

Weed control programs using higher Liberty rates in LibertyLink soybean

Trial ID: SOY02-17 Study Dir.: Sprague, Powell, Stiles
 Conducted: Campus C-12 Investigator: Christy Sprague

Planting Date: May-9-2017 **Row Spacing:** 30 IN
Variety: CZ2312LL **No. of Reps:** 4
Population: 155000 seeds/A **% OM:** 3.3
Soil Type: L loam **pH:** 7.4
Plot Size: 10 X 30 FT **Study Design:** Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plow; spring soil finish twice
Fertilizer:

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	lambsquarters, common	Chenopodium album
3	AMAPO	amaranth, Powell	Amaranthus powellii
4	AMBEL	ragweed, common	Ambrosia artemisiifolia
5	SINAR	mustard, wild	Sinapis arvensis
Crop	Code	Common Name	
1	GLXMA	Soybean	

Application Description

	A	B	C
Application Timing:	PRE	POST	LPOS
Date Treated:	May-9-2017	Jun-13-2017	Jun-20-2017
Time Treated:	4:00 PM	11:45 AM	7:30 AM
% Cloud Cover:	5	80	0
Air Temp., Unit:	62 F	82 F	59 F
% Relative Humidity:	24	56	82
Wind Speed/Unit/Dir:	3 mph W	3 mph NW	5 mph W
Soil Temp, Unit:	60 F	74 F	63 F
Leaf Moist/Dew Presence (Y/N):	5	5	2
Soil Moist:	3	5	2

Crop Stage at Each Application

	A	B	C
Crop 1 Name:	GLXMA	GLXMA	GLXMA
Height:		6-7 " (6.5)	8 "
Stage:		V3	V4

Weed Stage at Each Application

	A	B	C
Weed 1 Name:	ANGR	ANGR	ANGR
Height:		4 "	6 "
Stage:		4L	4L
Weed 2 Name:	CHEAL	CHEAL	CHEAL
Height:		3 "	5 "
Stage:		8-12L	10-12L
Weed 3 Name:	AMAPO	AMAPO	AMAPO
Height:		4 "	5 "
Stage:		8-10L	10-12L
Weed 4 Name:	AMBEL	AMBEL	AMBEL
Height:		2-4 " (4)	6-8 " (7)
Stage:		6-8L	12-16L
Weed 5 Name:	SINAR	SINAR	SINAR
Height:		2-7 " (5)	6-12 " (8)
Stage:		flower	flower

Weed Density

	1	2	3	4	5
Date:	Jun-20-2017	Jun-20-2017	Jun-20-2017	Jun-20-2017	Jun-20-2017
Weed Name:	ANGR	CHEAL	AMAPO	AMBEL	SINAR
Density:	22 FT2	16 FT2	0.25 FT2	4 FT2	1 FT2

Application Equipment

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Study Dir.: Sprague, Powell, Stiles

Conducted: Campus C-12

Investigator: Christy Sprague

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 "	20 "	100 "	19 GPA	WATER	30 PSI
B	Cub	3.8 MPH	AIXR	11003	23 "	20 "	100 "	19 GPA	WATER	30 PSI
C	Cub	3.8 MPH	AIXR	11003	25 "	20 "	100 "	19 GPA	WATER	30 PSI

Comments: The common ragweed population at this location is resistant to the ALS-inhibiting (Group 2) herbicides.

