

University of Georgia

Glyphosate-resistant Palmer amaranth response to V-10206 mixtures at layby.

Trial ID: C8-08

Study Dir.: Stanley Culpepper

Location: Macon County

Investigator: Stanley Culpepper

Reps: 3

Plots: 12 by 25 feet

Spray vol: 14.8 gal/ac

Mix size: 1.5 liters (min 1.1575)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Grow Unit	Appl Stg	Code	Amt to Measure	Product	Plot No. 1	Plot No. 2	Plot No. 3
1	Non-treated										101	207	301
2	Cotoran	4	L	L	3.2	PT/A	PRE	A	40.54 ml/mx		102	204	303
	Roundup PowerMax	4.5	L	L	22	OZ/A	2 lf	B	17.42 ml/mx				
	Roundup PowerMax	4.5	L	L	22	OZ/A	Layby	C	17.42 ml/mx				
	Valor SX	51	WG	WG	2	OZ/A	Layby	C	1.518 g/mx				
3	Cotoran	4	L	L	3.2	PT/A	PRE	A	40.54 ml/mx		103	202	305
	Roundup PowerMax	4.5	L	L	22	OZ/A	2 lf	B	17.42 ml/mx				
	Roundup PowerMax	4.5	L	L	22	OZ/A	Layby	C	17.42 ml/mx				
	Valor SX	51	WG	WG	2	OZ/A	Layby	C	1.518 g/mx				
	V-10206	85	WG	WG	1	OZ/A	Layby	C	0.759 g/mx				
4	Cotoran	4	L	L	3.2	PT/A	PRE	A	40.54 ml/mx		104	205	307
	Roundup PowerMax	4.5	L	L	22	OZ/A	2 lf	B	17.42 ml/mx				
	Roundup PowerMax	4.5	L	L	22	OZ/A	Layby	C	17.42 ml/mx				
	Valor SX	51	WG	WG	2	OZ/A	Layby	C	1.518 g/mx				
	V-10206	85	WG	WG	1.5	OZ/A	Layby	C	1.139 g/mx				
5	Cotoran	4	L	L	3.2	PT/A	PRE	A	40.54 ml/mx		105	208	306
	Roundup PowerMax	4.5	L	L	22	OZ/A	2 lf	B	17.42 ml/mx				
	Roundup PowerMax	4.5	L	L	22	OZ/A	Layby	C	17.42 ml/mx				
	Valor SX	51	WG	WG	2	OZ/A	Layby	C	1.518 g/mx				
	V-10206	85	WG	WG	2.0	OZ/A	Layby	C	1.518 g/mx				
6	Cotoran	4	L	L	3.2	PT/A	PRE	A	40.54 ml/mx		106	201	304
	Roundup PowerMax	4.5	L	L	22	OZ/A	2 lf	B	17.42 ml/mx				
	Roundup PowerMax	4.5	L	L	22	OZ/A	Layby	C	17.42 ml/mx				
	Valor SX	51	WG	WG	2	OZ/A	Layby	C	1.518 g/mx				
	V-10206	85	WG	WG	2.5	OZ/A	Layby	C	1.898 g/mx				
7	Cotoran	4	L	L	3.2	PT/A	PRE	A	40.54 ml/mx		107	203	302
	Roundup PowerMax	4.5	L	L	22	OZ/A	2 lf	B	17.42 ml/mx				
	Roundup PowerMax	4.5	L	L	22	OZ/A	Layby	C	17.42 ml/mx				
	Valor SX	51	WG	WG	2	OZ/A	Layby	C	1.518 g/mx				
	V-10206	85	WG	WG	3.0	OZ/A	Layby	C	2.277 g/mx				
8	Cotoran	4	L	L	3.2	PT/A	PRE	A	40.54 ml/mx		108	206	308
	Roundup PowerMax	4.5	L	L	22	OZ/A	2 lf	B	17.42 ml/mx				
	Roundup PowerMax	4.5	L	L	22	OZ/A	Layby	C	17.42 ml/mx				
	Valor SX	51	WG	WG	2	OZ/A	Layby	C	1.518 g/mx				
	Direx	4	L	L	1.5	PT/A	Layby	C	19.0 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
354.692	ml	Cotoran	4	L	
304.847	ml	Roundup PowerMax	4.5	L	
13.283	g	Valor SX	51	WG	
9.488	g	V-10206	85	WG	
23.752	ml	Direx	4	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.

