

MSU Weed Science Research Program

Control of glyphosate-resistant Palmer amaranth in sugarbeet

Trial ID: SB11-13 Study Dir.: Sprague, Powell
 Conducted: St. Joseph Co. Investigator: Christy Sprague

Date Planted: May/17/2013 **Row Spacing:** 30 IN
Variety: HM-173RR **No. of Reps:** 4
Population: 50,000 seeds/A **% OM:** 2.4
Soil Type: Sandy loam **pH:** 6.8
Plot Size: 10 X 30 FT **Design:** RANDOMIZED COMPLETE BLOCK

Tillage: Conventional tillage

Crop and Weed Description			Scientific Name
Weed	Code	Common Name	
1.	AMAPA	AMARANTH, PALMER	AMARANTHUS PALMERI S.WATS.
Crop	Code	Common Name	
1.	BETVU	BEET, SUGAR	

	Application Description			
	A	B	C	D
Application Timing:	PRE	2 leaf	6 leaf	canopy
Date Treated:	May/17/2013	Jun/06/2013	Jun/18/2013	Jul/03/2013
Time Treated:	3:15 PM	10:30 AM	12:00 PM	9:00 AM
% Cloud Cover:	100	80	15	100
Air Temp., Unit:	80 F	62 F	73 F	70 F
% Relative Humidity:	32	38	26	84
wind Speed/Unit/Dir:	9 mph E	4 mph NE	4 mph NE	2 mph SE
Soil Temp., Unit:	74 F	67 F	77 F	67 F
Soil/Leaf Surface M:	5 -	5 5	5 5	4 4
Soil Moist (1=w 5=d):	5	3	3	3

	Crop Stage at Each Application			
	A	B	C	D
Crop Name:	BETVU	BETVU	BETVU	BETVU
Height (In.):	-	0.5-1"	3"	12"
Stage (L):	-	cot-2	6	12

	Weed Stage at Each Application			
	A	B	C	D
Weed 1 Name:	AMAPA	AMAPA	AMAPA	AMAPA
Height (In.):	-	1"	2"	9"
Stage (L):	-	4	6	20

	Weed Density (plants/sq. ft.)			
	A	B	C	D
Weed Name:	AMAPA	AMAPA	AMAPA	AMAPA
Density:	1	3	3	3

Appl	Sprayer	Speed	Application Equipment							
			Nozzle	Nozzle	Nozzle	Nozzle	Boom			
	Type	MPH	Type	Size	Height	Spacing	Width	GPA	Carrier	PSI
A	Backpack	3.8	AIXR	11003	22"	20"	100"	19	water	30
B	Backpack	3.8	AIXR	11003	22"	20"	100"	19	water	30
C	Backpack	3.8	AIXR	11003	23"	20"	100"	19	water	30
D	Backpack	3.8	AIXR	11003	28"	20"	100"	19	water	30

Comments: Palmer amaranth pressure was greater in Reps 3 & 4.

MSU Weed Science Research Program

Control of glyphosate-resistant Palmer amaranth in sugarbeet

Trial ID: SB11-13 Study Dir.: Sprague, Powell
 Conducted: St. Joseph Co. Investigator: Christy Sprague

