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Glyphosate-resistant Palmer amaranth response to residual preplant herbicides.

Trial ID: C23-06

Study Dir.: Stanley Culpepper

Location: Macon (paved road)

Investigator: Stanley Culpepper

Reps: 3

Plots: 6 by 22 feet

Spray vol: 14.8 gal/ac

Mix size: 1.5 liters (min .50931)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate	Grow Unit	Stg	Appl Code	Amt to Measure	Product	Plot No. By Rep		
											1	2	3
1	Roundup WeatherMax	4.5	L		22 OZ/A	POST	C		17.42 ml/mx		101	207	307
	Roundup WeatherMax	4.5	L		22 OZ/A	POST2	D		17.42 ml/mx				
	Layby Pro	4	L		2 PT/A	PD	E		25.34 ml/mx				
	MSMA	6	L		2 LB A/A	PD	E		33.78 ml/mx				
	NIS		L		0.25 % V/V	PD	E		3.75 ml/mx				
	Roundup WeatherMax	4.5	L		22 OZ/A	Preplant	A		17.42 ml/mx				
2	Roundup WeatherMax	4.5	L		22 OZ/A	POST	C		17.42 ml/mx		102	210	304
	Roundup WeatherMax	4.5	L		22 OZ/A	POST2	D		17.42 ml/mx				
	Layby Pro	4	L		2 PT/A	PD	E		25.34 ml/mx				
	MSMA	6	L		2 LB A/A	PD	E		33.78 ml/mx				
	NIS		L		0.25 % V/V	PD	E		3.75 ml/mx				
	Roundup WeatherMax	4.5	L		22 OZ/A	Preplant	A		17.42 ml/mx				
Clarity	4	L		8 OZ/A	Preplant	A		6.334 ml/mx					
3	Roundup WeatherMax	4.5	L		22 OZ/A	POST	C		17.42 ml/mx		103	213	311
	Roundup WeatherMax	4.5	L		22 OZ/A	POST2	D		17.42 ml/mx				
	Layby Pro	4	L		2 PT/A	PD	E		25.34 ml/mx				
	MSMA	6	L		2 LB A/A	PD	E		33.78 ml/mx				
	NIS		L		0.25 % V/V	PD	E		3.75 ml/mx				
	Roundup WeatherMax	4.5	L		22 OZ/A	Preplant	A		17.42 ml/mx				
Clarity	4	L		8 OZ/A	Preplant	A		6.334 ml/mx					
Direx	4	L		24 OZ/A	Preplant	A		19.0 ml/mx					
4	Roundup WeatherMax	4.5	L		22 OZ/A	POST	C		17.42 ml/mx		104	208	308
	Roundup WeatherMax	4.5	L		22 OZ/A	POST2	D		17.42 ml/mx				
	Layby Pro	4	L		2 PT/A	PD	E		25.34 ml/mx				
	MSMA	6	L		2 LB A/A	PD	E		33.78 ml/mx				
	NIS		L		0.25 % V/V	PD	E		3.75 ml/mx				
	Roundup WeatherMax	4.5	L		22 OZ/A	Preplant	A		17.42 ml/mx				
Clarity	4	L		8 OZ/A	Preplant	A		6.334 ml/mx					
Cotoran	4	L		32 OZ/A	Preplant	A		25.34 ml/mx					
5	Roundup WeatherMax	4.5	L		22 OZ/A	POST	C		17.42 ml/mx		105	206	305
	Roundup WeatherMax	4.5	L		22 OZ/A	POST2	D		17.42 ml/mx				
	Layby Pro	4	L		2 PT/A	PD	E		25.34 ml/mx				
	MSMA	6	L		2 LB A/A	PD	E		33.78 ml/mx				
	NIS		L		0.25 % V/V	PD	E		3.75 ml/mx				
	Roundup WeatherMax	4.5	L		22 OZ/A	Preplant	A		17.42 ml/mx				
Clarity	4	L		8 OZ/A	Preplant	A		6.334 ml/mx					
Staple	3.2	L		1.7 OZ/A	Preplant	A		1.346 ml/mx					
6	Roundup WeatherMax	4.5	L		22 OZ/A	POST	C		17.42 ml/mx		106	201	309
	Roundup WeatherMax	4.5	L		22 OZ/A	POST2	D		17.42 ml/mx				
	Layby Pro	4	L		2 PT/A	PD	E		25.34 ml/mx				
	MSMA	6	L		2 LB A/A	PD	E		33.78 ml/mx				
	NIS		L		0.25 % V/V	PD	E		3.75 ml/mx				
	Roundup WeatherMax	4.5	L		22 OZ/A	Preplant	A		17.42 ml/mx				
Clarity	4	L		8 OZ/A	Preplant	A		6.334 ml/mx					
Cinch	3.2	L		16 OZ/A	Preplant	A		12.67 ml/mx					

