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Glyphosate-resistant Palmer amaranth response to glyphosate, Ignite, Remedy, Clarity, Weedar, Direx, MSMA, and Valor.

Trial ID: C52-08

Study Dir.: Stanley Culpepper

Location: Macon County

Investigator: Stanley Culpepper

Reps: 3

Plots: 6 by 25 feet

Spray vol: 14.8 gal/ac

Mix size: 1 liters (min .57876)

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	Remedy	4	L		0.5	PT/A		POST	A	4.223 ml/mx	101	210	302
	Durango	4	L		0.75	LB A/A		POST	A	12.67 ml/mx			
2	Remedy	4	L		1.0	PT/A		POST	A	8.445 ml/mx	102	207	312
	Durango	4	L		0.75	LB A/A		POST	A	12.67 ml/mx			
3	Remedy	4	L		1.5	PT/A		POST	A	12.67 ml/mx	103	219	320
	Durango	4	L		0.75	LB A/A		POST	A	12.67 ml/mx			
4	Remedy	4	L		2.0	PT/A		POST	A	16.89 ml/mx	104	205	301
	Durango	4	L		0.75	LB A/A		POST	A	12.67 ml/mx			
5	Weedar	3.8	L		1.5	PT/A		POST	A	12.67 ml/mx	105	202	308
	Durango	4	L		0.75	LB A/A		POST	A	12.67 ml/mx			
6	Weedar	3.8	L		1.5	PT/A		POST	A	12.67 ml/mx	106	220	318
	Ignite	2.34	L		23	OZ/A		POST	A	12.14 ml/mx			
7	Clarity	4	L		12	OZ/A		POST	A	6.334 ml/mx	107	213	307
	Durango	4	L		0.75	LB A/A		POST	A	12.67 ml/mx			
8	Clarity	4	L		12	OZ/A		POST	A	6.334 ml/mx	108	211	314
	Ignite	2.34	L		23	OZ/A		POST	A	12.14 ml/mx			
9	Remedy	4	L		1.0	PT/A		POST	A	8.445 ml/mx	109	216	311
	Ignite	2.34	L		23	OZ/A		POST	A	12.14 ml/mx			
10	Durango	4	L		0.75	LB A/A		POST	A	12.67 ml/mx	110	218	313
11	Ignite	2.34	L		23	OZ/A		POST	A	12.14 ml/mx	111	208	306
12	Ignite	2.34	L		23	OZ/A		POST	A	12.14 ml/mx	112	209	315
	COC		L		1	% V/V		POST	A	9.999 ml/mx			
13	Ignite	2.34	L		23	OZ/A		POST	A	12.14 ml/mx	113	212	317
	NIS		L		0.25	% V/V		POST	A	2.5 ml/mx			
14	Direx	4	L		1	QT/A		POST	A	16.89 ml/mx	114	201	303
	MSMA	6	L		2.5	PT/A		POST	A	21.11 ml/mx			
	NIS		L		0.25	% V/V		POST	A	2.5 ml/mx			
15	Direx	4	L		1	QT/A		POST	A	16.89 ml/mx	115	203	304
	MSMA	6	L		2.5	PT/A		POST	A	21.11 ml/mx			
	Valor	51	DF		1	OZ/A		POST	A	0.506 g/mx			
	NIS		L		0.25	% V/V		POST	A	2.5 ml/mx			
16	Direx	4	L		1	QT/A		POST	A	16.89 ml/mx	116	214	305
	MSMA	6	L		2.5	PT/A		POST	A	21.11 ml/mx			
	Valor	51	DF		2	OZ/A		POST	A	1.012 g/mx			
	NIS		L		0.25	% V/V		POST	A	2.5 ml/mx			
17	Direx	4	L		1	PT/A		POST	A	8.445 ml/mx	117	204	316
	MSMA	6	L		2.5	PT/A		POST	A	21.11 ml/mx			
	Valor	51	DF		2	OZ/A		POST	A	1.012 g/mx			
	NIS		L		0.25	% V/V		POST	A	2.5 ml/mx			
18	Durango	4	L		0.75	LB A/A		POST	A	12.67 ml/mx	118	206	310
	Direx	4	L		1.5	PT/A		POST	A	12.67 ml/mx			
19	Durango	4	L		0.75	LB A/A		POST	A	12.67 ml/mx	119	217	319
	Direx	4	L		1.5	PT/A		POST	A	12.67 ml/mx			
	Valor	51	DF		1	OZ/A		POST	A	0.506 g/mx			
20	Durango	4	L		0.75	LB A/A		POST	A	12.67 ml/mx	120	215	309
	Direx	4	L		1.5	PT/A		POST	A	12.67 ml/mx			
	Valor	51	DF		2	OZ/A		POST	A	1.012 g/mx			

Sort Order: Treatment

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Reps: 3 Plots: 6 by 25 feet
 Spray vol: 14.8 gal/ac Mix size: 1 liters (min .57876)

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
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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
63.338	ml	Remedy	4	L	
158.345	ml	Durango	4	L	
31.669	ml	Weedar	3.8	L	
91.058	ml	Ignite	2.34	L	
15.836	ml	Clarity	4	L	
12.499	ml	COC		L	
15.623	ml	NIS		L	
121.398	ml	Direx	4	L	
105.563	ml	MSMA	6	L	
5.060	g	Valor	51	DF	

* 'Per area' calculations based on spray volume= 14.8 gal/ac, mix size= 1 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 liters.

