

MSU Weed Science Research Program

Soil-applied herbicides for control of multiple-resistant Palmer amaranth

Trial ID: C10-14 Study Dir.: Kohrt, Sprague, Powell
Conducted: Barry County Investigator: Christy Sprague

Date Planted: May/19/2014 Row Spacing: 30 IN
Variety: DKC 5204 No. of Reps: 4
Population: 30,000 seeds/A % OM: 2.8
Soil Type: Sandy loam pH: 6.5
Plot Size: 10 X 30 FT Design: RANDOMIZED COMPLETE BLOCK

Tillage: Spring verical tillage.

Crop and Weed Description

Weed Code Common Name Scientific Name
1. AMAPA AMARANTH, PALMER AMARANTHUS PALMERI S.WATS.
Crop Code Common Name
1. ZEAMX CORN, FIELD

Application Description

A
Application Timing: PRE
Date Treated: May/19/2014
Time Treated: 1:30 pm
% Cloud Cover: 0
Air Temp., Unit: 72 F
% Relative Humidity: 28
Wind Speed/Unit/Dir: 5 mph SE
Soil Temp., Unit: 61 F
Soil/Leaf Surface M: 5 -
Soil Moist (1=w 5=d): 5

Crop Stage at Each Application

A
Crop Name: ZEAMX
Height (In.): -
Stage (L): -

Weed Stage at Each Application

A
Weed 1 Name: AMAPA
Height (In.): -
Stage (L): -

Weed Density (plants/sq. ft.)

1
Date: Jul/09/2014
Weed Name: AMAPA
Density: 5

Application Equipment

Appl	Sprayer	Speed	Nozzle	Nozzle	Nozzle	Nozzle	Boom			
	Type	MPH	Type	Size	Height	Spacing	Width	GPA	Carrier	PSI
A	Backpack	3.8	AIXR	11003	20"	20"	100"	19	water	30

Comments: This Palmer amaranth population is resistant to the Site of Action groups 2, 5, and 9.

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Weed Code									ZEAMX	AMAPA	ZEAMX	AMAPA	ZEAMX
Crop Code									injury	control	injury	control	injury
Rating Data Type									percent	percent	percent	percent	percent
Rating Unit									Jun/09/2014	Jun/09/2014	Jun/15/2014	Jun/15/2014	Jun/26/2014
Rating Date									21 DA-A	21 DA-A	27 DA-A	27 DA-A	38 DA-A
Trt-Eval Interval									0	0	0	0	0
# Subsamples, Dec.													
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code						
1	Untreated					PRE	A	0	0	0	0	0	
2	Atrazine	4	L	1	qt/a	PRE	A	0	13	0	13	0	
3	Atrazine	4	L	2	qt/a	PRE	A	0	55	0	58	0	
4	Balance Flexx	2	SC	6	oz/a	PRE	A	0	73	0	76	0	
5	Callisto	4	SC	6	oz/a	PRE	A	0	97	0	96	0	
6	Dual II Magnum	7.64	L	1.33	pt/a	PRE	A	0	88	0	83	0	
7	Harness	7	L	1.8	pt/a	PRE	A	0	99	0	92	0	
8	Zidua	85	WG	4	oz/a	PRE	A	0	95	0	95	0	
9	Sharpen	2.85	SC	3	oz/a	PRE	A	0	87	0	84	0	
10	Balance Flexx	2	SC	6	oz/a	PRE	A	0	48	0	51	0	
10	Atrazine	4	L	1	qt/a	PRE	A						
11	Callisto	4	SC	6	oz/a	PRE	A	0	99	0	97	0	
11	Atrazine	4	L	1	qt/a	PRE	A						
12	Dual II Magnum	7.64	L	1.33	pt/a	PRE	A	0	88	0	86	0	
12	Atrazine	4	L	1	qt/a	PRE	A						
13	Harness	7	L	1.8	pt/a	PRE	A	0	98	0	96	0	
13	Atrazine	4	L	1	qt/a	PRE	A						
14	Zidua	85	WG	4	oz/a	PRE	A	0	99	0	98	0	
14	Atrazine	4	L	1	qt/a	PRE	A						
15	Sharpen	2.85	SC	3	oz/a	PRE	A	0	84	0	84	0	
15	Atrazine	4	L	1	qt/a	PRE	A						
16	Lumax EZ	3.67	L	2.7	qt/a	PRE	A	0	99	0	99	0	
17	Lexar EZ	3.7	L	3	qt/a	PRE	A	0	99	0	98	0	
18	Zemax	3.67	L	2	qt/a	PRE	A	0	94	0	97	0	
19	Bicep Lite II Magnum	6	L	1.5	qt/a	PRE	A	0	92	0	93	0	
19	Aatrex	4	L	0.6	qt/a	PRE	A						
20	Harness Xtra 5.6	5.6	L	2	qt/a	PRE	A	0	98	0	99	0	
21	Verdict	5.57	EC	15	oz/a	PRE	A	0	98	0	94	0	
22	Sharpen	2.85	SC	3	oz/a	PRE	A	0	98	0	99	0	
22	Zidua	85	WG	4	oz/a	PRE	A						
23	Accuron	3.44	L	3	qt/a	PRE	A	0	96	0	92	0	
24	TripleFLEX	4.16	L	2.5	pt/a	PRE	A	0	98	0	94	0	
LSD (P=.05)								0.0	11.2	0.0	11.2	0.0	
CV								0.0	9.54	0.0	9.63	0.0	