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Reps: 3

Plots: 6 by 22 feet

Spray vol: 14.8 gal/ac

Mix size: 1.5 liters (min .50931)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code	Amt Product to Measure	Plot No. By Rep		
										1	2	3
14	Cotoran	4	L		3	PT/A	PRE	B	38.0 ml/mx	114	224	322
	Roundup WeatherMax	4.5	L		22	OZ/A	POST	C	17.42 ml/mx			
	Staple	3.2	L		1.7	OZ/A	POST	C	1.346 ml/mx			
	Layby Pro	4	L		2	PT/A	PD	E	25.34 ml/mx			
	MSMA	6	L		2	LB A/A	PD	E	33.78 ml/mx			
	NIS		L		0.25	% V/V	PD	E	3.75 ml/mx			
	Roundup WeatherMax	4.5	L		22	OZ/A	Preplant	A	17.42 ml/mx			
15	Cotoran	4	L		3	PT/A	PRE	B	38.0 ml/mx	115	215	326
	Roundup WeatherMax	4.5	L		22	OZ/A	POST	C	17.42 ml/mx			
	Staple	3.2	L		1.7	OZ/A	POST	C	1.346 ml/mx			
	Layby Pro	4	L		2	PT/A	PD	E	25.34 ml/mx			
	MSMA	6	L		2	LB A/A	PD	E	33.78 ml/mx			
	NIS		L		0.25	% V/V	PD	E	3.75 ml/mx			
	Roundup WeatherMax	4.5	L		22	OZ/A	Preplant	A	17.42 ml/mx			
Clarity	4	L		8	OZ/A	Preplant	A	6.334 ml/mx				
16	Cotoran	4	L		3	PT/A	PRE	B	38.0 ml/mx	116	223	321
	Roundup WeatherMax	4.5	L		22	OZ/A	POST	C	17.42 ml/mx			
	Staple	3.2	L		1.7	OZ/A	POST	C	1.346 ml/mx			
	Layby Pro	4	L		2	PT/A	PD	E	25.34 ml/mx			
	MSMA	6	L		2	LB A/A	PD	E	33.78 ml/mx			
	NIS		L		0.25	% V/V	PD	E	3.75 ml/mx			
	Roundup WeatherMax	4.5	L		22	OZ/A	Preplant	A	17.42 ml/mx			
	Clarity	4	L		8	OZ/A	Preplant	A	6.334 ml/mx			
Direx	4	L		24	OZ/A	Preplant	A	19.0 ml/mx				
17	Cotoran	4	L		3	PT/A	PRE	B	38.0 ml/mx	117	220	320
	Roundup WeatherMax	4.5	L		22	OZ/A	POST	C	17.42 ml/mx			
	Staple	3.2	L		1.7	OZ/A	POST	C	1.346 ml/mx			
	Layby Pro	4	L		2	PT/A	PD	E	25.34 ml/mx			
	MSMA	6	L		2	LB A/A	PD	E	33.78 ml/mx			
	NIS		L		0.25	% V/V	PD	E	3.75 ml/mx			
	Roundup WeatherMax	4.5	L		22	OZ/A	Preplant	A	17.42 ml/mx			
	Clarity	4	L		8	OZ/A	Preplant	A	6.334 ml/mx			
Cotoran	4	L		32	OZ/A	Preplant	A	25.34 ml/mx				
18	Cotoran	4	L		3	PT/A	PRE	B	38.0 ml/mx	118	222	324
	Roundup WeatherMax	4.5	L		22	OZ/A	POST	C	17.42 ml/mx			
	Staple	3.2	L		1.7	OZ/A	POST	C	1.346 ml/mx			
	Layby Pro	4	L		2	PT/A	PD	E	25.34 ml/mx			
	MSMA	6	L		2	LB A/A	PD	E	33.78 ml/mx			
	NIS		L		0.25	% V/V	PD	E	3.75 ml/mx			
	Roundup WeatherMax	4.5	L		22	OZ/A	Preplant	A	17.42 ml/mx			
	Clarity	4	L		8	OZ/A	Preplant	A	6.334 ml/mx			
Staple	3.2	L		1.7	OZ/A	Preplant	A	1.346 ml/mx				
19	Cotoran	4	L		3	PT/A	PRE	B	38.0 ml/mx	119	225	319
	Roundup WeatherMax	4.5	L		22	OZ/A	POST	C	17.42 ml/mx			
	Staple	3.2	L		1.7	OZ/A	POST	C	1.346 ml/mx			
	Layby Pro	4	L		2	PT/A	PD	E	25.34 ml/mx			
	MSMA	6	L		2	LB A/A	PD	E	33.78 ml/mx			
	NIS		L		0.25	% V/V	PD	E	3.75 ml/mx			
	Roundup WeatherMax	4.5	L		22	OZ/A	Preplant	A	17.42 ml/mx			
	Clarity	4	L		8	OZ/A	Preplant	A	6.334 ml/mx			
Cinch	3.2	L		16	OZ/A	Preplant	A	12.67 ml/mx				

