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Cotton and weed response to residual at-plant herbicide mixtures.

Mak3

Trial ID: C39-08

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	Rate	Grow Unit	Appl Stg	Code	Amt to Measure	Product Measure	Plot No. By Rep			
											1	2	3	4
1	No herbicide										101	217	316	413
2	Prometryn	4	L		3.2	PT/A	PRE	A	54.05 ml/mx		102	218	304	408
3	Fluometuron	4	L		3.2	PT/A	PRE	A	54.05 ml/mx		103	222	309	405
4	Diuron	4	L		3.2	PT/A	PRE	A	54.05 ml/mx		104	203	315	410
5	Diuron	4	L		0.67	PT/A	PRE	A	11.32 ml/mx		105	213	321	414
6	Parallel PCS	4	L		1.33	PT/A	PRE	A	22.46 ml/mx		106	205	318	403
7	Fluometuron	4	L		1	PT/A	PRE	A	16.89 ml/mx		107	206	311	412
	Diuron	4	L		0.335	PT/A	PRE	A	5.658 ml/mx					
8	Fluometuron	4	L		1.34	PT/A	PRE	A	22.63 ml/mx		108	204	308	415
	Diuron	4	L		0.45	PT/A	PRE	A	7.601 ml/mx					
9	Fluometuron	4	L		1	PT/A	PRE	A	16.89 ml/mx		109	216	302	406
	Prometryn	4	L		1.6	PT/A	PRE	A	27.02 ml/mx					
10	Fluometuron	4	L		1.34	PT/A	PRE	A	22.63 ml/mx		110	215	305	417
	Prometryn	4	L		2.14	PT/A	PRE	A	36.14 ml/mx					
11	Fluometuron	4	L		1	PT/A	PRE	A	16.89 ml/mx		111	209	301	422
	Parallel PCS	4	L		0.67	PT/A	PRE	A	11.32 ml/mx					
12	Fluometuron	4	L		1.34	PT/A	PRE	A	22.63 ml/mx		112	220	312	404
	Parallel PCS	4	L		0.89	PT/A	PRE	A	15.03 ml/mx					
13	Diuron	4	L		0.335	PT/A	PRE	A	5.658 ml/mx		113	219	313	419
	Prometryn	4	L		1.6	PT/A	PRE	A	27.02 ml/mx					
14	Diuron	4	L		0.45	PT/A	PRE	A	7.601 ml/mx		114	208	303	411
	Prometryn	4	L		2.14	PT/A	PRE	A	36.14 ml/mx					
15	Prowl H20	3.8	L		2.1	PT/A	PRE	A	35.47 ml/mx		115	212	317	420
	Reflex	2	L		16	OZ/A	PRE	A	16.89 ml/mx					
16	Diuron	4	L		2	PT/A	PRE	A	33.78 ml/mx		116	201	307	421
	Reflex	2	L		16	OZ/A	PRE	A	16.89 ml/mx					
17	Prowl H20	3.8	L		2.1	PT/A	PRE	A	35.47 ml/mx		117	210	319	416
	Diuron	4	L		2	PT/A	PRE	A	33.78 ml/mx					
18	Prowl H20	3.8	L		2.1	PT/A	PRE	A	35.47 ml/mx		118	207	314	402
	Cotoran	4	L		2	PT/A	PRE	A	33.78 ml/mx					
19	Prowl H20	3.8	L		2.1	PT/A	PRE	A	35.47 ml/mx		119	221	322	407
	Staple LX	3.2	L		1.7	OZ/A	PRE	A	1.795 ml/mx					
20	Diuron	4	L		2	PT/A	PRE	A	33.78 ml/mx		120	211	320	418
	Staple LX	3.2	L		1.7	OZ/A	PRE	A	1.795 ml/mx					
21	Reflex	2	L		16	OZ/A	PRE	A	16.89 ml/mx		121	214	310	409
	Staple LX	3.2	L		1.7	OZ/A	PRE	A	1.795 ml/mx					
22	Non-treated										122	202	306	401

Sort Order: Treatment

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

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
225.483	ml	Prometryn	4	L	
215.771	ml	Fluometuron	4	L	
241.529	ml	Diuron	4	L	
61.016	ml	Parallel PCS	4	L	

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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.	Tr> N>	Form Conc	Form Unit	Form Type	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
177.346	ml	Prowl H20	3.8	L	
63.345	ml	Reflex	2	L	
42.225	ml	Cotoran	4	L	
6.730	ml	Staple LX	3.2	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: Compare at plant herbicide programs for summer annual weed control.