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Location: Campus C-12

Investigator: Christy Sprague

Study Director: Sprague, Powell, Stiles

Pest Code	GLXMA	ANGR	CHEAL	AMBEL	GLXMA	ANGR
Crop Code	May-30-2017	May-30-2017	May-30-2017	May-30-2017	Jun-12-2017	Jun-12-2017
Rating Date	injury	control	control	control	injury	control
Rating Type	percent	percent	percent	percent	percent	percent
Rating Unit	21 DA-A	21 DA-A	21 DA-A	21 DA-A	34 DA-A	34 DA-A
Trt-Eval Interval	0	0	0	0	0	0
Number of Decimals						

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Appl Code	*	*	*	*	*	*
1	Authority MTZ	45	WG	16 oz/a		A	0	65	96	56	0	59
1	Liberty	2.34	L	32 fl oz/a		B						
1	AMS		WG	8.5 lb/100 gal		B						
2	Authority MTZ	45	WG	16 oz/a		A	0	70	93	58	0	55
2	Liberty	2.34	L	43 fl oz/a		C						
2	AMS		WG	8.5 lb/100 gal		C						
3	Authority First	70	WG	6.5 oz/a		A	0	83	96	89	0	77
3	Liberty	2.34	L	32 fl oz/a		B						
3	AMS		WG	8.5 lb/100 gal		B						
4	Authority First	70	WG	6.5 oz/a		A	0	83	98	86	0	77
4	Liberty	2.34	L	43 fl oz/a		C						
4	AMS		WG	8.5 lb/100 gal		C						
5	Untreated						0	0	0	0	0	0
6	Authority First	70	WG	6.5 oz/a		A	1	81	96	91	0	78
6	Liberty	2.34	L	32 fl oz/a		B						
6	Cadet	0.91	L	0.5 fl oz/a		B						
6	AMS		WG	8.5 lb/100 gal		B						
7	Authority First	70	WG	6.5 oz/a		A	1	75	99	91	0	71
7	Liberty	2.34	L	32 fl oz/a		B						
7	Anthem MAXX	4.3	L	3.5 fl oz/a		B						
7	AMS		WG	8.5 lb/100 gal		B						
8	Fierce	76	WG	3 oz/a		A	1	99	89	85	0	83
8	Liberty	2.34	L	32 fl oz/a		B						
8	AMS		WG	8.5 lb/100 gal		B						
9	Authority MTZ	45	WG	16 oz/a		A	0	74	95	64	0	65
9	Liberty	2.34	L	32 fl oz/a		B						
9	Warrant	3	L	3 pt/a		B						
9	AMS		WG	8.5 lb/100 gal		B						
LSD P=.05							0.9	11.9	4.6	7.1	.	12.6
Standard Deviation							0.6	8.2	3.1	4.9	0.0	8.6
CV							263.39	11.69	3.71	7.04	0.0	13.75

* Adjusted means

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Location: Campus C-12

Investigator: Christy Sprague

Study Director: Sprague, Powell, Stiles

Pest Code	CHEAL	AMBEL	SINAR	GLXMA	ANGR	CHEAL						
Crop Code												
Rating Date	Jun-12-2017	Jun-12-2017	Jun-12-2017	Jun-20-2017	Jun-20-2017	Jun-20-2017						
Rating Type	control	control	control	injury	control	control						
Rating Unit	percent	percent	percent	percent	percent	percent						
Trt-Eval Interval	34 DA-A	34 DA-A	34 DA-A	7 DA-B	7 DA-B	7 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	Authority MTZ	45	WG	16 oz/a		A	99	43	100	4	85	100
1	Liberty	2.34	L	32 fl oz/a		B						
1	AMS		WG	8.5 lb/100 gal		B						
2	Authority MTZ	45	WG	16 oz/a		A	99	45	100	0	65	95
2	Liberty	2.34	L	43 fl oz/a		C						
2	AMS		WG	8.5 lb/100 gal		C						
3	Authority First	70	WG	6.5 oz/a		A	100	74	99	3	87	100
3	Liberty	2.34	L	32 fl oz/a		B						
3	AMS		WG	8.5 lb/100 gal		B						
4	Authority First	70	WG	6.5 oz/a		A	100	75	99	0	77	94
4	Liberty	2.34	L	43 fl oz/a		C						
4	AMS		WG	8.5 lb/100 gal		C						
5	Untreated						0	0	0	0	0	0
6	Authority First	70	WG	6.5 oz/a		A	98	77	100	7	89	100
6	Liberty	2.34	L	32 fl oz/a		B						
6	Cadet	0.91	L	0.5 fl oz/a		B						
6	AMS		WG	8.5 lb/100 gal		B						
7	Authority First	70	WG	6.5 oz/a		A	98	75	100	9	90	100
7	Liberty	2.34	L	32 fl oz/a		B						
7	Anthem MAXX	4.3	L	3.5 fl oz/a		B						
7	AMS		WG	8.5 lb/100 gal		B						
8	Fierce	76	WG	3 oz/a		A	82	61	100	3	92	95
8	Liberty	2.34	L	32 fl oz/a		B						
8	AMS		WG	8.5 lb/100 gal		B						
9	Authority MTZ	45	WG	16 oz/a		A	100	50	100	3	87	100
9	Liberty	2.34	L	32 fl oz/a		B						
9	Warrant	3	L	3 pt/a		B						
9	AMS		WG	8.5 lb/100 gal		B						
LSD	P=.05						6.9	12.4	1.6	1.6	5.1	6.7
Standard Deviation							4.7	8.5	1.1	1.1	3.5	4.6
CV							5.5	15.29	1.24	35.27	4.7	5.27