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Reps: 3

Plots: 6 by 22 feet

Spray vol: 14.8 gal/ac

Mix size: 1.5 liters (min .50931)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code	Amt Product to Measure	Plot No. By Rep		
										1	2	3
20	Cotoran	4	L	3	PT/A	PRE	B	38.0 ml/mx	120	214	318	
	Roundup WeatherMax	4.5	L	22	OZ/A	POST	C	17.42 ml/mx				
	Staple	3.2	L	1.7	OZ/A	POST	C	1.346 ml/mx				
	Layby Pro	4	L	2	PT/A	PD	E	25.34 ml/mx				
	MSMA	6	L	2	LB A/A	PD	E	33.78 ml/mx				
	NIS		L	0.25	% V/V	PD	E	3.75 ml/mx				
	Roundup WeatherMax	4.5	L	22	OZ/A	Preplant	A	17.42 ml/mx				
	Clarity	4	L	8	OZ/A	Preplant	A	6.334 ml/mx				
	Caparol	4	L	24	OZ/A	Preplant	A	19.0 ml/mx				
21	Cotoran	4	L	3	PT/A	PRE	B	38.0 ml/mx	121	226	317	
	Roundup WeatherMax	4.5	L	22	OZ/A	POST	C	17.42 ml/mx				
	Staple	3.2	L	1.7	OZ/A	POST	C	1.346 ml/mx				
	Layby Pro	4	L	2	PT/A	PD	E	25.34 ml/mx				
	MSMA	6	L	2	LB A/A	PD	E	33.78 ml/mx				
	NIS		L	0.25	% V/V	PD	E	3.75 ml/mx				
	Roundup WeatherMax	4.5	L	22	OZ/A	Preplant	A	17.42 ml/mx				
	Clarity	4	L	8	OZ/A	Preplant	A	6.334 ml/mx				
	Valor	51	DF	2	OZ/A	Preplant	A	1.518 g/mx				
22	Cotoran	4	L	3	PT/A	PRE	B	38.0 ml/mx	122	216	323	
	Roundup WeatherMax	4.5	L	22	OZ/A	POST	C	17.42 ml/mx				
	Staple	3.2	L	1.7	OZ/A	POST	C	1.346 ml/mx				
	Layby Pro	4	L	2	PT/A	PD	E	25.34 ml/mx				
	MSMA	6	L	2	LB A/A	PD	E	33.78 ml/mx				
	NIS		L	0.25	% V/V	PD	E	3.75 ml/mx				
	Roundup WeatherMax	4.5	L	22	OZ/A	Preplant	A	17.42 ml/mx				
	Clarity	4	L	8	OZ/A	Preplant	A	6.334 ml/mx				
	Prowl H20	3.8	L	3.2	PT/A	Preplant	A	40.54 ml/mx				
23	Cotoran	4	L	3	PT/A	PRE	B	38.0 ml/mx	123	219	316	
	Roundup WeatherMax	4.5	L	22	OZ/A	POST	C	17.42 ml/mx				
	Staple	3.2	L	1.7	OZ/A	POST	C	1.346 ml/mx				
	Layby Pro	4	L	2	PT/A	PD	E	25.34 ml/mx				
	MSMA	6	L	2	LB A/A	PD	E	33.78 ml/mx				
	NIS		L	0.25	% V/V	PD	E	3.75 ml/mx				
	Gramoxone Max	3	L	20.8	OZ/A	Preplant	A	16.47 ml/mx				
	Crop Oil		L	1	% V/V	Preplant	A	15.0 ml/mx				
24	Cotoran	4	L	3	PT/A	PRE	B	38.0 ml/mx	124	217	314	
	Roundup WeatherMax	4.5	L	22	OZ/A	POST	C	17.42 ml/mx				
	Staple	3.2	L	1.7	OZ/A	POST	C	1.346 ml/mx				
	Layby Pro	4	L	2	PT/A	PD	E	25.34 ml/mx				
	MSMA	6	L	2	LB A/A	PD	E	33.78 ml/mx				
	NIS		L	0.25	% V/V	PD	E	3.75 ml/mx				
	Gramoxone Max	3	L	20.8	OZ/A	Preplant	A	16.47 ml/mx				
	Crop Oil		L	1	% V/V	Preplant	A	15.0 ml/mx				
Direx	4	L	24	OZ/A	Preplant	A	19.0 ml/mx					
25	Cotoran	4	L	3	PT/A	PRE	B	38.0 ml/mx	125	221	315	
	Roundup WeatherMax	4.5	L	22	OZ/A	POST	C	17.42 ml/mx				
	Staple	3.2	L	1.7	OZ/A	POST	C	1.346 ml/mx				
	Layby Pro	4	L	2	PT/A	PD	E	25.34 ml/mx				
	MSMA	6	L	2	LB A/A	PD	E	33.78 ml/mx				
	NIS		L	0.25	% V/V	PD	E	3.75 ml/mx				
	Gramoxone Max	3	L	20.8	OZ/A	Preplant	A	16.47 ml/mx				
	Crop Oil		L	1	% V/V	Preplant	A	15.0 ml/mx				
	Cotoran	4	L	32	OZ/A	Preplant	A	25.34 ml/mx				