COTTON RESPONSE:

1. Severe injury was noted with all Parallel PRE treatments.
2. No other treatment injured cotton greater than 8% throughout the study.

PALMER AMARANTH RESPONSE:

1. Fluometuron was less effective than diuron or prometryn at equal rates.
2. By 52 DAT, control was excellent with most systems except for diuron at 0.67 pt, fluometuron alone, fluometuron at 1 pt in combination with Parallel at 0.67 pt, diuron at 0.33 to 0.45 pt, or prometryn at 1.6 pt diuron.

SICKLEPOD RESPONSE:

1. Early in the season, fluometuron and diuron were more effective than prometryn at equal rates. By late season, fluometuron was the more effective choice.
2. Control was poor with nearly all treatments except for those systems including Staple which actually provided at least 86% control 52 DAT.

TEXAS PANICUM RESPONSE:

1. For the most part, control was similar when comparing fluometuron, diuron, and prometryn applied at the same rates.
2. The most consistent and effective treatments were those including Prowl.

GENERAL COMMENTS:

1. On May 12, 2008 the treatments were applied, followed by Roundup applied over the study to kill emerged weeds.
2. On May 13, 2008, 0.5 inch of irrigation was implemented.

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Trial ID: C39-08

Study Dir.: Culpepper, Davis

Location: Attapulgus

Investigator: Stanley Culpepper

Weed Code		GOSHI	GOSHI	GOSHI	AMAPA	AMAPA	AMAPA	AMAPA	CASOB	
Crop Code		injury	injury	injury	control	control	control	control	control	
Rating Data Type		%	%	%	%	%	%	%	%	
Rating Unit										
Rating Date		May-28-08	Jun-06-08	Jun-12-08	May-28-08	Jun-06-08	Jun-12-08	Jul-03-08	May-28-08	
Trt-Eval Interval		16 DA-A	25 DA-A	31 DA-A	16 DA-A	25 DA-A	31 DA-A	52 DA-A	16 DA-A	
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	
		Unit	Unit	Unit	Unit	Unit	Unit	Unit	Unit	
