

MSU Weed Science Research Program

Weed management strategies in Liberty Link soybean

Trial ID: SOY04-14
 Conducted: Campus T-10

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Date Planted: May/21/2014
Variety: MCIA 2365N LL
Population: 150,000 seeds/A
Soil Type: Loam
Plot Size: 10 X 35 FT
Row Spacing: 30 IN
No. of Reps: 4
% OM: 3
pH: 7.5
Design: RANDOMIZED COMPLETE BLOCK

Tillage: Fall chisel plow. Spring soil finish 2x.
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.	AMAPO	AMARANTH, POWELL	AMARANTHUS POWELLII S.WATS.
4.	AMBEL	RAGWEED, COMMON	AMBROSIA ARTEMISIIFOLIA L.
5.	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/22/2014	Jun/09/2014	Jun/16/2014	Jun/27/2014
Time Treated:	10:15 AM	11:50 AM	2:00 PM	5:10 PM
% Cloud Cover:	20	15	70	40
Air Temp., Unit:	62 F	78 F	84 F	89 F
% Relative Humidity:	62	48	42	50
wind Speed/Unit/Dir:	7 mph W	5 mph NE	6 mph SW	2 mph S
Soil Temp., Unit:	60 F	61 F	77 F	70 F
Soil/Leaf Surface M:	5 -	5 5	5 5	4 5
Soil Moist (1=w 5=d):	4	5	5	3

Crop Stage at Each Application

	A	B	C	D
Crop Name:	GLXMA	GLXMA	GLXMA	GLXMA
Height (In.):	-	4.5"	6"	14"
Stage (L):	-	V1	V2-V3	V4

Weed Stage at Each Application

	A	B	C	D
Weed 1 Name:	ANGR	ANGR	ANGR	ANGR
Height (In.):	-	4"	3-6"	1-6"
Stage (L):	-	4	3-5	2-5
Weed 2 Name:	CHEAL	CHEAL	CHEAL	CHEAL
Height (In.):	-	1.25"	2"	1-4"
Stage (L):	-	6	6	4-14
Weed 3 Name:	AMAPO	AMAPO	AMAPO	AMAPO
Height (In.):	-	1"	2-4"	1-4"
Stage (L):	-	6	6	4-8
Weed 4 Name:	AMBEL	AMBEL	AMBEL	AMBEL
Height (In.):	-	1"	2-4"	1-3"
Stage (L):	-	4	6	4-8
Weed 5 Name:	ABUTH	ABUTH	ABUTH	ABUTH
Height (In.):	-	1.5"	4"	3.5"
Stage (L):	-	4	5	4

Weed Density (plants/sq. ft.)

	1	2	3	4	5
Date:	Jul/17/2014	Jul/17/2014	Jul/17/2014	Jul/17/2014	Jul/17/2014
Weed Name:	ANGR	CHEAL	AMAPO	AMBEL	ABUTH
Density:	34	3	2	5	<1

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	30
B	Cub	3.8	AIXR	11003	25"	20"	100"	19	Water	30
C	Cub	3.8	AIXR	11003	26"	20"	100"	19	Water	30
D	Cub	3.8	AIXR	11003	29"	20"	100"	19	Water	30

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

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code		ANGR	CHEAL	AMAPO
1	Valor XLT	40.3	WG	3	oz/a	PRE	A	5	66	90	96
1	Liberty	2.34	L	29	fl oz/a	EPOS	B				
1	Zidua	85	WG	2	oz/a	EPOS	B				
1	AMS		WG	8.5	lb/100 gal	EPOS	B				
2	Envive	41.3	WG	3.5	oz/a	PRE	A	5	68	90	99
2	Liberty	2.34	L	29	fl oz/a	EPOS	B				
2	Outlook	6	L	14	fl oz/a	EPOS	B				
2	AMS		WG	8.5	lb/100 gal	EPOS	B				
3	Authority First	70	WG	6.4	oz/a	PRE	A	1	77	97	98
3	Liberty	2.34	L	29	fl oz/a	POST	C				
3	AMS		WG	8.5	lb/100 gal	POST	C				
4	Authority MTZ	45	WG	16	oz/a	PRE	A	2	74	98	97
4	Liberty	2.34	L	29	fl oz/a	POST	C				
4	AMS		WG	8.5	lb/100 gal	POST	C				
5	Boundary	6.5	L	1.5	pt/a	PRE	A	2	78	69	80
5	Liberty	2.34	L	29	fl oz/a	POST	C				
5	AMS		WG	8.5	lb/100 gal	POST	C				
6	Fierce	76	WG	3	oz/a	PRE	A	11	86	93	99
6	Liberty	2.34	L	29	fl oz/a	POST	C				
6	AMS		WG	8.5	lb/100 gal	POST	C				
7	Optill PRO - Optill	68	WG	2	oz/a	PRE	A	0	73	75	96
7	Optill PRO - Outlook	6	L	10	fl oz/a	PRE	A				
7	Liberty	2.34	L	29	fl oz/a	POST	C				
7	AMS		WG	8.5	lb/100 gal	POST	C				
8	Untreated							0	0	0	0
9	SP 1171	2	L	12.8	fl oz/a	PRE	A	15	55	49	81
9	Liberty	2.34	L	29	fl oz/a	POST	C				
9	AMS		WG	8.5	lb/100 gal	POST	C				
10	SP 1171	2	L	25.6	fl oz/a	PRE	A	26	74	72	99
10	Liberty	2.34	L	29	fl oz/a	POST	C				
10	AMS		WG	8.5	lb/100 gal	POST	C				
11	Liberty	2.34	L	29	fl oz/a	EPOS	B				
11	Prefix	5.29	L	2	pt/a	EPOS	B				
11	AMS		WG	8.5	lb/100 gal	EPOS	B				
12	Liberty	2.34	L	29	fl oz/a	EPOS	B				
12	Statement	5.25	L	2	pt/a	EPOS	B				
12	AMS		WG	8.5	lb/100 gal	EPOS	B				
13	Liberty	2.34	L	29	fl oz/a	EPOS	B				
13	Rhythm	1.88	L	1	pt/a	EPOS	B				
13	AMS		WG	8.5	lb/100 gal	EPOS	B				

