

Glyphosate-resistant waterhemp control in Enlist E3 soybean

Trial ID: SOY30-23 Study Dir.: Stiles, Sprague
 Conducted: Shiawassee County Investigator: Christy Sprague

Planting Date: May-17-2023 **Row Spacing:** 30 IN
Variety: P25A16E **No. of Reps:** 4
Population: 150000 seeds/A **% OM:** 3.2
Soil Type: CL clay loam **pH:** 7.5
Plot Size: 10 X 25 FT **Study Design:** Randomized Complete Block (RCB)

Tillage/Previous Crops: Spring chisel plow and disked, followed by soil finisher 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

	A	B
Application Timing:	PRE	POST
Date Treated:	May-17-2023	Jun-21-2023
Time Treated:	12:40 PM	12:40 PM
% Cloud Cover:	5	5
Air Temp., Unit:	50 F	79 F
% Relative Humidity:	50	49
Wind Speed/Unit/Dir:	10 MPH NE	8 MPH NE
Soil Temp, Unit:	57 F	82 F
Leaf Moist/Dew Presence (Y/N):		N
Soil Moist:	5	5

Crop Stage at Each Application

	A	B
Crop 1 Name:	GLXMA	GLXMA
Height:		2-6 " (4)
Stage:		V2

Weed Stage at Each Application

	A	B
Weed 1 Name:	AMATU	AMATU
Height:		1-4 " (4)
Stage:		3-many

Weed Density

Date:	1 Jun-21-2023
Weed Name:	AMATU
Density:	16 ft2

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	22.0 "	20.0 "	100.0 "	19 GPA	WATER	30 PSI

Comments: The waterhemp population at this location is resistant to glyphosate (Group 9) and ALS-inhibiting (Group 2) herbicides.

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Rating Date	Jun-21-2023	Jun-28-2023	Jun-28-2023	Jul-12-2023	Jul-12-2023	Jul-19-2023	Jul-19-2023
Rating Type	control	injury	control	injury	control	injury	control
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	
Pest Code	AMATU		AMATU		AMATU		AMATU
Trt-Eval Interval	35 DA-A	7 DA-B	7 DA-B	21 DA-B	21 DA-B	28 DA-B	28 DA-B
Number of Decimals	0	0	0	0	0	0	0

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	Appl Timing	Jun-21-2023 control	Jun-28-2023 injury	Jun-28-2023 control	Jul-12-2023 injury	Jul-12-2023 control	Jul-19-2023 injury	Jul-19-2023 control
1	Valor EZ	2 fl oz/a		A	PRE	61	2	58	0	47	0	47
	Roundup PowerMax 3	30 fl oz/a		B	POST							
	AMS	17 lb/100 gal		B	POST							
2	Valor EZ	2 fl oz/a		A	PRE	58	3	87	2	99	0	99
	Enlist Duo	4.75 pt/a		B	POST							
	AMS	17 lb/100 gal		B	POST							
3	Valor EZ	2 fl oz/a		A	PRE	61	4	93	0	98	0	99
	Liberty	32 fl oz/a		B	POST							
	AMS	17 lb/100 gal		B	POST							
4	Valor EZ	2 fl oz/a		A	PRE	58	7	96	2	100	0	100
	Enlist One	32 fl oz/a		B	POST							
	Liberty	32 fl oz/a		B	POST							
	AMS	17 lb/100 gal		B	POST							
5	Valor EZ	2 fl oz/a		A	PRE	60	6	89	11	98	0	100
	Warrant	3 pt/a		B	POST							
	Enlist Duo	4.75 pt/a		B	POST							
	AMS	17 lb/100 gal		B	POST							
6	Valor EZ	2 fl oz/a		A	PRE	60	8	94	11	100	0	100
	Warrant	3 pt/a		B	POST							
	Liberty	32 fl oz/a		B	POST							
	AMS	17 lb/100 gal		B	POST							
7	Valor EZ	2 fl oz/a		A	PRE	62	8	95	10	100	0	100
	Warrant	3 pt/a		B	POST							
	Enlist One	32 fl oz/a		B	POST							
	Liberty	32 fl oz/a		B	POST							
	AMS	17 lb/100 gal		B	POST							
8	Valor EZ	2 fl oz/a		A	PRE	62	9	98	7	100	0	100
	Dual II Magnum	1.33 pt/a		B	POST							
	Enlist One	32 fl oz/a		B	POST							
	Liberty	32 fl oz/a		B	POST							
	AMS	17 lb/100 gal		B	POST							
9	Valor EZ	2 fl oz/a		A	PRE	64	7	98	8	100	0	100
	Outlook	16 fl oz/a		B	POST							
	Enlist One	32 fl oz/a		B	POST							
	Liberty	32 fl oz/a		B	POST							
	AMS	17 lb/100 gal		B	POST							
10	Valor EZ	2 fl oz/a		A	PRE	70	7	98	6	100	0	100
	Zidua SC	4 fl oz/a		B	POST							
	Enlist One	32 fl oz/a		B	POST							
	Liberty	32 fl oz/a		B	POST							
	AMS	17 lb/100 gal		B	POST							
11	Roundup PowerMax 3	30 fl oz/a		B	POST	0	0	0	0	0	0	0
	AMS	17 lb/100 gal		B	POST							
12	Enlist Duo	4.75 pt/a		B	POST	0	2	80	0	89	0	99
	AMS	17 lb/100 gal		B	POST							
13	Liberty	32 fl oz/a		B	POST	0	0	89	0	87	0	78
	AMS	17 lb/100 gal		B	POST							
14	Liberty	43 fl oz/a		B	POST	0	0	85	0	87	0	79
	AMS	17 lb/100 gal		B	POST							
15	Liberty	32 fl oz/a		B	POST	0	0	83	0	79	0	75
	Roundup PowerMax 3	30 fl oz/a		B	POST							
	AMS	17 lb/100 gal		B	POST							

Could not calculate LSD (% mean diff) for columns 6 because error mean square = 0.

