

Waterhemp control with various soil-applied (PRE) herbicides in soybean

Trial ID: SOY13-21
 Conducted: Shiawassee County

Study Dir.: Sprague, Powell, Stiles
 Investigator: Christy Sprague

Planting Date: 6-20-21
Variety: AG24XF1
Population: 155000 seeds/A
Soil Type: CL clay loam
Plot Size: 10 X 25 FT

Row Spacing: 30 IN
No. of Reps: 4
% OM: 3.6
pH: 6.2
Study Design: Randomized Complete Block (RCB)

Tillage/Previous Crops: Spring disked corn stubble
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

	A	B
Application Timing:	PRE	POST
Date Treated:	5-20-21	7-7-21
Time Treated:	2:37 PM	10:20 AM
% Cloud Cover:	50	95
Air Temp., Unit:	86 F	76 F
% Relative Humidity:	35	79
Wind Speed/Unit/Dir:	7 MPH S	2 MPH W
Soil Temp, Unit:	66.4 F	79 F
Leaf Moist/Dew Presence (Y/N):	N	N
Soil Moist:	5	5

Crop Stage at Each Application

	A	B
Crop 1 Name:	GLXMA	GLXMA
Height:		17-18 " (17)
Stage:		V6

Weed Stage at Each Application

	A	B
Weed 1 Name:	AMATU	AMATU
Height:		8-10 " (6)
Stage:		12L-20L (16L)

Weed Density

Date:	1 7-7-21
Weed Name:	AMATU
Density:	15 FT ²

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 "	20.0 "	100.0 "	19 GPA	WATER	30 PSI
B	CUB	3.8 mph	AIXR	11003	28.0 "	20.0 "	100.0 "	19 GPA	WATER	30 PSI

Comments: Waterhemp at this location is Group 2 (ALS) and Group 9 (glyphosate) resistant.

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Pest Code	AMATU	AMATU	C, GLXMA	AMATU	C, GLXMA	AMATU	AMATU
Crop Type, Code							
Rating Date	6-16-21	7-7-21	7-21-21	7-21-21	8-11-21	8-11-21	9-30-21
Rating Type	control	control	injury	control	injury	control	control
Rating Unit	%	%	%	%	%	%	%
Trt-Eval Interval	27 DA-A	48 DA-A	14 DA-B	14 DA-B	35 DA-B	35 DA-B	85 DA-B

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code							
1	Valor	2 oz/a		A	95	91	0	100	0	99	100
1	Liberty	32 fl oz/a		B							
1	Roundup PowerMax	32 fl oz/a		B							
1	AMS	17 lb/100 gal		B							
2	Valor	2.5 oz/a		A	100	93	0	100	0	100	99
2	Liberty	32 fl oz/a		B							
2	Roundup PowerMax	32 fl oz/a		B							
2	AMS	17 lb/100 gal		B							
3	Spartan	8 fl oz/a		A	100	95	0	100	0	100	100
3	Liberty	32 fl oz/a		B							
3	Roundup PowerMax	32 fl oz/a		B							
3	AMS	17 lb/100 gal		B							
4	Untreated				0	0	0	0	0	0	0
5	Metribuzin	8 oz/a		A	100	93	0	98	0	96	96
5	Liberty	32 fl oz/a		B							
5	Roundup PowerMax	32 fl oz/a		B							
5	AMS	17 lb/100 gal		B							
6	Dimetric Charged	12 fl oz/a		A	100	100	0	100	0	100	100
6	Liberty	32 fl oz/a		B							
6	Roundup PowerMax	32 fl oz/a		B							
6	AMS	17 lb/100 gal		B							
7	Authority MTZ	16 oz/a		A	100	100	0	100	0	100	100
7	Liberty	32 fl oz/a		B							
7	Roundup PowerMax	32 fl oz/a		B							
7	AMS	17 lb/100 gal		B							
8	Boundary	2 pt/a		A	100	98	0	100	0	100	100
8	Liberty	32 fl oz/a		B							
8	Roundup PowerMax	32 fl oz/a		B							
8	AMS	17 lb/100 gal		B							
9	Zidua SC	4 fl oz/a		A	100	99	0	100	0	100	100
9	Liberty	32 fl oz/a		B							
9	Roundup PowerMax	32 fl oz/a		B							
9	AMS	17 lb/100 gal		B							
10	Dual II Magnum	2 pt/a		A	100	100	0	100	0	100	100
10	Liberty	32 fl oz/a		B							
10	Roundup PowerMax	32 fl oz/a		B							
10	AMS	17 lb/100 gal		B							
11	Warrant	3 pt/a		A	100	100	0	100	0	100	100
11	Liberty	32 fl oz/a		B							
11	Roundup PowerMax	32 fl oz/a		B							
11	AMS	17 lb/100 gal		B							
12	Outlook	18 fl oz/a		A	100	100	0	100	0	99	98
12	Liberty	32 fl oz/a		B							
12	Roundup PowerMax	32 fl oz/a		B							
12	AMS	17 lb/100 gal		B							
13	BroadAxe XC	26 fl oz/a		A	100	100	0	100	0	100	100
13	Liberty	32 fl oz/a		B							
13	Roundup PowerMax	32 fl oz/a		B							
13	AMS	17 lb/100 gal		B							

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Rating Unit	%	%	%	%	%	%	%
Trt-Eval Interval	27 DA-A	48 DA-A	14 DA-B	14 DA-B	35 DA-B	35 DA-B	85 DA-B

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code							
14	Authority Edge	9 fl oz/a		A	100	99	0	100	0	100	100
14	Liberty	32 fl oz/a		B							
14	Roundup PowerMax	32 fl oz/a		B							
14	AMS	17 lb/100 gal		B							
15	Fierce EZ	6 fl oz/a		A	100	100	0	100	0	100	100
15	Liberty	32 fl oz/a		B							
15	Roundup PowerMax	32 fl oz/a		B							
15	AMS	17 lb/100 gal		B							
16	Fierce MTZ	16 fl oz/a		A	100	100	0	100	0	100	100
16	Liberty	32 fl oz/a		B							
16	Roundup PowerMax	32 fl oz/a		B							
16	AMS	17 lb/100 gal		B							
LSD P=.05		3.6			7.3			1.8		2.8	2.5
Standard Deviation		2.5			5.1	0.0		1.3	0.0	1.9	1.8
CV		2.68			5.56	0.0		1.38	0.0	2.08	1.9
Grand Mean		93.4			91.7	0.0		93.5	0.0	93.3	93.3
Levene's F [^]		0.817			1.027			0.771		1.068	1.804
Levene's Prob(F)		0.655			0.446			0.701		0.409	0.062
Rank X2	
P(Rank X2)	
Skewness [^]		-4.2748*			-1.6015*			-3.8339*		-3.51*	-2.2295*
Kurtosis [^]		32.3903*			6.1818*			27.2564*		23.66*	11.1808*