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Reps: 3 Plots: 6 by 22 feet
 Spray vol: 14.8 gal/ac Mix size: 1.5 liters (min .50931)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate	Grow Stg	Appl Code	Amt to Measure	Product	Plot No. By Rep		
										1	2	3
26	Cotoran	4	L	L	3 PT/A	PRE	B	38.0 ml/mx		126	218	325
	Roundup WeatherMax	4.5	L	L	22 OZ/A	POST	C	17.42 ml/mx				
	Staple	3.2	L	L	1.7 OZ/A	POST	C	1.346 ml/mx				
	Layby Pro	4	L	L	2 PT/A	PD	E	25.34 ml/mx				
	MSMA	6	L	L	2 LB A/A	PD	E	33.78 ml/mx				
	NIS		L	L	0.25 % V/V	PD	E	3.75 ml/mx				
	None											

Sort Order: Treatment

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

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
1,241.162	ml	Roundup WeatherMax	4.5	L	
823.393	ml	Layby Pro	4	L	
1,097.857	ml	MSMA	6	L	
121.862	ml	NIS		L	
126.689	ml	Clarity	4	L	
95.017	ml	Direx	4	L	
744.234	ml	Cotoran	4	L	
25.239	ml	Staple	3.2	L	
31.672	ml	Cinch	3.2	L	
47.509	ml	Caparol	4	L	
3.795	g	Valor	51	DF	
101.341	ml	Prowl H20	3.8	L	
123.522	ml	Gramoxone Max	3	L	
112.488	ml	Crop Oil		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: Evaluate glyphosate resistant Palmer amaranth response to numerous herbicide systems.

Palmer Response:

1. After Preplant and PRE herbicide applications at 21 d after planting:
 - A. Cotoran PRE provided fair control (75 to 80%).
 - B. Valor preplant provided good control (83%). Control was not excellent because the planting process disturbed the herbicide zone in the drill and pigweed emerged from this area.
 - C. Preplant applications of Clarity, Direx, Cotoran, Staple, Cinch, Caparol, Prowl, and MSMA provided poor control.
 - D. Preplant residual herbicides followed by Cotoran PRE were much more effective providing at least 75% control.

2. In late June prior to layby treatments:
 - A. Control was less than 50% in all programs with only preplant residuals (except Valor) when followed by Roundup POST.
 - B. Greater than 80% control was noted with Direx, Cotoran, Valor, or Prowl applied preplant followed by Cotoran PRE and Roundup + Staple POST.

3. In mid-late July after all treatments including layby treatments were applied:
 - A. Less than 66% control was noted in systems without Valor preplant or Cotoran PRE.
 - B. Excellent control was only noted in seven programs that included a preplant residual herbicide (Prowl, Valor, Staple, Cotoran, Direx) followed by Cotoran PRE followed by Roundup + Staple POST followed by Layby Pro + MSMA directed.

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Cotton Injury:

1. Only Valor applied preplant caused significant injury at 42 DAT (30 to 39%), which is expected because of applying 2 oz/A 5-6 d before planting.
2. All treatments with Cotoran PRE had at least 6% injury but only Cotoran following Valor was more injurious than Cotoran alone.

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Glyphosate-resistant Palmer amaranth response to residual preplant herbicides.

