

MSU Weed Science Research Program

Comparison of commercial herbicide programs in soybean

Trial ID: SOY03-14
 Conducted: Campus T-10

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Date Planted: May/21/2014
Variety: see below
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 field finish 2x.
Fertilizer: None

Crop and Weed Description

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:	9:00 AM	11:40 AM	1:00 PM	5:00 PM
% Cloud Cover:	0	15	60	40
Air Temp., Unit:	58 F	78 F	83 F	89 F
% Relative Humidity:	70	48	46	50
wind Speed/Unit/Dir:	7 mph W	5 mph NE	4 mph W	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"	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.):	-	3"	3-6"	2-7"
Stage (L):	-	4	3-5	3-13
Weed 2 Name:	CHEAL	CHEAL	CHEAL	CHEAL
Height (In.):	-	1.5"	2"	2"
Stage (L):	-	6	6	8-10
Weed 3 Name:	AMAPO	AMAPO	AMAPO	AMAPO
Height (In.):	-	1.25"	2-4"	2"
Stage (L):	-	6	6	8
Weed 4 Name:	AMBEL	AMBEL	AMBEL	AMBEL
Height (In.):	-	1"	2-4"	2"
Stage (L):	-	4	6	6
Weed 5 Name:	ABUTH	ABUTH	ABUTH	ABUTH
Height (In.):	-	1"	4"	-
Stage (L):	-	4	5	-

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:	35	1	1	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

Comments: Pioneer 26T76R - Roundup Ready; MCIA2365NL2 - LibertyLink

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Weed Code										ANGR	CHEAL
Crop Code								GLXMA	GLXMA		
Rating Data Type								injury	injury	control	control
Rating Unit								percent	percent	percent	percent
Rating Date								Jun/13/2014	Jun/16/2014	Jun/16/2014	Jun/16/2014
Trt-Eval Interval								22 DA-A	7 DA-B	7 DA-B	7 DA-B
# Subsamples, Dec.											
Trt No.	Treatment	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code				
1	Boundary	6.5	L	1.5	pt/a	PRE	A	1	3	79	64
1	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
1	AMS		WG	17	lb/100 gal	POST	C				
2	Optill Pro - Optill	68	WG	2	oz/a	PRE	A	0	0	78	78
2	Optill Pro - Outlook	6	L	10	fl oz/a	PRE	A				
2	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
2	AMS		WG	17	lb/100 gal	POST	C				
3	Fierce	76	WG	3	oz/a	PRE	A	18	14	83	96
3	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C				
3	AMS		WG	17	lb/100 gal	POST	C				
4	Prefix	5.29	L	2	pt/a	PRE	A	6	6	83	55
4	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
4	AMS		WG	17	lb/100 gal	POST	C				
5	Canopy	75	WG	2.25	oz/a	PRE	A	0	0	33	58
5	Abundit Extra	3	SL	32	fl oz/a	POST	C				
5	AMS		WG	2	lb/a	POST	C				
6	Sonic	70	WG	3	oz/a	PRE	A	0	0	68	95
6	Durango DMA	4	SL	24	fl oz/a	POST	C				
6	AMS		WG	17	lb/100 gal	POST	C				
7	Sonic	70	WG	4.5	oz/a	PRE	A	0	0	73	96
7	Durango DMA	4	SL	24	fl oz/a	POST	C				
7	AMS		WG	17	lb/100 gal	POST	C				
8	Sonic	70	WG	6	oz/a	PRE	A	0	0	75	98
8	Durango DMA	4	SL	24	fl oz/a	POST	C				
8	AMS		WG	17	lb/100 gal	POST	C				
9	Untreated							0	0	0	0
10	Optill	68	WG	2	oz/a	PRE	A	1	0	71	79
10	Zidua	85	WG	2	oz/a	PRE	A				
10	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
10	AMS		WG	17	lb/100 gal	POST	C				
11	Optill	68	WG	2	oz/a	PRE	A	23	16	84	99
11	Prowl H2O	3.8	L	2.5	pt/a	PRE	A				
11	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
11	AMS		WG	17	lb/100 gal	POST	C				
12	Trivence	61.3	WG	8	oz/a	PRE	A	14	7	76	94
12	Abundit Extra	3	SL	32	fl oz/a	POST	C				
12	Cinch	7.64	L	1	pt/a	POST	C				
12	AMS		WG	2	lb/a	POST	C				
13	Optill	68	WG	2	oz/a	PRE	A	0	1	78	91
13	Metribuzin	75	WG	6	oz/a	PRE	A				
13	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
13	Outlook	6	L	10	fl oz/a	POST	C				
13	AMS		WG	17	lb/100 gal	POST	C				

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Weed Code											
Crop Code								GLXMA	GLXMA	ANGR	CHEAL
Rating Data Type								injury	injury	control	control
Rating Unit								percent	percent	percent	percent
Rating Date								Jun/13/2014	Jun/16/2014	Jun/16/2014	Jun/16/2014
Trt-Eval Interval								22 DA-A	7 DA-B	7 DA-B	7 DA-B
# Subsamples, Dec.											

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
14	Valor	51	WG	2	oz/a	PRE	A	13	9	67	97
14	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
14	Warrant	3	L	3	pt/a	POST	C				
14	AMS		WG	17	lb/100 gal	POST	C				
15	Valor XLT	40.3	WG	3	oz/a	PRE	A	15	9	75	96
15	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
15	Warrant	3	L	3	pt/a	POST	C				
15	AMS		WG	17	lb/100 gal	POST	C				
16	Sonic	70	WG	3	oz/a	PRE	A	0	0	70	95
16	Durango DMA	4	SL	24	fl oz/a	POST	C				
16	FirstRate	84	WG	0.3	oz/a	POST	C				
16	AMS		WG	17	lb/100 gal	POST	C				
17	Fierce	76	WG	3	oz/a	PRE	A	18	14	87	94
17	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C				
17	Cobra	2	L	8	fl oz/a	POST	C				
17	Crop oil concentrate		L	1	pt/a	POST	C				
17	AMS		WG	17	lb/100 gal	POST	C				
18	Boundary	6.5	L	1.5	pt/a	PRE	A	5	4	87	73
18	Flexstar GT 3.5	2.82	L	3.5	pt/a	POST	C				
18	MSO		L	1	% v/v	POST	C				
18	AMS		WG	17	lb/100 gal	POST	C				
19	Valor	51	WG	2	oz/a	PRE	A	14	11	75	97
19	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
19	Warrant	3	L	3	pt/a	POST	C				
19	Cobra	2	L	4	fl oz/a	POST	C				
19	Crop oil concentrate		L	1	% v/v	POST	C				
19	AMS		WG	17	lb/100 gal	POST	C				
20	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C				
20	AMS		WG	17	lb/100 gal	POST	C				
21	Touchdown Total	4.17	SL	24	fl oz/a	EPOS	B	0	0	92	99
21	AMS		WG	17	lb/100 gal	EPOS	B				
21	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	D				
21	AMS		WG	17	lb/100 gal	LPOS	D				
22	LibertyLink soybean							0	0	0	0
22	Untreated										
23	LibertyLink soybean							10	7	72	91
23	Valor XLT	40.3	WG	3	oz/a	PRE	A				
23	Liberty	2.34	L	29	fl oz/a	POST	C				
23	AMS		WG	8.5	lb/100 gal	POST	C				
24	LibertyLink soybean							19	10	83	97
24	Fierce	76	WG	3	oz/a	PRE	A				
24	Liberty	2.34	L	29	fl oz/a	POST	C				
24	AMS		WG	8.5	lb/100 gal	POST	C				

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Weed Code								ANGR	CHEAL
Crop Code									
Rating Data Type								control	control
Rating Unit								percent	percent
Rating Date								Jun/16/2014	Jun/16/2014
Trt-Eval Interval								7 DA-B	7 DA-B
# Subsamples, Dec.									

