

**Waterhemp control systems in RR2 Xtend and LibertyLink soybean**

Trial ID: SOY21-17 Study Dir.: Bales, Sprague, Powell, Stiles  
 Conducted: Isabella Co. Investigator: Christy Sprague

**Planting Date:** May-18-2017 **Row Spacing:** 30 IN  
**Variety:** See comments **No. of Reps:** 4  
**Population:** 152000 S/A **% OM:** 2.8  
**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 and culti-mulched  
**Fertilizer:**

**Crop and Weed Description**

<b>Weed</b>	<b>Code</b>	<b>Common Name</b>	<b>Scientific Name</b>
1	AMATU	waterhemp, tall	Amaranthus tuberculatus
<b>Crop</b>	<b>Code</b>	<b>Common Name</b>	
1	GLXMA	Soybean	

**Application Description**

	<b>A</b>	<b>B</b>
<b>Application Timing:</b>	PRE	POST
<b>Date Treated:</b>	May-19-2017	Jul-17-2017
<b>Time Treated:</b>	8:00 AM	2:15 PM
<b>% Cloud Cover:</b>	100	50
<b>Air Temp., Unit:</b>	44 F	72 F
<b>% Relative Humidity:</b>	78	56
<b>Wind Speed/Unit/Dir:</b>	4 mph N	2 mph NE
<b>Soil Temp, Unit:</b>	50 F	80 F
<b>Leaf Moist/Dew Presence (Y/N):</b>	3	5
<b>Soil Moist:</b>	2	4

**Crop Stage at Each Application**

	<b>A</b>	<b>B</b>
<b>Crop 1 Name:</b>	GLXMA	GLXMA
<b>Height:</b>		19 "
<b>Stage:</b>		R2

**Weed Stage at Each Application**

	<b>A</b>	<b>B</b>
<b>Weed 1 Name:</b>	AMATU	AMATU
<b>Height:</b>		1-8 " (5)
<b>Stage:</b>		6-16 L

**Weed Density**

	<b>1</b>
<b>Date:</b>	Jul-17-2017
<b>Weed Name:</b>	AMATU
<b>Density:</b>	74 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	24 "	20 "	100 "	19 GPA	WATER	30 PSI
B	Cub	3.8 MPH	AIXR/TTI	11003	28 "	20 "	100 "	19 GPA	WATER	30 PSI

**Comments:** Two soybean varieties were planted: Asgrow 5X6 RR2 Xtend and LibertyLink DF9251LL

## Waterhemp control systems in RR2 Xtend and LibertyLink soybean

Trial ID: SOY21-17

Location: Isabella Co.

Investigator: Christy Sprague

Study Director: Bales, Sprague, Powell, Stiles

Pest Code	AMATU		AMATU		AMATU	
Crop Code	GLXMA	AMATU	GLXMA	AMATU	GLXMA	AMATU
Rating Date	Jul-5-2017	Jul-5-2017	Jul-17-2017	Jul-17-2017	Aug-1-2017	Aug-1-2017
Rating Type	injury	control	injury	control	injury	control
Rating Unit	percent	percent	percent	percent	percent	percent
Trt-Eval Interval	47 DA-A	47 DA-A	59 DA-A	59 DA-A	15 DA-B	15 DA-B
Number of Decimals	0	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Appl Code	*	*	*	*	*	*
1	RR2 Xtend soybean						4	90	0	67	0	95
1	Valor	51	WG	2 oz/a		A						
1	TTI nozzles					B						
1	Roundup PowerMax	4.5	SL	32 fl oz/a		B						
1	XtendiMax	2.9	SL	22 fl oz/a		B						
1	Intact		L	0.5 % v/v		B						
2	RR2 Xtend soybean						4	83	0	69	0	92
2	Valor	51	WG	2 oz/a		A						
2	TTI nozzles					B						
2	Warrant	3	L	3 pt/a		B						
2	Roundup PowerMax	4.5	SL	32 fl oz/a		B						
2	XtendiMax	2.9	SL	22 fl oz/a		B						
2	Intact		L	0.5 % v/v		B						
3	RR2 Xtend soybean						3	87	0	67	0	95
3	Valor	51	WG	2 oz/a		A						
3	TTI nozzles					B						
3	Roundup PowerMax	4.5	SL	32 fl oz/a		B						
3	XtendiMax	2.9	SL	22 fl oz/a		B						
3	Intact		L	0.5 % v/v		B						
3	TTI nozzles					B						
4	RR2 Xtend soybean						5	91	0	69	12	95
4	Valor	51	WG	2 oz/a		A						
4	TTI nozzles					B						
4	Warrant Ultra	3.45	L	50 fl oz/a		B						
4	Roundup PowerMax	4.5	SL	32 fl oz/a		B						
4	XtendiMax	2.9	SL	22 fl oz/a		B						
4	Crop oil concentrate		L	1 % v/v		B						
4	Intact		L	0.5 % v/v		B						
5	RR2 Xtend soybean						0	0	0	0	0	0
5	AI XR nozzles					B						
5	Roundup PowerMax	4.5	SL	32 fl oz/a		B						
5	AMS		WG	17 lb/100 gal		B						
6	RR2 Xtend soybean						4	86	0	66	8	90
6	Valor	51	WG	2 oz/a		A						
6	AI XR nozzles					B						
6	Flexstar	1.88	L	1 pt/a		B						
6	Roundup PowerMax	4.5	SL	32 fl oz/a		B						
6	Crop oil concentrate		L	1 % v/v		B						
6	AMS		WG	17 lb/100 gal		B						

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 3,7 because error mean square = 0.