Trial ID: C23-06

Study Dir.: Stanley Culpepper

Location: Macon (paved road)

Investigator: Stanley Culpepper

Weed Code			AMAPA	AMAPA	AMAPA	AMAPA			
Crop Code		GOSHI	GOSHI	AMAPA	AMAPA	AMAPA	AMAPA		
Rating Data Type		injury	injury	control	control	control	control		
Rating Unit		%	%	%	%	%	%		
Rating Date		May-19-06	Jun-09-06	May-19-06	Jun-09-06	Jun-20-06	Jul-05-06		
Assessed By		AD	SC	AD	SC	SC	SC		
Trt-Eval Interval		21 DA-A	42 DA-A	21 DA-A	42 DA-A	53 DA-A	62 DA-A		
Trt No.	Treatment Name	Rate	Unit	1	2	3	4	5	6
1	Roundup WeatherMax	22	OZ/A	0 g	0 e	0 h	10 e	0 k	50 i
	Roundup WeatherMax	22	OZ/A						
	Layby Pro	2	PT/A						
	MSMA	2	LB A/A						
	NIS	0.25	% V/V						
	Roundup WeatherMax	22	OZ/A						
2	Roundup WeatherMax	22	OZ/A	2 fg	0 e	14 g	7 e	0 k	50 i
	Roundup WeatherMax	22	OZ/A						
	Layby Pro	2	PT/A						
	MSMA	2	LB A/A						
	NIS	0.25	% V/V						
	Roundup WeatherMax	22	OZ/A						
	Clarity	8	OZ/A						
3	Roundup WeatherMax	22	OZ/A	2 fg	0 e	57 e	35 bc	22 ij	53 hi
	Roundup WeatherMax	22	OZ/A						
	Layby Pro	2	PT/A						
	MSMA	2	LB A/A						
	NIS	0.25	% V/V						
	Roundup WeatherMax	22	OZ/A						
	Clarity	8	OZ/A						
	Direx	24	OZ/A						
4	Roundup WeatherMax	22	OZ/A	3 efg	0 e	53 e	46 bc	23 ij	57 ghi
	Roundup WeatherMax	22	OZ/A						
	Layby Pro	2	PT/A						
	MSMA	2	LB A/A						
	NIS	0.25	% V/V						
	Roundup WeatherMax	22	OZ/A						
	Clarity	8	OZ/A						
	Cotoran	32	OZ/A						
5	Roundup WeatherMax	22	OZ/A	2 fg	0 e	43 ef	37 bc	3 k	53 hi
	Roundup WeatherMax	22	OZ/A						
	Layby Pro	2	PT/A						
	MSMA	2	LB A/A						
	NIS	0.25	% V/V						
	Roundup WeatherMax	22	OZ/A						
	Clarity	8	OZ/A						
	Staple	1.7	OZ/A						
6	Roundup WeatherMax	22	OZ/A	3 efg	0 e	33 f	35 bc	3 k	58 ghi
	Roundup WeatherMax	22	OZ/A						
	Layby Pro	2	PT/A						
	MSMA	2	LB A/A						
	NIS	0.25	% V/V						
	Roundup WeatherMax	22	OZ/A						
	Clarity	8	OZ/A						
	Cinch	16	OZ/A						

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Weed Code			GOSHI	GOSHI	AMAPA	AMAPA	AMAPA	AMAPA
Crop Code			injury	injury	control	control	control	control
Rating Data Type			%	%	%	%	%	%
Rating Unit								
Rating Date			May-19-06	Jun-09-06	May-19-06	Jun-09-06	Jun-20-06	Jul-05-06
Assessed By			AD	SC	AD	SC	SC	SC
Trt-Eval Interval			21 DA-A	42 DA-A	21 DA-A	42 DA-A	53 DA-A	62 DA-A
Trt No.	Treatment Name	Rate Unit	1	2	3	4	5	6
7	Roundup WeatherMax	22 OZ/A	3 efg	0 e	14 g	13 e	0 k	55 hi
	Roundup WeatherMax	22 OZ/A						
	Layby Pro	2 PT/A						
	MSMA	2 LB A/A						
	NIS	0.25 % V/V						
	Roundup WeatherMax	22 OZ/A						
	Clarity	8 OZ/A						
	Caparol	24 OZ/A						
8	Roundup WeatherMax	22 OZ/A	16 ab	39 a	83 a-d	89 a	68 def	82 b-e
	Roundup WeatherMax	22 OZ/A						
	Layby Pro	2 PT/A						
	MSMA	2 LB A/A						
	NIS	0.25 % V/V						
	Roundup WeatherMax	22 OZ/A						
	Clarity	8 OZ/A						
	Valor	2 OZ/A						
9	Roundup WeatherMax	22 OZ/A	13 a-d	0 e	55 e	40 bc	7 jk	60 ghi
	Roundup WeatherMax	22 OZ/A						
	Layby Pro	2 PT/A						
	MSMA	2 LB A/A						
	NIS	0.25 % V/V						
	Roundup WeatherMax	22 OZ/A						
	Clarity	8 OZ/A						
	Prowl H20	3.2 PT/A						
10	Roundup WeatherMax	22 OZ/A	0 g	0 e	5 gh	17 de	0 k	53 hi
	Roundup WeatherMax	22 OZ/A						
	Layby Pro	2 PT/A						
	MSMA	2 LB A/A						
	NIS	0.25 % V/V						
	Gramoxone Max	20.8 OZ/A						
	Crop Oil	1 % V/V						
11	Roundup WeatherMax	22 OZ/A	4 efg	0 e	57 e	51 b	42 gh	65 fgh
	Roundup WeatherMax	22 OZ/A						
	Layby Pro	2 PT/A						
	MSMA	2 LB A/A						
	NIS	0.25 % V/V						
	Gramoxone Max	20.8 OZ/A						
	Crop Oil	1 % V/V						
	Direx	24 OZ/A						
12	Roundup WeatherMax	22 OZ/A	3 efg	0 e	48 e	32 cd	23 ij	58 ghi
	Roundup WeatherMax	22 OZ/A						
	Layby Pro	2 PT/A						
	MSMA	2 LB A/A						
	NIS	0.25 % V/V						
	Gramoxone Max	20.8 OZ/A						
	Crop Oil	1 % V/V						
	Cotoran	32 OZ/A						