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	GLXMA injury percent Jun/13/2014 22 DA-A	GLXMA injury percent Jun/16/2014 7 DA-B	ANGR control percent Jun/16/2014 7 DA-B	CHEAL control percent Jun/16/2014 7 DA-B
25	LibertyLink soybean							0	1	84	99
25	Authority MTZ	45	WG	13	oz/a	PRE	A				
25	Anthem	2.15	L	6	fl oz/a	PRE	A				
25	Liberty	2.34	L	29	fl oz/a	POST	C				
25	AMS		WG	8.5	lb/100 gal	POST	C				
26	LibertyLink soybean							0	0	74	90
26	Authority MTZ	45	WG	14	oz/a	PRE	A				
26	Accolade	80	WG	0.8	oz/a	PRE	A				
26	Liberty	2.34	L	29	fl oz/a	POST	C				
26	AMS		WG	8.5	lb/100 gal	POST	C				
27	LibertyLink soybean							4	5	72	65
27	Boundary	6.5	L	1.5	pt/a	PRE	A				
27	Liberty	2.34	L	29	fl oz/a	POST	C				
27	Outlook	6	L	12	fl oz/a	POST	C				
27	AMS		WG	8.5	lb/100 gal	POST	C				
28	LibertyLink soybean							38	24	94	99
28	Liberty	2.34	L	29	fl oz/a	EPOS	B				
28	Prefix	5.29	L	2	pt/a	EPOS	B				
28	AMS		WG	8.5	lb/100 gal	EPOS	B				
28	Liberty	2.34	L	29	fl oz/a	LPOS	D				
28	AMS		WG	8.5	lb/100 gal	LPOS	D				
LSD (P=.05)								3.2	2.8	8.6	11.5
CV								30.87	38.72	8.58	10.0

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

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

Trt No.	Treatment	Form Conc	Form Type	Form Rate	Rate Unit	Grow Stg	Appl Code	AMAPO	AMBEL	GLXMA	ANGR
1	Boundary	6.5	L	1.5	pt/a	PRE	A	76	61	1	99
1	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
1	AMS		WG	17	lb/100 gal	POST	C				
2	Optill Pro - Optill	68	WG	2	oz/a	PRE	A	99	66	2	99
2	Optill Pro - Outlook	6	L	10	fl oz/a	PRE	A				
2	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
2	AMS		WG	17	lb/100 gal	POST	C				
3	Fierce	76	WG	3	oz/a	PRE	A	99	88	4	99
3	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C				
3	AMS		WG	17	lb/100 gal	POST	C				
4	Prefix	5.29	L	2	pt/a	PRE	A	89	71	1	99
4	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
4	AMS		WG	17	lb/100 gal	POST	C				
5	Canopy	75	WG	2.25	oz/a	PRE	A	99	60	0	85
5	Abundit Extra	3	SL	32	fl oz/a	POST	C				
5	AMS		WG	2	lb/a	POST	C				
6	Sonic	70	WG	3	oz/a	PRE	A	94	68	0	91
6	Durango DMA	4	SL	24	fl oz/a	POST	C				
6	AMS		WG	17	lb/100 gal	POST	C				
7	Sonic	70	WG	4.5	oz/a	PRE	A	87	78	0	95
7	Durango DMA	4	SL	24	fl oz/a	POST	C				
7	AMS		WG	17	lb/100 gal	POST	C				
8	Sonic	70	WG	6	oz/a	PRE	A	96	80	0	97
8	Durango DMA	4	SL	24	fl oz/a	POST	C				
8	AMS		WG	17	lb/100 gal	POST	C				
9	Untreated							0	0	0	0
10	Optill	68	WG	2	oz/a	PRE	A	97	71	2	97
10	Zidua	85	WG	2	oz/a	PRE	A				
10	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
10	AMS		WG	17	lb/100 gal	POST	C				
11	Optill	68	WG	2	oz/a	PRE	A	98	74	4	98
11	Prowl H2O	3.8	L	2.5	pt/a	PRE	A				
11	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
11	AMS		WG	17	lb/100 gal	POST	C				
12	Trivence	61.3	WG	8	oz/a	PRE	A	99	79	14	98
12	Abundit Extra	3	SL	32	fl oz/a	POST	C				
12	Cinch	7.64	L	1	pt/a	POST	C				
12	AMS		WG	2	lb/a	POST	C				
13	Optill	68	WG	2	oz/a	PRE	A	92	72	2	99
13	Metribuzin	75	WG	6	oz/a	PRE	A				
13	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
13	Outlook	6	L	10	fl oz/a	POST	C				
13	AMS		WG	17	lb/100 gal	POST	C				

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

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
14	Valor	51	WG	2	oz/a	PRE	A	96	73	7	99
14	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
14	Warrant	3	L	3	pt/a	POST	C				
14	AMS		WG	17	lb/100 gal	POST	C				
15	Valor XLT	40.3	WG	3	oz/a	PRE	A	99	83	10	99
15	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
15	Warrant	3	L	3	pt/a	POST	C				
15	AMS		WG	17	lb/100 gal	POST	C				
16	Sonic	70	WG	3	oz/a	PRE	A	73	78	1	95
16	Durango DMA	4	SL	24	fl oz/a	POST	C				
16	FirstRate	84	WG	0.3	oz/a	POST	C				
16	AMS		WG	17	lb/100 gal	POST	C				
17	Fierce	76	WG	3	oz/a	PRE	A	99	93	29	96
17	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C				
17	Cobra	2	L	8	fl oz/a	POST	C				
17	Crop oil concentrate		L	1	pt/a	POST	C				
17	AMS		WG	17	lb/100 gal	POST	C				
18	Boundary	6.5	L	1.5	pt/a	PRE	A	92	66	21	99
18	Flexstar GT 3.5	2.82	L	3.5	pt/a	POST	C				
18	MSO		L	1	% v/v	POST	C				
18	AMS		WG	17	lb/100 gal	POST	C				
19	Valor	51	WG	2	oz/a	PRE	A	99	79	25	91
19	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
19	Warrant	3	L	3	pt/a	POST	C				
19	Cobra	2	L	4	fl oz/a	POST	C				
19	Crop oil concentrate		L	1	% v/v	POST	C				
19	AMS		WG	17	lb/100 gal	POST	C				
20	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C			0	80
20	AMS		WG	17	lb/100 gal	POST	C				
21	Touchdown Total	4.17	SL	24	fl oz/a	EPOS	B	99	99	0	59
21	AMS		WG	17	lb/100 gal	EPOS	B				
21	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	D				
21	AMS		WG	17	lb/100 gal	LPOS	D				
22	LibertyLink soybean							0	0	0	0
22	Untreated										
23	LibertyLink soybean							99	68	3	93
23	Valor XLT	40.3	WG	3	oz/a	PRE	A				
23	Liberty	2.34	L	29	fl oz/a	POST	C				
23	AMS		WG	8.5	lb/100 gal	POST	C				
24	LibertyLink soybean							99	78	3	98
24	Fierce	76	WG	3	oz/a	PRE	A				
24	Liberty	2.34	L	29	fl oz/a	POST	C				
24	AMS		WG	8.5	lb/100 gal	POST	C				

