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Managing glyphosate-sensitive Palmer amaranth in Roundup Ready Flex Cotton.

Mon 2008-01-99-02

Trial ID: C40-08

Study Dir.: Culpepper, Davis

Location: Attapulgus

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 Unit	Form Type	Form Rate	Rate Unit	Grow Stg	Appl Code	Amt to Measure	Product	Plot No. By Rep			
											1	2	3	4
1	Prowl H20	3.8	L		1	LB	A/A	PRE	A	35.56 ml/mx	101	222	309	412
	Reflex	2	L		0.25	LB	A/A	PRE	A	16.89 ml/mx				
2	Prowl H20	3.8	L		1	LB	A/A	PRE	A	35.56 ml/mx	102	208	313	401
	Reflex	2	L		0.25	LB	A/A	PRE	A	16.89 ml/mx				
	Roundup WeatherMax	4.5	L		0.375	LB	A/A	3 If	B	11.26 ml/mx				
	Parrlay	8	L		1.33	PT/A		3 If	B	22.46 ml/mx				
3	Prowl H20	3.8	L		1	LB	A/A	PRE	A	35.56 ml/mx	103	206	310	414
	Cotoran	4	L		1	LB	A/A	PRE	A	33.78 ml/mx				
4	Prowl H20	3.8	L		1	LB	A/A	PRE	A	35.56 ml/mx	104	207	317	406
	Cotoran	4	L		1	LB	A/A	PRE	A	33.78 ml/mx				
	Roundup WeatherMax	4.5	L		0.375	LB	A/A	3 If	B	11.26 ml/mx				
	Parrlay	8	L		1.33	PT/A		3 If	B	22.46 ml/mx				
5	Lasso Micro Tech	4	L		1.5	LB	A/A	PRE	A	50.67 ml/mx	105	204	315	403
	Reflex	2	L		0.25	LB	A/A	PRE	A	16.89 ml/mx				
6	Lasso Micro Tech	4	L		1.5	LB	A/A	PRE	A	50.67 ml/mx	106	217	311	415
	Reflex	2	L		0.25	LB	A/A	PRE	A	16.89 ml/mx				
	Roundup WeatherMax	4.5	L		0.375	LB	A/A	3 If	B	11.26 ml/mx				
	Parrlay	8	L		1.33	PT/A		3 If	B	22.46 ml/mx				
7	Lasso Micro Tech	4	L		1.5	LB	A/A	PRE	A	50.67 ml/mx	107	214	321	404
	Cotoran	4	L		1	LB	A/A	PRE	A	33.78 ml/mx				
8	Lasso Micro Tech	4	L		1.5	LB	A/A	PRE	A	50.67 ml/mx	108	219	320	405
	Cotoran	4	L		1	LB	A/A	PRE	A	33.78 ml/mx				
	Roundup WeatherMax	4.5	L		0.375	LB	A/A	3 If	B	11.26 ml/mx				
	Parrlay	8	L		1.33	PT/A		3 If	B	22.46 ml/mx				
9	Lasso Micro Tech	4	L		2.5	LB	A/A	PRE	A	84.45 ml/mx	109	202	304	418
	Reflex	2	L		0.25	LB	A/A	PRE	A	16.89 ml/mx				
10	Lasso Micro Tech	4	L		2.5	LB	A/A	PRE	A	84.45 ml/mx	110	216	307	409
	Reflex	2	L		0.25	LB	A/A	PRE	A	16.89 ml/mx				
	Roundup WeatherMax	4.5	L		0.375	LB	A/A	3 If	B	11.26 ml/mx				
	Parrlay	8	L		1.33	PT/A		3 If	B	22.46 ml/mx				
11	Lasso Micro Tech	4	L		2.5	LB	A/A	PRE	A	84.45 ml/mx	111	205	302	421
	Cotoran	4	L		1	LB	A/A	PRE	A	33.78 ml/mx				
12	Lasso Micro Tech	4	L		2.5	LB	A/A	PRE	A	84.45 ml/mx	112	218	319	417
	Cotoran	4	L		1	LB	A/A	PRE	A	33.78 ml/mx				
	Roundup WeatherMax	4.5	L		0.375	LB	A/A	3 If	B	11.26 ml/mx				
	Parrlay	8	L		1.33	PT/A		3 If	B	22.46 ml/mx				
13	Lasso Micro Tech	4	L		1.5	LB	A/A	PRE	A	50.67 ml/mx	113	221	312	408
14	Lasso Micro Tech	4	L		2.0	LB	A/A	PRE	A	67.56 ml/mx	114	220	316	402
15	Lasso Micro Tech	4	L		2.5	LB	A/A	PRE	A	84.45 ml/mx	115	211	322	413
16	Lasso Micro Tech	4	L		3.0	LB	A/A	PRE	A	101.3 ml/mx	116	210	303	419
17	Dual Magnum	7.62	L		1	LB	A/A	PRE	A	17.73 ml/mx	117	213	318	416
18	Staple LX	3.2	L		1.7	OZ/A		PRE	A	1.795 ml/mx	118	212	314	420
19	Reflex	2	L		0.25	LB	A/A	PRE	A	16.89 ml/mx	119	201	306	410
20	Diuron	4	L		1	QT/A		PRE	A	33.78 ml/mx	120	203	301	407
21	Non-treated										121	209	305	422
22	Non-treated										122	215	308	411