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Weed Code			GOSHI	GOSHI	AMAPA	AMAPA	AMAPA	AMAPA
Crop Code			injury	injury	control	control	control	control
Rating Data Type			%	%	%	%	%	%
Rating Unit								
Rating Date			May-19-06	Jun-09-06	May-19-06	Jun-09-06	Jun-20-06	Jul-05-06
Assessed By			AD	SC	AD	SC	SC	SC
Trt-Eval Interval			21 DA-A	42 DA-A	21 DA-A	42 DA-A	53 DA-A	62 DA-A
Trt No.	Treatment Name	Rate	1	2	3	4	5	6
		Rate Unit						
13	Roundup WeatherMax	22 OZ/A	0 g	1 de	3 gh	3 e	3 k	52 hi
	Roundup WeatherMax	22 OZ/A						
	Layby Pro	2 PT/A						
	MSMA	2 LB A/A						
	NIS	0.25 % V/V						
	None							
14	Cotoran	3 PT/A	10 b-e	6 bcd	79 bcd	87 a	70 c-f	84 a-d
	Roundup WeatherMax	22 OZ/A						
	Staple	1.7 OZ/A						
	Layby Pro	2 PT/A						
	MSMA	2 LB A/A						
	NIS	0.25 % V/V						
	Roundup WeatherMax	22 OZ/A						
15	Cotoran	3 PT/A	12 bcd	4 b-e	88 a-d	84 a	62 ef	80 cde
	Roundup WeatherMax	22 OZ/A						
	Staple	1.7 OZ/A						
	Layby Pro	2 PT/A						
	MSMA	2 LB A/A						
	NIS	0.25 % V/V						
	Roundup WeatherMax	22 OZ/A						
	Clarity	8 OZ/A						
16	Cotoran	3 PT/A	15 abc	9 b	88 a-d	94 a	81 a-d	92 abc
	Roundup WeatherMax	22 OZ/A						
	Staple	1.7 OZ/A						
	Layby Pro	2 PT/A						
	MSMA	2 LB A/A						
	NIS	0.25 % V/V						
	Roundup WeatherMax	22 OZ/A						
	Clarity	8 OZ/A						
	Direx	24 OZ/A						
17	Cotoran	3 PT/A	10 b-e	7 bc	93 ab	99 a	92 a	93 abc
	Roundup WeatherMax	22 OZ/A						
	Staple	1.7 OZ/A						
	Layby Pro	2 PT/A						
	MSMA	2 LB A/A						
	NIS	0.25 % V/V						
	Roundup WeatherMax	22 OZ/A						
	Clarity	8 OZ/A						
	Cotoran	32 OZ/A						
18	Cotoran	3 PT/A	8 c-f	5 b-e	92 ab	93 a	76 a-e	93 abc
	Roundup WeatherMax	22 OZ/A						
	Staple	1.7 OZ/A						
	Layby Pro	2 PT/A						
	MSMA	2 LB A/A						
	NIS	0.25 % V/V						
	Roundup WeatherMax	22 OZ/A						
	Clarity	8 OZ/A						
	Staple	1.7 OZ/A						