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Rating Unit	percent	percent	percent	percent
Rating Date	Jun/16/2014	Jun/16/2014	Jun/23/2014	Jun/23/2014
Trt-Eval Interval	7 DA-B	7 DA-B	7 DA-C	7 DA-C
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code	AMAPO	AMBEL	GLXMA	ANGR
25	LibertyLink soybean							96	67	1	98
25	Authority MTZ	45	WG	13	oz/a	PRE	A				
25	Anthem	2.15	L	6	fl oz/a	PRE	A				
25	Liberty	2.34	L	29	fl oz/a	POST	C				
25	AMS		WG	8.5	lb/100 gal	POST	C				
26	LibertyLink soybean							90	63	0	94
26	Authority MTZ	45	WG	14	oz/a	PRE	A				
26	Accolade	80	WG	0.8	oz/a	PRE	A				
26	Liberty	2.34	L	29	fl oz/a	POST	C				
26	AMS		WG	8.5	lb/100 gal	POST	C				
27	LibertyLink soybean							73	55	5	99
27	Boundary	6.5	L	1.5	pt/a	PRE	A				
27	Liberty	2.34	L	29	fl oz/a	POST	C				
27	Outlook	6	L	12	fl oz/a	POST	C				
27	AMS		WG	8.5	lb/100 gal	POST	C				
28	LibertyLink soybean							99	99	18	86
28	Liberty	2.34	L	29	fl oz/a	EPOS	B				
28	Prefix	5.29	L	2	pt/a	EPOS	B				
28	AMS		WG	8.5	lb/100 gal	EPOS	B				
28	Liberty	2.34	L	29	fl oz/a	LPOS	D				
28	AMS		WG	8.5	lb/100 gal	LPOS	D				
LSD (P=.05)								10.3	9.2	3.2	3.8
CV								8.39	9.44	42.24	3.12

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

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Weed Code	CHEAL	AMAPO	AMBEL	ABUTH
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	7 DA-C	7 DA-C
# Subsamples, Dec.				

Trt No.	Treatment	Form Conc	Form Type	Form Rate	Rate Unit	Grow Stg	Appl Code				
1	Boundary	6.5	L	1.5	pt/a	PRE	A	99	99	98	99
1	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
1	AMS		WG	17	lb/100 gal	POST	C				
2	Optill Pro - Optill	68	WG	2	oz/a	PRE	A	99	99	98	99
2	Optill Pro - Outlook	6	L	10	fl oz/a	PRE	A				
2	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
2	AMS		WG	17	lb/100 gal	POST	C				
3	Fierce	76	WG	3	oz/a	PRE	A	99	99	99	99
3	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C				
3	AMS		WG	17	lb/100 gal	POST	C				
4	Prefix	5.29	L	2	pt/a	PRE	A	99	99	99	99
4	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
4	AMS		WG	17	lb/100 gal	POST	C				
5	Canopy	75	WG	2.25	oz/a	PRE	A	99	99	99	99
5	Abundit Extra	3	SL	32	fl oz/a	POST	C				
5	AMS		WG	2	lb/a	POST	C				
6	Sonic	70	WG	3	oz/a	PRE	A	99	99	99	99
6	Durango DMA	4	SL	24	fl oz/a	POST	C				
6	AMS		WG	17	lb/100 gal	POST	C				
7	Sonic	70	WG	4.5	oz/a	PRE	A	99	99	99	99
7	Durango DMA	4	SL	24	fl oz/a	POST	C				
7	AMS		WG	17	lb/100 gal	POST	C				
8	Sonic	70	WG	6	oz/a	PRE	A	99	99	99	99
8	Durango DMA	4	SL	24	fl oz/a	POST	C				
8	AMS		WG	17	lb/100 gal	POST	C				
9	Untreated							0	0	0	0
10	Optill	68	WG	2	oz/a	PRE	A	99	99	99	99
10	Zidua	85	WG	2	oz/a	PRE	A				
10	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
10	AMS		WG	17	lb/100 gal	POST	C				
11	Optill	68	WG	2	oz/a	PRE	A	99	99	98	99
11	Prowl H2O	3.8	L	2.5	pt/a	PRE	A				
11	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
11	AMS		WG	17	lb/100 gal	POST	C				
12	Trivence	61.3	WG	8	oz/a	PRE	A	99	99	99	99
12	Abundit Extra	3	SL	32	fl oz/a	POST	C				
12	Cinch	7.64	L	1	pt/a	POST	C				
12	AMS		WG	2	lb/a	POST	C				
13	Optill	68	WG	2	oz/a	PRE	A	99	99	99	99
13	Metribuzin	75	WG	6	oz/a	PRE	A				
13	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
13	Outlook	6	L	10	fl oz/a	POST	C				
13	AMS		WG	17	lb/100 gal	POST	C				

