0 a	87 c	96 a	83 c	94 b	83 c	92 b
	Roundup WeatherMax	0.93	LB A/A								
2	Roundup WeatherMax	0.93	LB A/A	9 a	0 a	98 a	97 a	97 a	99 a	98 a	99 a
	Roundup WeatherMax	0.93	LB A/A								
	Layby Pro	1	LB A/A								
	COC	1	% V/V								
3	Roundup WeatherMax	0.93	LB A/A	8 ab	0 a	99 a	98 a	98 a	99 a	99 a	99 a
	Roundup WeatherMax	0.93	LB A/A								
	Direx	1	LB A/A								
	COC	1	% V/V								
4	Roundup WeatherMax	0.93	LB A/A	7 ab	0 a	99 a	99 a	99 a	99 a	99 a	99 a
	Roundup WeatherMax	0.93	LB A/A								
	Layby Pro	1	LB A/A								
	COC	1	% V/V								
	MSMA	1.5	LB A/A								
5	Roundup WeatherMax	0.93	LB A/A	5 ab	0 a	99 a	99 a	98 a	99 a	98 a	99 a
	Roundup WeatherMax	0.93	LB A/A								
	Direx	1	LB A/A								
	COC	1	% V/V								
	MSMA	1.5	LB A/A								
6	Roundup WeatherMax	0.93	LB A/A	7 ab	0 a	99 a	99 a	99 a	99 a	99 a	99 a
	Roundup WeatherMax	0.93	LB A/A								
	Roundup WeatherMax	0.93	LB A/A								
	Layby Pro	1	LB A/A								
7	Roundup WeatherMax	0.93	LB A/A	5 ab	0 a	99 a	99 a	98 a	99 a	99 a	99 a
	Roundup WeatherMax	0.93	LB A/A								
	Roundup WeatherMax	0.93	LB A/A								
	Direx	1	LB A/A								
8	Roundup WeatherMax	0.93	LB A/A	7 ab	0 a	99 a	99 a	98 a	99 a	99 a	99 a
	Roundup WeatherMax	0.93	LB A/A								
	Roundup WeatherMax	0.93	LB A/A								
	Direx	0.5	LB A/A								
9	Roundup WeatherMax	0.93	LB A/A	4 abc	0 a	99 a	99 a	97 a	99 a	99 a	94 ab
	Roundup WeatherMax	0.93	LB A/A								
	Roundup WeatherMax	0.93	LB A/A								
	Layby Pro	0.5	LB A/A								
10	Roundup WeatherMax	0.93	LB A/A	4 bc	0 a	99 a	99 a	99 a	99 a	99 a	99 a
	Roundup WeatherMax	0.93	LB A/A								
	Roundup WeatherMax	0.93	LB A/A								
	Valor	0.032	LB A/A								
11	Non-treated			0 c	0 a	0 d	0 c	0 d	0 c	0 d	0 c

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Weed Code	GOSHI	GOSHI	PANTE	PANTE	ACHNI	ACHNI	DEDTO	DEDTO		
Crop Code	injury	injury	control	control	control	control	control	control		
Rating Data Type	percent	percent	percent	percent	percent	percent	percent	percent		
Rating Unit										
Rating Date	Jul-10-06	Aug-02-06	Jul-10-06	Aug-02-06	Jul-10-06	Aug-02-06	Jul-10-06	Aug-02-06		
Trt-Eval Interval	40 DA-A	63 DA-A	40 DA-A	63 DA-A	40 DA-A	63 DA-A	40 DA-A	63 DA-A		
ARM Action Codes										
# Subsamples, Dec.										
Trt Treatment										
No. Name	Rate	Unit	1	2	3	4	5	6	7	8
12 Roundup WeatherMax	0.93	LB A/A	0 c	0 a	89 b	91 b	89 b	94 b	89 b	90 b
Roundup WeatherMax	0.93	LB A/A								
LSD (P=.05)	4.3	0.0	1.6	3.3	4.5	2.7	3.8	4.1		
Standard Deviation	2.5	0.0	0.9	1.9	2.6	1.6	2.3	2.4		
CV	54.88	0.0	1.05	2.17	3.0	1.78	2.55	2.74		
Bartlett's X2	7.078	0.0	2.319	25.137	16.001	6.206	16.521	1.789		
P(Bartlett's X2)	0.421	.	0.314	0.003*	0.025*	0.013*	0.002*	0.181		