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Weed Code			GOSHI	GOSHI	AMAPA	AMAPA	AMAPA	AMAPA
Crop Code			injury	injury	control	control	control	control
Rating Data Type			%	%	%	%	%	%
Rating Unit								
Rating Date			May-19-06	Jun-09-06	May-19-06	Jun-09-06	Jun-20-06	Jul-05-06
Assessed By			AD	SC	AD	SC	SC	SC
Trt-Eval Interval			21 DA-A	42 DA-A	21 DA-A	42 DA-A	53 DA-A	62 DA-A
Trt No.	Treatment Name	Rate Unit	1	2	3	4	5	6
19	Cotoran	3 PT/A	7 d-g	7 bc	85 a-d	91 a	74 a-f	88 a-d
	Roundup WeatherMax	22 OZ/A						
	Staple	1.7 OZ/A						
	Layby Pro	2 PT/A						
	MSMA	2 LB A/A						
	NIS	0.25 % V/V						
	Roundup WeatherMax	22 OZ/A						
	Clarity	8 OZ/A						
	Cinch	16 OZ/A						
20	Cotoran	3 PT/A	10 b-e	3 b-e	82 a-d	83 a	56 fg	75 def
	Roundup WeatherMax	22 OZ/A						
	Staple	1.7 OZ/A						
	Layby Pro	2 PT/A						
	MSMA	2 LB A/A						
	NIS	0.25 % V/V						
	Roundup WeatherMax	22 OZ/A						
	Clarity	8 OZ/A						
	Caparol	24 OZ/A						
21	Cotoran	3 PT/A	20 a	37 a	95 a	98 a	89 ab	93 abc
	Roundup WeatherMax	22 OZ/A						
	Staple	1.7 OZ/A						
	Layby Pro	2 PT/A						
	MSMA	2 LB A/A						
	NIS	0.25 % V/V						
	Roundup WeatherMax	22 OZ/A						
	Clarity	8 OZ/A						
	Valor	2 OZ/A						
22	Cotoran	3 PT/A	7 d-g	9 b	95 a	99 a	91 a	99 a
	Roundup WeatherMax	22 OZ/A						
	Staple	1.7 OZ/A						
	Layby Pro	2 PT/A						
	MSMA	2 LB A/A						
	NIS	0.25 % V/V						
	Roundup WeatherMax	22 OZ/A						
	Clarity	8 OZ/A						
	Prowl H20	3.2 PT/A						
23	Cotoran	3 PT/A	7 d-g	7 bc	77 cd	83 a	35 hi	70 efg
	Roundup WeatherMax	22 OZ/A						
	Staple	1.7 OZ/A						
	Layby Pro	2 PT/A						
	MSMA	2 LB A/A						
	NIS	0.25 % V/V						
	Gramoxone Max	20.8 OZ/A						
	Crop Oil	1 % V/V						

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Weed Code			AMAPA	AMAPA	AMAPA	AMAPA		
Crop Code	GOSHI	GOSHI	AMAPA	AMAPA	AMAPA	AMAPA		
Rating Data Type	injury	injury	control	control	control	control		
Rating Unit	%	%	%	%	%	%		
Rating Date	May-19-06	Jun-09-06	May-19-06	Jun-09-06	Jun-20-06	Jul-05-06		
Assessed By	AD	SC	AD	SC	SC	SC		
Trt-Eval Interval	21 DA-A	42 DA-A	21 DA-A	42 DA-A	53 DA-A	62 DA-A		
Trt No.	Treatment Name	Rate	1	2	3	4	5	6
		Unit						
24	Cotoran	3 PT/A	7 d-g	5 b-e	93 ab	96 a	89 ab	96 ab
	Roundup WeatherMax	22 OZ/A						
	Staple	1.7 OZ/A						
	Layby Pro	2 PT/A						
	MSMA	2 LB A/A						
	NIS	0.25 % V/V						
	Gramoxone Max	20.8 OZ/A						
	Crop Oil	1 % V/V						
	Direx	24 OZ/A						
25	Cotoran	3 PT/A	8 c-f	4 b-e	90 abc	90 a	87 abc	93 abc
	Roundup WeatherMax	22 OZ/A						
	Staple	1.7 OZ/A						
	Layby Pro	2 PT/A						
	MSMA	2 LB A/A						
	NIS	0.25 % V/V						
	Gramoxone Max	20.8 OZ/A						
	Crop Oil	1 % V/V						
	Cotoran	32 OZ/A						
26	Cotoran	3 PT/A	7 d-g	2 cde	75 d	85 a	71 b-f	85 a-d
	Roundup WeatherMax	22 OZ/A						
	Staple	1.7 OZ/A						
	Layby Pro	2 PT/A						
	MSMA	2 LB A/A						
	NIS	0.25 % V/V						
	None							
LSD (P=.05)			6.5	4.8	12.7	16.1	16.5	12.6
Standard Deviation			3.9	2.9	7.7	9.8	10.0	7.7
CV			57.77	52.7	12.53	15.89	22.21	10.54
Bartlett's X2			12.778	13.416	39.109	44.04	37.025	27.157
P(Bartlett's X2)			0.916	0.494	0.01*	0.004*	0.017*	0.249

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

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Glyphosate-resistant Palmer amaranth response to residual preplant herbicides.