## Waterhemp control systems in RR2 Xtend and LibertyLink soybean

Trial ID: SOY21-17

Location: Isabella Co.

Investigator: Christy Sprague

Study Director: Bales, Sprague, Powell, Stiles

Pest Code			AMATU		AMATU		AMATU					
	Crop Code	Rating Date	GLXMA Jul-5-2017	AMATU Jul-5-2017	GLXMA Jul-17-2017	AMATU Jul-17-2017	GLXMA Aug-1-2017	AMATU Aug-1-2017				
Rating Type	Rating Unit	Trt-Eval Interval	injury percent	control percent	injury percent	control percent	injury percent	control percent				
Number of Decimals			47 DA-A 0	47 DA-A 0	59 DA-A 0	59 DA-A 0	15 DA-B 0	15 DA-B 0				
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Appl Code	*	*	*	*	*	*
7	RR2 Xtend soybean						6	88	0	71	10	85
	7 Valor	51	WG	2 oz/a		A						
	7 AI XR nozzles					B						
	7 Warrant	3	L	3 pt/a		B						
	7 Flexstar	1.88	L	1 pt/a		B						
	7 Roundup PowerMax	4.5	SL	32 fl oz/a		B						
	7 Crop oil concentrate		L	1 % v/v		B						
	7 AMS		WG	17 lb/100 gal		B						
8	RR2 Xtend soybean						6	86	0	66	7	88
	8 Valor	51	WG	2 oz/a		A						
	8 AI XR nozzles					B						
	8 Flexstar	1.88	L	1 pt/a		B						
	8 Roundup PowerMax	4.5	SL	32 fl oz/a		B						
	8 Crop oil concentrate		L	1 % v/v		B						
	8 AMS		WG	17 lb/100 gal		B						
9	LibertyLink soybean						6	85	0	73	0	94
	9 Valor	51	WG	2 oz/a		A						
	9 AI XR nozzles					B						
	9 Liberty	2.34	L	32 fl oz/a		B						
	9 AMS		WG	8.5 lb/100 gal		B						
10	LibertyLink soybean						7	80	0	67	0	97
	10 Valor	51	WG	2 oz/a		A						
	10 AI XR nozzles					B						
	10 Warrant	3	L	3 pt/a		B						
	10 Liberty	2.34	L	32 fl oz/a		B						
	10 AMS		WG	8.5 lb/100 gal		B						
11	LibertyLink soybean						5	80	0	66	0	96
	11 Valor	51	WG	2 oz/a		A						
	11 AI XR nozzles					B						
	11 Liberty	2.34	L	32 fl oz/a		B						
	11 AMS		WG	8.5 lb/100 gal		B						
12	LibertyLink soybean						3	80	0	67	11	98
	12 Valor	51	WG	2 oz/a		A						
	12 AI XR nozzles					B						
	12 Warrant Ultra	3.45	L	50 fl oz/a		B						
	12 Liberty	2.34	L	32 fl oz/a		B						
	12 Crop oil concentrate		L	1 % v/v		B						
	12 AMS		WG	8.5 lb/100 gal		B						
LSD P=.05							5.0	10.5	.	8.8	3.0	8.7
Standard Deviation							3.5	7.3	0.0	6.1	2.1	6.0
CV							82.92	9.33	0.0	10.05	49.56	7.18

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 3,7 because error mean square = 0.

## Waterhemp control systems in RR2 Xtend and LibertyLink soybean

Trial ID: SOY21-17

Location: Isabella Co.