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Pest Code		AMBEL	SINAR	GLXMA	ANGR	CHEAL	AMAPO				
Crop Code											
Rating Date		Jun-20-2017	Jun-20-2017	Jun-27-2017	Jun-27-2017	Jun-27-2017	Jun-27-2017				
Rating Type		control	control	injury	control	control	control				
Rating Unit		percent	percent	percent	percent	percent	percent				
Trt-Eval Interval		7 DA-B	7 DA-B	7 DA-C	7 DA-C	7 DA-C	7 DA-C				
Number of Decimals		0	0	0	0	0	0				
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Appl Code	*	*	*	*	*	*
1	Authority MTZ	45	WG	16 oz/a	A	97	100	0	99	100	100
1	Liberty	2.34	L	32 fl oz/a	B						
1	AMS		WG	8.5 lb/100 gal	B						
2	Authority MTZ	45	WG	16 oz/a	A	63	100	0	70	100	94
2	Liberty	2.34	L	43 fl oz/a	C						
2	AMS		WG	8.5 lb/100 gal	C						
3	Authority First	70	WG	6.5 oz/a	A	99	100	0	100	100	100
3	Liberty	2.34	L	32 fl oz/a	B						
3	AMS		WG	8.5 lb/100 gal	B						
4	Authority First	70	WG	6.5 oz/a	A	76	94	0	73	100	100
4	Liberty	2.34	L	43 fl oz/a	C						
4	AMS		WG	8.5 lb/100 gal	C						
5	Untreated					0	0	0	0	0	0
6	Authority First	70	WG	6.5 oz/a	A	100	100	3	100	100	100
6	Liberty	2.34	L	32 fl oz/a	B						
6	Cadet	0.91	L	0.5 fl oz/a	B						
6	AMS		WG	8.5 lb/100 gal	B						
7	Authority First	70	WG	6.5 oz/a	A	99	100	5	100	100	100
7	Liberty	2.34	L	32 fl oz/a	B						
7	Anthem MAXX	4.3	L	3.5 fl oz/a	B						
7	AMS		WG	8.5 lb/100 gal	B						
8	Fierce	76	WG	3 oz/a	A	96	100	0	100	96	100
8	Liberty	2.34	L	32 fl oz/a	B						
8	AMS		WG	8.5 lb/100 gal	B						
9	Authority MTZ	45	WG	16 oz/a	A	95	100	1	100	100	100
9	Liberty	2.34	L	32 fl oz/a	B						
9	Warrant	3	L	3 pt/a	B						
9	AMS		WG	8.5 lb/100 gal	B						
LSD P=.05						3.8	6.1	1.4	1.5	2.3	6.1
Standard Deviation						2.6	4.2	1.0	1.1	1.6	4.2
CV						3.21	4.72	110.62	1.29	1.8	4.72