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Weed Code								
Crop Code					GLXMA	ANGR	CHEAL	AMAPO
Rating Data Type					injury	control	control	control
Rating Unit					percent	percent	percent	percent
Rating Date					Jun/09/2014	Jun/09/2014	Jun/09/2014	Jun/09/2014
Trt-Eval Interval					18 DA-A	18 DA-A	18 DA-A	18 DA-A
# Subsamples, Dec.								

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
14	Liberty	2.34	L	29	fl oz/a	EPOS	B				
14	Prefix	5.29	L	2	pt/a	EPOS	B				
14	AMS		WG	8.5	lb/100 gal	EPOS	B				
14	Liberty	2.34	L	29	fl oz/a	LPOS	D				
14	Warrant	3	L	3	pt/a	LPOS	D				
14	AMS		WG	8.5	lb/100 gal	LPOS	D				
15	Liberty	2.34	L	29	fl oz/a	EPOS	B				
15	Outlook	6	L	14	fl oz/a	EPOS	B				
15	AMS		WG	8.5	lb/100 gal	EPOS	B				
15	Liberty	2.34	L	29	fl oz/a	LPOS	D				
15	Pursuit	2	L	4	fl oz/a	LPOS	D				
15	AMS		WG	8.5	lb/100 gal	LPOS	D				
16	Liberty	2.34	L	29	fl oz/a	EPOS	B				
16	AMS		WG	8.5	lb/100 gal	EPOS	B				
16	Liberty	2.34	L	29	fl oz/a	LPOS	D				
16	AMS		WG	8.5	lb/100 gal	LPOS	D				
LSD (P=.05)								2.3	9.3	8.8	6.0
CV								23.99	9.87	8.28	4.9

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

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Weed Code	AMBEL	ABUTH	GLXMA	ANGR
Crop Code				
Rating Data Type	control	control	injury	control
Rating Unit	percent	percent	percent	percent
Rating Date	Jun/09/2014	Jun/09/2014	Jun/16/2014	Jun/16/2014
Trt-Eval Interval	18 DA-A	18 DA-A	7 DA-B	7 DA-B
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	AMBEL	ABUTH	GLXMA	ANGR
1	Valor XLT	40.3	WG	3	oz/a	PRE	A	82	99	23	99
1	Liberty	2.34	L	29	fl oz/a	EPOS	B				
1	Zidua	85	WG	2	oz/a	EPOS	B				
1	AMS		WG	8.5	lb/100 gal	EPOS	B				
2	Envive	41.3	WG	3.5	oz/a	PRE	A	81	99	8	99
2	Liberty	2.34	L	29	fl oz/a	EPOS	B				
2	Outlook	6	L	14	fl oz/a	EPOS	B				
2	AMS		WG	8.5	lb/100 gal	EPOS	B				
3	Authority First	70	WG	6.4	oz/a	PRE	A	78	99	0	75
3	Liberty	2.34	L	29	fl oz/a	POST	C				
3	AMS		WG	8.5	lb/100 gal	POST	C				
4	Authority MTZ	45	WG	16	oz/a	PRE	A	65	92	2	68
4	Liberty	2.34	L	29	fl oz/a	POST	C				
4	AMS		WG	8.5	lb/100 gal	POST	C				
5	Boundary	6.5	L	1.5	pt/a	PRE	A	64	99	2	76
5	Liberty	2.34	L	29	fl oz/a	POST	C				
5	AMS		WG	8.5	lb/100 gal	POST	C				
6	Fierce	76	WG	3	oz/a	PRE	A	86	99	9	83
6	Liberty	2.34	L	29	fl oz/a	POST	C				
6	AMS		WG	8.5	lb/100 gal	POST	C				
7	Optill PRO - Optill	68	WG	2	oz/a	PRE	A	68	99	0	70
7	Optill PRO - Outlook	6	L	10	fl oz/a	PRE	A				
7	Liberty	2.34	L	29	fl oz/a	POST	C				
7	AMS		WG	8.5	lb/100 gal	POST	C				
8	Untreated							0	0	0	0
9	SP 1171	2	L	12.8	fl oz/a	PRE	A	58	99	5	45
9	Liberty	2.34	L	29	fl oz/a	POST	C				
9	AMS		WG	8.5	lb/100 gal	POST	C				
10	SP 1171	2	L	25.6	fl oz/a	PRE	A	75	99	15	68
10	Liberty	2.34	L	29	fl oz/a	POST	C				
10	AMS		WG	8.5	lb/100 gal	POST	C				
11	Liberty	2.34	L	29	fl oz/a	EPOS	B			28	97
11	Prefix	5.29	L	2	pt/a	EPOS	B				
11	AMS		WG	8.5	lb/100 gal	EPOS	B				
12	Liberty	2.34	L	29	fl oz/a	EPOS	B			26	95
12	Statement	5.25	L	2	pt/a	EPOS	B				
12	AMS		WG	8.5	lb/100 gal	EPOS	B				
13	Liberty	2.34	L	29	fl oz/a	EPOS	B			24	95
13	Rhythm	1.88	L	1	pt/a	EPOS	B				
13	AMS		WG	8.5	lb/100 gal	EPOS	B				