Investigator: Christy Sprague  
Study Director: Bales, Sprague, Powell, Stiles

Pest Code		AMATU	AMATU
Crop Code	GLXMA		
Rating Date	Aug-16-2017	Aug-16-2017	Oct-19-2017
Rating Type	injury	control	control
Rating Unit	percent	percent	percent
Trt-Eval Interval	30 DA-B	30 DA-B	94 DA-B
Number of Decimals	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Appl Code	*	*	*
1	RR2 Xtend soybean						0	97	102
1	Valor	51	WG	2 oz/a		A			
1	TTI nozzles					B			
1	Roundup PowerMax	4.5	SL	32 fl oz/a		B			
1	XtendiMax	2.9	SL	22 fl oz/a		B			
1	Intact		L	0.5 % v/v		B			
2	RR2 Xtend soybean						0	100	104
2	Valor	51	WG	2 oz/a		A			
2	TTI nozzles					B			
2	Warrant	3	L	3 pt/a		B			
2	Roundup PowerMax	4.5	SL	32 fl oz/a		B			
2	XtendiMax	2.9	SL	22 fl oz/a		B			
2	Intact		L	0.5 % v/v		B			
3	RR2 Xtend soybean						0	100	104
3	Valor	51	WG	2 oz/a		A			
3	TTI nozzles					B			
3	Roundup PowerMax	4.5	SL	32 fl oz/a		B			
3	XtendiMax	2.9	SL	22 fl oz/a		B			
3	Intact		L	0.5 % v/v		B			
3	TTI nozzles					B			
4	RR2 Xtend soybean						0	100	104
4	Valor	51	WG	2 oz/a		A			
4	TTI nozzles					B			
4	Warrant Ultra	3.45	L	50 fl oz/a		B			
4	Roundup PowerMax	4.5	SL	32 fl oz/a		B			
4	XtendiMax	2.9	SL	22 fl oz/a		B			
4	Crop oil concentrate		L	1 % v/v		B			
4	Intact		L	0.5 % v/v		B			
5	RR2 Xtend soybean						0	0	0
5	AI XR nozzles					B			
5	Roundup PowerMax	4.5	SL	32 fl oz/a		B			
5	AMS		WG	17 lb/100 gal		B			
6	RR2 Xtend soybean						0	84	85
6	Valor	51	WG	2 oz/a		A			
6	AI XR nozzles					B			
6	Flexstar	1.88	L	1 pt/a		B			
6	Roundup PowerMax	4.5	SL	32 fl oz/a		B			
6	Crop oil concentrate		L	1 % v/v		B			
6	AMS		WG	17 lb/100 gal		B			

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 3,7 because error mean square = 0.

## Waterhemp control systems in RR2 Xtend and LibertyLink soybean

Trial ID: SOY21-17

Location: Isabella Co.

Investigator: Christy Sprague  
Study Director: Bales, Sprague, Powell, Stiles

Pest Code		AMATU	AMATU
Crop Code	GLXMA		
Rating Date	Aug-16-2017	Aug-16-2017	Oct-19-2017
Rating Type	injury	control	control
Rating Unit	percent	percent	percent
Trt-Eval Interval	30 DA-B	30 DA-B	94 DA-B
Number of Decimals	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Appl Code	*	*	*
7	RR2 Xtend soybean						0	84	84
	7 Valor	51	WG	2 oz/a		A			
	7 AI XR nozzles					B			
	7 Warrant	3	L	3 pt/a		B			
	7 Flexstar	1.88	L	1 pt/a		B			
	7 Roundup PowerMax	4.5	SL	32 fl oz/a		B			
	7 Crop oil concentrate		L	1 % v/v		B			
	7 AMS		WG	17 lb/100 gal		B			
8	RR2 Xtend soybean						0	79	85
	8 Valor	51	WG	2 oz/a		A			
	8 AI XR nozzles					B			
	8 Flexstar	1.88	L	1 pt/a		B			
	8 Roundup PowerMax	4.5	SL	32 fl oz/a		B			
	8 Crop oil concentrate		L	1 % v/v		B			
	8 AMS		WG	17 lb/100 gal		B			
9	LibertyLink soybean						0	95	93
	9 Valor	51	WG	2 oz/a		A			
	9 AI XR nozzles					B			
	9 Liberty	2.34	L	32 fl oz/a		B			
	9 AMS		WG	8.5 lb/100 gal		B			
10	LibertyLink soybean						0	99	95
	10 Valor	51	WG	2 oz/a		A			
	10 AI XR nozzles					B			
	10 Warrant	3	L	3 pt/a		B			
	10 Liberty	2.34	L	32 fl oz/a		B			
	10 AMS		WG	8.5 lb/100 gal		B			
11	LibertyLink soybean						0	91	94
	11 Valor	51	WG	2 oz/a		A			
	11 AI XR nozzles					B			
	11 Liberty	2.34	L	32 fl oz/a		B			
	11 AMS		WG	8.5 lb/100 gal		B			
12	LibertyLink soybean						0	97	94
	12 Valor	51	WG	2 oz/a		A			
	12 AI XR nozzles					B			
	12 Warrant Ultra	3.45	L	50 fl oz/a		B			
	12 Liberty	2.34	L	32 fl oz/a		B			
	12 Crop oil concentrate		L	1 % v/v		B			
	12 AMS		WG	8.5 lb/100 gal		B			
	LSD P=.05						.	10.4	12.0
	Standard Deviation						0.0	7.2	8.3
	CV						0.0	8.72	10.0

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 3,7 because error mean square = 0.