MSU Weed Science Research Program

Comparison of commercial herbicide programs in soybean

Trial ID: SOY03-14
 Conducted: Campus T-10

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code	CHEAL	AMAPO	AMBEL	ABUTH
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	7 DA-C	7 DA-C
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
14	Valor	51	WG	2	oz/a	PRE	A	99	99	99	99
14	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
14	Warrant	3	L	3	pt/a	POST	C				
14	AMS		WG	17	lb/100 gal	POST	C				
15	Valor XLT	40.3	WG	3	oz/a	PRE	A	99	99	99	99
15	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
15	Warrant	3	L	3	pt/a	POST	C				
15	AMS		WG	17	lb/100 gal	POST	C				
16	Sonic	70	WG	3	oz/a	PRE	A	99	99	98	99
16	Durango DMA	4	SL	24	fl oz/a	POST	C				
16	FirstRate	84	WG	0.3	oz/a	POST	C				
16	AMS		WG	17	lb/100 gal	POST	C				
17	Fierce	76	WG	3	oz/a	PRE	A	99	99	99	99
17	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C				
17	Cobra	2	L	8	fl oz/a	POST	C				
17	Crop oil concentrate		L	1	pt/a	POST	C				
17	AMS		WG	17	lb/100 gal	POST	C				
18	Boundary	6.5	L	1.5	pt/a	PRE	A	99	99	99	99
18	Flexstar GT 3.5	2.82	L	3.5	pt/a	POST	C				
18	MSO		L	1	% v/v	POST	C				
18	AMS		WG	17	lb/100 gal	POST	C				
19	Valor	51	WG	2	oz/a	PRE	A	99	99	99	99
19	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
19	Warrant	3	L	3	pt/a	POST	C				
19	Cobra	2	L	4	fl oz/a	POST	C				
19	Crop oil concentrate		L	1	% v/v	POST	C				
19	AMS		WG	17	lb/100 gal	POST	C				
20	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C	99	99	99	99
20	AMS		WG	17	lb/100 gal	POST	C				
21	Touchdown Total	4.17	SL	24	fl oz/a	EPOS	B	81	71	69	99
21	AMS		WG	17	lb/100 gal	EPOS	B				
21	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	D				
21	AMS		WG	17	lb/100 gal	LPOS	D				
22	LibertyLink soybean							0	0	0	0
22	Untreated										
23	LibertyLink soybean							99	99	99	99
23	Valor XLT	40.3	WG	3	oz/a	PRE	A				
23	Liberty	2.34	L	29	fl oz/a	POST	C				
23	AMS		WG	8.5	lb/100 gal	POST	C				
24	LibertyLink soybean							99	99	99	99
24	Fierce	76	WG	3	oz/a	PRE	A				
24	Liberty	2.34	L	29	fl oz/a	POST	C				
24	AMS		WG	8.5	lb/100 gal	POST	C				

MSU Weed Science Research Program

Comparison of commercial herbicide programs in soybean

Trial ID: SOY03-14
 Conducted: Campus T-10

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code	CHEAL	AMAPO	AMBEL	ABUTH
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	7 DA-C	7 DA-C
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code	CHEAL	AMAPO	AMBEL	ABUTH
25	LibertyLink soybean							99	99	99	99
25	Authority MTZ	45	WG	13	oz/a	PRE	A				
25	Anthem	2.15	L	6	fl oz/a	PRE	A				
25	Liberty	2.34	L	29	fl oz/a	POST	C				
25	AMS		WG	8.5	lb/100 gal	POST	C				
26	LibertyLink soybean							99	99	98	99
26	Authority MTZ	45	WG	14	oz/a	PRE	A				
26	Accolade	80	WG	0.8	oz/a	PRE	A				
26	Liberty	2.34	L	29	fl oz/a	POST	C				
26	AMS		WG	8.5	lb/100 gal	POST	C				
27	LibertyLink soybean							99	99	98	99
27	Boundary	6.5	L	1.5	pt/a	PRE	A				
27	Liberty	2.34	L	29	fl oz/a	POST	C				
27	Outlook	6	L	12	fl oz/a	POST	C				
27	AMS		WG	8.5	lb/100 gal	POST	C				
28	LibertyLink soybean							99	99	99	99
28	Liberty	2.34	L	29	fl oz/a	EPOS	B				
28	Prefix	5.29	L	2	pt/a	EPOS	B				
28	AMS		WG	8.5	lb/100 gal	EPOS	B				
28	Liberty	2.34	L	29	fl oz/a	LPOS	D				
28	AMS		WG	8.5	lb/100 gal	LPOS	D				
LSD (P=.05)								0.7	2.3	2.1	0.3
CV								0.56	1.77	1.63	0.21

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

MSU Weed Science Research Program

Comparison of commercial herbicide programs in soybean

Trial ID: SOY03-14
Conducted: Campus T-10Study Dir.: Sprague and Powell
Investigator: Christy Sprague

Weed Code									ANGR	CHEAL	AMAPO
Crop Code								GLXMA			
Rating Data Type								injury	control	control	control
Rating Unit								percent	percent	percent	percent
Rating Date								Jun/30/2014	Jun/30/2014	Jun/30/2014	Jun/30/2014
Trt-Eval Interval								14 DA-C	14 DA-C	14 DA-C	14 DA-C
# Subsamples, Dec.											
Trt No.	Treatment	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code				
1	Boundary	6.5	L	1.5	pt/a	PRE	A	0	98	99	99
1	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
1	AMS		WG	17	lb/100 gal	POST	C				
2	Optill Pro - Optill	68	WG	2	oz/a	PRE	A	0	95	99	99
2	Optill Pro - Outlook	6	L	10	fl oz/a	PRE	A				
2	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
2	AMS		WG	17	lb/100 gal	POST	C				
3	Fierce	76	WG	3	oz/a	PRE	A	0	99	99	99
3	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C				
3	AMS		WG	17	lb/100 gal	POST	C				
4	Prefix	5.29	L	2	pt/a	PRE	A	0	99	99	99
4	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
4	AMS		WG	17	lb/100 gal	POST	C				
5	Canopy	75	WG	2.25	oz/a	PRE	A	0	86	99	99
5	Abundit Extra	3	SL	32	fl oz/a	POST	C				
5	AMS		WG	2	lb/a	POST	C				
6	Sonic	70	WG	3	oz/a	PRE	A	0	90	99	99
6	Durango DMA	4	SL	24	fl oz/a	POST	C				
6	AMS		WG	17	lb/100 gal	POST	C				
7	Sonic	70	WG	4.5	oz/a	PRE	A	0	92	99	99
7	Durango DMA	4	SL	24	fl oz/a	POST	C				
7	AMS		WG	17	lb/100 gal	POST	C				
8	Sonic	70	WG	6	oz/a	PRE	A	0	96	99	99
8	Durango DMA	4	SL	24	fl oz/a	POST	C				
8	AMS		WG	17	lb/100 gal	POST	C				
9	Untreated							0	0	0	0
10	Optill	68	WG	2	oz/a	PRE	A	0	99	99	99
10	Zidua	85	WG	2	oz/a	PRE	A				
10	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
10	AMS		WG	17	lb/100 gal	POST	C				
11	Optill	68	WG	2	oz/a	PRE	A	0	98	99	99
11	Prowl H2O	3.8	L	2.5	pt/a	PRE	A				
11	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
11	AMS		WG	17	lb/100 gal	POST	C				
12	Trivence	61.3	WG	8	oz/a	PRE	A	7	99	99	99
12	Abundit Extra	3	SL	32	fl oz/a	POST	C				
12	Cinch	7.64	L	1	pt/a	POST	C				
12	AMS		WG	2	lb/a	POST	C				
13	Optill	68	WG	2	oz/a	PRE	A	0	99	99	99
13	Metribuzin	75	WG	6	oz/a	PRE	A				
13	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
13	Outlook	6	L	10	fl oz/a	POST	C				
13	AMS		WG	17	lb/100 gal	POST	C				