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Crop Code				
Rating Data Type	control	control	injury	control
Rating Unit	percent	percent	percent	percent
Rating Date	Jun/09/2014	Jun/09/2014	Jun/16/2014	Jun/16/2014
Trt-Eval Interval	18 DA-A	18 DA-A	7 DA-B	7 DA-B
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
14	Liberty	2.34	L	29	fl oz/a	EPOS	B				
14	Prefix	5.29	L	2	pt/a	EPOS	B	28	94		
14	AMS		WG	8.5	lb/100 gal	EPOS	B				
14	Liberty	2.34	L	29	fl oz/a	LPOS	D				
14	Warrant	3	L	3	pt/a	LPOS	D				
14	AMS		WG	8.5	lb/100 gal	LPOS	D				
15	Liberty	2.34	L	29	fl oz/a	EPOS	B	4	97		
15	Outlook	6	L	14	fl oz/a	EPOS	B				
15	AMS		WG	8.5	lb/100 gal	EPOS	B				
15	Liberty	2.34	L	29	fl oz/a	LPOS	D				
15	Pursuit	2	L	4	fl oz/a	LPOS	D				
15	AMS		WG	8.5	lb/100 gal	LPOS	D				
16	Liberty	2.34	L	29	fl oz/a	EPOS	B	3	90		
16	AMS		WG	8.5	lb/100 gal	EPOS	B				
16	Liberty	2.34	L	29	fl oz/a	LPOS	D				
16	AMS		WG	8.5	lb/100 gal	LPOS	D				
LSD (P=.05)								6.7	4.2	4.4	7.1
CV								7.05	3.3	28.08	6.4

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

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Weed Code	CHEAL	AMAPO	AMBEL	GLXMA
Crop Code				
Rating Data Type	control	control	control	injury
Rating Unit	percent	percent	percent	percent
Rating Date	Jun/16/2014	Jun/16/2014	Jun/16/2014	Jun/23/2014
Trt-Eval Interval	7 DA-B	7 DA-B	7 DA-B	7 DA-C
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	CHEAL	AMAPO	AMBEL	GLXMA injury
1	Valor XLT	40.3	WG	3	oz/a	PRE	A	99	99	99	6
1	Liberty	2.34	L	29	fl oz/a	EPOS	B				
1	Zidua	85	WG	2	oz/a	EPOS	B				
1	AMS		WG	8.5	lb/100 gal	EPOS	B				
2	Envive	41.3	WG	3.5	oz/a	PRE	A	99	99	99	7
2	Liberty	2.34	L	29	fl oz/a	EPOS	B				
2	Outlook	6	L	14	fl oz/a	EPOS	B				
2	AMS		WG	8.5	lb/100 gal	EPOS	B				
3	Authority First	70	WG	6.4	oz/a	PRE	A	97	99	72	0
3	Liberty	2.34	L	29	fl oz/a	POST	C				
3	AMS		WG	8.5	lb/100 gal	POST	C				
4	Authority MTZ	45	WG	16	oz/a	PRE	A	99	97	53	0
4	Liberty	2.34	L	29	fl oz/a	POST	C				
4	AMS		WG	8.5	lb/100 gal	POST	C				
5	Boundary	6.5	L	1.5	pt/a	PRE	A	43	89	53	3
5	Liberty	2.34	L	29	fl oz/a	POST	C				
5	AMS		WG	8.5	lb/100 gal	POST	C				
6	Fierce	76	WG	3	oz/a	PRE	A	93	99	80	4
6	Liberty	2.34	L	29	fl oz/a	POST	C				
6	AMS		WG	8.5	lb/100 gal	POST	C				
7	Optill PRO - Optill	68	WG	2	oz/a	PRE	A	62	99	58	2
7	Optill PRO - Outlook	6	L	10	fl oz/a	PRE	A				
7	Liberty	2.34	L	29	fl oz/a	POST	C				
7	AMS		WG	8.5	lb/100 gal	POST	C				
8	Untreated							0	0	0	0
9	SP 1171	2	L	12.8	fl oz/a	PRE	A	45	81	58	4
9	Liberty	2.34	L	29	fl oz/a	POST	C				
9	AMS		WG	8.5	lb/100 gal	POST	C				
10	SP 1171	2	L	25.6	fl oz/a	PRE	A	63	99	64	12
10	Liberty	2.34	L	29	fl oz/a	POST	C				
10	AMS		WG	8.5	lb/100 gal	POST	C				
11	Liberty	2.34	L	29	fl oz/a	EPOS	B	99	99	99	20
11	Prefix	5.29	L	2	pt/a	EPOS	B				
11	AMS		WG	8.5	lb/100 gal	EPOS	B				
12	Liberty	2.34	L	29	fl oz/a	EPOS	B	99	99	99	15
12	Statement	5.25	L	2	pt/a	EPOS	B				
12	AMS		WG	8.5	lb/100 gal	EPOS	B				
13	Liberty	2.34	L	29	fl oz/a	EPOS	B	99	99	99	9
13	Rhythm	1.88	L	1	pt/a	EPOS	B				
13	AMS		WG	8.5	lb/100 gal	EPOS	B				