Sort Order: Treatment

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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 Unit	Form Type	Form Rate	Form Unit	Rate Stg	Grow Code	Appl to Measure	Amt Product 1	Plot No. 2	By Rep 3	4
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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
177.791	ml	Prowl H2O	3.8	L	
147.788	ml	Reflex	2	L	
84.451	ml	Roundup WeatherMax	4.5	L	
168.479	ml	Parrlay	8	L	
253.352	ml	Cotoran	4	L	
1,055.632	ml	Lasso Micro Tech	4	L	
22.165	ml	Dual Magnum	7.62	L	
2.243	ml	Staple LX	3.2	L	
42.225	ml	Diuron	4	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.

Trial Comments

OBJECTIVE: Determine potential use for Lasso Micro Tech applied PRE in cotton.

COTTON RESPONSE:

1. Lasso Micro Tech at 1.5 lb injured cotton 20% at 15 DAP and 11% at 36 DAP.
2. Lasso Micro Tech at 2.0 lb injured cotton 29% at 15 DAP and 14% at 36 DAP.
3. Lasso Micro Tech at 2.5 lb injured cotton 60% at 15 DAP and 23% at 36 DAP.
4. Lasso Micro Tech at 3 lb injured cotton 73% at 15 DAP and 34% at 36 DAP.
5. Dual Mag. at 1 lb injured cotton 50% at 15 DAP and 13% at 36 DAP.
6. The addition of Cotoran or Reflex with Lasso tended to increase early season injury.

PALMER AMARANTH RESPONSE:

1. Prowl + Reflex and Lasso + Reflex or Cotoran provided complete control. Prowl + Cotoran was 36% less effective late in the study.
2. Lasso at 1.5 lb was less effective than Lasso at 2, 2.5, or 3 lb.
3. Dual, Reflex, and diuron provided excellent control; staple in this study was slightly less effective.
4. Roundup provided excellent control.

LARGE CRABGRASS RESPONSE:

1. All treatments except for diuron or staple alone provided excellent control at 15 DAT.
2. At 23 and 31 DAP, a rate effect was noted with Lasso. Control ranged from 50 to 83% at 31 DAP.
3. By 31 DAP, control was poor with Dual Magnum, Staple, Reflex, and diuron as well as Lasso at 1.5 lb.
4. By 51 DAP, control by all treatments with a single herbicide was less than 30%.
5. By 51 DAT, Prowl + Reflex was generally more effective than Prowl + Cotoran.
6. By 51 DAT, both Prowl systems were at least 20% more effective than Lasso + Reflex or Cotoran systems.
7. Roundup provided excellent control.

GENERAL COMMENTS:

1. On May 12, 2008 treatments were applied followed by a blanket treatment of Roundup.
2. On May 13, 2008 an 0.5 " of irrigation was implemented.

