

Horseweed management with fall and spring applied herbicide treatments - I

Trial ID: NTS01-16 Study Dir.: Sprague, Powell, Stiles
 Conducted: Bancroft MI Investigator: Christy Sprague

Planting Date: May-10-2016 **Row Spacing:** 15 IN
Variety: NKS15P1 **No. of Reps:** 4
Population: 155000 seeds/A **% OM:** 2.0
Soil Type: SL sandy loam **pH:** 6.1
Plot Size: 10 X 25 FT **Study Design:** Randomized Complete Block (RCB)

Tillage/Previous Crops:
Fertilizer:

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ERICA	horseweed	Conyza canadensis
2	STEME	chickweed, common	Stellaria media
3	LAMAM	henbit	Lamium amplexicaule

Crop	Code	Common Name
1	GLXMA	Soybean

Application Description

	A	B	C
Application Timing:	FALL	EPP	POST
Date Treated:	Nov-4-2015	Apr-27-2016	Jun-13-2016
Time Treated:	9:30 AM	5:15 PM	5:00 PM
% Cloud Cover:	0	50	85
Air Temp., Unit:	61 F	54 F	72 F
% Relative Humidity:	68	35	45
Wind Speed/Unit/Dir:	2 mph S	4 mph NE	3 mph E
Soil Temp, Unit:	50 F	56 F	70 F
Leaf Moist/Dew Presence (Y/N):	5	5	5
Soil Moist:	4	4	4

Crop Stage at Each Application

	A	B	C
Crop 1 Name:	GLXMA	GLXMA	GLXMA
Height:			3- " (4)
Stage:			V2

Weed Stage at Each Application

	A	B	C
Weed 1 Name:	ERICA	ERICA	ERICA
Height:	3-5 " (4)	2-11 " (5)	5 "
Stage:	Rosett	10-15L	many
Weed 2 Name:	STEME	STEME	STEME
Height:		2-3 " (2)	
Stage:	many	many	-
Weed 3 Name:	LAMAM	LAMAM	LAMAM
Height:	0.5 "	4 "	
Stage:	6-8L	many	-

Application Equipment

Appl	Sprayer	Ground	Nozzle	Nozzle	Nozzle	Nozzle	Boom	Spray	Carrier	Operation
	Type	Speed	Type	Size	Height	Spacing	Width	Volume		Pressure
A	BACKPK	3.8 MPH	AIXR	11003	20 "	20 "	100 "	19 GAL/AC	WATER	28 PSI
B	BACKPK	3.8 MPH	AIXR	11003	20 "	20 "	100 "	19 GAL/AC	WATER	28 PSI
C	CUB	3.8 MPH	AIXR	11003	26 "	20 "	100 "	19 GAL/AC	WATER	30 PSI

Comments:

The horseweed at this location was glyphosate-resistant. On June 13, 2016 FirstRate at 0.3 and 0.45 oz/A, Classic at 0.67 oz/A + COC, Synchrony XP at 0.375 oz/A were tank-mixed with Roundup PowerMax at 32 fl oz/A + AMS and Roundup PowerMax + AMS alone were applied in strips POST across all treatments with the exception of treatments 2, 6, 8, 9, and 15.

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Pest Code	ERICA	STEME	LAMPU	ERICA	STEME	LAMPU
Rating Date	Apr-25-2016	Apr-25-2016	Apr-25-2016	May-4-2016	May-4-2016	May-4-2016
Rating Type	control	control	control	control	control	control
Rating Unit	percent	percent	percent	percent	percent	percent
Trt-Eval Interval	173 DA-A	173 DA-A	173 DA-A	7 DA-B	7 DA-B	7 DA-B
Number of Decimals	0	0	0	0	0	0