MSU Weed Science Research Program

Comparison of commercial herbicide programs in soybean

Trial ID: SOY03-14
 Conducted: Campus T-10

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code								ANGR	CHEAL	AMAPO	
Crop Code								GLXMA			
Rating Data Type								injury	control	control	
Rating Unit								percent	percent	percent	
Rating Date								Jun/30/2014	Jun/30/2014	Jun/30/2014	
Trt-Eval Interval								14 DA-C	14 DA-C	14 DA-C	
# Subsamples, Dec.											
25	LibertyLink soybean							0	99	99	99
25	Authority MTZ	45	WG	13	oz/a	PRE	A				
25	Anthem	2.15	L	6	fl oz/a	PRE	A				
25	Liberty	2.34	L	29	fl oz/a	POST	C				
25	AMS		WG	8.5	lb/100 gal	POST	C				
26	LibertyLink soybean							0	94	99	99
26	Authority MTZ	45	WG	14	oz/a	PRE	A				
26	Accolade	80	WG	0.8	oz/a	PRE	A				
26	Liberty	2.34	L	29	fl oz/a	POST	C				
26	AMS		WG	8.5	lb/100 gal	POST	C				
27	LibertyLink soybean							0	99	99	99
27	Boundary	6.5	L	1.5	pt/a	PRE	A				
27	Liberty	2.34	L	29	fl oz/a	POST	C				
27	Outlook	6	L	12	fl oz/a	POST	C				
27	AMS		WG	8.5	lb/100 gal	POST	C				
28	LibertyLink soybean							7	96	99	99
28	Liberty	2.34	L	29	fl oz/a	EPOS	B				
28	Prefix	5.29	L	2	pt/a	EPOS	B				
28	AMS		WG	8.5	lb/100 gal	EPOS	B				
28	Liberty	2.34	L	29	fl oz/a	LPOS	D				
28	AMS		WG	8.5	lb/100 gal	LPOS	D				
LSD (P=.05)								1.8	2.8	0.3	0.0
CV								51.62	2.24	0.23	0.0

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

MSU Weed Science Research Program

Comparison of commercial herbicide programs in soybean

Trial ID: SOY03-14
 Conducted: Campus T-10

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

								AMBEL	ABUTH	GLXMA	ANGR
Weed Code											
Crop Code											
Rating Data Type								control	control	injury	control
Rating Unit								percent	percent	percent	percent
Rating Date								Jun/30/2014	Jun/30/2014	Jul/14/2014	Jul/14/2014
Trt-Eval Interval								14 DA-C	14 DA-C	28 DA-C	28 DA-C
# Subsamples, Dec.											
Trt No.	Treatment	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code				
1	Boundary	6.5	L	1.5	pt/a	PRE	A	94	99	0	98
1	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
1	AMS		WG	17	lb/100 gal	POST	C				
2	Optill Pro - Optill	68	WG	2	oz/a	PRE	A	96	99	0	89
2	Optill Pro - Outlook	6	L	10	fl oz/a	PRE	A				
2	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
2	AMS		WG	17	lb/100 gal	POST	C				
3	Fierce	76	WG	3	oz/a	PRE	A	99	99	0	94
3	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C				
3	AMS		WG	17	lb/100 gal	POST	C				
4	Prefix	5.29	L	2	pt/a	PRE	A	99	99	0	98
4	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
4	AMS		WG	17	lb/100 gal	POST	C				
5	Canopy	75	WG	2.25	oz/a	PRE	A	99	99	0	87
5	Abundit Extra	3	SL	32	fl oz/a	POST	C				
5	AMS		WG	2	lb/a	POST	C				
6	Sonic	70	WG	3	oz/a	PRE	A	97	99	0	88
6	Durango DMA	4	SL	24	fl oz/a	POST	C				
6	AMS		WG	17	lb/100 gal	POST	C				
7	Sonic	70	WG	4.5	oz/a	PRE	A	98	99	0	91
7	Durango DMA	4	SL	24	fl oz/a	POST	C				
7	AMS		WG	17	lb/100 gal	POST	C				
8	Sonic	70	WG	6	oz/a	PRE	A	99	99	0	93
8	Durango DMA	4	SL	24	fl oz/a	POST	C				
8	AMS		WG	17	lb/100 gal	POST	C				
9	Untreated							0	0	0	0
10	Optill	68	WG	2	oz/a	PRE	A	98	99	0	97
10	Zidua	85	WG	2	oz/a	PRE	A				
10	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
10	AMS		WG	17	lb/100 gal	POST	C				
11	Optill	68	WG	2	oz/a	PRE	A	96	99	0	96
11	Prowl H2O	3.8	L	2.5	pt/a	PRE	A				
11	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
11	AMS		WG	17	lb/100 gal	POST	C				
12	Trivence	61.3	WG	8	oz/a	PRE	A	99	99	2	99
12	Abundit Extra	3	SL	32	fl oz/a	POST	C				
12	Cinch	7.64	L	1	pt/a	POST	C				
12	AMS		WG	2	lb/a	POST	C				
13	Optill	68	WG	2	oz/a	PRE	A	98	99	0	97
13	Metribuzin	75	WG	6	oz/a	PRE	A				
13	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
13	Outlook	6	L	10	fl oz/a	POST	C				
13	AMS		WG	17	lb/100 gal	POST	C				