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Trial ID: C8-08

Study Dir.: Stanley Culpepper

Location: Macon County

Investigator: Stanley Culpepper

Trial Comments

OBJECTIVE: Determine the benefit for using V-10206 at layby for the control of glyphosate-resistant Palmer amaranth.

Palmer Amaranth Response:

1. Cotoran provided excellent control for 3 wks.
2. Glyphosate POST provided no control.
3. At 4 d after layby, V-10206 at rates above 2 oz/A improved the initial "burn" on the pigweed.
4. The addition of diuron with Roundup plus Valor was far more effective than V-10206 as the diuron improved control of emerged plants.
5. At 26 d after layby, the addition of V-10206 at 2 to 3 oz/A with glyphosate and Valor was more effective than just glyphosate plus Valor. However, diuron was a more effective tank mix partner because of the improved control of emerged plants.

Cotton Injury:

1. Cotton stems were woody at time of application and precision applications were made.
2. Injury from directed applications of Valor were not impacted by the addition of V-10206 or with diuron. Injury was stem blackening and leaf defoliation on leaves contacted.
3. Cotton recovered completely by 24 DAT.

GENERAL COMMENTS:

1. Firestorm @ 1 qt/A + 1 qt/A Crop Oil was applied over the trial area at planting.
2. Rainfall occurring during times of herbicide applications in crop included the following:

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

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Weed Code		AMAPA	AMAPA	AMAPA	AMAPA	GOSHI	GOSHI	GOSHI	
Crop Code									
Rating Data Type		control	control	control	control	injury	injury	injury	
Rating Unit		%	%	%	%	%	%	%	
Rating Date		May-14-08	Jun-04-08	Jun-11-08	Jun-26-08	Jun-04-08	Jun-11-08	Jun-24-08	
Trt-Eval Interval		21 DA-A	4 DA-C	11 DA-C	26 DA-C	4 DA-C	11 DA-C	24 DA-C	
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate	Rate	Rate	
		Unit	Unit	Unit	Unit	Unit	Unit	Unit	
		1	2	3	4	5	6	7	
1	Non-treated	0 b	0 d	0 d	0 d	0 b	0 c	0 a	
2	Cotoran	3.2 PT/A	97 a	76 c	77 b	33 c	9 a	7 b	0 a
	Roundup PowerMax	22 OZ/A							
	Roundup PowerMax	22 OZ/A							
	Valor SX	2 OZ/A							
3	Cotoran	3.2 PT/A	97 a	78 c	78 b	33 c	9 a	7 b	0 a
	Roundup PowerMax	22 OZ/A							
	Roundup PowerMax	22 OZ/A							
	Valor SX	2 OZ/A							
	V-10206	1 OZ/A							
4	Cotoran	3.2 PT/A	95 a	77 c	72 c	30 c	13 a	6 b	0 a
	Roundup PowerMax	22 OZ/A							
	Roundup PowerMax	22 OZ/A							
	Valor SX	2 OZ/A							
	V-10206	1.5 OZ/A							
5	Cotoran	3.2 PT/A	98 a	81 bc	77 b	47 b	11 a	9 ab	0 a
	Roundup PowerMax	22 OZ/A							
	Roundup PowerMax	22 OZ/A							
	Valor SX	2 OZ/A							
	V-10206	2.0 OZ/A							
6	Cotoran	3.2 PT/A	98 a	85 ab	80 b	55 b	12 a	9 ab	0 a
	Roundup PowerMax	22 OZ/A							
	Roundup PowerMax	22 OZ/A							
	Valor SX	2 OZ/A							
	V-10206	2.5 OZ/A							
7	Cotoran	3.2 PT/A	97 a	84 ab	80 b	53 b	12 a	8 ab	0 a
	Roundup PowerMax	22 OZ/A							
	Roundup PowerMax	22 OZ/A							
	Valor SX	2 OZ/A							
	V-10206	3.0 OZ/A							
8	Cotoran	3.2 PT/A	96 a	88 a	96 a	79 a	14 a	12 a	0 a
	Roundup PowerMax	22 OZ/A							
	Roundup PowerMax	22 OZ/A							
	Valor SX	2 OZ/A							
	Direx	1.5 PT/A							
LSD (P=.05)		3.6	5.0	4.7	10.7	6.4	4.1	0.0	
Standard Deviation		2.1	2.9	2.7	6.1	3.7	2.4	0.0	
CV		2.45	4.05	3.86	14.78	36.62	32.26	0.0	
Bartlett's X2		6.401	3.141	1.581	9.442	6.387	3.533	0.0	
P(Bartlett's X2)		0.38	0.791	0.664	0.093	0.381	0.74	.	