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code						
1	Roundup PowerMax	32 fl oz/a		A	25	90	90	15	90	88
1	AMS	17 lb/100 gal		A						
1	Roundup PowerMax	22 fl oz/a		B						
1	AMS	17 lb/100 gal		B						
2	2,4-D Ester	1 pt/a		A	87	25	28	99	43	70
2	Authority First	4.5 oz/a		B						
2	Roundup PowerMax	22 fl oz/a		B						
2	2,4-D Ester	1 pt/a		B						
2	AMS	17 lb/100 gal		B						
3	Roundup PowerMax	32 fl oz/a		A	93	84	88	100	92	98
3	2,4-D Ester	1 pt/a		A						
3	AMS	17 lb/100 gal		A						
3	Liberty	29 fl oz/a		B						
3	Metribuzin	6 oz/a		B						
3	AMS	17 lb/100 gal		B						
4	Roundup PowerMax	22 fl oz/a		B	0	0	0	0	0	0
4	AMS	17 lb/100 gal		B						
5	Sharpen	1 fl oz/a		A	93	68	55	98	76	91
5	MSO	1 % v/v		A						
5	AMS	17 lb/100 gal		A						
5	Spartan	6 fl oz/a		B						
5	Roundup PowerMax	22 fl oz/a		B						
5	2,4-D Ester	1 pt/a		B						
5	AMS	17 lb/100 gal		B						
6	Sharpen	2 fl oz/a		A	96	78	68	100	96	91
6	MSO	1 % v/v		A						
6	AMS	17 lb/100 gal		A						
6	Trivence	8 oz/a		B						
6	Roundup PowerMax	22 fl oz/a		B						
6	2,4-D Ester	1 pt/a		B						
6	AMS	17 lb/100 gal		B						
7	Sharpen	1 fl oz/a		A	75	88	98	100	99	99
7	Roundup PowerMax	32 fl oz/a		A						
7	MSO	1 % v/v		A						
7	AMS	17 lb/100 gal		A						
7	Metribuzin	6 oz/a		B						
7	Sharpen	1 fl oz/a		B						
7	Roundup PowerMax	22 fl oz/a		B						
7	MSO	1 % v/v		B						
7	AMS	17 lb/100 gal		B						

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Rating Type	control	control	control	control	control	control
Rating Unit	percent	percent	percent	percent	percent	percent
Trt-Eval Interval	173 DA-A	173 DA-A	173 DA-A	7 DA-B	7 DA-B	7 DA-B
Number of Decimals	0	0	0	0	0	0

Trt No.	Treatment Name	Rate Unit	Appl Code						
8	Sharpen	1 fl oz/a	A	100	75	79	100	80	93
8	2,4-D Ester	1 pt/a	A						
8	MSO	1 % v/v	A						
8	AMS	17 lb/100 gal	A						
8	Authority MTZ	16 oz/a	B						
8	Liberty	29 fl oz/a	B						
8	AMS	17 lb/100 gal	B						
9	Clarity	1 pt/a	A	99	82	61	100	98	96
9	Valor	2 oz/a	B						
9	Metribuzin	6 oz/a	B						
9	Sharpen	1 fl oz/a	B						
9	Roundup PowerMax	22 fl oz/a	B						
9	MSO	1 % v/v	B						
9	AMS	17 lb/100 gal	B						
10	Roundup PowerMax	22 fl oz/a	B				55	3	20
10	2,4-D Ester	1 pt/a	B						
10	AMS	17 lb/100 gal	B						
11	Valor	2.5 oz/a	B				90	75	81
11	Roundup PowerMax	22 fl oz/a	B						
11	2,4-D Ester	1 pt/a	B						
11	AMS	17 lb/100 gal	B						
12	Spartan	8 fl oz/a	B				78	43	55
12	Roundup PowerMax	22 fl oz/a	B						
12	2,4-D Ester	1 pt/a	B						
12	AMS	17 lb/100 gal	B						
13	Metribuzin	8 oz/a	B				58	0	23
13	Roundup PowerMax	22 fl oz/a	B						
13	2,4-D Ester	1 pt/a	B						
13	AMS	17 lb/100 gal	B						
14	Valor	2 oz/a	B				74	70	76
14	Metribuzin	6 oz/a	B						
14	Roundup PowerMax	22 fl oz/a	B						
14	2,4-D Ester	1 pt/a	B						
14	AMS	17 lb/100 gal	B						
15	Authority MTZ	18 oz/a	B				66	24	48
15	Roundup PowerMax	22 fl oz/a	B						
15	2,4-D Ester	1 pt/a	B						
15	AMS	17 lb/100 gal	B						
16	Sharpen	1 fl oz/a	B				98	43	35
16	Roundup PowerMax	22 fl oz/a	B						
16	MSO	1 % v/v	B						
16	AMS	17 lb/100 gal	B						