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Mon 2008-01-99-02

Trial ID: C40-08

Study Dir.: Culpepper, Davis

Location: Attapulgus

Investigator: Stanley Culpepper

Weed Code	Crop Code	Rating Data Type	Rating Unit	Rating Date	Trt-Eval Interval	GOSHI injury % May-28-08 15 DA-A	GOSHI injury % Jun-05-08 23 DA-A	GOSHI injury % Jun-13-08 31 DA-A	GOSHI injury % Jun-18-08 36 DA-A	AMAPA control % May-28-08 15 DA-A	AMAPA control % Jun-05-08 23 DA-A	AMAPA control % Jun-13-08 31 DA-A
Trt No.	Treatment Name	Rate	Unit	1	2	3	4	5	6	7		
1	Prowl H20 Reflex	1 LB 0.25 LB	A/A A/A	2 f	0 e	2 f	0 f	100 a	99 a	100 a		
2	Prowl H20 Reflex Roundup WeatherMax Parrlay	1 LB 0.25 LB 0.375 LB 1.33 PT	A/A A/A A/A A	3 f	5 e	0 f	3 ef	100 a	99 a	100 a		
3	Prowl H20 Cotoran	1 LB 1 LB	A/A A/A	2 f	2 e	1 f	3 ef	100 a	97 a	95 b		
4	Prowl H20 Cotoran Roundup WeatherMax Parrlay	1 LB 1 LB 0.375 LB 1.33 PT	A/A A/A A/A A	4 f	2 e	0 f	0 f	100 a	98 a	100 a		
5	Lasso Micro Tech Reflex	1.5 LB 0.25 LB	A/A A/A	31 de	29 cd	18 cde	13 cde	100 a	99 a	100 a		
6	Lasso Micro Tech Reflex Roundup WeatherMax Parrlay	1.5 LB 0.25 LB 0.375 LB 1.33 PT	A/A A/A A/A A	35 de	38 bc	25 cd	16 bcd	100 a	99 a	100 a		
7	Lasso Micro Tech Cotoran	1.5 LB 1 LB	A/A A/A	36 cde	41 bc	21 cde	19 bc	100 a	99 a	100 a		
8	Lasso Micro Tech Cotoran Roundup WeatherMax Parrlay	1.5 LB 1 LB 0.375 LB 1.33 PT	A/A A/A A/A A	30 de	35 c	15 def	16 bcd	100 a	99 a	100 a		
9	Lasso Micro Tech Reflex	2.5 LB 0.25 LB	A/A A/A	64 ab	45 bc	33 bc	16 bcd	100 a	99 a	100 a		
10	Lasso Micro Tech Reflex Roundup WeatherMax Parrlay	2.5 LB 0.25 LB 0.375 LB 1.33 PT	A/A A/A A/A A	58 ab	39 bc	25 cd	18 bcd	100 a	99 a	100 a		
11	Lasso Micro Tech Cotoran	2.5 LB 1 LB	A/A A/A	55 abc	55 ab	41 ab	26 ab	100 a	99 a	100 a		
12	Lasso Micro Tech Cotoran Roundup WeatherMax Parrlay	2.5 LB 1 LB 0.375 LB 1.33 PT	A/A A/A A/A A	58 ab	53 ab	33 bc	21 bc	100 a	99 a	100 a		
13	Lasso Micro Tech	1.5 LB	A/A	20 ef	18 de	18 cde	11 c-f	100 a	97 a	95 b		
14	Lasso Micro Tech	2.0 LB	A/A	29 e	30 cd	19 cde	14 cd	100 a	99 a	100 a		
15	Lasso Micro Tech	2.5 LB	A/A	60 ab	55 ab	48 a	23 bc	100 a	99 a	100 a		
16	Lasso Micro Tech	3.0 LB	A/A	73 a	63 a	52 a	34 a	100 a	99 a	100 a		
17	Dual Magnum	1 LB	A/A	50 bcd	41 bc	28 bcd	13 cde	100 a	96 a	98 ab		
18	Staple LX	1.7 OZ	A	4 f	8 e	7 ef	6 def	100 a	96 a	95 b		
19	Reflex	0.25 LB	A/A	2 f	3 e	1 f	0 f	100 a	99 a	100 a		
20	Diuron	1 QT	A	1 f	0 e	3 f	0 f	100 b	98 a	95 b		
21	Non-treated			0 f	0 e	0 f	0 f	0 c	0 b	0 c		

