

Waterhemp control with various PRE herbicides in LibertyLink GT27 soybean

Trial ID: SOY17-20 Study Dir.: Sprague, Powell, Stiles
 Conducted: Isabella Co. Investigator: Christy Sprague

Planting Date: May-13-2020 **Row Spacing:** 30 IN
Variety: CZ2360 LLGT27 **No. of Reps:** 4
Population: 156000 seeds/A **% OM:** 2.5
Soil Type: SL sandy loam **pH:** 6.8
Plot Size: 10 X 25 FT **Study Design:** Randomized Complete Block (RCB)

Tillage/Previous Crops: Spring disked; spring cultimulched

Fertilizer:

Crop and Weed Description

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

Application Description

	A	B
Application Timing:	PRE	POST
Date Treated:	May-13-2020	Jul-8-2020
Time Treated:	9:30 AM	9:10 AM
% Cloud Cover:	0	20
Air Temp., Unit:	47 F	78 F
% Relative Humidity:	62	72
Wind Speed/Unit/Dir:	3 mph N	2 mph N
Soil Temp, Unit:	78 F	72 F
Leaf Moist/Dew Presence (Y/N):		4
Soil Moist:	5	5

Crop Stage at Each Application

	A	B
Crop 1 Name:	GLXMA	GLXMA
Height:		14 "
Stage:		V6

Weed Stage at Each Application

	A	B
Weed 1 Name:	AMATU	AMATU
Height:		3-12 " (5)
Stage:		8-20L

Weed Density

	1
Date:	Jul-8-2020
Weed Name:	AMATU
Density:	12 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	21 "	20 "	100 "	19 GPA	WATER	30 psi
B	CUB	3.8 mph	AIXR	11003	30 "	20 "	120 "	19 GPA	WATER	30 psi

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

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Pest Code			AMATU	AMATU		AMATU
Crop Type, Code	C GLXMA	C GLXMA			C GLXMA	
Rating Date	Jun-2-2020	Jun-16-2020	Jun-16-2020	Jul-8-2020	Jul-22-2020	Jul-22-2020
Rating Type	injury	injury	control	control	injury	control
Rating Unit	percent	percent	percent	percent	percent	percent
Trt-Eval Interval	20 DA-A	34 DA-A	34 DA-A	0 DA-B	14 DA-B	14 DA-B
Number of Decimals	0	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Appl Timing	Appl Code						
1	Alite	4 L		3 fl oz/a	PRE	A	0	5	100	80	0	95
	Liberty	2.34 L		32 fl oz/a	POST	B						
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B						
	AMS	WG		17 lb/100 gal	POST	B						
2	Valor	51 WG		2 oz/a	PRE	A	0	13	100	81	0	95
	Liberty	2.34 L		32 fl oz/a	POST	B						
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B						
	AMS	WG		17 lb/100 gal	POST	B						
3	Spartan	4 L		8 fl oz/a	PRE	A	0	8	100	88	0	93
	Liberty	2.34 L		32 fl oz/a	POST	B						
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B						
	AMS	WG		17 lb/100 gal	POST	B						
4	Metribuzin	75 WG		8 oz/a	PRE	A	0	4	90	60	0	85
	Liberty	2.34 L		32 fl oz/a	POST	B						
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B						
	AMS	WG		17 lb/100 gal	POST	B						
5	Alite	4 L		3 fl oz/a	PRE	A	0	7	100	84	0	96
	Metribuzin	75 WG		6 oz/a	PRE	A						
	Liberty	2.34 L		32 fl oz/a	POST	B						
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B						
	AMS	WG		17 lb/100 gal	POST	B						
6	Dimetric Charged	3.67 L		12 fl oz/a	PRE	A	0	8	100	93	0	99
	Liberty	2.34 L		32 fl oz/a	POST	B						
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B						
	AMS	WG		17 lb/100 gal	POST	B						
7	Authority MTZ	45 WG		16 oz/a	PRE	A	0	3	100	91	0	96
	Liberty	2.34 L		32 fl oz/a	POST	B						
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B						
	AMS	WG		17 lb/100 gal	POST	B						
8	Untreated						0	0	0	0	0	0
9	Zidua SC	4.17 L		4 fl oz/a	PRE	A	0	8	100	100	0	100
	Liberty	2.34 L		32 fl oz/a	POST	B						
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B						
	AMS	WG		17 lb/100 gal	POST	B						
10	Dual II Magnum	7.64 L		2 pt/a	PRE	A	0	26	100	100	0	100
	Liberty	2.34 L		32 fl oz/a	POST	B						
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B						
	AMS	WG		17 lb/100 gal	POST	B						
11	Warrant	3 L		3 pt/a	PRE	A	0	20	100	95	0	98
	Liberty	2.34 L		32 fl oz/a	POST	B						
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B						
	AMS	WG		17 lb/100 gal	POST	B						
12	Outlook	6 L		18 fl oz/a	PRE	A	0	22	100	90	0	100
	Liberty	2.34 L		32 fl oz/a	POST	B						
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B						
	AMS	WG		17 lb/100 gal	POST	B						
13	Alite	4 L		2 fl oz/a	PRE	A	0	5	100	98	0	100
	Zidua SC	4.17 L		4 fl oz/a	PRE	A						
	Liberty	2.34 L		32 fl oz/a	POST	B						
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B						
	AMS	WG		17 lb/100 gal	POST	B						