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

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Weed Code	IAQTA	IAQTA	RCHSC	RCHSC	Seed Yld	Seed Yld		
Crop Code					GOSHI	GOSHI		
Rating Data Type	control	control	control	control	plot wt	YIELD		
Rating Unit	percent	percent	percent	percent	lb	LB/A		
Rating Date	Jul-10-06	Aug-02-06	Jul-10-06	Aug-02-06	Oct-20-06	Oct-20-06		
Trt-Eval Interval	40 DA-A	63 DA-A	40 DA-A	63 DA-A	142 DA-A	142 DA-A		
ARM Action Codes						TY1		
# Subsamples, Dec.						1		
Trt Treatment								
No. Name	Rate	Unit	9	10	11	12	13	14
1 Roundup WeatherMax	0.93	LB A/A	83 b	86 b	90 c	90 b	14 a	4040.4 a
Roundup WeatherMax	0.93	LB A/A						
2 Roundup WeatherMax	0.93	LB A/A	96 a	99 a	98 ab	99 a	14 a	3968.8 a
Roundup WeatherMax	0.93	LB A/A						
Layby Pro	1	LB A/A						
COC	1	% V/V						
3 Roundup WeatherMax	0.93	LB A/A	98 a	99 a	99 a	99 a	14 a	3984.3 a
Roundup WeatherMax	0.93	LB A/A						
Direx	1	LB A/A						
COC	1	% V/V						
4 Roundup WeatherMax	0.93	LB A/A	98 a	99 a	97 b	98 a	16 a	4547.7 a
Roundup WeatherMax	0.93	LB A/A						
Layby Pro	1	LB A/A						
COC	1	% V/V						
MSMA	1.5	LB A/A						
5 Roundup WeatherMax	0.93	LB A/A	98 a	99 a	98 ab	99 a	16 a	4660.0 a
Roundup WeatherMax	0.93	LB A/A						
Direx	1	LB A/A						
COC	1	% V/V						
MSMA	1.5	LB A/A						
6 Roundup WeatherMax	0.93	LB A/A	98 a	98 a	99 a	99 a	15 a	4375.4 a
Roundup WeatherMax	0.93	LB A/A						
Roundup WeatherMax	0.93	LB A/A						
Layby Pro	1	LB A/A						
7 Roundup WeatherMax	0.93	LB A/A	98 a	99 a	99 a	99 a	14 a	4092.7 a
Roundup WeatherMax	0.93	LB A/A						
Roundup WeatherMax	0.93	LB A/A						
Direx	1	LB A/A						
8 Roundup WeatherMax	0.93	LB A/A	97 a	99 a	99 ab	99 a	14 a	4063.7 a
Roundup WeatherMax	0.93	LB A/A						
Roundup WeatherMax	0.93	LB A/A						
Direx	0.5	LB A/A						
9 Roundup WeatherMax	0.93	LB A/A	98 a	99 a	97 ab	98 a	14 a	4108.2 a
Roundup WeatherMax	0.93	LB A/A						
Roundup WeatherMax	0.93	LB A/A						
Layby Pro	0.5	LB A/A						
10 Roundup WeatherMax	0.93	LB A/A	99 a	99 a	99 a	99 a	15 a	4437.3 a
Roundup WeatherMax	0.93	LB A/A						
Roundup WeatherMax	0.93	LB A/A						
Valor	0.032	LB A/A						
11 Non-treated			0 c	0 c	0 d	0 c	3 b	900.2 b
12 Roundup WeatherMax	0.93	LB A/A	85 b	88 b	92 c	90 b	15 a	4299.9 a
Roundup WeatherMax	0.93	LB A/A						
LSD (P=.05)			4.9	2.8	1.8	2.2	2.4	682.46
Standard Deviation			2.9	1.7	1.1	1.3	1.4	403.01
CV			3.29	1.89	1.21	1.47	10.19	10.19
Bartlett's X2			16.178	11.207	3.261	7.665	6.998	6.998
P(Bartlett's X2)			0.063	0.024*	0.66	0.053	0.799	0.799

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Weed Code	IAQTA	IAQTA	RCHSC	RCHSC	Seed Yld	Seed Yld
Crop Code					GOSHI	GOSHI
Rating Data Type	control	control	control	control	plot wt	YIELD
Rating Unit	percent	percent	percent	percent	lb	LB/A
Rating Date	Jul-10-06	Aug-02-06	Jul-10-06	Aug-02-06	Oct-20-06	Oct-20-06
Trt-Eval Interval	40 DA-A	63 DA-A	40 DA-A	63 DA-A	142 DA-A	142 DA-A
ARM Action Codes						TY1
# Subsamples, Dec.						1

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

Column 14: TY1 = 290.4*[13]

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	Previous Crops	Previous Pesticides	Year
1.			