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Rating Date	Apr-25-2016	Apr-25-2016	Apr-25-2016	May-4-2016	May-4-2016	May-4-2016
Rating Type	control	control	control	control	control	control
Rating Unit	percent	percent	percent	percent	percent	percent
Trt-Eval Interval	173 DA-A	173 DA-A	173 DA-A	7 DA-B	7 DA-B	7 DA-B
Number of Decimals	0	0	0	0	0	0

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code			
17	Metribuzin	6 oz/a	B		100	64	63
17	Sharpen	1 fl oz/a	B				
17	Roundup PowerMax	22 fl oz/a	B				
17	MSO	1 % v/v	B				
17	AMS	17 lb/100 gal	B				
18	Metribuzin	6 oz/a	B		100	66	69
18	Sharpen	1 fl oz/a	B				
18	Liberty	29 fl oz/a	B				
18	MSO	1 % v/v	B				
18	AMS	17 lb/100 gal	B				
19	Metribuzin	8 oz/a	B		71	33	53
19	Liberty	29 fl oz/a	B				
19	MSO	1 % v/v	B				
19	AMS	17 lb/100 gal	B				
20	Metribuzin	6 oz/a	B		100	71	79
20	Sharpen	1 fl oz/a	B				
20	Roundup PowerMax	22 fl oz/a	B				
20	2,4-D Ester	1 pt/a	B				
20	MSO	1 % v/v	B				
20	AMS	17 lb/100 gal	B				
	LSD P=.05	12.1	16.9	16.5	10.2	16.6	18.4
	Standard Deviation	8.3	11.6	11.3	7.2	11.7	13.0
	CV	11.2	17.76	17.96	8.97	20.15	19.6

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Rating Date	May-18-2016	May-18-2016	May-18-2016	Jun-13-2016	Jun-27-2016	Aug-1-2016
Rating Type	control	control	control	control	control	control
Rating Unit	percent	percent	percent	percent	percent	percent
Trt-Eval Interval	21 DA-B	21 DA-B	21 DA-B	47 DA-B	61 DA-B	96 DA-B
Number of Decimals	0	0	0	0	0	0

Trt No.	Treatment Name	Rate Unit	Appl Code	ERICA	STEME	LAMPU	ERICA	ERICA	ERICA
1	Roundup PowerMax	32 fl oz/a	A	13	99	87	0		
1	AMS	17 lb/100 gal	A						
1	Roundup PowerMax	22 fl oz/a	B						
1	AMS	17 lb/100 gal	B						
2	2,4-D Ester	1 pt/a	A	100	76	93	94	83	70
2	Authority First	4.5 oz/a	B						
2	Roundup PowerMax	22 fl oz/a	B						
2	2,4-D Ester	1 pt/a	B						
2	AMS	17 lb/100 gal	B						
3	Roundup PowerMax	32 fl oz/a	A	100	99	100	50		
3	2,4-D Ester	1 pt/a	A						
3	AMS	17 lb/100 gal	A						
3	Liberty	29 fl oz/a	B						
3	Metribuzin	6 oz/a	B						
3	AMS	17 lb/100 gal	B						
4	Roundup PowerMax	22 fl oz/a	B	3	91	58	0		
4	AMS	17 lb/100 gal	B						
5	Sharpen	1 fl oz/a	A	99	90	99	71		
5	MSO	1 % v/v	A						
5	AMS	17 lb/100 gal	A						
5	Spartan	6 fl oz/a	B						
5	Roundup PowerMax	22 fl oz/a	B						
5	2,4-D Ester	1 pt/a	B						
5	AMS	17 lb/100 gal	B						
6	Sharpen	2 fl oz/a	A	100	100	99	98	93	90
6	MSO	1 % v/v	A						
6	AMS	17 lb/100 gal	A						
6	Trivence	8 oz/a	B						
6	Roundup PowerMax	22 fl oz/a	B						
6	2,4-D Ester	1 pt/a	B						
6	AMS	17 lb/100 gal	B						
7	Sharpen	1 fl oz/a	A	100	100	100	63		
7	Roundup PowerMax	32 fl oz/a	A						
7	MSO	1 % v/v	A						
7	AMS	17 lb/100 gal	A						
7	Metribuzin	6 oz/a	B						
7	Sharpen	1 fl oz/a	B						
7	Roundup PowerMax	22 fl oz/a	B						
7	MSO	1 % v/v	B						
7	AMS	17 lb/100 gal	B						