MSU Weed Science Research Program

Comparison of commercial herbicide programs in soybean

Trial ID: SOY03-14
 Conducted: Campus T-10

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code	AMBEL	ABUTH	GLXMA	ANGR
Crop Code				
Rating Data Type	control	control	injury	control
Rating Unit	percent	percent	percent	percent
Rating Date	Jun/30/2014	Jun/30/2014	Jul/14/2014	Jul/14/2014
Trt-Eval Interval	14 DA-C	14 DA-C	28 DA-C	28 DA-C
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
14	Valor	51	WG	2	oz/a	PRE	A	99	99	1	97
14	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
14	Warrant	3	L	3	pt/a	POST	C				
14	AMS		WG	17	lb/100 gal	POST	C				
15	Valor XLT	40.3	WG	3	oz/a	PRE	A	99	99	1	97
15	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
15	Warrant	3	L	3	pt/a	POST	C				
15	AMS		WG	17	lb/100 gal	POST	C				
16	Sonic	70	WG	3	oz/a	PRE	A	97	99	0	93
16	Durango DMA	4	SL	24	fl oz/a	POST	C				
16	FirstRate	84	WG	0.3	oz/a	POST	C				
16	AMS		WG	17	lb/100 gal	POST	C				
17	Fierce	76	WG	3	oz/a	PRE	A	99	99	4	94
17	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C				
17	Cobra	2	L	8	fl oz/a	POST	C				
17	Crop oil concentrate		L	1	pt/a	POST	C				
17	AMS		WG	17	lb/100 gal	POST	C				
18	Boundary	6.5	L	1.5	pt/a	PRE	A	99	99	2	97
18	Flexstar GT 3.5	2.82	L	3.5	pt/a	POST	C				
18	MSO		L	1	% v/v	POST	C				
18	AMS		WG	17	lb/100 gal	POST	C				
19	Valor	51	WG	2	oz/a	PRE	A	99	99	4	96
19	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
19	Warrant	3	L	3	pt/a	POST	C				
19	Cobra	2	L	4	fl oz/a	POST	C				
19	Crop oil concentrate		L	1	% v/v	POST	C				
19	AMS		WG	17	lb/100 gal	POST	C				
20	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C	95	99	2	75
20	AMS		WG	17	lb/100 gal	POST	C				
21	Touchdown Total	4.17	SL	24	fl oz/a	EPOS	B	80	99	0	97
21	AMS		WG	17	lb/100 gal	EPOS	B				
21	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	D				
21	AMS		WG	17	lb/100 gal	LPOS	D				
22	LibertyLink soybean							0	0	0	0
22	Untreated										
23	LibertyLink soybean							99	99	0	95
23	Valor XLT	40.3	WG	3	oz/a	PRE	A				
23	Liberty	2.34	L	29	fl oz/a	POST	C				
23	AMS		WG	8.5	lb/100 gal	POST	C				
24	LibertyLink soybean							99	99	0	97
24	Fierce	76	WG	3	oz/a	PRE	A				
24	Liberty	2.34	L	29	fl oz/a	POST	C				
24	AMS		WG	8.5	lb/100 gal	POST	C				

MSU Weed Science Research Program

Comparison of commercial herbicide programs in soybean

Trial ID: SOY03-14
 Conducted: Campus T-10

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code	AMBEL	ABUTH	GLXMA	ANGR
Crop Code				
Rating Data Type	control	control	injury	control
Rating Unit	percent	percent	percent	percent
Rating Date	Jun/30/2014	Jun/30/2014	Jul/14/2014	Jul/14/2014
Trt-Eval Interval	14 DA-C	14 DA-C	28 DA-C	28 DA-C
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code	AMBEL	ABUTH	GLXMA	ANGR
25	LibertyLink soybean							97	99	0	98
25	Authority MTZ	45	WG	13	oz/a	PRE	A				
25	Anthem	2.15	L	6	fl oz/a	PRE	A				
25	Liberty	2.34	L	29	fl oz/a	POST	C				
25	AMS		WG	8.5	lb/100 gal	POST	C				
26	LibertyLink soybean							96	99	0	92
26	Authority MTZ	45	WG	14	oz/a	PRE	A				
26	Accolade	80	WG	0.8	oz/a	PRE	A				
26	Liberty	2.34	L	29	fl oz/a	POST	C				
26	AMS		WG	8.5	lb/100 gal	POST	C				
27	LibertyLink soybean							97	99	0	99
27	Boundary	6.5	L	1.5	pt/a	PRE	A				
27	Liberty	2.34	L	29	fl oz/a	POST	C				
27	Outlook	6	L	12	fl oz/a	POST	C				
27	AMS		WG	8.5	lb/100 gal	POST	C				
28	LibertyLink soybean							99	99	2	99
28	Liberty	2.34	L	29	fl oz/a	EPOS	B				
28	Prefix	5.29	L	2	pt/a	EPOS	B				
28	AMS		WG	8.5	lb/100 gal	EPOS	B				
28	Liberty	2.34	L	29	fl oz/a	LPOS	D				
28	AMS		WG	8.5	lb/100 gal	LPOS	D				
LSD (P=.05)								2.0	0.1	1.0	3.1
CV								1.55	0.1	116.16	2.47

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

MSU Weed Science Research Program

Comparison of commercial herbicide programs in soybean

Trial ID: SOY03-14
 Conducted: Campus T-10

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code	CHEAL	AMAPO	AMBEL	ABUTH
Crop Code				
Rating Data Type	control	control	control	control
Rating Unit	percent	percent	percent	percent
Rating Date	Jul/14/2014	Jul/14/2014	Jul/14/2014	Jul/14/2014
Trt-Eval Interval	28 DA-C	28 DA-C	28 DA-C	28 DA-C
# Subsamples, Dec.				

Trt No.	Treatment	Form Conc	Form Type	Form Rate	Rate Unit	Grow Stg	Appl Code				
1	Boundary	6.5	L	1.5	pt/a	PRE	A	97	98	93	99
1	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
1	AMS		WG	17	lb/100 gal	POST	C				
2	Optill Pro - Optill	68	WG	2	oz/a	PRE	A	99	99	94	99
2	Optill Pro - Outlook	6	L	10	fl oz/a	PRE	A				
2	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
2	AMS		WG	17	lb/100 gal	POST	C				
3	Fierce	76	WG	3	oz/a	PRE	A	99	99	98	99
3	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C				
3	AMS		WG	17	lb/100 gal	POST	C				
4	Prefix	5.29	L	2	pt/a	PRE	A	99	99	98	99
4	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
4	AMS		WG	17	lb/100 gal	POST	C				
5	Canopy	75	WG	2.25	oz/a	PRE	A	99	99	95	99
5	Abundit Extra	3	SL	32	fl oz/a	POST	C				
5	AMS		WG	2	lb/a	POST	C				
6	Sonic	70	WG	3	oz/a	PRE	A	99	99	94	99
6	Durango DMA	4	SL	24	fl oz/a	POST	C				
6	AMS		WG	17	lb/100 gal	POST	C				
7	Sonic	70	WG	4.5	oz/a	PRE	A	99	99	96	99
7	Durango DMA	4	SL	24	fl oz/a	POST	C				
7	AMS		WG	17	lb/100 gal	POST	C				
8	Sonic	70	WG	6	oz/a	PRE	A	99	99	97	99
8	Durango DMA	4	SL	24	fl oz/a	POST	C				
8	AMS		WG	17	lb/100 gal	POST	C				
9	Untreated							0	0	0	0
10	Optill	68	WG	2	oz/a	PRE	A	99	99	96	99
10	Zidua	85	WG	2	oz/a	PRE	A				
10	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
10	AMS		WG	17	lb/100 gal	POST	C				
11	Optill	68	WG	2	oz/a	PRE	A	99	99	94	99
11	Prowl H2O	3.8	L	2.5	pt/a	PRE	A				
11	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
11	AMS		WG	17	lb/100 gal	POST	C				
12	Trivence	61.3	WG	8	oz/a	PRE	A	99	99	99	99
12	Abundit Extra	3	SL	32	fl oz/a	POST	C				
12	Cinch	7.64	L	1	pt/a	POST	C				
12	AMS		WG	2	lb/a	POST	C				
13	Optill	68	WG	2	oz/a	PRE	A	99	99	94	99
13	Metribuzin	75	WG	6	oz/a	PRE	A				
13	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
13	Outlook	6	L	10	fl oz/a	POST	C				
13	AMS		WG	17	lb/100 gal	POST	C				

