

University of Georgia

Comparison of layby herbicide options in RR cotton.

Trial ID: C41-05
Location: Moultrie

Study Dir.: Stanley Culpepper
Investigator: Stanley Culpepper

Reps: 4 Plots: 9 by 25 feet
Spray vol: 14.8 gal/ac Mix size: 1.5 liters (min 1.1575)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	Amt Product to Measure	Plot No. By Rep			
									1	2	3	4
1	Layby Pro	4	L	1	lb ai/a	Layby	A	25.34 ml/mx	101	204	311	411
	COC		L	1	% v/v	Layby	A	15.0 ml/mx				
2	Layby Pro	4	L	1	lb ai/a	Layby	A	25.34 ml/mx	102	205	304	404
	WeatherMax	4.5	L	0.75	lb ai/a	Layby	A	16.89 ml/mx				
3	Direx	4	L	1	lb ai/a	Layby	A	25.34 ml/mx	103	211	310	410
	WeatherMax	4.5	L	0.75	lb ai/a	Layby	A	16.89 ml/mx				
4	Layby Pro	4	L	1	lb ai/a	Layby	A	25.34 ml/mx	104	203	309	409
	COC		L	1	% v/v	Layby	A	15.0 ml/mx				
	MSMA	6	L	1.5	lb ai/a	Layby	A	25.34 ml/mx				
5	Layby Pro	4	L	1	lb ai/a	Layby	A	25.34 ml/mx	105	212	303	403
	Valor	51	WDG	0.0156	lb ai/a	Layby	A	0.3715 g/mx				
	MSMA	6	L	1.5	lb ai/a	Layby	A	25.34 ml/mx				
6	Direx	4	L	1	lb ai/a	Layby	A	25.34 ml/mx	106	208	307	407
	COC		L	1	% v/v	Layby	A	15.0 ml/mx				
	MSMA	6	L	1.5	lb ai/a	Layby	A	25.34 ml/mx				
7	WeatherMax	4.5	L	0.75	lb ai/a	Layby	A	16.89 ml/mx	107	213	301	401
8	WeatherMax	4.5	L	0.75	lb ai/a	Layby	A	16.89 ml/mx	108	201	305	405
	Valor	51	WDG	0.031	lb ai/a	Layby	A	0.7382 g/mx				
9	WeatherMax	4.5	L	0.75	lb ai/a	Layby	A	16.89 ml/mx	109	202	313	413
	Valor	51	WDG	0.0625	lb ai/a	Layby	A	1.488 g/mx				
10	Direx	4	L	0.5	lb ai/a	Layby	A	12.67 ml/mx	110	206	302	402
	WeatherMax	4.5	L	0.75	lb ai/a	Layby	A	16.89 ml/mx				
11	No Layby								111	209	306	406
12	Suprend	80	DG	0.8	lb ai/a	Layby	A	12.14 g/mx	112	210	308	408
	COC		L	1	% v/v	Layby	A	15.0 ml/mx				
13	Direx	4	L	1	lb ai/a	Layby	A	25.34 ml/mx	113	207	312	412
	COC		L	1	% v/v	Layby	A	15.0 ml/mx				

Sort Order: Treatment

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

Amount*	Unit	Treatment Name	Lot Code
126.676	ml	Layby Pro 4 L	
93.740	ml	COC L	
126.676	ml	WeatherMax 4.5 L	
110.841	ml	Direx 4 L	
95.007	ml	MSMA 6 L	
3.247	g	Valor 51 WDG	
15.181	g	Suprend 80 DG	

* '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.

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Trial Comments

OBJECTIVE: Compare several layby herbicides for the control of morningglory and grasses.

Cotton Response:

1. Injury was less than 12% by all treatments at 6 DAT.
2. Injury was a visual measure of stem necrosis.
3. No injury was detected 3 WAT.

WEED RESPONSE:

Large crabgrass:

1. At 3 WAT, all WeaterMax mixtures provided 89 to 93% control.
2. Non-glyphosate mixtures were less effective than glyphosate mixtures.
3. Direx plus MSMA mixtures provided control similar to that of Layby Pro plus MSMA.

Pitted morningglory:

1. Weathermax applied alone (86% control) was the only treatment providing less than 96% control at 3 WAT.

Doveweed:

1. Doveweed was extremely small at time of treatment, thus control by all systems was greater than typical.
2. Direx, Suprend, or Valor mixtures tended to be more effective than glyphosate only mixtures. This was likely a response to residual weed control.