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Weed Code							AMAPA		AMAPA		AMAPA	
Crop Code								ZEAMX		ZEAMX		
Rating Data Type							control	injury	control	injury	control	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							Jun/26/2014	Jul/09/2014	Jul/09/2014	Jul/30/2014	Jul/30/2014	
Trt-Eval Interval							38 DA-A	51 DA-A	51 DA-A	72 DA-A	72 DA-A	
# Subsamples, Dec.							0	0	0	0	0	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code					
1	Untreated					PRE	A	0	0	0	0	
2	Atrazine	4	L	1	qt/a	PRE	A	15	0	0	0	
3	Atrazine	4	L	2	qt/a	PRE	A	58	0	40	40	
4	Balance Flexx	2	SC	6	oz/a	PRE	A	67	0	37	33	
5	Callisto	4	SC	6	oz/a	PRE	A	84	0	80	75	
6	Dual II Magnum	7.64	L	1.33	pt/a	PRE	A	72	0	68	64	
7	Harness	7	L	1.8	pt/a	PRE	A	89	0	87	89	
8	Zidua	85	WG	4	oz/a	PRE	A	89	0	91	90	
9	Sharpen	2.85	SC	3	oz/a	PRE	A	79	0	68	67	
10	Balance Flexx	2	SC	6	oz/a	PRE	A	43	0	5	5	
10	Atrazine	4	L	1	qt/a	PRE	A					
11	Callisto	4	SC	6	oz/a	PRE	A	97	0	96	99	
11	Atrazine	4	L	1	qt/a	PRE	A					
12	Dual II Magnum	7.64	L	1.33	pt/a	PRE	A	82	0	80	80	
12	Atrazine	4	L	1	qt/a	PRE	A					
13	Harness	7	L	1.8	pt/a	PRE	A	93	0	91	87	
13	Atrazine	4	L	1	qt/a	PRE	A					
14	Zidua	85	WG	4	oz/a	PRE	A	97	0	96	97	
14	Atrazine	4	L	1	qt/a	PRE	A					
15	Sharpen	2.85	SC	3	oz/a	PRE	A	76	0	65	63	
15	Atrazine	4	L	1	qt/a	PRE	A					
16	Lumax EZ	3.67	L	2.7	qt/a	PRE	A	96	0	99	99	
17	Lexar EZ	3.7	L	3	qt/a	PRE	A	97	0	99	99	
18	Zemax	3.67	L	2	qt/a	PRE	A	90	0	94	94	
19	Bicep Lite II Magnum	6	L	1.5	qt/a	PRE	A	81	0	80	76	
19	Aatrex	4	L	0.6	qt/a	PRE	A					
20	Harness Xtra 5.6	5.6	L	2	qt/a	PRE	A	95	0	95	95	
21	Verdict	5.57	EC	15	oz/a	PRE	A	90	0	92	91	
22	Sharpen	2.85	SC	3	oz/a	PRE	A	97	0	98	99	
22	Zidua	85	WG	4	oz/a	PRE	A					
23	Accuron	3.44	L	3	qt/a	PRE	A	92	0	91	91	
24	TripleFLEX	4.16	L	2.5	pt/a	PRE	A	85	0	91	91	
LSD (P=.05)								12.9	0.0	15.4	0.0	16.1
CV								11.73	0.0	14.98	0.0	15.92