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Rating Type	control	control	control	control	control	control
Rating Unit	percent	percent	percent	percent	percent	percent
Trt-Eval Interval	21 DA-B	21 DA-B	21 DA-B	47 DA-B	61 DA-B	96 DA-B
Number of Decimals	0	0	0	0	0	0

Trt No.	Treatment Name	Rate Unit	Appl Code						
8	Sharpen	1 fl oz/a	A	100	100	100	96	86	75
8	2,4-D Ester	1 pt/a	A						
8	MSO	1 % v/v	A						
8	AMS	17 lb/100 gal	A						
8	Authority MTZ	16 oz/a	B						
8	Liberty	29 fl oz/a	B						
8	AMS	17 lb/100 gal	B						
9	Clarity	1 pt/a	A	100	100	100	93	85	56
9	Valor	2 oz/a	B						
9	Metribuzin	6 oz/a	B						
9	Sharpen	1 fl oz/a	B						
9	Roundup PowerMax	22 fl oz/a	B						
9	MSO	1 % v/v	B						
9	AMS	17 lb/100 gal	B						
10	Roundup PowerMax	22 fl oz/a	B	92	71	68	48		
10	2,4-D Ester	1 pt/a	B						
10	AMS	17 lb/100 gal	B						
11	Valor	2.5 oz/a	B	96	93	96	71		
11	Roundup PowerMax	22 fl oz/a	B						
11	2,4-D Ester	1 pt/a	B						
11	AMS	17 lb/100 gal	B						
12	Spartan	8 fl oz/a	B	97	81	96	81		
12	Roundup PowerMax	22 fl oz/a	B						
12	2,4-D Ester	1 pt/a	B						
12	AMS	17 lb/100 gal	B						
13	Metribuzin	8 oz/a	B	98	90	99	68		
13	Roundup PowerMax	22 fl oz/a	B						
13	2,4-D Ester	1 pt/a	B						
13	AMS	17 lb/100 gal	B						
14	Valor	2 oz/a	B	100	98	100	86		
14	Metribuzin	6 oz/a	B						
14	Roundup PowerMax	22 fl oz/a	B						
14	2,4-D Ester	1 pt/a	B						
14	AMS	17 lb/100 gal	B						
15	Authority MTZ	18 oz/a	B	100	93	98	95	90	64
15	Roundup PowerMax	22 fl oz/a	B						
15	2,4-D Ester	1 pt/a	B						
15	AMS	17 lb/100 gal	B						
16	Sharpen	1 fl oz/a	B	99	98	74	45		
16	Roundup PowerMax	22 fl oz/a	B						
16	MSO	1 % v/v	B						
16	AMS	17 lb/100 gal	B						

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Rating Unit	percent	percent	percent	percent	percent	percent
Trt-Eval Interval	21 DA-B	21 DA-B	21 DA-B	47 DA-B	61 DA-B	96 DA-B
Number of Decimals	0	0	0	0	0	0

Trt No.	Treatment Name	Rate Unit	Appl Code						
17	Metribuzin	6 oz/a	B	100	99	96	60		
17	Sharpen	1 fl oz/a	B						
17	Roundup PowerMax	22 fl oz/a	B						
17	MSO	1 % v/v	B						
17	AMS	17 lb/100 gal	B						
18	Metribuzin	6 oz/a	B	100	98	99	61		
18	Sharpen	1 fl oz/a	B						
18	Liberty	29 fl oz/a	B						
18	MSO	1 % v/v	B						
18	AMS	17 lb/100 gal	B						
19	Metribuzin	8 oz/a	B	99	99	99	61		
19	Liberty	29 fl oz/a	B						
19	MSO	1 % v/v	B						
19	AMS	17 lb/100 gal	B						
20	Metribuzin	6 oz/a	B	100	97	99	66		
20	Sharpen	1 fl oz/a	B						
20	Roundup PowerMax	22 fl oz/a	B						
20	2,4-D Ester	1 pt/a	B						
20	MSO	1 % v/v	B						
20	AMS	17 lb/100 gal	B						
	LSD P=.05			6.1	6.2	7.2	11.3	18.2	40.6
	Standard Deviation			4.3	4.4	5.1	8.0	11.8	26.3
	CV			4.76	4.71	5.5	12.19	13.51	37.08