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Weed Code	CHEAL	AMAPO	AMBEL	GLXMA
Crop Code				
Rating Data Type	control	control	control	injury
Rating Unit	percent	percent	percent	percent
Rating Date	Jun/16/2014	Jun/16/2014	Jun/16/2014	Jun/23/2014
Trt-Eval Interval	7 DA-B	7 DA-B	7 DA-B	7 DA-C
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	CHEAL	AMAPO	AMBEL	GLXMA
14	Liberty	2.34	L	29	fl oz/a	EPOS	B	99	99	99	10
14	Prefix	5.29	L	2	pt/a	EPOS	B				
14	AMS		WG	8.5	lb/100 gal	EPOS	B				
14	Liberty	2.34	L	29	fl oz/a	LPOS	D				
14	Warrant	3	L	3	pt/a	LPOS	D				
14	AMS		WG	8.5	lb/100 gal	LPOS	D				
15	Liberty	2.34	L	29	fl oz/a	EPOS	B	99	99	99	6
15	Outlook	6	L	14	fl oz/a	EPOS	B				
15	AMS		WG	8.5	lb/100 gal	EPOS	B				
15	Liberty	2.34	L	29	fl oz/a	LPOS	D				
15	Pursuit	2	L	4	fl oz/a	LPOS	D				
15	AMS		WG	8.5	lb/100 gal	LPOS	D				
16	Liberty	2.34	L	29	fl oz/a	EPOS	B	99	99	99	0
16	AMS		WG	8.5	lb/100 gal	EPOS	B				
16	Liberty	2.34	L	29	fl oz/a	LPOS	D				
16	AMS		WG	8.5	lb/100 gal	LPOS	D				
LSD (P=.05)								4.8	7.2	4.8	2.1
CV								4.15	5.51	4.37	24.17