Trial Comments

OBJECTIVE: Determine Palmer amaranth response to Weedar, Remedy, Clarity, Ignite and Direx mixtures.

Note: Control was evaluated on Palmer amaranth that emerged during mid summer.

- Palmer amaranth response at 42 DAT:
1. Palmer was 8 inches at time of application.
 2. When mixed with glyphosate, Remedy at 2 pt provided 82% control with Weedar at 1.5 pt/A being 21% less effective.
 3. Excellent control was noted with Ignite at 23 oz/A mixed with Weedar at 1.5 pt/A, Clarity at 12 oz/A, and Remedy at 1 pt/A.
 4. Ignite alone provided poor control. Mixing crop oil with Ignite did not improve control. However, NIS mixed with Ignite greatly improved control. This benefit in control with NIS is odd and not expected, this result must be further studied in 2009.
 5. Palmer was simply too large for all diuron mixtures and control was poor.

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Glyphosate-resistant Palmer amaranth response to glyphosate, Ignite, Remedy, Clarity, Weedar, Direx, MSMA, and Valor.

Trial ID: C52-08

Study Dir.: Stanley Culpepper

Location: Macon County

Investigator: Stanley Culpepper

Weed Code	AMAPA	AMAPA	AMAPA
Rating Data Type	control	control	control
Rating Unit	%	%	%
Rating Date	Aug-06-08	Aug-11-08	Sep-09-08
Trt-Eval Interval	8 DA-A	13 DA-A	42 DA-A
Trt No.	1	2	3
Treatment Name			
Rate			
Rate Unit			
1 Remedy	73 cd	74 cde	50 ef
Durango			
0.5 PT/A			
0.75 LB A/A			
2 Remedy	72 cd	75 cde	53 e
Durango			
1.0 PT/A			
0.75 LB A/A			
3 Remedy	77 cd	80 bcd	72 c
Durango			
1.5 PT/A			
0.75 LB A/A			
4 Remedy	81 bc	83 bc	82 b
Durango			
2.0 PT/A			
0.75 LB A/A			
5 Weedar	73 cd	70 def	62 d
Durango			
1.5 PT/A			
0.75 LB A/A			
6 Weedar	98 a	98 a	91 a
Ignite			
1.5 PT/A			
23 OZ/A			
7 Clarity	78 cd	76 cde	65 cd
Durango			
12 OZ/A			
0.75 LB A/A			
8 Clarity	98 a	97 a	95 a
Ignite			
12 OZ/A			
23 OZ/A			
9 Remedy	97 a	97 a	91 a
Ignite			
1.0 PT/A			
23 OZ/A			
10 Durango	3 e	0 j	0 i
0.75 LB A/A			
11 Ignite	90 ab	83 bc	40 gh
23 OZ/A			
12 Ignite	93 a	80 bcd	47 efg
COC			
23 OZ/A			
1 % V/V			
13 Ignite	98 a	90 ab	72 c
NIS			
23 OZ/A			
0.25 % V/V			
14 Direx	78 c	62 fgh	40 gh
MSMA			
2.5 PT/A			
NIS			
0.25 % V/V			
15 Direx	78 c	58 ghi	40 gh
MSMA			
2.5 PT/A			
Valor			
1 OZ/A			
NIS			
0.25 % V/V			
16 Direx	81 bc	67 efg	40 gh
MSMA			
2.5 PT/A			
Valor			
2 OZ/A			
NIS			
0.25 % V/V			
17 Direx	78 c	61 fgh	40 gh
MSMA			
2.5 PT/A			
Valor			
2 OZ/A			
NIS			
0.25 % V/V			
18 Durango	67 d	55 hi	43 fgh
Direx			
0.75 LB A/A			
1.5 PT/A			
19 Durango	77 cd	50 i	40 gh
Direx			
0.75 LB A/A			
1.5 PT/A			
Valor			
1 OZ/A			

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Weed Code		AMAPA	AMAPA	AMAPA
Rating Data Type		control	control	control
Rating Unit		%	%	%
Rating Date		Aug-06-08	Aug-11-08	Sep-09-08
Trt-Eval Interval		8 DA-A	13 DA-A	42 DA-A
Trt No.	Treatment Name	Rate	Unit	
20	Durango	0.75	LB A/A	73 cd
	Direx	1.5	PT/A	60 fgh
	Valor	2	OZ/A	37 h
LSD (P=.05)		9.5		9.4
Standard Deviation		5.8		5.7
CV		7.39		8.06
Bartlett's X2		39.089		20.759
P(Bartlett's X2)		0.004*		0.145

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

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

SOIL DESCRIPTION

% Sand: 82 % OM: 6.4 Texture: loamy sand
 % Silt: 14 pH: 2 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
Application Date:	Jul-29-08
Time of Day:	1:00 pm
Application Method:	broadcast
Application Timing:	POST
Applic. Placement:	overtop
Air Temp., Unit:	94 F
% Relative Humidity:	48
Wind Velocity, Unit:	2 mph
Dew Presence (Y/N):	N
Water Hardness:	
Soil Temp., Unit:	104 F
Soil Moisture:	dry
% Cloud Cover:	20

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	
Stage Scale:	
Height, Unit:	

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	AMAPA
Stage Scale:	8 inch
Density, Unit:	10 ydsq

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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