

Titration of metribuzin rates for waterhemp control

Trial ID: SOY24-23 Study Dir.: Sprague, Stiles
 Conducted: Shiawassee County Investigator: Christy Sprague

Planting Date: May-23-2023 **Row Spacing:** 30 IN
Variety: AG26XF3 **No. of Reps:** 4
Population: 150000 seeds/A **% OM:** 1.3
Soil Type: L loam **pH:** 6.1
Plot Size: 10 X 25 FT **Study Design:** Randomized Complete Block (RCB)

Tillage/Previous Crops: Spring chisel plow; spring disk and soil finished twice.
Fertilizer:

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	AMATU	waterhemp	Amaranthus tuberculatus
Crop	Code	Common Name	
1	GLXMA	Soybean	

Application Description

Application Timing: A
Date Treated: PRE
 May-23-2023
Time Treated: 1:50 PM
% Cloud Cover: 0
Air Temp., Unit: 75 F
% Relative Humidity: 37
Wind Speed/Unit/Dir: 1 MPH NW
Soil Temp, Unit: 69 F
Leaf Moist/Dew Presence (Y/N): N
Soil Moist: 5

Crop Stage at Each Application

Crop 1 Name: A
 GLXMA
Height:
Stage:

Weed Stage at Each Application

Weed 1 Name: A
 AMATU
Height:
Stage:

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 MPH	AIXR	11003	22.0 "	20 "	100 "	19 GPA	WATER	30 PSI

Comments:

The waterhemp population at this location is resistant to glyphosate (Group 9) and the ALS-inhibitors (Group 2). The lack of precipitation preceding and soon after soybean planting resulted in high variability of soybean growth and waterhemp emergence and herbicide effectiveness. There was no apparent soybean injury related to any of the herbicide treatments.

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Rating Date	Jun-20-2023	Jun-20-2023	Jun-27-2023	Jun-27-2023	Jul-5-2023	Jul-5-2023	Jul-18-2023
Rating Type	injury	control	injury	control	injury	control	injury
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
Crop Type, Code	C, GLXMA		C, GLXMA		C, GLXMA		C, GLXMA
Pest Code	AMATU		AMATU		AMATU		
Trt-Eval Interval	28 DA-A	28 DA-A	35 DA-A	35 DA-A	43 DA-A	43 DA-A	56 DA-A
Number of Decimals	0	0	0	0	0	0	0

Trt No.	Treatment Name	Rate	Appl Unit	Appl Code	Appl Timing	Jun-20-2023 injury	Jun-20-2023 control	Jun-27-2023 injury	Jun-27-2023 control	Jul-5-2023 injury	Jul-5-2023 control	Jul-18-2023 injury
1	Untreated					0	0	0	0	0	0	0
2	Metribuzin	4 oz/a	A		PRE	0	88	0	68	0	58	0
3	Metribuzin	5 oz/a	A		PRE	0	88	0	83	0	66	0
4	Metribuzin	6 oz/a	A		PRE	0	96	0	95	0	76	0
5	Metribuzin	7 oz/a	A		PRE	0	99	0	92	0	68	0
6	Metribuzin	8 oz/a	A		PRE	0	85	0	82	0	68	0
7	Metribuzin	9 oz/a	A		PRE	0	90	0	88	0	71	0
8	Metribuzin	10 oz/a	A		PRE	0	95	0	96	0	86	0
9	Metribuzin	11 oz/a	A		PRE	0	97	0	97	0	81	0
10	Metribuzin	12 oz/a	A		PRE	0	93	0	90	0	81	0
11	Metribuzin	13 oz/a	A		PRE	0	95	0	90	0	81	0
12	Metribuzin	14 oz/a	A		PRE	0	99	0	95	0	88	0
13	Metribuzin	15 oz/a	A		PRE	0	93	0	91	0	80	0
14	Metribuzin	16 oz/a	A		PRE	0	93	0	89	0	84	0
15	Spartan	12 fl oz/a	A		PRE	0	88	0	88	0	82	0
16	Dual Magnum	1.67 pt/a	A		PRE	0	99	0	95	0	84	0
LSD P=.05						.	13.3	.	14.5	.	13.4	.
Standard Deviation						0.0	9.3	0.0	10.2	0.0	9.4	0.0
CV						0.0	10.69	0.0	12.17	0.0	13.03	0.0

Missing data estimates are included in columns: Average=1,2,3,4,5,6,7,8,10,11,12,13,14,15,16,17,18,19
 Could not calculate LSD (% mean diff) for columns 1,3,5,7,9 because error mean square = 0.

