

MSU Weed Science Research Program

Management of glyphosate-resistant horseweed in sugarbeet

Trial ID: SB05-14 Study Dir.: Goffnett, Sprague, and Powell
 Conducted: Gratiot County Investigator: Christy Sprague

Date Planted: May/23/2014 Row Spacing: 30 IN
 Variety: Roundup Ready No. of Reps: 4
 Population: % OM: 2.6
 Soil Type: Loamy sand pH: 6.4
 Plot Size: 10 X 30 FT Design: RANDOMIZED COMPLETE BLOCK

Tillage: Fall tillage, no spring tillage.

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1.	ERICA	HORSEWEED (Marestail)	CONYZA CANADENSIS L.
2.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
Crop	Code	Common Name	
1.	BETVU	BEEET, SUGAR	

Application Description

	A	B	C
Application Timing:	2-Leaf	6-Leaf	Canopy
Date Treated:	Jun/04/2014	Jun/16/2014	Jul/14/2014
Time Treated:	8:09 AM	2:30 PM	10:00 AM
% Cloud Cover:	100	50	50
Air Temp., Unit:	65 F	86 F	74 F
% Relative Humidity:	77	33	85
Wind Speed/Unit/Dir:	3 mph E	9 mph SW	3 mph SE
Soil Temp., Unit:	62 F	82 F	72 F
Soil/Leaf Surface M:	5 5	5 5	3 4
Soil Moist (1=w 5=d):	5	5	3

Crop Stage at Each Application

	A	B	C
Crop Name:	BETVU	BETVU	BETVU
Height (In.):	0.5-1"	2-3"	8-10"
Stage (L):	Cot-2	4-6	10

Weed Stage at Each Application

	A	B	C
Weed 1 Name:	ERICA	ERICA	ERICA
Height (In.):	1.5-2.5"	1.5-4"	1.5-4"
Stage (L):	pre-bolt	bolting	bolting
Weed 2 Name:	CHEAL	CHEAL	CHEAL
Height (In.):	3-4"	2"	-
Stage (L):	8	6-8	-

Weed Density (plants/sq. ft.)

	1	2
Date:	Jul/28/2014	Jul/28/2014
Weed Name:	ERICA	CHEAL
Density:	3	<1

Application Equipment

Appl	Sprayer	Speed	Nozzle	Nozzle	Nozzle	Nozzle	Boom			
	Type	MPH	Type	Size	Height	Spacing	Width	GPA	Carrier	PSI
A	Backpack	3.5	AIXR	11003	23"	20"	100"	19	Water	30
B	Backpack	3.5	AIXR	11003	24"	20"	100"	19	Water	30
C	Backpack	3.5	AIXR	11003	24"	20"	100"	19	Water	30

Comments: Roundup PowerMax (32 fl oz/A) + AMS was applied to the entire plot area on May 30 and July 17 to cleanup other weed besides glyphosate-resistant horseweed.

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Weed Code								BEAVA	ERICA	CHEAL	BEAVA
Crop Code								injury	control	control	injury
Rating Data Type								percent	percent	percent	percent
Rating Unit								Jun/16/2014	Jun/16/2014	Jun/16/2014	Jun/26/2014
Rating Date								12 DA-A	12 DA-A	12 DA-A	10 DA-B
Trt-Eval Interval								0	0	0	0
# Subsamples, Dec.											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
10	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	0	46	99	11
10	AMS		WG	17	lb/100 gal	2-leaf	A				
10	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
10	Stinger	3	L	6	fl oz/a	6-leaf	B				
10	AMS		WG	17	lb/100 gal	6-leaf	B				
11	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	0	60	99	14
11	AMS		WG	17	lb/100 gal	2-leaf	A				
11	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
11	Stinger	3	L	8	fl oz/a	6-leaf	B				
11	AMS		WG	17	lb/100 gal	6-leaf	B				
12	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	0	64	98	11
12	Stinger	3	L	2	fl oz/a	2-leaf	A				
12	AMS		WG	17	lb/100 gal	2-leaf	A				
12	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
12	Stinger	3	L	4	fl oz/a	6-leaf	B				
12	AMS		WG	17	lb/100 gal	6-leaf	B				
12	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
12	Stinger	3	L	4	fl oz/a	canopy	C				
12	AMS		WG	17	lb/100 gal	canopy	C				
13	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	0	60	98	16
13	Stinger	3	L	2	fl oz/a	2-leaf	A				
13	Upbeet	50	WG	0.5	oz/a	2-leaf	A				
13	AMS		WG	17	lb/100 gal	2-leaf	A				
13	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
13	Stinger	3	L	4	fl oz/a	6-leaf	B				
13	Upbeet	50	WG	0.5	oz/a	6-leaf	B				
13	AMS		WG	17	lb/100 gal	6-leaf	B				
14	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	0	68	99	0
14	Upbeet	50	WG	1	oz/a	2-leaf	A				
14	Destiny HC		L	1	pt/a	2-leaf	A				
14	AMS		WG	17	lb/100 gal	2-leaf	A				
14	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
14	Upbeet	50	WG	1	oz/a	6-leaf	B				
14	Destiny HC		L	1	pt/a	6-leaf	B				
14	AMS		WG	17	lb/100 gal	6-leaf	B				
LSD (P=.05)								0.0	14.0	1.4	5.3
CV								0.0	15.83	0.96	50.59