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Weed Code					AMAPA	AMAPA	AMAPA
Crop Code	GOSHI	GOSHI	GOSHI	GOSHI			
Rating Data Type	injury	injury	injury	injury	control	control	control
Rating Unit	%	%	%	%	%	%	%
Rating Date	May-28-08	Jun-05-08	Jun-13-08	Jun-18-08	May-28-08	Jun-05-08	Jun-13-08
Trt-Eval Interval	15 DA-A	23 DA-A	31 DA-A	36 DA-A	15 DA-A	23 DA-A	31 DA-A
Trt Treatment	Rate						
No. Name	Rate Unit	1	2	3	4	5	6
22 Non-treated		0 f	0 e	0 f	0 f	0 c	0 b
LSD (P=.05)		18.0	15.2	13.7	9.7	0.2	3.3
Standard Deviation		12.7	10.7	9.7	6.9	0.1	2.4
CV		45.81	42.23	55.52	60.61	0.12	2.64
Bartlett's X2		70.357	27.305	45.595	22.394	0.0	6.134
P(Bartlett's X2)		0.001*	0.038*	0.001*	0.098	.	0.293

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

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Weed Code		AMAPA	AMAPA	DIGSA	DIGSA	DIGSA	DIGSA		
Crop Code									
Rating Data Type		control	control	control	control	control	control		
Rating Unit		%	%	%	%	%	%		
Rating Date		Jun-18-08	Jul-03-08	May-28-08	Jun-05-08	Jun-13-08	Jul-03-08		
Trt-Eval Interval		36 DA-A	51 DA-A	15 DA-A	23 DA-A	31 DA-A	51 DA-A		
Trt No.	Treatment Name	Rate	Unit	8	9	10	11	12	13
1	Prowl H20 Reflex	1 0.25	LB A/A LB A/A	99 a	100 a	100 a	97 a	98 a	93 ab
2	Prowl H20 Reflex Roundup WeatherMax Parrlay	1 0.25 0.375 1.33	LB A/A LB A/A LB A/A PT/A	99 a	100 a	99 a	95 a	100 a	100 a
3	Prowl H20 Cotoran	1 1	LB A/A LB A/A	88 b	74 c	99 a	93 a	95 a	80 b
4	Prowl H20 Cotoran Roundup WeatherMax Parrlay	1 1 0.375 1.33	LB A/A LB A/A LB A/A PT/A	99 a	100 a	100 a	95 a	100 a	100 a
5	Lasso Micro Tech Reflex	1.5 0.25	LB A/A LB A/A	98 a	100 a	100 a	94 a	89 ab	54 cd
6	Lasso Micro Tech Reflex Roundup WeatherMax Parrlay	1.5 0.25 0.375 1.33	LB A/A LB A/A LB A/A PT/A	99 a	100 a	100 a	99 a	100 a	100 a
7	Lasso Micro Tech Cotoran	1.5 1	LB A/A LB A/A	99 a	100 a	100 a	91 a	89 ab	40 de
8	Lasso Micro Tech Cotoran Roundup WeatherMax Parrlay	1.5 1 0.375 1.33	LB A/A LB A/A LB A/A PT/A	99 a	100 a	100 a	95 a	100 a	99 a
9	Lasso Micro Tech Reflex	2.5 0.25	LB A/A LB A/A	99 a	100 a	99 a	93 a	85 ab	58 c
10	Lasso Micro Tech Reflex Roundup WeatherMax Parrlay	2.5 0.25 0.375 1.33	LB A/A LB A/A LB A/A PT/A	99 a	100 a	100 a	96 a	100 a	100 a
11	Lasso Micro Tech Cotoran	2.5 1	LB A/A LB A/A	99 a	100 a	100 a	89 ab	83 ab	45 cd
12	Lasso Micro Tech Cotoran Roundup WeatherMax Parrlay	2.5 1 0.375 1.33	LB A/A LB A/A LB A/A PT/A	99 a	100 a	100 a	93 a	99 a	88 ab
13	Lasso Micro Tech	1.5	LB A/A	85 b	85 bc	90 bc	65 cd	50 d	12 fg
14	Lasso Micro Tech	2.0	LB A/A	99 a	100 a	97 ab	76 bc	76 b	14 fg
15	Lasso Micro Tech	2.5	LB A/A	99 a	99 a	100 a	87 ab	73 bc	18 f
16	Lasso Micro Tech	3.0	LB A/A	99 a	100 a	99 a	91 a	83 ab	27 ef
17	Dual Magnum	1	LB A/A	93 ab	96 ab	99 a	69 c	51 d	14 fg
18	Staple LX	1.7	OZ/A	85 b	86 b	83 c	54 de	33 e	11 fg
19	Reflex	0.25	LB A/A	99 a	100 a	98 a	86 ab	58 cd	23 f
20	Diuron	1	QT/A	94 ab	91 ab	61 d	44 e	30 e	1 g
21	Non-treated			0 c	0 d	0 e	0 f	0 f	0 g