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Weed Code		cotton	cotton	DIGSA	DIGSA	IPOLA	IPOLA	MUNDU	MUNDU		
Crop Code		cotton	cotton	cotton	cotton	cotton	cotton	cotton	cotton		
Rating Data Type		injury	injury	control	control	control	control	control	control		
Rating Unit		percent	percent	percent	percent	percent	percent	percent	percent		
Rating Date		Jun-27-05	Jul-11-05	Jun-27-05	Jul-11-05	Jun-27-05	Jul-11-05	Jun-27-05	Jul-11-05		
Trt-Eval Interval		7 DA-A	21 DA-A	7 DA-A	21 DA-A	7 DA-A	21 DA-A	7 DA-A	21 DA-A		
Trt No.	Treatment Name	Rate	Rate Unit	1	2	3	4	5	6	7	8
1	Layby Pro COC	1 lb ai/a 1 % v/v		12	0	77	67	99	97	83	90
2	Layby Pro WeatherMax	1 lb ai/a 0.75 lb ai/a		12	0	98	94	99	97	80	85
3	Direx WeatherMax	1 lb ai/a 0.75 lb ai/a		11	0	95	91	99	99	89	92
4	Layby Pro COC MSMA	1 lb ai/a 1 % v/v 1.5 lb ai/a		11	0	79	69	99	99	79	87
5	Layby Pro Valor MSMA	1 lb ai/a 0.0156 lb ai/a 1.5 lb ai/a		7	0	90	86	99	95	86	86
6	Direx COC MSMA	1 lb ai/a 1 % v/v 1.5 lb ai/a		4	0	70	64	99	97	74	97
7	WeatherMax	0.75 lb ai/a		0	0	99	89	72	86	63	81
8	WeatherMax Valor	0.75 lb ai/a 0.031 lb ai/a		5	0	98	93	99	96	92	98
9	WeatherMax Valor	0.75 lb ai/a 0.0625 lb ai/a		5	0	99	99	99	99	93	99
10	Direx WeatherMax	0.5 lb ai/a 0.75 lb ai/a		9	0	90	90	98	96	83	94
11	No Layby			0	0	0	0	0	0	0	0
12	Suprend COC	0.8 lb ai/a 1 % v/v		11	0	72	54	90	99	86	97
13	Direx COC	1 lb ai/a 1 % v/v		9	0	60	56	99	98	81	99
LSD (P=.05)				3.9	0.0	8.4	10.4	9.1	6.3	13.1	14.7
Standard Deviation				2.7	0.0	5.8	7.3	6.4	4.4	9.2	10.3
CV				37.68	0.0	7.41	9.94	7.19	5.0	12.04	12.12

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

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 Location: Moultrie Investigator: Stanley Culpepper

GENERAL TRIAL INFORMATION

Study Director: Stanley Culpepper **Title:** Ext. Weed Science
Affiliation: Univ. of Georgia
Postal Code: 31794

Investigator: Stanley Culpepper **Title:** Ext. Weed Science
Affiliation: Univ. of Georgia
Postal Code: 31794

TRIAL LOCATION

City: Moultrie **Trial Status:** completed
State/Prov.: GA **Trial Reliability:** good
Postal Code: 31794 **Initiation Date:** May-04-05
Country: USA **Planned Completion Date:** _____
E-Longitude of LL Corner °: _____ **N-Latitude of LL Corner °:** _____
Altitude of LL Corner: _____ **Unit:** _____ **Angle y-axis to North °:** _____
Directions:

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.	DIGSA	large crabgrass	
2.	IPOLA	pitted morningglory	
3.	MUNDU	doveweed	

Crop 1: GOSHI cotton **Variety:** DP 555 B/RR
Planting Date: May-04-05 **Planting Method:** hill drop
Rate: 2 8 in **Depth:** 0.5 in **Perennial Age:** _____
Row Spacing: 36 inch **Spacing Within Row:** _____ **Seed Bed:** flat
Soil Temperature: 76 F **Soil Moisture:** moist **Emergence Date:** May-11-05

SITE AND DESIGN

Plot Width, Unit: 9 FT **Plot Length, Unit:** 25 FT **Reps:** 4
Site Type: Sunbelt expo
Tillage Type: none **Study Design:** RANDOMIZED COMPLETE BLOCK

Trial Initiation Comments:

1.	Previous Crops	Previous Pesticides	Year

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MAINTENANCE

Field Prep./Maintenance:

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

SOIL DESCRIPTION

% Sand: 88	% OM: 1.2	Texture: loamy sand
% Silt: 12	pH: 6.0	Soil Name: _____
% Clay: 0	CEC: _____	Fert. Level: _____

ADDITIONAL MEASURED ELEMENTS

Element	Quantity	Unit

MOISTURE CONDITIONS

No.	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: _____

Closest Weather Station: _____ Distance: _____ Unit: _____

APPLICATION DESCRIPTION

	A
Application Date:	Jun-20-05
Time of Day:	9 am
Application Method:	broadcast
Application Timing:	layby
Applic. Placement:	directed
Air Temp., Unit:	78 F
% Relative Humidity:	62
Wind Velocity, Unit:	5 mph
Dew Presence (Y/N):	n
Water Hardness:	
Soil Temp., Unit:	77 F
Soil Moisture:	moist
% Cloud Cover:	0

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	GOSHI layby
Stage Scale:	10 lf
Height, Unit:	13 inch

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WEED STAGE AT EACH APPLICATION

A	
Weed 1 Code, Stage:	DIGSA layby
Stage Scale:	< 5 in
Density, Unit:	9 ydsq
Weed 2 Code, Stage:	IPOLA layby
Stage Scale:	< 5 in
Density, Unit:	5 ydsq
Weed 3 Code, Stage:	MUNDU layby
Stage Scale:	< 0.5 in
Density, Unit:	25 ydsq

APPLICATION EQUIPMENT

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

Trt No	Treatment Application Comment