

University of Georgia

GR Palmer amaranth response to Reflex and Prefix directed at layby.

Prot (HFML01A4)

Trial ID: C10-08

Study Dir.: Stanley Culpepper

Location: Macon County

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	Form Rate	Rate Unit	Grow Stg	Appl Code	Amt Product to Measure	Plot No. By Rep		
										1	2	3
1	Prowl	3.8	L		2.1	PT/A	PRE	A	26.6 ml/mx	101	207	313
	Diuron	4	L		2.5	PT/A	PRE	A	31.67 ml/mx			
	WeatherMax	4.5	L		22	OZ/A	1 inch	B	17.42 ml/mx			
	Staple	3.2	L		2.6	OZ/A	1 inch	B	2.059 ml/mx			
	No Layby											
2	Prowl	3.8	L		2.1	PT/A	PRE	A	26.6 ml/mx	102	210	304
	Diuron	4	L		2.5	PT/A	PRE	A	31.67 ml/mx			
	WeatherMax	4.5	L		22	OZ/A	1 inch	B	17.42 ml/mx			
	Staple	3.2	L		2.6	OZ/A	1 inch	B	2.059 ml/mx			
	Reflex	2	L		16	OZ/A	PD-5"AMA	C	12.67 ml/mx			
	NIS		L		0.25	% V/V	PD-5"AMA	C	3.75 ml/mx			
3	Prowl	3.8	L		2.1	PT/A	PRE	A	26.6 ml/mx	103	211	306
	Diuron	4	L		2.5	PT/A	PRE	A	31.67 ml/mx			
	WeatherMax	4.5	L		22	OZ/A	1 inch	B	17.42 ml/mx			
	Staple	3.2	L		2.6	OZ/A	1 inch	B	2.059 ml/mx			
	Reflex	2	L		24	OZ/A	PD-5"AMA	C	19.0 ml/mx			
	NIS		L		0.25	% V/V	PD-5"AMA	C	3.75 ml/mx			
4	Prowl	3.8	L		2.1	PT/A	PRE	A	26.6 ml/mx	104	208	303
	Diuron	4	L		2.5	PT/A	PRE	A	31.67 ml/mx			
	WeatherMax	4.5	L		22	OZ/A	1 inch	B	17.42 ml/mx			
	Staple	3.2	L		2.6	OZ/A	1 inch	B	2.059 ml/mx			
	Prefix	5.4	L		32	OZ/A	PD-5"AMA	C	25.34 ml/mx			
	NIS		L		0.25	% V/V	PD-5"AMA	C	3.75 ml/mx			
5	Prowl	3.8	L		2.1	PT/A	PRE	A	26.6 ml/mx	105	203	312
	Diuron	4	L		2.5	PT/A	PRE	A	31.67 ml/mx			
	WeatherMax	4.5	L		22	OZ/A	1 inch	B	17.42 ml/mx			
	Staple	3.2	L		2.6	OZ/A	1 inch	B	2.059 ml/mx			
	Prefix	5.4	L		42.56	OZ/A	PD-5"AMA	C	33.7 ml/mx			
	NIS		L		0.25	% V/V	PD-5"AMA	C	3.75 ml/mx			
6	Prowl	3.8	L		2.1	PT/A	PRE	A	26.6 ml/mx	106	202	310
	Diuron	4	L		2.5	PT/A	PRE	A	31.67 ml/mx			
	WeatherMax	4.5	L		22	OZ/A	1 inch	B	17.42 ml/mx			
	Staple	3.2	L		2.6	OZ/A	1 inch	B	2.059 ml/mx			
	Valor	51	WG		1	OZ/A	PD-5"AMA	C	0.759 g/mx			
	NIS		L		0.25	% V/V	PD-5"AMA	C	3.75 ml/mx			
7	Prowl	3.8	L		2.1	PT/A	PRE	A	26.6 ml/mx	107	209	302
	Diuron	4	L		2.5	PT/A	PRE	A	31.67 ml/mx			
	WeatherMax	4.5	L		22	OZ/A	1 inch	B	17.42 ml/mx			
	Staple	3.2	L		2.6	OZ/A	1 inch	B	2.059 ml/mx			
	Valor	51	WG		2	OZ/A	PD-5"AMA	C	1.518 g/mx			
	NIS		L		0.25	% V/V	PD-5"AMA	C	3.75 ml/mx			
8	Prowl	3.8	L		2.1	PT/A	PRE	A	26.6 ml/mx	108	205	301
	Diuron	4	L		2.5	PT/A	PRE	A	31.67 ml/mx			
	WeatherMax	4.5	L		22	OZ/A	1 inch	B	17.42 ml/mx			
	Staple	3.2	L		2.6	OZ/A	1 inch	B	2.059 ml/mx			
	Reflex	2	L		16	OZ/A	PD-5"AMA	C	12.67 ml/mx			
	NIS		L		0.25	% V/V	PD-5"AMA	C	3.75 ml/mx			
	Touchdown Total	4.17	L		24	OZ/A	PD-5"AMA	C	19.0 ml/mx			