MSU Weed Science Research Program

Comparison of commercial herbicide programs in soybean

Trial ID: SOY03-14
Conducted: Campus T-10Study Dir.: Sprague and Powell
Investigator: Christy Sprague

Weed Code	CHEAL	AMAPO	AMBEL	ABUTH
Crop Code				
Rating Data Type	control	control	control	control
Rating Unit	percent	percent	percent	percent
Rating Date	Jul/14/2014	Jul/14/2014	Jul/14/2014	Jul/14/2014
Trt-Eval Interval	28 DA-C	28 DA-C	28 DA-C	28 DA-C
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
14	Valor	51	WG	2	oz/a	PRE	A	99	99	98	99
14	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
14	Warrant	3	L	3	pt/a	POST	C				
14	AMS		WG	17	lb/100 gal	POST	C				
15	Valor XLT	40.3	WG	3	oz/a	PRE	A	99	99	99	99
15	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
15	Warrant	3	L	3	pt/a	POST	C				
15	AMS		WG	17	lb/100 gal	POST	C				
16	Sonic	70	WG	3	oz/a	PRE	A	99	99	98	99
16	Durango DMA	4	SL	24	fl oz/a	POST	C				
16	FirstRate	84	WG	0.3	oz/a	POST	C				
16	AMS		WG	17	lb/100 gal	POST	C				
17	Fierce	76	WG	3	oz/a	PRE	A	99	99	98	99
17	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C				
17	Cobra	2	L	8	fl oz/a	POST	C				
17	Crop oil concentrate		L	1	pt/a	POST	C				
17	AMS		WG	17	lb/100 gal	POST	C				
18	Boundary	6.5	L	1.5	pt/a	PRE	A	99	99	98	99
18	Flexstar GT 3.5	2.82	L	3.5	pt/a	POST	C				
18	MSO		L	1	% v/v	POST	C				
18	AMS		WG	17	lb/100 gal	POST	C				
19	Valor	51	WG	2	oz/a	PRE	A	99	99	98	99
19	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C				
19	Warrant	3	L	3	pt/a	POST	C				
19	Cobra	2	L	4	fl oz/a	POST	C				
19	Crop oil concentrate		L	1	% v/v	POST	C				
19	AMS		WG	17	lb/100 gal	POST	C				
20	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C	95	85	92	99
20	AMS		WG	17	lb/100 gal	POST	C				
21	Touchdown Total	4.17	SL	24	fl oz/a	EPOS	B	99	99	98	99
21	AMS		WG	17	lb/100 gal	EPOS	B				
21	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	D				
21	AMS		WG	17	lb/100 gal	LPOS	D				
22	LibertyLink soybean							0	0	0	0
22	Untreated										
23	LibertyLink soybean							99	99	98	99
23	Valor XLT	40.3	WG	3	oz/a	PRE	A				
23	Liberty	2.34	L	29	fl oz/a	POST	C				
23	AMS		WG	8.5	lb/100 gal	POST	C				
24	LibertyLink soybean							99	99	97	99
24	Fierce	76	WG	3	oz/a	PRE	A				
24	Liberty	2.34	L	29	fl oz/a	POST	C				
24	AMS		WG	8.5	lb/100 gal	POST	C				

MSU Weed Science Research Program

Comparison of commercial herbicide programs in soybean

Trial ID: SOY03-14
 Conducted: Campus T-10

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code	CHEAL	AMAPO	AMBEL	ABUTH
Crop Code				
Rating Data Type	control	control	control	control
Rating Unit	percent	percent	percent	percent
Rating Date	Jul/14/2014	Jul/14/2014	Jul/14/2014	Jul/14/2014
Trt-Eval Interval	28 DA-C	28 DA-C	28 DA-C	28 DA-C
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code	CHEAL	AMAPO	AMBEL	ABUTH
25	LibertyLink soybean							99	99	96	99
25	Authority MTZ	45	WG	13	oz/a	PRE	A				
25	Anthem	2.15	L	6	fl oz/a	PRE	A				
25	Liberty	2.34	L	29	fl oz/a	POST	C				
25	AMS		WG	8.5	lb/100 gal	POST	C				
26	LibertyLink soybean							99	99	94	99
26	Authority MTZ	45	WG	14	oz/a	PRE	A				
26	Accolade	80	WG	0.8	oz/a	PRE	A				
26	Liberty	2.34	L	29	fl oz/a	POST	C				
26	AMS		WG	8.5	lb/100 gal	POST	C				
27	LibertyLink soybean							99	99	94	99
27	Boundary	6.5	L	1.5	pt/a	PRE	A				
27	Liberty	2.34	L	29	fl oz/a	POST	C				
27	Outlook	6	L	12	fl oz/a	POST	C				
27	AMS		WG	8.5	lb/100 gal	POST	C				
28	LibertyLink soybean							99	99	99	99
28	Liberty	2.34	L	29	fl oz/a	EPOS	B				
28	Prefix	5.29	L	2	pt/a	EPOS	B				
28	AMS		WG	8.5	lb/100 gal	EPOS	B				
28	Liberty	2.34	L	29	fl oz/a	LPOS	D				
28	AMS		WG	8.5	lb/100 gal	LPOS	D				
LSD (P=.05)								1.8	1.6	2.7	0.0
CV								1.41	1.27	2.17	0.0

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

MSU Weed Science Research Program

Comparison of commercial herbicide programs in soybean

Trial ID: SOY03-14
Conducted: Campus T-10Study Dir.: Sprague and Powell
Investigator: Christy Sprague

Weed Code

Crop Code

Rating Data Type

Rating Unit

Rating Date

Trt-Eval Interval

Subsamples, Dec.

GLXMA
moisture
percent
Oct/30/2014
136 DA-C
GLXMA
yield
bu/acre
Oct/30/2014
at 13% M