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Weed Code	AMAPA	AMAPA	DIGSA	DIGSA	DIGSA	DIGSA
Crop Code						
Rating Data Type	control	control	control	control	control	control
Rating Unit	%	%	%	%	%	%
Rating Date	Jun-18-08	Jul-03-08	May-28-08	Jun-05-08	Jun-13-08	Jul-03-08
Trt-Eval Interval	36 DA-A	51 DA-A	15 DA-A	23 DA-A	31 DA-A	51 DA-A
Trt Treatment						
No. Name	8	9	10	11	12	13
Rate Unit						
22 Non-treated	0 c	0 d	0 e	0 f	0 f	0 g
LSD (P=.05)	8.4	11.0	7.4	12.4	15.5	14.3
Standard Deviation	5.9	7.8	5.2	8.8	11.0	10.1
CV	6.78	8.88	5.99	11.37	15.2	20.71
Bartlett's X2	12.428	12.757	122.945	50.219	44.273	46.361
P(Bartlett's X2)	0.029*	0.026*	0.001*	0.001*	0.001*	0.001*

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

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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: 84	% OM: 1.3	Texture: loamy sand
% Silt: 8	pH: 5.9	Soil Name: _____
% Clay: 8	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
Application Date:	May-13-08	Jun-05-08
Time of Day:	7:00 am	7:00 pm
Application Method:	broadcast	broadcast
Application Timing:	PRE	POST
Applic. Placement:	on soil	overtop
Air Temp., Unit:	50 F	92 F
% Relative Humidity:	8	58
Wind Velocity, Unit:	0 mph	3 mph
Dew Presence (Y/N):	N	N
Water Hardness:		
Soil Temp., Unit:	58 F	96 F
Soil Moisture:	fair	moist
% Cloud Cover:	0	0

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	GOSHI A	GOSHI B
Stage Scale:	PRE	4 leaf
Height, Unit:	0 in	5 in

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	DIGSA A	DIGSA B
Stage Scale:	PRE	4 in
Density, Unit:	0 ydsq	18 ydsq
Weed 2 Code, Stage:	AMAPA A	AMAPA B
Stage Scale:	PRE	3 in
Density, Unit:	0 ydsq	20 ydsq

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APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	backpack	backpack
Operating Pressure:	24	24
Nozzle Type:	flat fan	flat fan
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	18 in	18 in
Nozzles/Row:	2	2
Band Width, Unit:		
Boom Length, Unit:	4.5 ft	4.5 ft
Boom Height, Unit:	15 in	15 in
Ground Speed, Unit:	3 mph	3 mph
Incorporation Equip.:		
Hours to Incorp.:		
Incorp. Depth, Unit:		
Carrier:	water	water
Spray Volume, Unit:	15 GPA	15 GPA
Spray pH:		
Propellant:	CO2	CO2
Tank Mix (Y/N):	y	y

Trt No	Treatment Application Comment