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

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Weed Code	ANGR	CHEAL	AMAPO	AMBEL
Crop Code				
Rating Data Type	control	control	control	control
Rating Unit	percent	percent	percent	percent
Rating Date	Jun/23/2014	Jun/23/2014	Jun/23/2014	Jun/23/2014
Trt-Eval Interval	7 DA-C	7 DA-C	14 DA-B	7 DA-C
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
1	Valor XLT	40.3	WG	3	oz/a	PRE	A	95	99	99	99
1	Liberty	2.34	L	29	fl oz/a	EPOS	B				
1	Zidua	85	WG	2	oz/a	EPOS	B				
1	AMS		WG	8.5	lb/100 gal	EPOS	B				
2	Envive	41.3	WG	3.5	oz/a	PRE	A	99	99	99	99
2	Liberty	2.34	L	29	fl oz/a	EPOS	B				
2	Outlook	6	L	14	fl oz/a	EPOS	B				
2	AMS		WG	8.5	lb/100 gal	EPOS	B				
3	Authority First	70	WG	6.4	oz/a	PRE	A	93	99	99	96
3	Liberty	2.34	L	29	fl oz/a	POST	C				
3	AMS		WG	8.5	lb/100 gal	POST	C				
4	Authority MTZ	45	WG	16	oz/a	PRE	A	93	99	99	98
4	Liberty	2.34	L	29	fl oz/a	POST	C				
4	AMS		WG	8.5	lb/100 gal	POST	C				
5	Boundary	6.5	L	1.5	pt/a	PRE	A	98	99	99	99
5	Liberty	2.34	L	29	fl oz/a	POST	C				
5	AMS		WG	8.5	lb/100 gal	POST	C				
6	Fierce	76	WG	3	oz/a	PRE	A	98	99	99	99
6	Liberty	2.34	L	29	fl oz/a	POST	C				
6	AMS		WG	8.5	lb/100 gal	POST	C				
7	Optill PRO - Optill	68	WG	2	oz/a	PRE	A	97	99	99	99
7	Optill PRO - Outlook	6	L	10	fl oz/a	PRE	A				
7	Liberty	2.34	L	29	fl oz/a	POST	C				
7	AMS		WG	8.5	lb/100 gal	POST	C				
8	Untreated							0	0	0	0
9	SP 1171	2	L	12.8	fl oz/a	PRE	A	90	99	99	99
9	Liberty	2.34	L	29	fl oz/a	POST	C				
9	AMS		WG	8.5	lb/100 gal	POST	C				
10	SP 1171	2	L	25.6	fl oz/a	PRE	A	94	99	99	99
10	Liberty	2.34	L	29	fl oz/a	POST	C				
10	AMS		WG	8.5	lb/100 gal	POST	C				
11	Liberty	2.34	L	29	fl oz/a	EPOS	B	96	99	99	99
11	Prefix	5.29	L	2	pt/a	EPOS	B				
11	AMS		WG	8.5	lb/100 gal	EPOS	B				
12	Liberty	2.34	L	29	fl oz/a	EPOS	B	88	99	99	98
12	Statement	5.25	L	2	pt/a	EPOS	B				
12	AMS		WG	8.5	lb/100 gal	EPOS	B				
13	Liberty	2.34	L	29	fl oz/a	EPOS	B	83	99	99	99
13	Rhythm	1.88	L	1	pt/a	EPOS	B				
13	AMS		WG	8.5	lb/100 gal	EPOS	B				

MSU Weed Science Research Program

Weed management strategies in Liberty Link soybean

Trial ID: SOY04-14
 Conducted: Campus T-10

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code	ANGR	CHEAL	AMAPO	AMBEL
Crop Code				
Rating Data Type	control	control	control	control
Rating Unit	percent	percent	percent	percent
Rating Date	Jun/23/2014	Jun/23/2014	Jun/23/2014	Jun/23/2014
Trt-Eval Interval	7 DA-C	7 DA-C	14 DA-B	7 DA-C
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	ANGR	CHEAL	AMAPO	AMBEL
14	Liberty	2.34	L	29	fl oz/a	EPOS	B	84	99	99	99
14	Prefix	5.29	L	2	pt/a	EPOS	B				
14	AMS		WG	8.5	lb/100 gal	EPOS	B				
14	Liberty	2.34	L	29	fl oz/a	LPOS	D				
14	Warrant	3	L	3	pt/a	LPOS	D				
14	AMS		WG	8.5	lb/100 gal	LPOS	D				
15	Liberty	2.34	L	29	fl oz/a	EPOS	B	97	98	99	91
15	Outlook	6	L	14	fl oz/a	EPOS	B				
15	AMS		WG	8.5	lb/100 gal	EPOS	B				
15	Liberty	2.34	L	29	fl oz/a	LPOS	D				
15	Pursuit	2	L	4	fl oz/a	LPOS	D				
15	AMS		WG	8.5	lb/100 gal	LPOS	D				
16	Liberty	2.34	L	29	fl oz/a	EPOS	B	71	90	88	88
16	AMS		WG	8.5	lb/100 gal	EPOS	B				
16	Liberty	2.34	L	29	fl oz/a	LPOS	D				
16	AMS		WG	8.5	lb/100 gal	LPOS	D				
LSD (P=.05)								3.7	1.5	1.8	2.3
CV								3.01	1.17	1.36	1.79

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

MSU Weed Science Research Program

Weed management strategies in Liberty Link soybean

Trial ID: SOY04-14
Conducted: Campus T-10Study Dir.: Sprague and Powell
Investigator: Christy Sprague