MAINTENANCE

Field Prep./Maintenance:

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

SOIL DESCRIPTION

% Sand: 84	% OM: 1.3	Texture: loamy sand
% Silt: 8	pH: 6.0	Soil Name: _____
% Clay: 8	CEC: _____	Fert. Level: _____

ADDITIONAL MEASURED ELEMENTS

Element	Quantity	Unit

MOISTURE CONDITIONS

	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: overhead irrigation

Closest Weather Station: _____ Distance: _____ Unit: ____

APPLICATION DESCRIPTION

	A	B	C
Application Date:	May-31-06	Jun-15-06	Jul-03-06
Time of Day:	2 pm	4 pm	9 am
Application Method:	broadcast	broadcast	broadcast
Application Timing:	2 leaf	6 leaf	13 leaf
Applic. Placement:	overtop	overtop	directed
Air Temp., Unit:	95 F	94 F	81 F
% Relative Humidity:	44	46	72
Wind Velocity, Unit:	3 mph	4 mph	0 mph
Dew Presence (Y/N):	n	n	y
Water Hardness:			
Soil Temp., Unit:	98 F	101 F	84 F
Soil Moisture:	moist	fair	moist
% Cloud Cover:	0	0	0

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	GOSHI 2 leaf	GOSHI 6 leaf	GOSHI 13 leaf
Stage Scale:	1-2 leaf	6-7 leaf	13 leaf
Height, Unit:	2 inch	10 inch	22 inch

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WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	PANTE 2 leaf	PANTE 6 leaf	PANTE 13 leaf
Stage Scale:	< 1 inch	< 3 inch	< 5 inch
Density, Unit:	8 ydsq	8 ydsq	4 ydsq
Weed 2 Code, Stage:	ACHNI 2 leaf	ACHNI 6 leaf	ACHNI 13 leaf
Stage Scale:	< 1 inch	< 3 inch	< 4 inch
Density, Unit:	2 ydsq	2 ydsq	2 ydsq
Weed 3 Code, Stage:	DEDTO 2 leaf	DEDTO 6 leaf	DEDTO 13 leaf
Stage Scale:	< 1 inch	< 3 inch	< 4 inch
Density, Unit:	2 ydsq	2 ydsq	4 ydsq
Weed 4 Code, Stage:	IAQTA 2 leaf	IAQTA 6 leaf	IAQTA 13 leaf
Stage Scale:	< 1 inch	< 3 inch	< 4 inch
Density, Unit:	3 ydsq	3 ydsq	2 ydsq
Weed 5 Code, Stage:	RCHSC 2 leaf	RCHSC 6 leaf	RCHSC 13 leaf
Stage Scale:	< 1 inch	< 3 inch	< 3 inch
Density, Unit:	3 ydsq	3 ydsq	2 ydsq

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	backpack	backpack	backpack
Operating Pressure:	23	23	18
Nozzle Type:	flat fan	flat fan	flat fan
Nozzle Size:	11002	11002	11002
Nozzle Spacing, Unit:	18 inch	18 inch	12 inch
Nozzles/Row:	2	2	3
Band Width, Unit:			
Boom Length, Unit:	4.5 feet	4.5 feet	2 feet
Boom Height, Unit:	15 inch	15 inch	10 inch
Ground Speed, Unit:	3 mph	3 mph	3 mph
Incorporation Equip.:			
Hours to Incorp.:			
Incorp. Depth, Unit:			
Carrier:	water	water	water
Spray Volume, Unit:	14.8 GPA	14.8 GPA	14.8 GPA
Spray pH:			
Propellant:	CO2	CO2	CO2
Tank Mix (Y/N):	Y	Y	Y

Trt No	Treatment Application Comment