

MSU Weed Science Research Program

Weed control systems in LibertyLink soybean

Trial ID: SOY06-13 Study Dir.: Sprague, Powell
 Conducted: Campus C-14 Investigator: Christy Sprague

Date Planted: May/08/2013 **Row Spacing:** 30 IN
Variety: DF9251LL **No. of Reps:** 4
Population: 155,000 seeds/A **% OM:** 3.5
Soil Type: Silt loam **pH:** 6.5
Plot Size: 10 X 30 FT **Design:** RANDOMIZED COMPLETE BLOCK

Tillage: Fall chisel, spring soil finish x2
Fertilizer: None

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1.	ANGR	mainly foxtail species	SETARIA SP.
2.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
3.	AMBEL	RAGWEED, COMMON	AMBROSIA ARTEMISIFOLIA L.
4.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
Crop	Code	Common Name	
1.	GLXMA	SOYBEAN	

Application Description

	A	B	C	D
Application Timing:	PRE	EPOS	POST	LPOS
Date Treated:	May/08/2013	Jun/07/2013	Jun/19/2013	Jun/27/2013
Time Treated:	3:00 PM	8:00 AM	11:30 AM	9:45 AM
% Cloud Cover:	60	100	0	10
Air Temp., Unit:	80 F	53 F	70 F	83 F
% Relative Humidity:	27	54	47	62
Wind Speed/Unit/Dir:	4 mph NE	3 mph NE	3 mph NE	1 mph NW
Soil Temp., Unit:	68 F	60 F	60 F	73 F
Soil/Leaf Surface M:	3 -	3 5	2 4	2 4
Soil Moist (1=w 5=d):	3	5	2	2

Crop Stage at Each Application

	A	B	C	D
Crop Name:	GLXMA	GLXMA	GLXMA	GLXMA
Height (In.):	-	4"	7"	14"
Stage (L):	-	V1	V3	R1

Weed Stage at Each Application

	A	B	C	D
Weed 1 Name:	ANGR	ANGR	ANGR	ANGR
Height (In.):	-	2"	7"	2"
Stage (L):	-	3	3-4	3
Weed 2 Name:	CHEAL	CHEAL	CHEAL	CHEAL
Height (In.):	-	1.5"	3.5"	2"
Stage (L):	-	6	10	4
Weed 3 Name:	AMBEL	AMBEL	AMBEL	AMBEL
Height (In.):	-	3"	4"	2"
Stage (L):	-	4	8	4
Weed 4 Name:	ABUTH	ABUTH	ABUTH	ABUTH
Height (In.):	-	1.5"	3"	1"
Stage (L):	-	3	3	1

Weed Density (plants/sq. ft.)

	1	2	3	4
Date:	Jul/11/2013	Jul/11/2013	Jul/11/2013	Jul/11/2013
Weed Name:	ANGR	CHEAL	AMBEL	ABUTH
Density:	7	3	37	3

Application Equipment

Appl	Sprayer Type	Speed MPH	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	GPA	Carrier	PSI
A	Cub	3.8	AIXR	11003	22"	20"	100"	19	water	35
B	Cub	3.8	AIXR	11003	22"	20"	100"	19	water	30
C	Cub	3.8	AIXR	11003	24"	20"	100"	19	water	30
D	Cub	3.8	AIXR	11003	26"	20"	100"	19	water	30

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Weed control systems in LibertyLink soybean

Trial ID: SOY06-13 Study Dir.: Sprague, Powell
 Conducted: Campus C-14 Investigator: Christy Sprague

Weed Code	ANGR	CHEAL	AMBEL	ABUTH
Crop Code	GLXMA			
Rating Data Type	injury	control	control	control
Rating Unit	percent	percent	percent	percent
Rating Date	Jun/17/2013	Jun/17/2013	Jun/17/2013	Jun/17/2013
Trt-Eval Interval	40 DA-A	40 DA-A	40 DA-A	40 DA-A
# Subsamples, Dec.	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code					
1	Authority First Liberty	70	WG	6.5	oz/a	PRE	A	0	84	99	50	99
	AMS	2.34	L	29	fl oz/a	POST	C					
2	Valor XLT Liberty	40.3	WG	3.5	oz/a	PRE	A	7	95	99	76	99
	AMS	2.34	L	29	fl oz/a	POST	C					
3	Fierce Liberty	76	WG	3	oz/a	PRE	A	6	99	99	82	99
	AMS	2.34	L	29	fl oz/a	POST	C					
4	OpTill Pro - OpTill Liberty	68	WG	2	oz/a	PRE	A	0	99	99	58	99
	AMS	2.34	L	29	fl oz/a	POST	C					
5	Untreated							0	0	0	0	0
6	Valor Liberty	51	WG	2	oz/a	PRE	A	4	85	99	66	99
	AMS	2.34	L	29	fl oz/a	POST	C					
7	Valor Liberty	51	WG	2	oz/a	PRE	A	4	91	99	68	99
	AMS	2.34	L	29	fl oz/a	POST	C					
	Warrant	3	L	3	pt/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
8	Valor Liberty	51	WG	2	oz/a	PRE	A	2	89	99	65	99
	AMS	2.34	L	29	fl oz/a	POST	C					
	Zidua	85	WG	2	oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
9	Liberty Prefix	2.34	L	29	fl oz/a	EPOS	B	28	99	99	99	99
	AMS	5.29	L	2	pt/a	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					
	Liberty	2.34	L	29	fl oz/a	LPOS	D					
	Zidua	85	WG	2	oz/a	LPOS	D					
	AMS		WG	8.5	lb/100 gal	LPOS	D					
10	Liberty Warrant	2.34	L	29	fl oz/a	EPOS	B	3	98	99	97	99
	AMS	3	L	3	pt/a	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					
	Liberty	2.34	L	29	fl oz/a	LPOS	D					
	Outlook	6	L	14	fl oz/a	LPOS	D					
	AMS		WG	8.5	lb/100 gal	LPOS	D					
LSD (P=.05)								1.8	5.5	0.0	7.7	0.5
CV								23.33	4.56	0.0	8.03	0.36