Weed Code	ABUTH	GLXMA	ANGR	CHEAL
Crop Code				
Rating Data Type	control	injury	control	control
Rating Unit	percent	percent	percent	percent
Rating Date	Jun/23/2014	Jul/07/2014	Jul/07/2014	Jul/07/2014
Trt-Eval Interval	7 DA-C	21 DA-C	10 DA-D	10 DA-D
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
1	Valor XLT	40.3	WG	3	oz/a	PRE	A	99	0	95	99
1	Liberty	2.34	L	29	fl oz/a	EPOS	B				
1	Zidua	85	WG	2	oz/a	EPOS	B				
1	AMS		WG	8.5	lb/100 gal	EPOS	B				
2	Envive	41.3	WG	3.5	oz/a	PRE	A	99	0	97	99
2	Liberty	2.34	L	29	fl oz/a	EPOS	B				
2	Outlook	6	L	14	fl oz/a	EPOS	B				
2	AMS		WG	8.5	lb/100 gal	EPOS	B				
3	Authority First	70	WG	6.4	oz/a	PRE	A	99	0	94	99
3	Liberty	2.34	L	29	fl oz/a	POST	C				
3	AMS		WG	8.5	lb/100 gal	POST	C				
4	Authority MTZ	45	WG	16	oz/a	PRE	A	99	0	93	99
4	Liberty	2.34	L	29	fl oz/a	POST	C				
4	AMS		WG	8.5	lb/100 gal	POST	C				
5	Boundary	6.5	L	1.5	pt/a	PRE	A	99	0	99	98
5	Liberty	2.34	L	29	fl oz/a	POST	C				
5	AMS		WG	8.5	lb/100 gal	POST	C				
6	Fierce	76	WG	3	oz/a	PRE	A	99	2	99	99
6	Liberty	2.34	L	29	fl oz/a	POST	C				
6	AMS		WG	8.5	lb/100 gal	POST	C				
7	Optill PRO - Optill	68	WG	2	oz/a	PRE	A	99	2	90	99
7	Optill PRO - Outlook	6	L	10	fl oz/a	PRE	A				
7	Liberty	2.34	L	29	fl oz/a	POST	C				
7	AMS		WG	8.5	lb/100 gal	POST	C				
8	Untreated							0	0	0	0
9	SP 1171	2	L	12.8	fl oz/a	PRE	A	99	3	96	99
9	Liberty	2.34	L	29	fl oz/a	POST	C				
9	AMS		WG	8.5	lb/100 gal	POST	C				
10	SP 1171	2	L	25.6	fl oz/a	PRE	A	99	8	98	99
10	Liberty	2.34	L	29	fl oz/a	POST	C				
10	AMS		WG	8.5	lb/100 gal	POST	C				
11	Liberty	2.34	L	29	fl oz/a	EPOS	B	99	3	96	99
11	Prefix	5.29	L	2	pt/a	EPOS	B				
11	AMS		WG	8.5	lb/100 gal	EPOS	B				
12	Liberty	2.34	L	29	fl oz/a	EPOS	B	99	0	86	99
12	Statement	5.25	L	2	pt/a	EPOS	B				
12	AMS		WG	8.5	lb/100 gal	EPOS	B				
13	Liberty	2.34	L	29	fl oz/a	EPOS	B	99	0	78	91
13	Rhythm	1.88	L	1	pt/a	EPOS	B				
13	AMS		WG	8.5	lb/100 gal	EPOS	B				

MSU Weed Science Research Program

Weed management strategies in Liberty Link soybean

Trial ID: SOY04-14 Study Dir.: Sprague and Powell
 Conducted: Campus T-10 Investigator: Christy Sprague

Weed Code	ABUTH		ANGR	CHEAL
Crop Code		GLXMA		
Rating Data Type	control	injury	control	control
Rating Unit	percent	percent	percent	percent
Rating Date	Jun/23/2014	Jul/07/2014	Jul/07/2014	Jul/07/2014
Trt-Eval Interval	7 DA-C	21 DA-C	10 DA-D	10 DA-D
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	ABUTH	GLXMA	ANGR	CHEAL
14	Liberty	2.34	L	29	fl oz/a	EPOS	B	99	1	99	99
14	Prefix	5.29	L	2	pt/a	EPOS	B				
14	AMS		WG	8.5	lb/100 gal	EPOS	B				
14	Liberty	2.34	L	29	fl oz/a	LPOS	D				
14	Warrant	3	L	3	pt/a	LPOS	D				
14	AMS		WG	8.5	lb/100 gal	LPOS	D				
15	Liberty	2.34	L	29	fl oz/a	EPOS	B	99	12	99	99
15	Outlook	6	L	14	fl oz/a	EPOS	B				
15	AMS		WG	8.5	lb/100 gal	EPOS	B				
15	Liberty	2.34	L	29	fl oz/a	LPOS	D				
15	Pursuit	2	L	4	fl oz/a	LPOS	D				
15	AMS		WG	8.5	lb/100 gal	LPOS	D				
16	Liberty	2.34	L	29	fl oz/a	EPOS	B	99	0	93	99
16	AMS		WG	8.5	lb/100 gal	EPOS	B				
16	Liberty	2.34	L	29	fl oz/a	LPOS	D				
16	AMS		WG	8.5	lb/100 gal	LPOS	D				
LSD (P=.05)								0.4	3.4	3.4	2.2
CV								0.27	131.69	2.69	1.66

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

MSU Weed Science Research Program

Weed management strategies in Liberty Link soybean

Trial ID: SOY04-14
Conducted: Campus T-10Study Dir.: Sprague and Powell
Investigator: Christy Sprague