Weed Code		AMAPA		AMAPA
Crop Code		BETVU		BETVU
Rating Data Type		injury	control	injury
Rating Unit		percent	percent	percent
Rating Date		Jun/06/2013	Jun/06/2013	Jun/21/2013
Trt-Eval Interval		20 DA-A	20 DA-A	15 DA-B
# Subsamples, Dec.		0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
1	Roundup PowerMax AMS	4.5	SL	22	fl oz/a	2-leaf	B	0	0	0	10
	Roundup PowerMax AMS	4.5	WG	17	lb/100 gal	2-leaf	B				
	Roundup PowerMax AMS	4.5	SL	22	fl oz/a	6-leaf	C				
	Roundup PowerMax AMS	4.5	WG	17	lb/100 gal	6-leaf	C				
	Roundup PowerMax AMS	4.5	SL	22	fl oz/a	canopy	D				
	Roundup PowerMax AMS	4.5	WG	17	lb/100 gal	canopy	D				
2	Pyramin	65	DF	6	lb/a	PRE	A	0	76	44	84
	Roundup PowerMax AMS	4.5	SL	22	fl oz/a	2-leaf	B				
	Roundup PowerMax AMS	4.5	WG	17	lb/100 gal	2-leaf	B				
	Roundup PowerMax AMS	4.5	SL	22	fl oz/a	6-leaf	C				
	Roundup PowerMax AMS	4.5	WG	17	lb/100 gal	6-leaf	C				
	Roundup PowerMax AMS	4.5	SL	22	fl oz/a	canopy	D				
	Roundup PowerMax AMS	4.5	WG	17	lb/100 gal	canopy	D				
3	Goltix	70	WG	11.4	lb/a	PRE	A	0	73	20	90
	Roundup PowerMax AMS	4.5	SL	22	fl oz/a	2-leaf	B				
	Roundup PowerMax AMS	4.5	WG	17	lb/100 gal	2-leaf	B				
	Roundup PowerMax AMS	4.5	SL	22	fl oz/a	6-leaf	C				
	Roundup PowerMax AMS	4.5	WG	17	lb/100 gal	6-leaf	C				
	Roundup PowerMax AMS	4.5	SL	22	fl oz/a	canopy	D				
	Roundup PowerMax AMS	4.5	WG	17	lb/100 gal	canopy	D				
4	Nortron	4	L	3	pt/a	PRE	A	0	47	7	52
	Roundup PowerMax AMS	4.5	SL	22	fl oz/a	2-leaf	B				
	Roundup PowerMax AMS	4.5	WG	17	lb/100 gal	2-leaf	B				
	Roundup PowerMax AMS	4.5	SL	22	fl oz/a	6-leaf	C				
	Roundup PowerMax AMS	4.5	WG	17	lb/100 gal	6-leaf	C				
	Roundup PowerMax AMS	4.5	SL	22	fl oz/a	canopy	D				
	Roundup PowerMax AMS	4.5	WG	17	lb/100 gal	canopy	D				
5	Nortron	4	L	3	pt/a	PRE	A	0	53	34	74
	Roundup PowerMax AMS	4.5	SL	22	fl oz/a	2-leaf	B				
	Betamix AMS	1.3	L	2	pt/a	2-leaf	B				
	Roundup PowerMax AMS	4.5	WG	17	lb/100 gal	2-leaf	B				
	Roundup PowerMax AMS	4.5	SL	22	fl oz/a	6-leaf	C				
	Betamix AMS	1.3	L	3	pt/a	6-leaf	C				
	Roundup PowerMax AMS	4.5	WG	17	lb/100 gal	6-leaf	C				
	Roundup PowerMax AMS	4.5	SL	22	fl oz/a	canopy	D				
	Betamix AMS	1.3	L	3	pt/a	canopy	D				
	Roundup PowerMax AMS	4.5	WG	17	lb/100 gal	canopy	D				
6	Nortron	4	L	3	pt/a	PRE	A	0	70	34	85
	Roundup PowerMax AMS	4.5	SL	22	fl oz/a	2-leaf	B				
	Betamix AMS	1.3	L	2	pt/a	2-leaf	B				
	Stinger AMS	3	L	2	fl oz/a	2-leaf	B				
	Roundup PowerMax AMS	4.5	WG	17	lb/100 gal	2-leaf	B				
	Roundup PowerMax AMS	4.5	SL	22	fl oz/a	6-leaf	C				
	Betamix AMS	1.3	L	3	pt/a	6-leaf	C				
	Stinger AMS	3	L	4	fl oz/a	6-leaf	C				
	Roundup PowerMax AMS	4.5	WG	17	lb/100 gal	6-leaf	C				
	Roundup PowerMax AMS	4.5	SL	22	fl oz/a	canopy	D				
	Betamix AMS	1.3	L	3	pt/a	canopy	D				
	Stinger AMS	3	L	4	fl oz/a	canopy	D				
	Roundup PowerMax AMS	4.5	WG	17	lb/100 gal	canopy	D				