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Study Director: Sprague, Powell, Stiles

Pest Code	AMBEL	SINAR	GLXMA	ANGR	CHEAL	AMBEL
Crop Code						
Rating Date	Jun-27-2017	Jun-27-2017	Jul-11-2017	Jul-11-2017	Jul-11-2017	Jul-11-2017
Rating Type	control	control	injury	injury	injury	injury
Rating Unit	percent	percent	percent	percent	percent	percent
Trt-Eval Interval	7 DA-C	7 DA-C	21 DA-C	21 DA-C	21 DA-C	21 DA-C
Number of Decimals	0	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Appl Code	*	*	*	*	*	*
1	Authority MTZ	45	WG	16 oz/a		A	99	100	0	69	100	99
1	Liberty	2.34	L	32 fl oz/a		B						
1	AMS		WG	8.5 lb/100 gal		B						
2	Authority MTZ	45	WG	16 oz/a		A	78	100	0	76	100	99
2	Liberty	2.34	L	43 fl oz/a		C						
2	AMS		WG	8.5 lb/100 gal		C						
3	Authority First	70	WG	6.5 oz/a		A	100	100	0	86	100	100
3	Liberty	2.34	L	32 fl oz/a		B						
3	AMS		WG	8.5 lb/100 gal		B						
4	Authority First	70	WG	6.5 oz/a		A	74	100	0	82	100	100
4	Liberty	2.34	L	43 fl oz/a		C						
4	AMS		WG	8.5 lb/100 gal		C						
5	Untreated						0	0	0	0	0	0
6	Authority First	70	WG	6.5 oz/a		A	100	100	0	79	100	100
6	Liberty	2.34	L	32 fl oz/a		B						
6	Cadet	0.91	L	0.5 fl oz/a		B						
6	AMS		WG	8.5 lb/100 gal		B						
7	Authority First	70	WG	6.5 oz/a		A	100	100	0	99	100	100
7	Liberty	2.34	L	32 fl oz/a		B						
7	Anthem MAXX	4.3	L	3.5 fl oz/a		B						
7	AMS		WG	8.5 lb/100 gal		B						
8	Fierce	76	WG	3 oz/a		A	100	100	0	82	97	100
8	Liberty	2.34	L	32 fl oz/a		B						
8	AMS		WG	8.5 lb/100 gal		B						
9	Authority MTZ	45	WG	16 oz/a		A	100	100	0	98	100	99
9	Liberty	2.34	L	32 fl oz/a		B						
9	Warrant	3	L	3 pt/a		B						
9	AMS		WG	8.5 lb/100 gal		B						
	LSD P=.05						7.8	.	.	8.4	2.3	1.2
	Standard Deviation						5.4	0.0	0.0	5.8	1.6	0.8
	CV						6.44	0.0	0.0	7.72	1.77	0.93