Weed Code	AMAPO	AMBEL	ABUTH	GLXMA
Crop Code				moisture
Rating Data Type	control	control	control	percent
Rating Unit	percent	percent	percent	percent
Rating Date	Jul/07/2014	Jul/07/2014	Jul/07/2014	Nov/03/2014
Trt-Eval Interval	10 DA-D	10 DA-D	10 DA-D	129 DA-D
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	AMAPO	AMBEL	ABUTH	GLXMA
1	Valor XLT	40.3	WG	3	oz/a	PRE	A	99	99	99	11.4
1	Liberty	2.34	L	29	fl oz/a	EPOS	B				
1	Zidua	85	WG	2	oz/a	EPOS	B				
1	AMS		WG	8.5	lb/100 gal	EPOS	B				
2	Envive	41.3	WG	3.5	oz/a	PRE	A	99	98	99	11.5
2	Liberty	2.34	L	29	fl oz/a	EPOS	B				
2	Outlook	6	L	14	fl oz/a	EPOS	B				
2	AMS		WG	8.5	lb/100 gal	EPOS	B				
3	Authority First	70	WG	6.4	oz/a	PRE	A	99	97	99	12.2
3	Liberty	2.34	L	29	fl oz/a	POST	C				
3	AMS		WG	8.5	lb/100 gal	POST	C				
4	Authority MTZ	45	WG	16	oz/a	PRE	A	99	93	99	11.6
4	Liberty	2.34	L	29	fl oz/a	POST	C				
4	AMS		WG	8.5	lb/100 gal	POST	C				
5	Boundary	6.5	L	1.5	pt/a	PRE	A	99	92	99	11.5
5	Liberty	2.34	L	29	fl oz/a	POST	C				
5	AMS		WG	8.5	lb/100 gal	POST	C				
6	Fierce	76	WG	3	oz/a	PRE	A	99	98	99	11.6
6	Liberty	2.34	L	29	fl oz/a	POST	C				
6	AMS		WG	8.5	lb/100 gal	POST	C				
7	Optill PRO - Optill	68	WG	2	oz/a	PRE	A	99	91	99	12.1
7	Optill PRO - Outlook	6	L	10	fl oz/a	PRE	A				
7	Liberty	2.34	L	29	fl oz/a	POST	C				
7	AMS		WG	8.5	lb/100 gal	POST	C				
8	Untreated							0	0	0	12.0
9	SP 1171	2	L	12.8	fl oz/a	PRE	A	99	95	99	11.7
9	Liberty	2.34	L	29	fl oz/a	POST	C				
9	AMS		WG	8.5	lb/100 gal	POST	C				
10	SP 1171	2	L	25.6	fl oz/a	PRE	A	99	99	99	11.7
10	Liberty	2.34	L	29	fl oz/a	POST	C				
10	AMS		WG	8.5	lb/100 gal	POST	C				
11	Liberty	2.34	L	29	fl oz/a	EPOS	B	99	99	99	11.5
11	Prefix	5.29	L	2	pt/a	EPOS	B				
11	AMS		WG	8.5	lb/100 gal	EPOS	B				
12	Liberty	2.34	L	29	fl oz/a	EPOS	B	99	94	99	11.4
12	Statement	5.25	L	2	pt/a	EPOS	B				
12	AMS		WG	8.5	lb/100 gal	EPOS	B				
13	Liberty	2.34	L	29	fl oz/a	EPOS	B	99	99	99	12.3
13	Rhythm	1.88	L	1	pt/a	EPOS	B				
13	AMS		WG	8.5	lb/100 gal	EPOS	B				

MSU Weed Science Research Program

Weed management strategies in Liberty Link soybean

Trial ID: SOY04-14
 Conducted: Campus T-10

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code	AMAPO	AMBEL	ABUTH	GLXMA
Crop Code				
Rating Data Type	control	control	control	moisture
Rating Unit	percent	percent	percent	percent
Rating Date	Jul/07/2014	Jul/07/2014	Jul/07/2014	Nov/03/2014
Trt-Eval Interval	10 DA-D	10 DA-D	10 DA-D	129 DA-D
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
14	Liberty	2.34	L	29	fl oz/a	EPOS	B	99	99	99	11.8
14	Prefix	5.29	L	2	pt/a	EPOS	B				
14	AMS		WG	8.5	lb/100 gal	EPOS	B				
14	Liberty	2.34	L	29	fl oz/a	LPOS	D				
14	Warrant	3	L	3	pt/a	LPOS	D				
14	AMS		WG	8.5	lb/100 gal	LPOS	D				
15	Liberty	2.34	L	29	fl oz/a	EPOS	B	99	99	99	11.8
15	Outlook	6	L	14	fl oz/a	EPOS	B				
15	AMS		WG	8.5	lb/100 gal	EPOS	B				
15	Liberty	2.34	L	29	fl oz/a	LPOS	D				
15	Pursuit	2	L	4	fl oz/a	LPOS	D				
15	AMS		WG	8.5	lb/100 gal	LPOS	D				
16	Liberty	2.34	L	29	fl oz/a	EPOS	B	99	99	99	11.7
16	AMS		WG	8.5	lb/100 gal	EPOS	B				
16	Liberty	2.34	L	29	fl oz/a	LPOS	D				
16	AMS		WG	8.5	lb/100 gal	LPOS	D				
LSD (P=.05)								0.5	3.3	0.4	0.72
CV								0.39	2.54	0.27	4.27