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Rating Date	Jul-18-2023	Jun-27-2023	Jun-27-2023	Jun-27-2023	Jun-27-2023	Jun-27-2023	Jun-27-2023
Rating Type	control	count A	count B	biomass(g)A	biomass(g)B	height 1	height 2
Rating Unit/Min/Max	%, 0, 100	0.25 m2, -, -	0.25 m2, -, -	0.25 m2, -, -	0.25 m2, -, -	inches, -, -	inches, -, -
Crop Type, Code						C, GLXMA	C, GLXMA
Pest Code	AMATU	AMATU	AMATU	AMATU A	AMATU		
Trt-Eval Interval	56 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A
Number of Decimals	0	0	0	2	2	0	0

Trt No.	Treatment Name	Rate	Appl Unit	Appl Code	Appl Timing							
1	Untreated					0	9	11	1.72	0.29	5	5
2	Metribuzin	4 oz/a	A	PRE		45	3	3	0.18	0.25	4	4
3	Metribuzin	5 oz/a	A	PRE		56	1	1	0.37	0.21	4	3
4	Metribuzin	6 oz/a	A	PRE		63	2	2	0.09	0.04	4	3
5	Metribuzin	7 oz/a	A	PRE		65	0	0	0.09	0.03	4	4
6	Metribuzin	8 oz/a	A	PRE		66	1	0	0.50	0.00	4	4
7	Metribuzin	9 oz/a	A	PRE		71	1	2	0.37	0.40	3	4
8	Metribuzin	10 oz/a	A	PRE		82	0	0	0.00	0.00	4	4
9	Metribuzin	11 oz/a	A	PRE		78	0	0	0.00	0.11	4	4
10	Metribuzin	12 oz/a	A	PRE		75	0	1	0.08	0.11	4	4
11	Metribuzin	13 oz/a	A	PRE		76	1	0	0.21	0.03	5	5
12	Metribuzin	14 oz/a	A	PRE		87	1	1	0.19	0.34	5	5
13	Metribuzin	15 oz/a	A	PRE		78	0	1	0.00	0.18	3	3
14	Metribuzin	16 oz/a	A	PRE		81	2	1	0.42	0.05	3	4
15	Spartan	12 fl oz/a	A	PRE		81	1	2	0.30	0.67	4	4
16	Dual Magnum	1.67 pt/a	A	PRE		79	0	0	0.00	0.00	4	3
	LSD P=.05					13.0	3.1	4.7	0.794	0.500	1.5	1.1
	Standard Deviation					9.1	2.2	3.3	0.557	0.351	1.0	0.8
	CV					13.52	159.98	212.76	197.4	206.74	27.33	20.4

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Rating Date	Jun-27-2023	Jun-27-2023	Jun-27-2023	Jun-27-2023
Rating Type	height 3	height 4	height 5	height 6
Rating Unit/Min/Max	inches, -, -	inches, -, -	inches, -, -	inches, -, -
Crop Type, Code	C, GLXMA	C, GLXMA	C, GLXMA	C, GLXMA
Pest Code				
Trt-Eval Interval	35 DA-A	35 DA-A	35 DA-A	35 DA-A
Number of Decimals	0	0	0	0

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	Appl Timing	4	5	5	3
1	Untreated					4	5	5	3
2	Metribuzin	4 oz/a	A	PRE		4	4	4	4
3	Metribuzin	5 oz/a	A	PRE		3	3	3	3
4	Metribuzin	6 oz/a	A	PRE		4	4	3	3
5	Metribuzin	7 oz/a	A	PRE		5	5	4	5
6	Metribuzin	8 oz/a	A	PRE		4	3	4	4
7	Metribuzin	9 oz/a	A	PRE		4	4	4	4
8	Metribuzin	10 oz/a	A	PRE		5	5	4	4
9	Metribuzin	11 oz/a	A	PRE		3	4	5	4
10	Metribuzin	12 oz/a	A	PRE		3	4	3	3
11	Metribuzin	13 oz/a	A	PRE		4	4	4	4
12	Metribuzin	14 oz/a	A	PRE		5	4	4	4
13	Metribuzin	15 oz/a	A	PRE		5	4	4	4
14	Metribuzin	16 oz/a	A	PRE		4	3	4	4
15	Spartan	12 fl oz/a	A	PRE		3	5	4	4
16	Dual Magnum	1.67 pt/a	A	PRE		3	3	3	3
LSD P=.05						1.4	1.3	1.4	1.2
Standard Deviation						1.0	0.9	1.0	0.8
CV						25.05	23.58	26.03	23.03

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