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Crop Type, Code						C GLXMA	C GLXMA		C GLXMA					
Rating Date						Jun-2-2020	Jun-16-2020	Jun-16-2020	Jul-8-2020	Jul-22-2020	Jul-22-2020			
Rating Type						injury	injury	control	control	injury	control			
Rating Unit						percent	percent	percent	percent	percent	percent			
Trt-Eval Interval						20 DA-A	34 DA-A	34 DA-A	0 DA-B	14 DA-B	14 DA-B			
Number of Decimals						0	0	0	0	0	0			
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Appl Timing	Appl Code							
14	Fierce Liberty AMS	76	WG	3 oz/a		PRE	A	0	15	100	93	0	98	
		2.34	L	32 fl oz/a		POST	B							
			WG	17 lb/100 gal		POST	B							
15	Authority Edge Liberty AMS	4.25	L	10 fl oz/a		PRE	A	0	13	100	100	0	100	
		2.34	L	32 fl oz/a		POST	B							
			WG	17 lb/100 gal		POST	B							
16	Fierce MTZ Liberty AMS	2.64	L	16 fl oz/a		PRE	A	0	14	100	96	0	96	
		2.34	L	32 fl oz/a		POST	B							
			WG	17 lb/100 gal		POST	B							
	LSD P=.05								8.9	2.6	12.0	.	7.9	
	Standard Deviation								0.0	6.3	1.8	8.4	0.0	5.5
	CV								0.0	59.63	1.97	10.0	0.0	6.09

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Pest Code	AMATU	AMATU
Crop Type, Code		
Rating Date	Aug-11-2020	Oct-6-2020
Rating Type	control	control
Rating Unit	percent	percent
Trt-Eval Interval	34 DA-B	90 DA-B
Number of Decimals	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Appl Timing	Appl Code		
1	Alite	4 L		3 fl oz/a	PRE	A	95	93
	Liberty	2.34 L		32 fl oz/a	POST	B		
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B		
	AMS	WG		17 lb/100 gal	POST	B		
2	Valor	51 WG		2 oz/a	PRE	A	97	94
	Liberty	2.34 L		32 fl oz/a	POST	B		
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B		
	AMS	WG		17 lb/100 gal	POST	B		
3	Spartan	4 L		8 fl oz/a	PRE	A	95	93
	Liberty	2.34 L		32 fl oz/a	POST	B		
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B		
	AMS	WG		17 lb/100 gal	POST	B		
4	Metribuzin	75 WG		8 oz/a	PRE	A	82	83
	Liberty	2.34 L		32 fl oz/a	POST	B		
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B		
	AMS	WG		17 lb/100 gal	POST	B		
5	Alite	4 L		3 fl oz/a	PRE	A	97	96
	Metribuzin	75 WG		6 oz/a	PRE	A		
	Liberty	2.34 L		32 fl oz/a	POST	B		
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B		
	AMS	WG		17 lb/100 gal	POST	B		
6	Dimetric Charged	3.67 L		12 fl oz/a	PRE	A	100	98
	Liberty	2.34 L		32 fl oz/a	POST	B		
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B		
	AMS	WG		17 lb/100 gal	POST	B		
7	Authority MTZ	45 WG		16 oz/a	PRE	A	96	97
	Liberty	2.34 L		32 fl oz/a	POST	B		
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B		
	AMS	WG		17 lb/100 gal	POST	B		
8	Untreated						0	0
9	Zidua SC	4.17 L		4 fl oz/a	PRE	A	100	100
	Liberty	2.34 L		32 fl oz/a	POST	B		
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B		
	AMS	WG		17 lb/100 gal	POST	B		
10	Dual II Magnum	7.64 L		2 pt/a	PRE	A	100	100
	Liberty	2.34 L		32 fl oz/a	POST	B		
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B		
	AMS	WG		17 lb/100 gal	POST	B		
11	Warrant	3 L		3 pt/a	PRE	A	97	95
	Liberty	2.34 L		32 fl oz/a	POST	B		
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B		
	AMS	WG		17 lb/100 gal	POST	B		
12	Outlook	6 L		18 fl oz/a	PRE	A	98	99
	Liberty	2.34 L		32 fl oz/a	POST	B		
	Roundup PowerMax	4.5 SL		32 fl oz/a	POST	B		
	AMS	WG		17 lb/100 gal	POST	B		
13	Alite	4 L		2 fl oz/a	PRE	A	100	100
	Zidua SC	4.17 L		4 fl oz/a	PRE	A		
	Liberty	2.34 L		32 fl oz/a	POST	B		
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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Appl Timing	Appl Code		
								AMATU	AMATU
								Aug-11-2020	Oct-6-2020
								control	control
								percent	percent
								34 DA-B	90 DA-B
								0	0
14	Fierce	76	WG	3	oz/a	PRE	A	100	98
	Liberty	2.34	L	32	fl oz/a	POST	B		
	AMS		WG	17	lb/100 gal	POST	B		
15	Authority Edge	4.25	L	10	fl oz/a	PRE	A	100	100
	Liberty	2.34	L	32	fl oz/a	POST	B		
	AMS		WG	17	lb/100 gal	POST	B		
16	Fierce MTZ	2.64	L	16	fl oz/a	PRE	A	97	98
	Liberty	2.34	L	32	fl oz/a	POST	B		
	AMS		WG	17	lb/100 gal	POST	B		
	LSD P=.05							6.5	7.1
	Standard Deviation							4.6	5.0
	CV							5.07	5.54