University of Georgia

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	Form Rate	Rate Unit	Grow Stg	Appl Code	Amt Product to Measure	Plot No. By Rep		
										1	2	3
9	Prowl	3.8	L		2.1	PT/A	PRE	A	26.6 ml/mx	109	213	305
	Diuron	4	L		2.5	PT/A	PRE	A	31.67 ml/mx			
	WeatherMax	4.5	L		22	OZ/A	1 inch	B	17.42 ml/mx			
	Staple	3.2	L		2.6	OZ/A	1 inch	B	2.059 ml/mx			
	Reflex	2	L		24	OZ/A	PD-5"AMA	C	19.0 ml/mx			
	NIS		L		0.25	% V/V	PD-5"AMA	C	3.75 ml/mx			
	Touchdown Total	4.17	L		24	OZ/A	PD-5"AMA	C	19.0 ml/mx			
10	Prowl	3.8	L		2.1	PT/A	PRE	A	26.6 ml/mx	110	201	314
	Diuron	4	L		2.5	PT/A	PRE	A	31.67 ml/mx			
	WeatherMax	4.5	L		22	OZ/A	1 inch	B	17.42 ml/mx			
	Staple	3.2	L		2.6	OZ/A	1 inch	B	2.059 ml/mx			
	Prefix	5.4	L		32	OZ/A	PD-5"AMA	C	25.34 ml/mx			
	NIS		L		0.25	% V/V	PD-5"AMA	C	3.75 ml/mx			
	Touchdown Total	4.17	L		24	OZ/A	PD-5"AMA	C	19.0 ml/mx			
11	Prowl	3.8	L		2.1	PT/A	PRE	A	26.6 ml/mx	111	206	308
	Diuron	4	L		2.5	PT/A	PRE	A	31.67 ml/mx			
	WeatherMax	4.5	L		22	OZ/A	1 inch	B	17.42 ml/mx			
	Staple	3.2	L		2.6	OZ/A	1 inch	B	2.059 ml/mx			
	Prefix	5.4	L		42.56	OZ/A	PD-5"AMA	C	33.7 ml/mx			
	NIS		L		0.25	% V/V	PD-5"AMA	C	3.75 ml/mx			
	Touchdown Total	4.17	L		24	OZ/A	PD-5"AMA	C	19.0 ml/mx			
12	Prowl	3.8	L		2.1	PT/A	PRE	A	26.6 ml/mx	112	204	315
	Diuron	4	L		2.5	PT/A	PRE	A	31.67 ml/mx			
	WeatherMax	4.5	L		22	OZ/A	1 inch	B	17.42 ml/mx			
	Staple	3.2	L		2.6	OZ/A	1 inch	B	2.059 ml/mx			
	Valor	51	WG		1	OZ/A	PD-5"AMA	C	0.759 g/mx			
	NIS		L		0.25	% V/V	PD-5"AMA	C	3.75 ml/mx			
	Touchdown Total	4.17	L		24	OZ/A	PD-5"AMA	C	19.0 ml/mx			
13	Prowl	3.8	L		2.1	PT/A	PRE	A	26.6 ml/mx	113	212	311
	Diuron	4	L		2.5	PT/A	PRE	A	31.67 ml/mx			
	WeatherMax	4.5	L		22	OZ/A	1 inch	B	17.42 ml/mx			
	Staple	3.2	L		2.6	OZ/A	1 inch	B	2.059 ml/mx			
	Valor	51	WG		2	OZ/A	PD-5"AMA	C	1.518 g/mx			
	NIS		L		0.25	% V/V	PD-5"AMA	C	3.75 ml/mx			
	Touchdown Total	4.17	L		24	OZ/A	PD-5"AMA	C	19.0 ml/mx			
14	Prowl	3.8	L		2.1	PT/A	PRE	A	26.6 ml/mx	114	215	307
	Diuron	4	L		2.5	PT/A	PRE	A	31.67 ml/mx			
	WeatherMax	4.5	L		22	OZ/A	1 inch	B	17.42 ml/mx			
	Staple	3.2	L		2.6	OZ/A	1 inch	B	2.059 ml/mx			
	Reflex	2	L		16	OZ/A	PD-5"AMA	C	12.67 ml/mx			
	NIS		L		0.25	% V/V	PD-5"AMA	C	3.75 ml/mx			
	MSMA	6	L		24	OZ/A	PD-5"AMA	C	19.0 ml/mx			
15	Prowl	3.8	L		2.1	PT/A	PRE	A	26.6 ml/mx	115	214	309
	Diuron	4	L		2.5	PT/A	PRE	A	31.67 ml/mx			
	WeatherMax	4.5	L		22	OZ/A	1 inch	B	17.42 ml/mx			
	Staple	3.2	L		2.6	OZ/A	1 inch	B	2.059 ml/mx			
	Prefix	5.4	L		32	OZ/A	PD-5"AMA	C	25.34 ml/mx			
	NIS		L		0.25	% V/V	PD-5"AMA	C	3.75 ml/mx			
	MSMA	6	L		24	OZ/A	PD-5"AMA	C	19.0 ml/mx			