MSU Weed Science Research Program

Weed Code								AMAPA		AMAPA	
Crop Code								BETVU		BETVU	
Rating Data Type								injury	control	injury	
Rating Unit								percent	percent	percent	
Rating Date								Jun/06/2013	Jun/06/2013	Jun/21/2013	
Trt-Eval Interval								20 DA-A	20 DA-A	15 DA-B	
# Subsamples, Dec.								0	0	0	
Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Grow Stg	Appl Code				
7	Nortron	4	L	3	pt/a	PRE	A	0	63	28	87
	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B				
	Betamix	1.3	L	3	pt/a	2-leaf	B				
	AMS		WG	17	lb/100 gal	2-leaf	B				
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C				
	Betamix	1.3	L	3	pt/a	6-leaf	C				
	Warrant	3	L	3	pt/a	6-leaf	C				
	AMS		WG	17	lb/100 gal	6-leaf	C				
8	Nortron	4	L	3	pt/a	PRE	A	0	60	25	91
	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B				
	Betamix	1.3	L	3	pt/a	2-leaf	B				
	AMS		WG	17	lb/100 gal	2-leaf	B				
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C				
	Betamix	1.3	L	3	pt/a	6-leaf	C				
	Dual II Magnum	7.64	L	1.33	pt/a	6-leaf	C				
	AMS		WG	17	lb/100 gal	6-leaf	C				
9	Nortron	4	L	3	pt/a	PRE	A	0	66	36	93
	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B				
	Betamix	1.3	L	3	pt/a	2-leaf	B				
	AMS		WG	17	lb/100 gal	2-leaf	B				
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C				
	Betamix	1.3	L	3	pt/a	6-leaf	C				
	V-10206	85	WG	2.5	oz/a	6-leaf	C				
	AMS		WG	17	lb/100 gal	6-leaf	C				
10	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B	0	0	21	70
	Betamix	1.3	L	2	pt/a	2-leaf	B				
	AMS		WG	17	lb/100 gal	2-leaf	B				
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C				
	Betamix	1.3	L	4	pt/a	6-leaf	C				
	AMS		WG	17	lb/100 gal	6-leaf	C				
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D				
	Betamix	1.3	L	6	pt/a	canopy	D				
	AMS		WG	17	lb/100 gal	canopy	D				
11	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B	0	0	25	68
	Betamix	1.3	L	2	pt/a	2-leaf	B				
	AMS		WG	17	lb/100 gal	2-leaf	B				
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C				
	Betamix	1.3	L	4	pt/a	6-leaf	C				
	Warrant	3	L	3	pt/a	6-leaf	C				
	AMS		WG	17	lb/100 gal	6-leaf	C				
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D				
	Betamix	1.3	L	6	pt/a	canopy	D				
	AMS		WG	17	lb/100 gal	canopy	D				

MSU Weed Science Research Program

Weed Code				
Crop Code		BETVU	AMAPA	AMAPA
Rating Data Type		injury	control	injury
Rating Unit		percent	percent	percent
Rating Date		Jun/06/2013	Jun/06/2013	Jun/21/2013
Trt-Eval Interval		20 DA-A	20 DA-A	15 DA-B
# Subsamples, Dec.		0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Grow Stg	Appl Code				
12	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B	0	0	18	78
	Betamix	1.3	L	2	pt/a	2-leaf	B				
	Stinger	3	L	2	fl oz/a	2-leaf	B				
	AMS		WG	17	lb/100 gal	2-leaf	B				
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C				
	Betamix	1.3	L	4	pt/a	6-leaf	C				
	Stinger	3	L	4	fl oz/a	6-leaf	C				
	Warrant	3	L	3	pt/a	6-leaf	C				
	AMS		WG	17	lb/100 gal	6-leaf	C				
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D				
	Betamix	1.3	L	6	pt/a	canopy	D				
	Stinger	3	L	4	fl oz/a	canopy	D				
	AMS		WG	17	lb/100 gal	canopy	D				
LSD (P=.05)								0.0	12.6	10.6	16.6
CV								0.0	20.71	30.32	15.68

Means followed by same letter do not significantly differ (P=.05, LSD)

