

MSU Weed Science Research Program

Weed control in LibertyLink soybean with Cheetah and Cheetah Max

Trial ID: SOY11-15 Study Dir.: Sprague and Powell  
 Conducted: Campus C-18 Investigator: Christy Sprague

Date Planted: May/21/2015 Row Spacing: 30 IN  
 Variety: MCIA 2512LL No. of Reps: 4  
 Population: 150,000 seeds/A % OM: 2.8  
 Soil Type: Loam pH: 7.2  
 Plot Size: 10 X 30 FT Design: RANDOMIZED COMPLETE BLOCK

Tillage: Fall chisel; spring soil finish twice

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.	AMAPO	AMARANTH, POWELL	AMARANTHUS POWELLII S.WATS.
4.	AMBEL	RAGWEED, COMMON	AMBROSIA ARTEMISIIFOLIA L.
5.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
6.	SINAR	MUSTARD, WILD	SINAPIS ARVENSIS L.
Crop	Code	Common Name	
1.	GLXMA	SOYBEAN	

Application Description

	A	B
Application Timing:	PRE	POST
Date Treated:	May/21/2015	Jun/19/2015
Time Treated:	12:05 PM	3:25 PM
% Cloud Cover:	40	40
Air Temp., Unit:	52 F	70 F
% Relative Humidity:	62	54
Wind Speed/Unit/Dir:	8 mph W	5 mph N
Soil Temp., Unit:	54 F	72 F
Soil/Leaf Surface M:	3 -	3 5
Soil Moist (1=w 5=d):	3	4

Crop Stage at Each Application

	A	B
Crop Name:	GLXMA	GLXMA
Height (In.):	-	7"
Stage (L):	-	V2-V3

Weed Stage at Each Application

	A	B
Weed 1 Name:	ANGR	ANGR
Height (In.):	-	3"
Stage (L):	-	3
Weed 2 Name:	CHEAL	CHEAL
Height (In.):	-	2"
Stage (L):	-	6
Weed 3 Name:	AMAPO	AMAPO
Height (In.):	-	3"
Stage (L):	-	6
Weed 4 Name:	AMBEL	AMBEL
Height (In.):	-	3"
Stage (L):	-	4
Weed 5 Name:	ABUTH	ABUTH
Height (In.):	-	3"
Stage (L):	-	4
Weed 6 Name:	SINAR	SINAR
Height (In.):	-	3"
Stage (L):	-	5

Weed Density (plants/sq. ft.)

	1	2	3	4	5
Date:	Jun/09/2015	Jun/09/2015	Jun/09/2015	Jun/09/2015	Jun/09/2015
Weed Name:	ANGR	CHEAL	AMBEL	ABUTH	SINAR
Density:	49	30	51	<1	4

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	20"	20"	100"	19	Water	28
B	Cub	3.8	AIXR	11003	20"	20"	100"	19	Water	28

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Weed Code								ANGR	CHEAL	AMBEL	SINAR	
Crop Code								GLXMA				
Rating Data Type								injury	control	control	control	
Rating Unit								percent	percent	percent	percent	
Rating Date								Jun/19/2015	Jun/19/2015	Jun/19/2015	Jun/19/2015	
Trt-Eval Interval								0 DA-B	0 DA-B	0 DA-B	0 DA-B	
# Subsamples, Dec.								0	0	0	0	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Grow Stg	Appl Code					
1	Authority MTZ	45	WG	13	oz/a	PRE	A	0	90	99	79	99
1	Cheetah Max	3	L	1	qt/a	POST	B					
1	AMS		WG	8.5	lb/100 gal	POST	B					
2	Authority MTZ	45	WG	13	oz/a	PRE	A	0	88	99	79	99
2	Cheetah Max	3	L	1	qt/a	POST	B					
2	Dual Magnum	7.62	L	1	pt/a	POST	B					
2	AMS		WG	8.5	lb/100 gal	POST	B					
3	Cheetah	2.34	L	29	fl oz/a	POST	B	0	0	0	0	0
3	AMS		WG	8.5	lb/100 gal	POST	B					
4	Cheetah Max	3	L	1	qt/a	POST	B	0	0	0	0	0
4	AMS		WG	8.5	lb/100 gal	POST	B					
5	Untreated							0	0	0	0	0
6	Cheetah	2.34	L	29	fl oz/a	POST	B	0	0	0	0	0
6	Dual Magnum	7.62	L	1	pt/a	POST	B					
6	AMS		WG	8.5	lb/100 gal	POST	B					
7	Cheetah	2.34	L	29	fl oz/a	POST	B	0	0	0	0	0
7	Dual Magnum	7.62	L	1.33	pt/a	POST	B					
7	AMS		WG	8.5	lb/100 gal	POST	B					
8	Cheetah Max	3	L	1	qt/a	POST	B	0	0	0	0	0
8	Dual Magnum	7.62	L	1	pt/a	POST	B					
8	AMS		WG	8.5	lb/100 gal	POST	B					
LSD (P=.05)								0.0	5.2	0.0	5.1	0.0
CV								0.0	15.98	0.0	17.63	0.0