Sort Order: Treatment

University of Georgia

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	Form Rate	Form Unit	Rate Stg	Grow Code	Appl to Measure	Amt Product 1	Product 2	Plot No. 3	By Rep
---------	----------------	-----------	-----------	-----------	-----------	-----------	----------	-----------	-----------------	---------------	-----------	------------	--------

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

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
498.786	ml	Prowl	3.8	L	
593.793	ml	Diuron	4	L	
326.621	ml	WeatherMax	4.5	L	
38.601	ml	Staple	3.2	L	
95.017	ml	Reflex	2	L	
65.618	ml	NIS		L	
179.266	ml	Prefix	5.4	L	
5.693	g	Valor	51	WG	
142.526	ml	Touchdown Total	4.17	L	
47.509	ml	MSMA	6	L	

- * '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: Determining cotton and weed response to layby applications of Reflex and Prefix.

Note: Early season weed control was so effective and conditions were dry during mid-season; thus, getting a uniform stand of weeds for layby treatments was extremely challenging. Cotton was larger than desired and weed populations were lighter than desired making this a "fair" study at best.

Cotton Response:

1. Injury was a measure of leaf drop coupled with stem spotting (blackening). Cotton stems were "woody" at time of application.
2. Reflex defoliated any leaf it touched and caused some stem spotting (8-20% injury 7DAT). No rate response was noted. Injury from Prefix was similar. These treatments need to be compared on non-woody cotton.
3. Injury from Valor was typical ranging from 15 to 20%.
4. Glyphosate added to Reflex, Prefix, or Valor did not increase injury on this woody mature cotton. Similar results were noted when mixing MSMA with Reflex or Prefix.
5. By 15 DAT, cotton leaves contacted by Reflex, Prefix or Valor were on the ground and stem blackening was similar among treated cotton.

Sicklepod Response:

1. All glyphosate and MSMA layby combinations provided complete control.
2. Valor provided poor control, Reflex provided poor to fair control, and Prefix provided fair control.

Morningglory Response:

1. All layby treatments except Valor at 1 oz/A provided complete control.

Palmer amaranth:

1. Palmer amaranth was only 1.5 inches at time of treatment. Treatments had to be applied because cotton was beginning to lap.
2. All treatments except for Valor alone provided complete control of emerged plants. All treatments provided complete residual control.

Conclusions:

1. Additional studies with Prefix and Reflex are needed on non-"woody" cotton. Injury was significant for such large mature cotton.
2. Lack of cotton tolerance data and carryover label recommendations are concerns with recommending Prefix or Reflex at layby in cotton.

GENERAL COMMENTS:

1. Rainfall that occurred while conducting the experiment is as follows:

University of Georgia

Apr 28	1 in
May 9	0.4 in
May 11	2.7 in
May 20	0.2 in
May 24	0.3 in
Jun 11	0.9 in
Jun 17	0.6 in
Jun 22	1 in
Jul 5	0.5 in
Jul 21	1 in