Trial ID: C23-06 Study Dir.: Stanley Culpepper
Location: Macon (paved road) 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: _____ **Initiation Date:** Apr-28-06
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	Palmer amaranth	

Crop 1: GOSHI cotton **Variety:** ST 6565 BRR
Planting Date: May-03-06 **Planting Method:** conventional
Rate: 3 ft **Depth:** 0.5 in **Perennial Age:** _____
Row Spacing: 3 ft **Spacing Within Row:** 4 in **Seed Bed:** bedded
Soil Temperature: 74 F **Soil Moisture:** moist **Emergence Date:** May-08-06

SITE AND DESIGN

Plot Width, Unit: 6 FT **Plot Length, Unit:** 22 FT **Reps:** 3
Site Type: Sutton farms
Tillage Type: conventional **Study Design:** SPLIT-PLOT

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 Texture: Loamy Sand
 % Silt: 14 pH: 6.3 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: Over 5.5 inches of rain within 9 d of planting, ver
 Closest Weather Station: _____ Distance: _____ Unit: ____

APPLICATION DESCRIPTION

	A	B	C	D	E
Application Date:	Apr-28-06	May-04-06	May-28-06	Jun-05-06	Jun-21-06
Time of Day:	8:00am	8:00am	10:00am	9:00am	12:00pm
Application Method:	broadcast	broadcast	broadcast	broadcast	broadcast
Application Timing:	Preplant	PRE	POST1	POST2	PD
Applic. Placement:	on soil	on soil	overtop	overtop	directed
Air Temp., Unit:	64 F	72 F	85 F	84 F	94 F
% Relative Humidity:	54	64	55	50	44
Wind Velocity, Unit:	1 mph	0 mph	2 mph	2 mph	2 mph
Dew Presence (Y/N):	n	n	n	n	n
Water Hardness:					
Soil Temp., Unit:	67 F	72 F	85 F	84 F	94 F
Soil Moisture:	moist	moist	fair	fair	moist
% Cloud Cover:	0	0	5	0	15

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E
Crop 1 Code, Stage:	GOSHI Preplant	GOSHI PRE	GOSHI POST1	GOSHI POST2	GOSHI PD
Stage Scale:	not up	not up	3-4 leaf	5-6 leaf	8 leaf
Height, Unit:	0 inch	0 inch	3 inch	5 inch	11 inch

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E
Weed 1 Code, Stage:	AMAPA Preplant	AMAPA PRE	AMAPA POST1	AMAPA POST2	AMAPA PD
Stage Scale:	not up	not up	3 inch	5 inch	8-10 inch
Density, Unit:	0 ydsq	0 ydsq	45 ydsq	65 ydsq	65 ydsq

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APPLICATION EQUIPMENT

	A	B	C	D	E
Appl. Equipment:	backpack	backpack	backpack	backpack	backpack
Operating Pressure:	24	24	24	24	18
Nozzle Type:	flat fan	flat fan	flat fan	flat fan	flat fan
Nozzle Size:	11002	11002	11002	11002	11002
Nozzle Spacing, Unit:	18 inch	18 inch	18 inch	18 inch	18 inch
Nozzles/Row:	2	2	2	2	3
Band Width, Unit:					
Boom Length, Unit:	4.5 feet	4.5 feet	4.5 feet	4.5 feet	2 feet
Boom Height, Unit:	15 inch	15 inch	15 inch	15 inch	10 inch
Ground Speed, Unit:	3 mph	3 mph	3 mph	3 mph	3 mph
Incorporation Equip.:					
Hours to Incorp.:					
Incorp. Depth, Unit:					
Carrier:	water	water	water	water	water
Spray Volume, Unit:	14.8 GPA	14.8 GPA	14.8 GPA	14.8 GPA	14.8 GPA
Spray pH:					
Propellant:	CO2	CO2	CO2	CO2	CO2
Tank Mix (Y/N):	Y	Y	Y	Y	Y

Trt No	Treatment Application Comment