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

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Crop Code								GLXMA			
Rating Data Type								injury	control	control	control
Rating Unit								percent	percent	percent	percent
Rating Date								Jun/26/2015	Jun/26/2015	Jun/26/2015	Jun/26/2015
Trt-Eval Interval								7 DA-B	7 DA-B	7 DA-B	7 DA-B
# Subsamples, Dec.								0	0	0	0
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Grow Stg	Appl Code				
1	Authority MTZ	45	WG	13	oz/a	PRE	A	25	99	99	99
1	Cheetah Max	3	L	1	qt/a	POST	B				
1	AMS		WG	8.5	lb/100 gal	POST	B				
2	Authority MTZ	45	WG	13	oz/a	PRE	A	34	99	99	99
2	Cheetah Max	3	L	1	qt/a	POST	B				
2	Dual Magnum	7.62	L	1	pt/a	POST	B				
2	AMS		WG	8.5	lb/100 gal	POST	B				
3	Cheetah	2.34	L	29	fl oz/a	POST	B	4	89	99	96
3	AMS		WG	8.5	lb/100 gal	POST	B				
4	Cheetah Max	3	L	1	qt/a	POST	B	24	91	99	98
4	AMS		WG	8.5	lb/100 gal	POST	B				
5	Untreated							0	0	0	0
6	Cheetah	2.34	L	29	fl oz/a	POST	B	5	94	99	99
6	Dual Magnum	7.62	L	1	pt/a	POST	B				
6	AMS		WG	8.5	lb/100 gal	POST	B				
7	Cheetah	2.34	L	29	fl oz/a	POST	B	5	89	99	98
7	Dual Magnum	7.62	L	1.33	pt/a	POST	B				
7	AMS		WG	8.5	lb/100 gal	POST	B				
8	Cheetah Max	3	L	1	qt/a	POST	B	34	97	99	99
8	Dual Magnum	7.62	L	1	pt/a	POST	B				
8	AMS		WG	8.5	lb/100 gal	POST	B				
LSD (P=.05)								2.7	6.8	0.0	2.3
CV								11.26	5.6	0.0	1.84

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Weed Code								SINAR	GLXMA	ANGR	CHEAL	AMBEL
Crop Code								control	injury	control	control	control
Rating Data Type								percent	percent	percent	percent	percent
Rating Unit								Jun/26/2015	Jul/02/2015	Jul/02/2015	Jul/02/2015	Jul/02/2015
Rating Date								7 DA-B	13 DA-B	13 DA-B	13 DA-B	13 DA-B
Trt-Eval Interval								0	0	0	0	0
# Subsamples, Dec.												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Grow Stg	Appl Code					
1	Authority MTZ	45	WG	13	oz/a	PRE	A	99	14	99	99	99
1	Cheetah Max	3	L	1	qt/a	POST	B					
1	AMS		WG	8.5	lb/100 gal	POST	B					
2	Authority MTZ	45	WG	13	oz/a	PRE	A	99	25	99	99	99
2	Cheetah Max	3	L	1	qt/a	POST	B					
2	Dual Magnum	7.62	L	1	pt/a	POST	B					
2	AMS		WG	8.5	lb/100 gal	POST	B					
3	Cheetah	2.34	L	29	fl oz/a	POST	B	91	0	97	96	97
3	AMS		WG	8.5	lb/100 gal	POST	B					
4	Cheetah Max	3	L	1	qt/a	POST	B	90	14	97	96	99
4	AMS		WG	8.5	lb/100 gal	POST	B					
5	Untreated							0	0	0	0	0
6	Cheetah	2.34	L	29	fl oz/a	POST	B	90	3	97	97	97
6	Dual Magnum	7.62	L	1	pt/a	POST	B					
6	AMS		WG	8.5	lb/100 gal	POST	B					
7	Cheetah	2.34	L	29	fl oz/a	POST	B	90	4	97	96	96
7	Dual Magnum	7.62	L	1.33	pt/a	POST	B					
7	AMS		WG	8.5	lb/100 gal	POST	B					
8	Cheetah Max	3	L	1	qt/a	POST	B	94	26	99	95	98
8	Dual Magnum	7.62	L	1	pt/a	POST	B					
8	AMS		WG	8.5	lb/100 gal	POST	B					
LSD (P=.05)								3.7	3.6	1.1	3.3	1.7
CV								3.09	22.96	0.85	2.65	1.34