University of Georgia

Weed Code			CASOB	CASOB	CASOB	IPOLA	IPOLA	IPOLA			
Crop Code	GOSHI	GOSHI	CASOB	CASOB	CASOB	IPOLA	IPOLA	IPOLA			
Rating Data Type	injury	injury	control	control	control	control	control	control			
Rating Unit	%	%	%	%	%	%	%	%			
Rating Date	Jul-21-08	Jul-29-08	May-28-08	Jul-21-08	Jul-29-08	May-28-08	Jul-21-08	Jul-29-08			
Trt-Eval Interval	7 DA-C	15 DA-C	14 DA-B	7 DA-C	15 DA-C	14 DA-B	7 DA-C	15 DA-C			
Trt No.	Treatment Name	Rate	Unit	1	2	3	4	5	6	7	8
15	Prowl	2.1	PT/A	20 ab	10 a	99 a	99 a	99 a	99 a	99 a	99 a
	Diuron	2.5	PT/A								
	WeatherMax	22	OZ/A								
	Staple	2.6	OZ/A								
	Prefix	32	OZ/A								
	NIS	0.25	% V/V								
	MSMA	24	OZ/A								
LSD (P=.05)				6.5	0.0	0.0	10.0	7.0	0.0	0.0	0.0
Standard Deviation				3.9	0.0	0.0	6.0	4.2	0.0	0.0	0.0
CV				21.62	0.0	0.0	7.17	5.1	0.0	0.0	0.0
Bartlett's X2				3.403	0.0	0.0	15.955	10.98	0.0	0.0	0.0
P(Bartlett's X2)				0.97	.	.	0.007*	0.052	.	.	.

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

University of Georgia

Weed Code			AMAPA	AMAPA	AMAPA	
Crop Code						
Rating Data Type			control	control	control	
Rating Unit			%	%	%	
Rating Date			May-28-08	Jul-21-08	Jul-29-08	
Trt-Eval Interval			14 DA-B	7 DA-C	15 DA-C	
Trt No.	Treatment Name	Rate	Unit	9	10	11
1	Prowl	2.1	PT/A	99 a	0 c	0 d
	Diuron	2.5	PT/A			
	WeatherMax	22	OZ/A			
	Staple	2.6	OZ/A			
	No Layby					
2	Prowl	2.1	PT/A	99 a	99 a	99 a
	Diuron	2.5	PT/A			
	WeatherMax	22	OZ/A			
	Staple	2.6	OZ/A			
	Reflex	16	OZ/A			
	NIS	0.25	% V/V			
3	Prowl	2.1	PT/A	99 a	99 a	99 a
	Diuron	2.5	PT/A			
	WeatherMax	22	OZ/A			
	Staple	2.6	OZ/A			
	Reflex	24	OZ/A			
	NIS	0.25	% V/V			
4	Prowl	2.1	PT/A	99 a	99 a	99 a
	Diuron	2.5	PT/A			
	WeatherMax	22	OZ/A			
	Staple	2.6	OZ/A			
	Prefix	32	OZ/A			
	NIS	0.25	% V/V			
5	Prowl	2.1	PT/A	99 a	99 a	99 a
	Diuron	2.5	PT/A			
	WeatherMax	22	OZ/A			
	Staple	2.6	OZ/A			
	Prefix	42.56	OZ/A			
	NIS	0.25	% V/V			
6	Prowl	2.1	PT/A	99 a	90 b	75 c
	Diuron	2.5	PT/A			
	WeatherMax	22	OZ/A			
	Staple	2.6	OZ/A			
	Valor	1	OZ/A			
	NIS	0.25	% V/V			
7	Prowl	2.1	PT/A	99 a	90 b	83 b
	Diuron	2.5	PT/A			
	WeatherMax	22	OZ/A			
	Staple	2.6	OZ/A			
	Valor	2	OZ/A			
	NIS	0.25	% V/V			
8	Prowl	2.1	PT/A	99 a	99 a	99 a
	Diuron	2.5	PT/A			
	WeatherMax	22	OZ/A			
	Staple	2.6	OZ/A			
	Reflex	16	OZ/A			
	NIS	0.25	% V/V			
	Touchdown Total	24	OZ/A			

University of Georgia

Weed Code				AMAPA	AMAPA	AMAPA
Crop Code						
Rating Data Type				control	control	control
Rating Unit				%	%	%
Rating Date				May-28-08	Jul-21-08	Jul-29-08
Trt-Eval Interval				14 DA-B	7 DA-C	15 DA-C
Trt No.	Treatment Name	Rate	Unit	9	10	11
9	Prowl	2.1	PT/A	99 a	99 a	99 a
	Diuron	2.5	PT/A			
	WeatherMax	22	OZ/A			
	Staple	2.6	OZ/A			
	Reflex	24	OZ/A			
	NIS	0.25	% V/V			
	Touchdown Total	24	OZ/A			
10	Prowl	2.1	PT/A	99 a	99 a	99 a
	Diuron	2.5	PT/A			
	WeatherMax	22	OZ/A			
	Staple	2.6	OZ/A			
	Prefix	32	OZ/A			
	NIS	0.25	% V/V			
	Touchdown Total	24	OZ/A			
11	Prowl	2.1	PT/A	99 a	99 a	99 a
	Diuron	2.5	PT/A			
	WeatherMax	22	OZ/A			
	Staple	2.6	OZ/A			
	Prefix	42.56	OZ/A			
	NIS	0.25	% V/V			
	Touchdown Total	24	OZ/A			
12	Prowl	2.1	PT/A	99 a	99 a	99 a
	Diuron	2.5	PT/A			
	WeatherMax	22	OZ/A			
	Staple	2.6	OZ/A			
	Valor	1	OZ/A			
	NIS	0.25	% V/V			
	Touchdown Total	24	OZ/A			
13	Prowl	2.1	PT/A	99 a	99 a	99 a
	Diuron	2.5	PT/A			
	WeatherMax	22	OZ/A			
	Staple	2.6	OZ/A			
	Valor	2	OZ/A			
	NIS	0.25	% V/V			
	Touchdown Total	24	OZ/A			
14	Prowl	2.1	PT/A	99 a	99 a	99 a
	Diuron	2.5	PT/A			
	WeatherMax	22	OZ/A			
	Staple	2.6	OZ/A			
	Reflex	16	OZ/A			
	NIS	0.25	% V/V			
	MSMA	24	OZ/A			