MSU Weed Science Research Program

Weed Code								AMAPA		AMAPA	
Crop Code								BETVU		BETVU	
Rating Data Type								injury	control	injury	control
Rating Unit								percent	percent	percent	percent
Rating Date								Jun/25/2013	Jun/25/2013	Jul/03/2013	Jul/03/2013
Trt-Eval Interval								7 DA-C	7 DA-C	15 DA-C	15 DA-C
# Subsamples, Dec.								0	0	0	0
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
1	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B	0	11	0	10
	AMS		WG	17	lb/100 gal	2-leaf	B				3
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C				
	AMS		WG	17	lb/100 gal	6-leaf	C				
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D				
	AMS		WG	17	lb/100 gal	canopy	D				
2	Pyramin	65	DF	6	lb/a	PRE	A	23	90	26	93
	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B				36
	AMS		WG	17	lb/100 gal	2-leaf	B				
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C				
	AMS		WG	17	lb/100 gal	6-leaf	C				
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D				
	AMS		WG	17	lb/100 gal	canopy	D				
3	Goltix	70	WG	11.4	lb/a	PRE	A	17	90	5	90
	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B				17
	AMS		WG	17	lb/100 gal	2-leaf	B				
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C				
	AMS		WG	17	lb/100 gal	6-leaf	C				
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D				
	AMS		WG	17	lb/100 gal	canopy	D				
4	Nortron	4	L	3	pt/a	PRE	A	0	43	0	17
	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B				0
	AMS		WG	17	lb/100 gal	2-leaf	B				
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C				
	AMS		WG	17	lb/100 gal	6-leaf	C				
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D				
	AMS		WG	17	lb/100 gal	canopy	D				
5	Nortron	4	L	3	pt/a	PRE	A	29	92	20	89
	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B				23
	Betamix	1.3	L	2	pt/a	2-leaf	B				
	AMS		WG	17	lb/100 gal	2-leaf	B				
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C				
	Betamix	1.3	L	3	pt/a	6-leaf	C				
	AMS		WG	17	lb/100 gal	6-leaf	C				
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D				
	Betamix	1.3	L	3	pt/a	canopy	D				
	AMS		WG	17	lb/100 gal	canopy	D				
6	Nortron	4	L	3	pt/a	PRE	A	35	97	33	98
	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B				36
	Betamix	1.3	L	2	pt/a	2-leaf	B				
	Stinger	3	L	2	fl oz/a	2-leaf	B				
	AMS		WG	17	lb/100 gal	2-leaf	B				
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C				
	Betamix	1.3	L	3	pt/a	6-leaf	C				
	Stinger	3	L	4	fl oz/a	6-leaf	C				
	AMS		WG	17	lb/100 gal	6-leaf	C				
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D				
	Betamix	1.3	L	3	pt/a	canopy	D				
	Stinger	3	L	4	fl oz/a	canopy	D				
	AMS		WG	17	lb/100 gal	canopy	D				

MSU Weed Science Research Program

Weed Code								AMAPA		AMAPA		
Crop Code								BETVU		BETVU		
Rating Data Type								injury	control	injury	control	
Rating Unit								percent	percent	percent	percent	
Rating Date								Jun/25/2013	Jun/25/2013	Jul/03/2013	Jul/03/2013	
Trt-Eval Interval								7 DA-C	7 DA-C	15 DA-C	15 DA-C	
# Subsamples, Dec.								0	0	0	0	
Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Grow Stg	Appl Code					
7	Nortron	4	L	3	pt/a	PRE	A	35	98	40	98	13
	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B					
	Betamix	1.3	L	3	pt/a	2-leaf	B					
	AMS		WG	17	lb/100 gal	2-leaf	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C					
	Betamix	1.3	L	3	pt/a	6-leaf	C					
	Warrant	3	L	3	pt/a	6-leaf	C					
	AMS		WG	17	lb/100 gal	6-leaf	C					
8	Nortron	4	L	3	pt/a	PRE	A	36	98	36	97	18
	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B					
	Betamix	1.3	L	3	pt/a	2-leaf	B					
	AMS		WG	17	lb/100 gal	2-leaf	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C					
	Betamix	1.3	L	3	pt/a	6-leaf	C					
	Dual II Magnum	7.64	L	1.33	pt/a	6-leaf	C					
	AMS		WG	17	lb/100 gal	6-leaf	C					
9	Nortron	4	L	3	pt/a	PRE	A	38	96	59	93	30
	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B					
	Betamix	1.3	L	3	pt/a	2-leaf	B					
	AMS		WG	17	lb/100 gal	2-leaf	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C					
	Betamix	1.3	L	3	pt/a	6-leaf	C					
	V-10206	85	WG	2.5	oz/a	6-leaf	C					
	AMS		WG	17	lb/100 gal	6-leaf	C					
10	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B	24	94	20	90	13
	Betamix	1.3	L	2	pt/a	2-leaf	B					
	AMS		WG	17	lb/100 gal	2-leaf	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C					
	Betamix	1.3	L	4	pt/a	6-leaf	C					
	AMS		WG	17	lb/100 gal	6-leaf	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D					
	Betamix	1.3	L	6	pt/a	canopy	D					
	AMS		WG	17	lb/100 gal	canopy	D					
11	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B	35	97	25	98	23
	Betamix	1.3	L	2	pt/a	2-leaf	B					
	AMS		WG	17	lb/100 gal	2-leaf	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C					
	Betamix	1.3	L	4	pt/a	6-leaf	C					
	Warrant	3	L	3	pt/a	6-leaf	C					
	AMS		WG	17	lb/100 gal	6-leaf	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D					
	Betamix	1.3	L	6	pt/a	canopy	D					
	AMS		WG	17	lb/100 gal	canopy	D					