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Weed Code								ABUTH	SINAR	GLXMA	ANGR	CHEAL
Crop Code								control	control	injury	control	control
Rating Data Type								percent	percent	percent	percent	percent
Rating Unit								Jul/02/2015	Jul/02/2015	Jul/17/2015	Jul/17/2015	Jul/17/2015
Rating Date								13 DA-B	13 DA-B	28 DA-B	28 DA-B	28 DA-B
Trt-Eval Interval								0	0	0	0	0
# Subsamples, Dec.								0	0	0	0	0
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Grow Stg	Appl Code					
1	Authority MTZ	45	WG	13	oz/a	PRE	A	99	99	0	99	99
1	Cheetah Max	3	L	1	qt/a	POST	B					
1	AMS		WG	8.5	lb/100 gal	POST	B					
2	Authority MTZ	45	WG	13	oz/a	PRE	A	99	99	2	99	99
2	Cheetah Max	3	L	1	qt/a	POST	B					
2	Dual Magnum	7.62	L	1	pt/a	POST	B					
2	AMS		WG	8.5	lb/100 gal	POST	B					
3	Cheetah	2.34	L	29	fl oz/a	POST	B	98	99	0	83	85
3	AMS		WG	8.5	lb/100 gal	POST	B					
4	Cheetah Max	3	L	1	qt/a	POST	B	99	99	0	90	88
4	AMS		WG	8.5	lb/100 gal	POST	B					
5	Untreated							0	0	0	0	0
6	Cheetah	2.34	L	29	fl oz/a	POST	B	99	98	0	94	91
6	Dual Magnum	7.62	L	1	pt/a	POST	B					
6	AMS		WG	8.5	lb/100 gal	POST	B					
7	Cheetah	2.34	L	29	fl oz/a	POST	B	97	99	0	89	90
7	Dual Magnum	7.62	L	1.33	pt/a	POST	B					
7	AMS		WG	8.5	lb/100 gal	POST	B					
8	Cheetah Max	3	L	1	qt/a	POST	B	99	99	0	94	93
8	Dual Magnum	7.62	L	1	pt/a	POST	B					
8	AMS		WG	8.5	lb/100 gal	POST	B					
LSD (P=.05)								2.0	1.0	0.8	4.4	6.9
CV								1.54	0.82	188.56	3.67	5.8

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Weed Code								AMBEL	ABUTH	SINAR	GLXMA	GLXMA
Crop Code								control	control	control	moisture	yield
Rating Data Type								percent	percent	percent	percent	bu/acre
Rating Unit								Jul/17/2015	Jul/17/2015	Jul/17/2015	Oct/21/2015	Oct/21/2015
Rating Date								28 DA-B	28 DA-B	28 DA-B	124 DA-B	at 13% M
Trt-Eval Interval								0	0	0	1	1
# Subsamples, Dec.								0	0	0	1	1
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Grow Stg	Appl Code					
1	Authority MTZ	45	WG	13	oz/a	PRE	A	99	99	99	15.5	70.6
1	Cheetah Max	3	L	1	qt/a	POST	B					
1	AMS		WG	8.5	lb/100 gal	POST	B					
2	Authority MTZ	45	WG	13	oz/a	PRE	A	99	99	99	15.5	68.3
2	Cheetah Max	3	L	1	qt/a	POST	B					
2	Dual Magnum	7.62	L	1	pt/a	POST	B					
2	AMS		WG	8.5	lb/100 gal	POST	B					
3	Cheetah	2.34	L	29	fl oz/a	POST	B	89	99	91	15.4	69.6
3	AMS		WG	8.5	lb/100 gal	POST	B					
4	Cheetah Max	3	L	1	qt/a	POST	B	99	99	99	15.4	69.7
4	AMS		WG	8.5	lb/100 gal	POST	B					
5	Untreated							0	0	0	16.2	24.6
6	Cheetah	2.34	L	29	fl oz/a	POST	B	89	98	93	15.4	72.0
6	Dual Magnum	7.62	L	1	pt/a	POST	B					
6	AMS		WG	8.5	lb/100 gal	POST	B					
7	Cheetah	2.34	L	29	fl oz/a	POST	B	84	97	90	15.6	69.4
7	Dual Magnum	7.62	L	1.33	pt/a	POST	B					
7	AMS		WG	8.5	lb/100 gal	POST	B					
8	Cheetah Max	3	L	1	qt/a	POST	B	95	98	99	15.4	69.2
8	Dual Magnum	7.62	L	1	pt/a	POST	B					
8	AMS		WG	8.5	lb/100 gal	POST	B					
LSD (P=.05)								4.0	2.5	5.0	0.52	5.76
CV								3.29	1.96	4.03	2.27	6.06

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