University of Georgia

Weed Code		AMAPA	AMAPA	AMAPA
Crop Code				
Rating Data Type		control	control	control
Rating Unit		%	%	%
Rating Date		May-28-08	Jul-21-08	Jul-29-08
Trt-Eval Interval		14 DA-B	7 DA-C	15 DA-C
Trt No.	Treatment Name	Rate	Unit	
		9	10	11
15	Prowl	2.1	PT/A	99 a
	Diuron	2.5	PT/A	99 a
	WeatherMax	22	OZ/A	99 a
	Staple	2.6	OZ/A	
	Prefix	32	OZ/A	
	NIS	0.25	% V/V	
	MSMA	24	OZ/A	
LSD (P=.05)		0.0	3.5	1.2
Standard Deviation		0.0	2.1	0.7
CV		0.0	2.29	0.83
Bartlett's X2		0.0	0.0	0.0
P(Bartlett's X2)		.	.	.

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

University of Georgia

MAINTENANCE

Field Prep./Maintenance:

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

SOIL DESCRIPTION

% Sand: 82	% OM: 2	Texture: loamy sand
% Silt: 14	pH: 6.4	Soil Name: _____
% Clay: 4	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	B	C
Application Date:	Apr-24-08	May-14-08	Jul-14-08
Time of Day:	8:00 am	8:00 am	9:00 am
Application Method:	broadcast	broadcast	broadcast
Application Timing:	PRE	1 in	layby
Applic. Placement:	on soil	overtop	directed
Air Temp., Unit:	68 F	68 F	81 F
% Relative Humidity:	75	56	61
Wind Velocity, Unit:	3 mph	2 mph	4 mph
Dew Presence (Y/N):	N	N	Y
Water Hardness:			
Soil Temp., Unit:	65 F	68 F	81 F
Soil Moisture:	moist	moist	moist
% Cloud Cover:	0	50	100

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	GOSHI A	GOSHI B	GOSHI C
Stage Scale:	PRE	2 leaf	15 leaf
Height, Unit:	0 inch	2.5 in	24 in

University of Georgia

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	AMAPA A	AMAPA B	AMAPA C
Stage Scale:	PRE	1.5 in	1.5 in
Density, Unit:	0 ydsq	2 ydsq	4 ydsq
Weed 2 Code, Stage:	IPOLA A	IPOLA B	IPOLA C
Stage Scale:	PRE	2 in	4 in
Density, Unit:	0 ydsq	2 ydsq	2 ydsq
Weed 3 Code, Stage:	CASOB A	CASOB B	CASOB C
Stage Scale:	PRE	2 in	3 in
Density, Unit:	0 ydsq	5 ydsq	3 ydsq

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	backpack	backpack	backpack
Operating Pressure:	24	23	26
Nozzle Type:	flat fan	flat fan	flood jet
Nozzle Size:	11002	11002	tk 2
Nozzle Spacing, Unit:	18 in	18 in	36 in
Nozzles/Row:	2	2	1
Band Width, Unit:			
Boom Length, Unit:	4.5 ft	4.5 ft	
Boom Height, Unit:	15 in	15 in	12 in
Ground Speed, Unit:	3 mph	3 mph	3 mph
Incorporation Equip.:			
Hours to Incorp.:			
Incorp. Depth, Unit:			
Carrier:			
Spray Volume, Unit:	15 GPA	15 GPA	15 GPA
Spray pH:			
Propellant:	CO2	CO2	CO2
Tank Mix (Y/N):			

Trt No	Treatment Application Comment