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

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								ERICA	ERICA	ERICA	ERICA
Weed Code								control	control	control	control
Crop Code								percent	percent	percent	percent
Rating Data Type								Jun/26/2014	Jul/11/2014	Jul/28/2014	Oct/02/2014
Rating Unit								10 DA-B	25 DA-B	14 DA-C	80 DA-C
Rating Date								0	0	0	0
Trt-Eval Interval											
# 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	A	33	60	65	30
1	AMS		WG	17	lb/100 gal	2-leaf	A				
1	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
1	AMS		WG	17	lb/100 gal	6-leaf	B				
2	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	63	86	89	64
2	Stinger	3	L	2	fl oz/a	2-leaf	A				
2	AMS		WG	17	lb/100 gal	2-leaf	A				
2	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
2	AMS		WG	17	lb/100 gal	6-leaf	B				
3	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	80	93	98	81
3	Stinger	3	L	3	fl oz/a	2-leaf	A				
3	AMS		WG	17	lb/100 gal	2-leaf	A				
3	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
3	AMS		WG	17	lb/100 gal	6-leaf	B				
4	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	74	89	95	71
4	Stinger	3	L	4	fl oz/a	2-leaf	A				
4	AMS		WG	17	lb/100 gal	2-leaf	A				
4	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
4	AMS		WG	17	lb/100 gal	6-leaf	B				
5	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	78	94	97	74
5	Stinger	3	L	6	fl oz/a	2-leaf	A				
5	AMS		WG	17	lb/100 gal	2-leaf	A				
5	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
5	AMS		WG	17	lb/100 gal	6-leaf	B				
6	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	81	92	97	80
6	Stinger	3	L	2	fl oz/a	2-leaf	A				
6	AMS		WG	17	lb/100 gal	2-leaf	A				
6	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
6	Stinger	3	L	2	fl oz/a	6-leaf	B				
6	AMS		WG	17	lb/100 gal	6-leaf	B				
7	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	80	98	99	93
7	Stinger	3	L	3	fl oz/a	2-leaf	A				
7	AMS		WG	17	lb/100 gal	2-leaf	A				
7	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
7	Stinger	3	L	3	fl oz/a	6-leaf	B				
7	AMS		WG	17	lb/100 gal	6-leaf	B				
8	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	85	99	99	92
8	Stinger	3	L	2	fl oz/a	2-leaf	A				
8	AMS		WG	17	lb/100 gal	2-leaf	A				
8	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
8	Stinger	3	L	4	fl oz/a	6-leaf	B				
8	AMS		WG	17	lb/100 gal	6-leaf	B				
9	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	71	90	97	91
9	AMS		WG	17	lb/100 gal	2-leaf	A				
9	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
9	Stinger	3	L	4	fl oz/a	6-leaf	B				
9	AMS		WG	17	lb/100 gal	6-leaf	B				

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								ERICA	ERICA	ERICA	ERICA
								control	control	control	control
								percent	percent	percent	percent
								Jun/26/2014	Jul/11/2014	Jul/28/2014	Oct/02/2014
								10 DA-B	25 DA-B	14 DA-C	80 DA-C
								0	0	0	0
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
10	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	64	93	98	88
10	AMS		WG	17	lb/100 gal	2-leaf	A				
10	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
10	Stinger	3	L	6	fl oz/a	6-leaf	B				
10	AMS		WG	17	lb/100 gal	6-leaf	B				
11	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	71	92	96	82
11	AMS		WG	17	lb/100 gal	2-leaf	A				
11	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
11	Stinger	3	L	8	fl oz/a	6-leaf	B				
11	AMS		WG	17	lb/100 gal	6-leaf	B				
12	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	78	98	99	99
12	Stinger	3	L	2	fl oz/a	2-leaf	A				
12	AMS		WG	17	lb/100 gal	2-leaf	A				
12	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
12	Stinger	3	L	4	fl oz/a	6-leaf	B				
12	AMS		WG	17	lb/100 gal	6-leaf	B				
12	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
12	Stinger	3	L	4	fl oz/a	canopy	C				
12	AMS		WG	17	lb/100 gal	canopy	C				
13	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	80	97	99	90
13	Stinger	3	L	2	fl oz/a	2-leaf	A				
13	Upbeet	50	WG	0.5	oz/a	2-leaf	A				
13	AMS		WG	17	lb/100 gal	2-leaf	A				
13	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
13	Stinger	3	L	4	fl oz/a	6-leaf	B				
13	Upbeet	50	WG	0.5	oz/a	6-leaf	B				
13	AMS		WG	17	lb/100 gal	6-leaf	B				
14	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	46	63	63	38
14	Upbeet	50	WG	1	oz/a	2-leaf	A				
14	Destiny HC		L	1	pt/a	2-leaf	A				
14	AMS		WG	17	lb/100 gal	2-leaf	A				
14	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
14	Upbeet	50	WG	1	oz/a	6-leaf	B				
14	Destiny HC		L	1	pt/a	6-leaf	B				
14	AMS		WG	17	lb/100 gal	6-leaf	B				
LSD (P=.05)								10.0	8.0	4.4	14.7
CV								9.98	6.27	3.33	13.42

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