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Rating Type	control	injury	control	injury	control	injury	control
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	
Pest Code	AMATU		AMATU		AMATU		AMATU
Trt-Eval Interval	35 DA-A	7 DA-B	7 DA-B	21 DA-B	21 DA-B	28 DA-B	28 DA-B
Number of Decimals	0	0	0	0	0	0	0

Trt No.	Treatment Name	Rate	Unit	Appl Code	Appl Timing	Jun-21-2023 control	Jun-28-2023 injury	Jun-28-2023 control	Jul-12-2023 injury	Jul-12-2023 control	Jul-19-2023 injury	Jul-19-2023 control
16	Enlist One	32 fl oz/a		B	POST	0	5	96	2	94	0	92
	Liberty	32 fl oz/a		B	POST							
	AMS	17 lb/100 gal		B	POST							
	LSD P=.05					7.3	3.2	6.8	3.0	6.2	.	8.4
	Standard Deviation					4.4	1.9	4.1	1.8	3.7	0.0	5.1
	CV					11.44	45.69	4.85	49.25	4.29	0.0	5.9

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Rating Date Sep-21-2023
 Rating Type control
 Rating Unit/Min/Max %, 0, 100
 Crop Type, Code
 Pest Code AMATU
 Trt-Eval Interval 92 DA-B
 Number of Decimals 0

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	Appl Timing	
1	Valor EZ	2 fl oz/a		A	PRE	42
	Roundup PowerMax 3	30 fl oz/a		B	POST	
	AMS	17 lb/100 gal		B	POST	
2	Valor EZ	2 fl oz/a		A	PRE	100
	Enlist Duo	4.75 pt/a		B	POST	
	AMS	17 lb/100 gal		B	POST	
3	Valor EZ	2 fl oz/a		A	PRE	97
	Liberty	32 fl oz/a		B	POST	
	AMS	17 lb/100 gal		B	POST	
4	Valor EZ	2 fl oz/a		A	PRE	100
	Enlist One	32 fl oz/a		B	POST	
	Liberty	32 fl oz/a		B	POST	
	AMS	17 lb/100 gal		B	POST	
5	Valor EZ	2 fl oz/a		A	PRE	93
	Warrant	3 pt/a		B	POST	
	Enlist Duo	4.75 pt/a		B	POST	
	AMS	17 lb/100 gal		B	POST	
6	Valor EZ	2 fl oz/a		A	PRE	100
	Warrant	3 pt/a		B	POST	
	Liberty	32 fl oz/a		B	POST	
	AMS	17 lb/100 gal		B	POST	
7	Valor EZ	2 fl oz/a		A	PRE	100
	Warrant	3 pt/a		B	POST	
	Enlist One	32 fl oz/a		B	POST	
	Liberty	32 fl oz/a		B	POST	
	AMS	17 lb/100 gal		B	POST	
8	Valor EZ	2 fl oz/a		A	PRE	100
	Dual II Magnum	1.33 pt/a		B	POST	
	Enlist One	32 fl oz/a		B	POST	
	Liberty	32 fl oz/a		B	POST	
	AMS	17 lb/100 gal		B	POST	
9	Valor EZ	2 fl oz/a		A	PRE	92
	Outlook	16 fl oz/a		B	POST	
	Enlist One	32 fl oz/a		B	POST	
	Liberty	32 fl oz/a		B	POST	
	AMS	17 lb/100 gal		B	POST	
10	Valor EZ	2 fl oz/a		A	PRE	100
	Zidua SC	4 fl oz/a		B	POST	
	Enlist One	32 fl oz/a		B	POST	
	Liberty	32 fl oz/a		B	POST	
	AMS	17 lb/100 gal		B	POST	
11	Roundup PowerMax 3	30 fl oz/a		B	POST	0
	AMS	17 lb/100 gal		B	POST	
12	Enlist Duo	4.75 pt/a		B	POST	100
	AMS	17 lb/100 gal		B	POST	
13	Liberty	32 fl oz/a		B	POST	75
	AMS	17 lb/100 gal		B	POST	
14	Liberty	43 fl oz/a		B	POST	73
	AMS	17 lb/100 gal		B	POST	
15	Liberty	32 fl oz/a		B	POST	75
	Roundup PowerMax 3	30 fl oz/a		B	POST	
	AMS	17 lb/100 gal		B	POST	

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 Rating Type control
 Rating Unit/Min/Max %, 0, 100
 Crop Type, Code
 Pest Code AMATU
 Trt-Eval Interval 92 DA-B
 Number of Decimals 0

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	Appl Timing	
16	Enlist One	32 fl oz/a	B	POST		88
	Liberty	32 fl oz/a	B	POST		
	AMS	17 lb/100 gal	B	POST		
	LSD P=.05					11.9
	Standard Deviation					7.1
	CV					8.57