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

MSU Weed Science Research Program

Weed management strategies in Liberty Link soybean

Trial ID: SOY04-14
 Conducted: Campus T-10

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

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

GLXMA
 yield
 bu/acre
 Nov/03/2014
 at 13% M

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	
1	Valor XLT	40.3	WG	3	oz/a	PRE	A	71.3
1	Liberty	2.34	L	29	fl oz/a	EPOS	B	
1	Zidua	85	WG	2	oz/a	EPOS	B	
1	AMS		WG	8.5	lb/100 gal	EPOS	B	
2	Envive	41.3	WG	3.5	oz/a	PRE	A	74.0
2	Liberty	2.34	L	29	fl oz/a	EPOS	B	
2	Outlook	6	L	14	fl oz/a	EPOS	B	
2	AMS		WG	8.5	lb/100 gal	EPOS	B	
3	Authority First	70	WG	6.4	oz/a	PRE	A	71.8
3	Liberty	2.34	L	29	fl oz/a	POST	C	
3	AMS		WG	8.5	lb/100 gal	POST	C	
4	Authority MTZ	45	WG	16	oz/a	PRE	A	72.6
4	Liberty	2.34	L	29	fl oz/a	POST	C	
4	AMS		WG	8.5	lb/100 gal	POST	C	
5	Boundary	6.5	L	1.5	pt/a	PRE	A	75.6
5	Liberty	2.34	L	29	fl oz/a	POST	C	
5	AMS		WG	8.5	lb/100 gal	POST	C	
6	Fierce	76	WG	3	oz/a	PRE	A	73.5
6	Liberty	2.34	L	29	fl oz/a	POST	C	
6	AMS		WG	8.5	lb/100 gal	POST	C	
7	Optill PRO - Optill	68	WG	2	oz/a	PRE	A	70.4
7	Optill PRO - Outlook	6	L	10	fl oz/a	PRE	A	
7	Liberty	2.34	L	29	fl oz/a	POST	C	
7	AMS		WG	8.5	lb/100 gal	POST	C	
8	Untreated							17.7
9	SP 1171	2	L	12.8	fl oz/a	PRE	A	69.7
9	Liberty	2.34	L	29	fl oz/a	POST	C	
9	AMS		WG	8.5	lb/100 gal	POST	C	
10	SP 1171	2	L	25.6	fl oz/a	PRE	A	70.6
10	Liberty	2.34	L	29	fl oz/a	POST	C	
10	AMS		WG	8.5	lb/100 gal	POST	C	
11	Liberty	2.34	L	29	fl oz/a	EPOS	B	69.1
11	Prefix	5.29	L	2	pt/a	EPOS	B	
11	AMS		WG	8.5	lb/100 gal	EPOS	B	
12	Liberty	2.34	L	29	fl oz/a	EPOS	B	73.8
12	Statement	5.25	L	2	pt/a	EPOS	B	
12	AMS		WG	8.5	lb/100 gal	EPOS	B	
13	Liberty	2.34	L	29	fl oz/a	EPOS	B	71.5
13	Rhythm	1.88	L	1	pt/a	EPOS	B	
13	AMS		WG	8.5	lb/100 gal	EPOS	B	

MSU Weed Science Research Program

Weed management strategies in Liberty Link soybean

Trial ID: SOY04-14
 Conducted: Campus T-10

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

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

GLXMA
 yield
 bu/acre
 Nov/03/2014
 at 13% M

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code	
14	Liberty	2.34	L	29	fl oz/a	EPOS	B	68.8
14	Prefix	5.29	L	2	pt/a	EPOS	B	
14	AMS		WG	8.5	lb/100 gal	EPOS	B	
14	Liberty	2.34	L	29	fl oz/a	LPOS	D	
14	Warrant	3	L	3	pt/a	LPOS	D	
14	AMS		WG	8.5	lb/100 gal	LPOS	D	
15	Liberty	2.34	L	29	fl oz/a	EPOS	B	61.5
15	Outlook	6	L	14	fl oz/a	EPOS	B	
15	AMS		WG	8.5	lb/100 gal	EPOS	B	
15	Liberty	2.34	L	29	fl oz/a	LPOS	D	
15	Pursuit	2	L	4	fl oz/a	LPOS	D	
15	AMS		WG	8.5	lb/100 gal	LPOS	D	
16	Liberty	2.34	L	29	fl oz/a	EPOS	B	71.6
16	AMS		WG	8.5	lb/100 gal	EPOS	B	
16	Liberty	2.34	L	29	fl oz/a	LPOS	D	
16	AMS		WG	8.5	lb/100 gal	LPOS	D	
LSD (P=.05)								4.82
CV								4.98

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