Means followed by same letter do not significantly differ (P=.05, LSD)

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Weed Code	GLXMA	ANGR	AMBEL	CHEAL	ABUTH
Crop Code	injury	control	control	control	control
Rating Data Type	percent	percent	percent	percent	percent
Rating Unit	Jun/26/2013	Jun/26/2013	Jun/26/2013	Jun/26/2013	Jun/26/2013
Rating Date	7 DA-C	7 DA-C	7 DA-C	7 DA-C	7 DA-C
Trt-Eval Interval	0	0	0	0	0
# Subsamples, Dec.					

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code					
1	Authority First	70	WG	6.5	oz/a	PRE	A	0	97	98	99	99
	Liberty	2.34	L	29	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
2	Valor XLT	40.3	WG	3.5	oz/a	PRE	A	0	98	99	99	99
	Liberty	2.34	L	29	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
3	Fierce	76	WG	3	oz/a	PRE	A	0	99	99	99	99
	Liberty	2.34	L	29	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
4	OpTill Pro - OpTill	68	WG	2	oz/a	PRE	A	0	99	98	99	99
	OpTill Pro - Outlook	6	L	10	fl oz/a	PRE	A					
	Liberty	2.34	L	29	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
5	Untreated							0	0	0	0	0
6	Valor	51	WG	2	oz/a	PRE	A	0	98	97	99	99
	Liberty	2.34	L	29	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
7	Valor	51	WG	2	oz/a	PRE	A	3	99	97	99	99
	Liberty	2.34	L	29	fl oz/a	POST	C					
	Warrant	3	L	3	pt/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
8	Valor	51	WG	2	oz/a	PRE	A	8	98	98	99	99
	Liberty	2.34	L	29	fl oz/a	POST	C					
	Zidua	85	WG	2	oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
9	Liberty	2.34	L	29	fl oz/a	EPOS	B	8	99	98	99	99
	Prefix	5.29	L	2	pt/a	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					
	Liberty	2.34	L	29	fl oz/a	LPOS	D					
	Zidua	85	WG	2	oz/a	LPOS	D					
	AMS		WG	8.5	lb/100 gal	LPOS	D					
10	Liberty	2.34	L	29	fl oz/a	EPOS	B	2	96	88	98	98
	Warrant	3	L	3	pt/a	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					
	Liberty	2.34	L	29	fl oz/a	LPOS	D					
	Outlook	6	L	14	fl oz/a	LPOS	D					
	AMS		WG	8.5	lb/100 gal	LPOS	D					