1	No herbicide		0 d	0 e	0 c	0 c	0 e	0 f	0 h	0 j
2	Prometryn	3.2 PT/A	0 d	0 e	0 c	99 a	99 a	95 a	93 abc	36 efg
3	Fluometuron	3.2 PT/A	0 d	0 e	0 c	99 a	88 ab	71 c	58 e	59 cd
4	Diuron	3.2 PT/A	0 d	0 e	0 c	99 a	97 a	94 a	95 abc	71 bc
5	Diuron	0.67 PT/A	0 d	0 e	0 c	86 b	48 d	26 e	0 h	4 ij
6	Parallel PCS	1.33 PT/A	19 b	21 b	15 b	99 a	99 a	90 ab	85 cd	0 j
7	Fluometuron Diuron	1 PT/A 0.335 PT/A	0 d	0 e	2 c	95 a	79 c	45 d	33 g	10 hij
8	Fluometuron Diuron	1.34 PT/A 0.45 PT/A	0 d	0 e	0 c	99 a	84 bc	75 bc	46 f	29 e-h
9	Fluometuron Prometryn	1 PT/A 1.6 PT/A	0 d	0 e	0 c	99 a	96 a	83 abc	79 d	16 g-j
10	Fluometuron Prometryn	1.34 PT/A 2.14 PT/A	0 d	0 e	0 c	99 a	99 a	97 a	99 ab	20 f-j
11	Fluometuron Parallel PCS	1 PT/A 0.67 PT/A	24 a	24 a	18 a	99 a	96 a	91 ab	88 bcd	23 f-i
12	Fluometuron Parallel PCS	1.34 PT/A 0.89 PT/A	24 a	25 a	15 b	99 a	99 a	99 a	98 ab	35 efg
13	Diuron Prometryn	0.335 PT/A 1.6 PT/A	0 d	0 e	0 c	99 a	98 a	95 a	88 bcd	25 fgh
14	Diuron Prometryn	0.45 PT/A 2.14 PT/A	0 d	0 e	0 c	99 a	99 a	99 a	100 a	31 efg
15	Prowl H20 Reflex	2.1 PT/A 16 OZ/A	0 d	0 e	0 c	99 a	99 a	99 a	99 ab	40 def
16	Diuron Reflex	2 PT/A 16 OZ/A	1 d	0 e	0 c	99 a	99 a	99 a	100 a	60 cd
17	Prowl H20 Diuron	2.1 PT/A 2 PT/A	0 d	0 e	0 c	99 a	99 a	99 a	98 ab	56 cd
18	Prowl H20 Cotoran	2.1 PT/A 2 PT/A	0 d	0 e	0 c	99 a	99 a	99 a	99 ab	48 de
19	Prowl H20 Staple LX	2.1 PT/A 1.7 OZ/A	0 d	4 d	0 c	99 a	99 a	99 a	100 a	93 a
20	Diuron Staple LX	2 PT/A 1.7 OZ/A	5 c	8 c	0 c	99 a	99 a	99 a	100 a	94 a
21	Reflex Staple LX	16 OZ/A 1.7 OZ/A	0 d	2 e	0 c	99 a	98 a	93 ab	95 abc	84 ab
22	Non-treated		0 d	0 e	0 c	0 c	0 e	0 f	0 h	0 j
LSD (P=.05)			1.5	2.5	1.3	4.0	9.1	16.6	9.8	18.0
Standard Deviation			1.1	1.8	0.9	2.8	6.4	11.7	6.9	12.7
CV			32.35	46.37	40.4	3.16	7.58	14.77	9.27	33.7
Bartlett's X2			0.0	2.275	0.004	0.39	24.795	38.409	27.347	28.278
P(Bartlett's X2)			1.00	0.685	0.947	0.532	0.002*	0.001*	0.017*	0.042*