Trt No.	Treatment	Form Conc	Form Type	Form Rate	Rate Unit	Grow Stg	Appl Code		
1	Boundary	6.5	L	1.5	pt/a	PRE	A	16.7	70.3
1	Touchdown Total	4.17	SL	24	fl oz/a	POST	C		
1	AMS		WG	17	lb/100 gal	POST	C		
2	Optill Pro - Optill	68	WG	2	oz/a	PRE	A	16.5	69.2
2	Optill Pro - Outlook	6	L	10	fl oz/a	PRE	A		
2	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C		
2	AMS		WG	17	lb/100 gal	POST	C		
3	Fierce	76	WG	3	oz/a	PRE	A	16.7	67.6
3	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C		
3	AMS		WG	17	lb/100 gal	POST	C		
4	Prefix	5.29	L	2	pt/a	PRE	A	16.4	69.3
4	Touchdown Total	4.17	SL	24	fl oz/a	POST	C		
4	AMS		WG	17	lb/100 gal	POST	C		
5	Canopy	75	WG	2.25	oz/a	PRE	A	16.6	69.9
5	Abundit Extra	3	SL	32	fl oz/a	POST	C		
5	AMS		WG	2	lb/a	POST	C		
6	Sonic	70	WG	3	oz/a	PRE	A	16.7	67.3
6	Durango DMA	4	SL	24	fl oz/a	POST	C		
6	AMS		WG	17	lb/100 gal	POST	C		
7	Sonic	70	WG	4.5	oz/a	PRE	A	16.7	71.4
7	Durango DMA	4	SL	24	fl oz/a	POST	C		
7	AMS		WG	17	lb/100 gal	POST	C		
8	Sonic	70	WG	6	oz/a	PRE	A	16.6	70.9
8	Durango DMA	4	SL	24	fl oz/a	POST	C		
8	AMS		WG	17	lb/100 gal	POST	C		
9	Untreated							17.5	28.0
10	Optill	68	WG	2	oz/a	PRE	A	16.6	70.9
10	Zidua	85	WG	2	oz/a	PRE	A		
10	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C		
10	AMS		WG	17	lb/100 gal	POST	C		
11	Optill	68	WG	2	oz/a	PRE	A	16.7	67.0
11	Prowl H2O	3.8	L	2.5	pt/a	PRE	A		
11	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C		
11	AMS		WG	17	lb/100 gal	POST	C		
12	Trivence	61.3	WG	8	oz/a	PRE	A	16.6	69.8
12	Abundit Extra	3	SL	32	fl oz/a	POST	C		
12	Cinch	7.64	L	1	pt/a	POST	C		
12	AMS		WG	2	lb/a	POST	C		
13	Optill	68	WG	2	oz/a	PRE	A	16.7	68.4
13	Metribuzin	75	WG	6	oz/a	PRE	A		
13	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C		
13	Outlook	6	L	10	fl oz/a	POST	C		
13	AMS		WG	17	lb/100 gal	POST	C		

MSU Weed Science Research Program

Comparison of commercial herbicide programs in soybean

Trial ID: SOY03-14
Conducted: Campus T-10Study Dir.: Sprague and Powell
Investigator: Christy Sprague

Weed Code

Crop Code

Rating Data Type

Rating Unit

Rating Date

Trt-Eval Interval

Subsamples, Dec.

GLXMA
moisture
percent
Oct/30/2014
136 DA-C
GLXMA
yield
bu/acre
Oct/30/2014
at 13% M

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code		
14	Valor	51	WG	2	oz/a	PRE	A	16.7	69.4
14	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C		
14	Warrant	3	L	3	pt/a	POST	C		
14	AMS		WG	17	lb/100 gal	POST	C		
15	Valor XLT	40.3	WG	3	oz/a	PRE	A	16.9	69.6
15	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C		
15	Warrant	3	L	3	pt/a	POST	C		
15	AMS		WG	17	lb/100 gal	POST	C		
16	Sonic	70	WG	3	oz/a	PRE	A	16.6	69.7
16	Durango DMA	4	SL	24	fl oz/a	POST	C		
16	FirstRate	84	WG	0.3	oz/a	POST	C		
16	AMS		WG	17	lb/100 gal	POST	C		
17	Fierce	76	WG	3	oz/a	PRE	A	16.6	65.3
17	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C		
17	Cobra	2	L	8	fl oz/a	POST	C		
17	Crop oil concentrate		L	1	pt/a	POST	C		
17	AMS		WG	17	lb/100 gal	POST	C		
18	Boundary	6.5	L	1.5	pt/a	PRE	A	16.6	68.7
18	Flexstar GT 3.5	2.82	L	3.5	pt/a	POST	C		
18	MSO		L	1	% v/v	POST	C		
18	AMS		WG	17	lb/100 gal	POST	C		
19	Valor	51	WG	2	oz/a	PRE	A	16.6	64.4
19	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	C		
19	Warrant	3	L	3	pt/a	POST	C		
19	Cobra	2	L	4	fl oz/a	POST	C		
19	Crop oil concentrate		L	1	% v/v	POST	C		
19	AMS		WG	17	lb/100 gal	POST	C		
20	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C	16.3	69.4
20	AMS		WG	17	lb/100 gal	POST	C		
21	Touchdown Total	4.17	SL	24	fl oz/a	EPOS	B	16.9	69.3
21	AMS		WG	17	lb/100 gal	EPOS	B		
21	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	D		
21	AMS		WG	17	lb/100 gal	LPOS	D		
22	LibertyLink soybean							17.1	27.4
22	Untreated								
23	LibertyLink soybean							17.1	72.6
23	Valor XLT	40.3	WG	3	oz/a	PRE	A		
23	Liberty	2.34	L	29	fl oz/a	POST	C		
23	AMS		WG	8.5	lb/100 gal	POST	C		
24	LibertyLink soybean							17.1	70.7
24	Fierce	76	WG	3	oz/a	PRE	A		
24	Liberty	2.34	L	29	fl oz/a	POST	C		
24	AMS		WG	8.5	lb/100 gal	POST	C		

MSU Weed Science Research Program

Comparison of commercial herbicide programs in soybean

Trial ID: SOY03-14
 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
 moisture
 percent
 Oct/30/2014
 136 DA-C

GLXMA
 yield
 bu/acre
 Oct/30/2014
 at 13% M

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code	GLXMA moisture percent	GLXMA yield bu/acre
25	LibertyLink soybean							17.1	70.3
25	Authority MTZ	45	WG	13	oz/a	PRE	A		
25	Anthem	2.15	L	6	fl oz/a	PRE	A		
25	Liberty	2.34	L	29	fl oz/a	POST	C		
25	AMS		WG	8.5	lb/100 gal	POST	C		
26	LibertyLink soybean							17.2	70.8
26	Authority MTZ	45	WG	14	oz/a	PRE	A		
26	Accolade	80	WG	0.8	oz/a	PRE	A		
26	Liberty	2.34	L	29	fl oz/a	POST	C		
26	AMS		WG	8.5	lb/100 gal	POST	C		
27	LibertyLink soybean							17.1	73.7
27	Boundary	6.5	L	1.5	pt/a	PRE	A		
27	Liberty	2.34	L	29	fl oz/a	POST	C		
27	Outlook	6	L	12	fl oz/a	POST	C		
27	AMS		WG	8.5	lb/100 gal	POST	C		
28	LibertyLink soybean							16.9	72.2
28	Liberty	2.34	L	29	fl oz/a	EPOS	B		
28	Prefix	5.29	L	2	pt/a	EPOS	B		
28	AMS		WG	8.5	lb/100 gal	EPOS	B		
28	Liberty	2.34	L	29	fl oz/a	LPOS	D		
28	AMS		WG	8.5	lb/100 gal	LPOS	D		
LSD (P=.05)								0.45	4.05
CV								1.91	4.31

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