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

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Trial ID: C8-08 Study Dir.: Stanley Culpepper
 Location: Macon County Investigator: Stanley Culpepper

GENERAL TRIAL INFORMATION

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

TRIAL LOCATION

City: Macon Co. **Trial Status:** completed
State/Prov.: GA **Trial Reliability:** good
Postal Code: 31068 **Initiation Date:** Apr-23-08
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.	AMAPA	Amaranth, Palmer	Amaranthus palmeri

Crop 1: GOSHI COTTON, SHORT STAPLE **Variety:** DP 555 BR
Planting Date: Apr-23-08 **Planting Method:** hill dropped
Rate: 2 8 in **Depth:** 0.5 in **Perennial Age:** _____
Row Spacing: 36 in **Spacing Within Row:** 8 in **Seed Bed:** raised
Soil Temperature: 82 F **Soil Moisture:** moist **Emergence Date:** Apr-29-08

SITE AND DESIGN

Plot Width, Unit: 12 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: On Farm
Tillage Type: Conventional **Study Design:** RANDOMIZED COMPLETE BLOCK

Trial Initiation Comments:

	Previous Crops	Previous Pesticides	Year
1.			

MAINTENANCE

Field Prep./Maintenance:

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

SOIL DESCRIPTION

% Sand: 82 % OM: 2.0 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-23-08	May-14-08	May-31-08
Time of Day:	7:00 pm	8:00 am	8:00 am
Application Method:	broadcast	broadcast	broadcast
Application Timing:	PRE	2 leaf	layby
Applic. Placement:	on soil	overtop	directed
Air Temp., Unit:	78 F	68 F	77 F
% Relative Humidity:	44	56	74
Wind Velocity, Unit:	6 mph	2 mph	3 mph
Dew Presence (Y/N):	N	N	N
Water Hardness:			
Soil Temp., Unit:	82 F	68 F	77 F
Soil Moisture:	moist	moist	fair
% Cloud Cover:	10	80	30

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	GOSHI A	GOSHI B	GOSHI C
Stage Scale:	PRE	2 leaf	8 leaf
Height, Unit:	0 in	2.5 in	12 in

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	AMAPA A	AMAPA B	AMAPA C
Stage Scale:	PRE	0.25 inch	4 in
Density, Unit:	0 ydsq	15 ydsq	22 ydsq

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APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	backpack	backpack	backpack
Operating Pressure:	24	24	24
Nozzle Type:	flat fan	flat fan	flat fan
Nozzle Size:	11002	11002	11002
Nozzle Spacing, Unit:	18 in	18 in	12 in
Nozzles/Row:	2	2	3
Band Width, Unit:			
Boom Length, Unit:	4.5 ft	4.5 ft	24 in
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:	water	water	water
Spray Volume, Unit:	14.5 GPA	15 GPA	15 GPA
Spray pH:			
Propellant:	CO2	CO2	CO2
Tank Mix (Y/N):	y	y	y

Trt No	Treatment Application Comment