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

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Weed Code		CASOB	CASOB	CASOB	PANTE	PANTE	PANTE	PANTE		
Crop Code					GOSHI	GOSHI	GOSHI	GOSHI		
Rating Data Type		control	control	control	control	control	control	control		
Rating Unit		%	%	%	%	%	%	%		
Rating Date		Jun-06-08	Jun-12-08	Jul-03-08	May-28-08	Jun-06-08	Jun-12-08	Jul-03-08		
Trt-Eval Interval		25 DA-A	31 DA-A	52 DA-A	16 DA-A	25 DA-A	31 DA-A	52 DA-A		
Trt No.	Treatment Name	Rate	Unit	9	10	11	12	13	14	15
1	No herbicide			0 h	0 h	0 e	0 f	0 j	0 k	0 g
2	Prometryn	3.2	PT/A	15 e-h	18 e-h	13 de	98 a	90 a-e	61 d-g	31 de
3	Fluometuron	3.2	PT/A	54 b	60 bc	51 b	91 a-e	81 d-h	54 fgh	30 de
4	Diuron	3.2	PT/A	38 bcd	40 cde	39 bc	95 a-d	86 b-f	63 d-g	30 de
5	Diuron	0.67	PT/A	5 gh	14 fgh	0 e	84 e	58 i	24 j	0 g
6	Parallel PCS	1.33	PT/A	5 gh	8 gh	0 e	99 a	91 a-e	79 b-e	35 d
7	Fluometuron Diuron	1 0.335	PT/A PT/A	10 fgh	33 d-g	15 de	89 cde	70 h	30 ij	0 g
8	Fluometuron Diuron	1.34 0.45	PT/A PT/A	25 c-f	10 gh	15 de	89 cde	73 gh	48 ghi	0 g
9	Fluometuron Prometryn	1 1.6	PT/A PT/A	13 e-h	16 e-h	21 cd	93 a-d	86 b-f	60 efg	8 g
10	Fluometuron Prometryn	1.34 2.14	PT/A PT/A	23 d-g	25 d-h	14 de	97 abc	87 a-e	59 fg	20 ef
11	Fluometuron Parallel PCS	1 0.67	PT/A PT/A	13 e-h	10 gh	16 de	88 de	83 c-g	58 fg	23 def
12	Fluometuron Parallel PCS	1.34 0.89	PT/A PT/A	23 d-g	36 def	11 de	94 a-d	84 c-g	54 fgh	21 ef
13	Diuron Prometryn	0.335 1.6	PT/A PT/A	23 d-g	25 d-h	23 cd	89 b-e	74 fgh	36 hij	11 fg
14	Diuron Prometryn	0.45 2.14	PT/A PT/A	18 e-h	30 d-g	26 cd	93 a-d	78 e-h	45 ghi	23 def
15	Prowl H20 Reflex	2.1 16	PT/A OZ/A	28 c-f	28 d-g	19 de	99 a	94 abc	98 a	98 a
16	Diuron Reflex	2 16	PT/A OZ/A	50 b	29 d-g	30 cd	99 a	98 ab	80 a-d	74 b
17	Prowl H20 Diuron	2.1 2	PT/A PT/A	30 cde	49 cd	26 cd	99 a	99 a	93 ab	99 a
18	Prowl H20 Cotoran	2.1 2	PT/A PT/A	41 bc	23 e-h	26 cd	99 a	99 a	97 ab	97 a
19	Prowl H20 Staple LX	2.1 1.7	PT/A OZ/A	95 a	94 a	94 a	99 a	99 a	98 a	100 a
20	Diuron Staple LX	2 1.7	PT/A OZ/A	97 a	94 a	96 a	99 a	92 a-d	73 c-f	49 c
21	Reflex Staple LX	16 1.7	OZ/A OZ/A	92 a	78 ab	86 a	98 ab	97 ab	82 abc	78 b
22	Non-treated			0 h	0 h	0 e	0 f	0 j	0 k	0 g
LSD (P=.05)				15.4	21.5	17.0	7.2	11.0	16.9	11.4
Standard Deviation				10.9	15.2	12.0	5.1	7.8	12.0	8.1
CV				34.55	46.63	42.45	5.91	9.97	20.4	21.52
Bartlett's X2				32.592	39.894	37.426	10.889	30.5	39.935	41.442
P(Bartlett's X2)				0.027*	0.001*	0.003*	0.538	0.016*	0.002*	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: _____

Closest Weather Station: _____ Distance: _____ Unit: _____

APPLICATION DESCRIPTION

	A
Application Date:	May-12-08
Time of Day:	7:00 pm
Application Method:	broadcast
Application Timing:	PRE
Applic. Placement:	on soil
Air Temp., Unit:	82 F
% Relative Humidity:	41
Wind Velocity, Unit:	0 mph
Dew Presence (Y/N):	N
Water Hardness:	
Soil Temp., Unit:	88 F
Soil Moisture:	fair
% Cloud Cover:	0

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	GOSHI A
Stage Scale:	PRE
Height, Unit:	0 inch

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WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	AMAPA A
Stage Scale:	PRE
Density, Unit:	5 ydsq
Weed 2 Code, Stage:	CASOB A
Stage Scale:	PRE
Density, Unit:	15 ydsq
Weed 3 Code, Stage:	PANTE A
Stage Scale:	PRE
Density, Unit:	15 ydsq

APPLICATION EQUIPMENT

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

Trt No	Treatment Application Comment