LSD (P=.05)								3.1	1.4	1.9	0.2	0.4
CV								104.4	1.11	1.48	0.18	0.34

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Weed Code								ANGR	CHEAL	AMBEL	ABUTH	
Crop Code								GLXMA				
Rating Data Type								injury	control	control	control	
Rating Unit								percent	percent	percent	percent	
Rating Date								Jul/17/2013	Jul/17/2013	Jul/17/2013	Jul/17/2013	
Trt-Eval Interval								28 DA-C	28 DA-C	28 DA-C	28 DA-C	
# Subsamples, Dec.								0	0	0	0	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code					
1	Authority First	70	WG	6.5	oz/a	PRE	A	0	96	99	94	
	Liberty	2.34	L	29	fl oz/a	POST	C				99	
	AMS		WG	8.5	lb/100 gal	POST	C					
2	Valor XLT	40.3	WG	3.5	oz/a	PRE	A	0	92	99	95	
	Liberty	2.34	L	29	fl oz/a	POST	C				99	
	AMS		WG	8.5	lb/100 gal	POST	C					
3	Fierce	76	WG	3	oz/a	PRE	A	0	96	99	94	
	Liberty	2.34	L	29	fl oz/a	POST	C				99	
	AMS		WG	8.5	lb/100 gal	POST	C					
4	OpTill Pro - OpTill	68	WG	2	oz/a	PRE	A	0	95	99	92	
	OpTill Pro - Outlook	6	L	10	fl oz/a	PRE	A				99	
	Liberty	2.34	L	29	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
5	Untreated							0	0	0	0	
6	Valor	51	WG	2	oz/a	PRE	A	0	91	99	93	
	Liberty	2.34	L	29	fl oz/a	POST	C				99	
	AMS		WG	8.5	lb/100 gal	POST	C					
7	Valor	51	WG	2	oz/a	PRE	A	0	97	99	96	
	Liberty	2.34	L	29	fl oz/a	POST	C				99	
	Warrant	3	L	3	pt/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
8	Valor	51	WG	2	oz/a	PRE	A	0	99	99	97	
	Liberty	2.34	L	29	fl oz/a	POST	C				99	
	Zidua	85	WG	2	oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
9	Liberty	2.34	L	29	fl oz/a	EPOS	B	2	99	99	99	
	Prefix	5.29	L	2	pt/a	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					
	Liberty	2.34	L	29	fl oz/a	LPOS	D					
	Zidua	85	WG	2	oz/a	LPOS	D					
	AMS		WG	8.5	lb/100 gal	LPOS	D					
10	Liberty	2.34	L	29	fl oz/a	EPOS	B	0	99	99	99	
	Warrant	3	L	3	pt/a	EPOS	B					
	AMS		WG	8.5	lb/100 gal	EPOS	B					
	Liberty	2.34	L	29	fl oz/a	LPOS	D					
	Outlook	6	L	14	fl oz/a	LPOS	D					
	AMS		WG	8.5	lb/100 gal	LPOS	D					
LSD (P=.05)								0.8	2.9	0.0	3.0	0.6
CV								365.15	2.33	0.0	2.4	0.5

Means followed by same letter do not significantly differ (P=.05, LSD)

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Weed Code
 Crop Code
 Rating Data Type
 Rating Unit
 Rating Date
 Trt-Eval Interval
 # Subsamples, Dec.

GLXMA
 moisture
 percent
 Oct/11/2013
 114 DA-C
 1

GLXMA
 yield
 bu/acre
 Oct/11/2013
 at 13% M
 1

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code		
1	Authority First	70	WG	6.5	oz/a	PRE	A	10.9	75.1
	Liberty	2.34	L	29	fl oz/a	POST	C		
	AMS		WG	8.5	lb/100 gal	POST	C		
2	Valor XLT	40.3	WG	3.5	oz/a	PRE	A	11.0	71.8
	Liberty	2.34	L	29	fl oz/a	POST	C		
	AMS		WG	8.5	lb/100 gal	POST	C		
3	Fierce	76	WG	3	oz/a	PRE	A	11.1	69.3
	Liberty	2.34	L	29	fl oz/a	POST	C		
	AMS		WG	8.5	lb/100 gal	POST	C		
4	OpTill Pro - OpTill	68	WG	2	oz/a	PRE	A	11.1	68.1
	OpTill Pro - Outlook	6	L	10	fl oz/a	PRE	A		
	Liberty	2.34	L	29	fl oz/a	POST	C		
	AMS		WG	8.5	lb/100 gal	POST	C		
5	Untreated							11.3	32.9
6	Valor	51	WG	2	oz/a	PRE	A	11.0	71.3
	Liberty	2.34	L	29	fl oz/a	POST	C		
	AMS		WG	8.5	lb/100 gal	POST	C		
7	Valor	51	WG	2	oz/a	PRE	A	10.9	72.0
	Liberty	2.34	L	29	fl oz/a	POST	C		
	Warrant	3	L	3	pt/a	POST	C		
	AMS		WG	8.5	lb/100 gal	POST	C		
8	Valor	51	WG	2	oz/a	PRE	A	10.9	73.9
	Liberty	2.34	L	29	fl oz/a	POST	C		
	Zidua	85	WG	2	oz/a	POST	C		
	AMS		WG	8.5	lb/100 gal	POST	C		
9	Liberty	2.34	L	29	fl oz/a	EPOS	B	10.9	64.8
	Prefix	5.29	L	2	pt/a	EPOS	B		
	AMS		WG	8.5	lb/100 gal	EPOS	B		
	Liberty	2.34	L	29	fl oz/a	LPOS	D		
	Zidua	85	WG	2	oz/a	LPOS	D		
	AMS		WG	8.5	lb/100 gal	LPOS	D		
10	Liberty	2.34	L	29	fl oz/a	EPOS	B	11.0	68.2
	Warrant	3	L	3	pt/a	EPOS	B		
	AMS		WG	8.5	lb/100 gal	EPOS	B		
	Liberty	2.34	L	29	fl oz/a	LPOS	D		
	Outlook	6	L	14	fl oz/a	LPOS	D		
	AMS		WG	8.5	lb/100 gal	LPOS	D		
LSD (P=.05)								0.16	7.72
CV								1.03	7.97

Means followed by same letter do not significantly differ (P=.05, LSD)