MSU Weed Science Research Program

Weed Code									
Crop Code									
Rating Data Type						BETVU	AMAPA	BETVU	AMAPA
Rating Unit						injury	control	injury	control
Rating Date						percent	percent	percent	percent
Trt-Eval Interval						Jun/25/2013	Jun/25/2013	Jul/03/2013	Jul/03/2013
# Subsamples, Dec.						7 DA-C	7 DA-C	15 DA-C	15 DA-C
						0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Grow Stg	Appl Code					
12	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B	34	96	33	96	28
	Betamix	1.3	L	2	pt/a	2-leaf	B					
	Stinger	3	L	2	fl oz/a	2-leaf	B					
	AMS		WG	17	lb/100 gal	2-leaf	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C					
	Betamix	1.3	L	4	pt/a	6-leaf	C					
	Stinger	3	L	4	fl oz/a	6-leaf	C					
	Warrant	3	L	3	pt/a	6-leaf	C					
	AMS		WG	17	lb/100 gal	6-leaf	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D					
	Betamix	1.3	L	6	pt/a	canopy	D					
	Stinger	3	L	4	fl oz/a	canopy	D					
	AMS		WG	17	lb/100 gal	canopy	D					
LSD (P=.05)								7.9	9.3	21.2	12.3	14.5
CV								21.62	7.71	59.49	10.58	50.61

Means followed by same letter do not significantly differ (P=.05, LSD)

MSU Weed Science Research Program

Weed Code								AMAPA		AMAPA		AMAPA
Crop Code								control	BETVU	control	BETVU	control
Rating Data Type								percent	percent	percent	percent	percent
Rating Unit								Jul/10/2013	Jul/15/2013	Jul/15/2013	Jul/24/2013	Jul/24/2013
Rating Date								7 DA-D	12 DA-D	12 DA-D	21 DA-D	21 DA-D
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	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B	13	0	9	0	5
	AMS		WG	17	lb/100 gal	2-leaf	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C					
	AMS		WG	17	lb/100 gal	6-leaf	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D					
	AMS		WG	17	lb/100 gal	canopy	D					
2	Pyramin	65	DF	6	lb/a	PRE	A	88	3	71	5	71
	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B					
	AMS		WG	17	lb/100 gal	2-leaf	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C					
	AMS		WG	17	lb/100 gal	6-leaf	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D					
	AMS		WG	17	lb/100 gal	canopy	D					
3	Goltix	70	WG	11.4	lb/a	PRE	A	88	0	79	0	82
	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B					
	AMS		WG	17	lb/100 gal	2-leaf	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C					
	AMS		WG	17	lb/100 gal	6-leaf	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D					
	AMS		WG	17	lb/100 gal	canopy	D					
4	Nortron	4	L	3	pt/a	PRE	A	28	0	17	0	0
	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B					
	AMS		WG	17	lb/100 gal	2-leaf	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C					
	AMS		WG	17	lb/100 gal	6-leaf	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D					
	AMS		WG	17	lb/100 gal	canopy	D					
5	Nortron	4	L	3	pt/a	PRE	A	87	5	81	5	78
	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B					
	Betamix	1.3	L	2	pt/a	2-leaf	B					
	AMS		WG	17	lb/100 gal	2-leaf	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C					
	Betamix	1.3	L	3	pt/a	6-leaf	C					
	AMS		WG	17	lb/100 gal	6-leaf	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D					
	Betamix	1.3	L	3	pt/a	canopy	D					
	AMS		WG	17	lb/100 gal	canopy	D					
6	Nortron	4	L	3	pt/a	PRE	A	98	13	93	15	97
	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B					
	Betamix	1.3	L	2	pt/a	2-leaf	B					
	Stinger	3	L	2	fl oz/a	2-leaf	B					
	AMS		WG	17	lb/100 gal	2-leaf	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C					
	Betamix	1.3	L	3	pt/a	6-leaf	C					
	Stinger	3	L	4	fl oz/a	6-leaf	C					
	AMS		WG	17	lb/100 gal	6-leaf	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D					
	Betamix	1.3	L	3	pt/a	canopy	D					
	Stinger	3	L	4	fl oz/a	canopy	D					
	AMS		WG	17	lb/100 gal	canopy	D					