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Location: Campus C-12

Investigator: Christy Sprague

Study Director: Sprague, Powell, Stiles

Pest Code	SINAR		GLXMA		ANGR	CHEAL	AMAPO	AMBEL				
Crop Code	Jul-11-2017		Jul-25-2017		Jul-25-2017	Jul-25-2017	Jul-25-2017	Jul-25-2017				
Rating Date	injury		injury		control	control	control	control				
Rating Type	percent		percent		percent	percent	percent	percent				
Rating Unit	21 DA-C		35 DA-C		35 DA-C	35 DA-C	35 DA-C	35 DA-C				
Trt-Eval Interval	0		0		0	0	0	0				
Number of Decimals	0		0		0	0	0	0				
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Appl Code	*	*	*	*	*	*
1	Authority MTZ	45	WG	16 oz/a		A	100	0	93	100	100	98
1	Liberty	2.34	L	32 fl oz/a		B						
1	AMS		WG	8.5 lb/100 gal		B						
2	Authority MTZ	45	WG	16 oz/a		A	100	0	93	100	100	99
2	Liberty	2.34	L	43 fl oz/a		C						
2	AMS		WG	8.5 lb/100 gal		C						
3	Authority First	70	WG	6.5 oz/a		A	100	0	96	100	100	100
3	Liberty	2.34	L	32 fl oz/a		B						
3	AMS		WG	8.5 lb/100 gal		B						
4	Authority First	70	WG	6.5 oz/a		A	100	0	97	100	100	99
4	Liberty	2.34	L	43 fl oz/a		C						
4	AMS		WG	8.5 lb/100 gal		C						
5	Untreated						0	0	0	0	0	0
6	Authority First	70	WG	6.5 oz/a		A	100	0	95	100	100	99
6	Liberty	2.34	L	32 fl oz/a		B						
6	Cadet	0.91	L	0.5 fl oz/a		B						
6	AMS		WG	8.5 lb/100 gal		B						
7	Authority First	70	WG	6.5 oz/a		A	100	0	99	100	100	100
7	Liberty	2.34	L	32 fl oz/a		B						
7	Anthem MAXX	4.3	L	3.5 fl oz/a		B						
7	AMS		WG	8.5 lb/100 gal		B						
8	Fierce	76	WG	3 oz/a		A	100	0	97	98	100	100
8	Liberty	2.34	L	32 fl oz/a		B						
8	AMS		WG	8.5 lb/100 gal		B						
9	Authority MTZ	45	WG	16 oz/a		A	100	0	100	100	100	100
9	Liberty	2.34	L	32 fl oz/a		B						
9	Warrant	3	L	3 pt/a		B						
9	AMS		WG	8.5 lb/100 gal		B						
LSD	P=.05						.	.	3.0	1.7	.	1.8
Standard Deviation							0.0	0.0	2.0	1.2	0.0	1.2
CV							0.0	0.0	2.39	1.32	0.0	1.4

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Investigator: Christy Sprague

Study Director: Sprague, Powell, Stiles

Pest Code	SINAR
Crop Code	
Rating Date	Jul-25-2017
Rating Type	control
Rating Unit	percent
Trt-Eval Interval	35 DA-C
Number of Decimals	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Appl Code	*
1	Authority MTZ	45	WG	16 oz/a		A	100
1	Liberty	2.34	L	32 fl oz/a		B	
1	AMS		WG	8.5 lb/100 gal		B	
2	Authority MTZ	45	WG	16 oz/a		A	100
2	Liberty	2.34	L	43 fl oz/a		C	
2	AMS		WG	8.5 lb/100 gal		C	
3	Authority First	70	WG	6.5 oz/a		A	100
3	Liberty	2.34	L	32 fl oz/a		B	
3	AMS		WG	8.5 lb/100 gal		B	
4	Authority First	70	WG	6.5 oz/a		A	100
4	Liberty	2.34	L	43 fl oz/a		C	
4	AMS		WG	8.5 lb/100 gal		C	
5	Untreated						0
6	Authority First	70	WG	6.5 oz/a		A	100
6	Liberty	2.34	L	32 fl oz/a		B	
6	Cadet	0.91	L	0.5 fl oz/a		B	
6	AMS		WG	8.5 lb/100 gal		B	
7	Authority First	70	WG	6.5 oz/a		A	100
7	Liberty	2.34	L	32 fl oz/a		B	
7	Anthem MAXX	4.3	L	3.5 fl oz/a		B	
7	AMS		WG	8.5 lb/100 gal		B	
8	Fierce	76	WG	3 oz/a		A	100
8	Liberty	2.34	L	32 fl oz/a		B	
8	AMS		WG	8.5 lb/100 gal		B	
9	Authority MTZ	45	WG	16 oz/a		A	100
9	Liberty	2.34	L	32 fl oz/a		B	
9	Warrant	3	L	3 pt/a		B	
9	AMS		WG	8.5 lb/100 gal		B	

LSD P=.05

Standard Deviation

CV

. .

0.0 .

0.0 .

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