MSU Weed Science Research Program

Weed Code							AMAPA		AMAPA		AMAPA	
Crop Code								BETVU		BETVU		
Rating Data Type							control	injury	control	injury	control	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							Jul/10/2013	Jul/15/2013	Jul/15/2013	Jul/24/2013	Jul/24/2013	
Trt-Eval Interval							7 DA-D	12 DA-D	12 DA-D	21 DA-D	21 DA-D	
# Subsamples, Dec.							0	0	0	0	0	
Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Grow Stg	Appl Code					
7	Nortron	4	L	3	pt/a	PRE	A	94	0	87	0	84
	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B					
	Betamix	1.3	L	3	pt/a	2-leaf	B					
	AMS		WG	17	lb/100 gal	2-leaf	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C					
	Betamix	1.3	L	3	pt/a	6-leaf	C					
	Warrant	3	L	3	pt/a	6-leaf	C					
	AMS		WG	17	lb/100 gal	6-leaf	C					
8	Nortron	4	L	3	pt/a	PRE	A	97	0	90	4	87
	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B					
	Betamix	1.3	L	3	pt/a	2-leaf	B					
	AMS		WG	17	lb/100 gal	2-leaf	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C					
	Betamix	1.3	L	3	pt/a	6-leaf	C					
	Dual II Magnum	7.64	L	1.33	pt/a	6-leaf	C					
	AMS		WG	17	lb/100 gal	6-leaf	C					
9	Nortron	4	L	3	pt/a	PRE	A	95	4	85	13	87
	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B					
	Betamix	1.3	L	3	pt/a	2-leaf	B					
	AMS		WG	17	lb/100 gal	2-leaf	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C					
	Betamix	1.3	L	3	pt/a	6-leaf	C					
	V-10206	85	WG	2.5	oz/a	6-leaf	C					
	AMS		WG	17	lb/100 gal	6-leaf	C					
10	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B	96	4	91	5	86
	Betamix	1.3	L	2	pt/a	2-leaf	B					
	AMS		WG	17	lb/100 gal	2-leaf	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C					
	Betamix	1.3	L	4	pt/a	6-leaf	C					
	AMS		WG	17	lb/100 gal	6-leaf	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D					
	Betamix	1.3	L	6	pt/a	canopy	D					
	AMS		WG	17	lb/100 gal	canopy	D					
11	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B	98	7	97	3	99
	Betamix	1.3	L	2	pt/a	2-leaf	B					
	AMS		WG	17	lb/100 gal	2-leaf	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C					
	Betamix	1.3	L	4	pt/a	6-leaf	C					
	Warrant	3	L	3	pt/a	6-leaf	C					
	AMS		WG	17	lb/100 gal	6-leaf	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D					
	Betamix	1.3	L	6	pt/a	canopy	D					
	AMS		WG	17	lb/100 gal	canopy	D					

MSU Weed Science Research Program

Weed Code	AMAPA	BETVU	AMAPA	BETVU	AMAPA
Crop Code					
Rating Data Type	control	injury	control	injury	control
Rating Unit	percent	percent	percent	percent	percent
Rating Date	Jul/10/2013	Jul/15/2013	Jul/15/2013	Jul/24/2013	Jul/24/2013
Trt-Eval Interval	7 DA-D	12 DA-D	12 DA-D	21 DA-D	21 DA-D
# Subsamples, Dec.	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Grow Stg	Appl Code	AMAPA	BETVU	AMAPA	BETVU	AMAPA
12	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	B	98	14	92	15	95
	Betamix	1.3	L	2	pt/a	2-leaf	B					
	Stinger	3	L	2	fl oz/a	2-leaf	B					
	AMS		WG	17	lb/100 gal	2-leaf	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	C					
	Betamix	1.3	L	4	pt/a	6-leaf	C					
	Stinger	3	L	4	fl oz/a	6-leaf	C					
	Warrant	3	L	3	pt/a	6-leaf	C					
	AMS		WG	17	lb/100 gal	6-leaf	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	D					
	Betamix	1.3	L	6	pt/a	canopy	D					
	Stinger	3	L	4	fl oz/a	canopy	D					
	AMS		WG	17	lb/100 gal	canopy	D					
LSD (P=.05)								11.4	3.9	15.9	7.8	16.1
CV								9.64	66.95	14.86	99.66	15.32

Means followed by same letter do not significantly differ (P=.05, LSD)