

MSU Weed Science Research Program

Comparison of commercial herbicide programs in soybean

Trial ID: SOY02-12 Study Dir.: Sprague, Powell
 Conducted: T-10 Campus Investigator: Christy Sprague

Date Planted: May/17/2012 **Row Spacing:** 30 IN
Variety: Asgrow 2330 **No. of Reps:** 4
Population: 150,000 seeds/acre **% OM:** 2.3
Soil Type: Loam **pH:** 7.5
Plot Size: 10 X 35 FT **Design:** RANDOMIZED COMPLETE BLOCK

Tillage: Fall chisel plow, spring soil finish
Fertilizer: None at planting

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 ARTEMISII FOLIA L.
5.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
Crop	Code	Common Name	
1.	GLXMA	SOYBEAN	

Application Description

	A	B	C	D
Application Timing:	PRE	MPOS	POST	LPOS
Date Treated:	May/17/2012	Jun/11/2012	Jun/14/2012	Jul/10/2012
Time Treated:	3:15 PM	12:40 PM	11:15 AM	9:35 AM
% Cloud Cover:	10	40	0	5
Air Temp., Unit:	72 F	79 F	78 F	75 F
% Relative Humidity:	26	53	34	45
Wind Speed/Unit/Dir:	1 mph W	6 mph E	2 mph S	1 mph N
Soil Temp., Unit:	69 F	71 F	69 F	75 F
Soil/Leaf Surface M:	3 5	5 5	5 5	5 5
Soil Moist (1=w 5=d):	3	4	5	5

Crop Stage at Each Application

	A	B	C	D
Crop Name:	GLXMA	GLXMA	GLXMA	GLXMA
Height (In.):	-	7"	7"	18"
Stage (L):	-	V3	V3	R1

Weed Stage at Each Application

	A	B	C	D
Weed 1 Name:	ANGR	ANGR	ANGR	ANGR
Height (In.):	-	7"	7"	5"
Stage (L):	-	3-4	3-4	3
Weed 2 Name:	CHEAL	CHEAL	CHEAL	CHEAL
Height (In.):	-	4"	4"	5"
Stage (L):	-	13	13	10-16
Weed 3 Name:	AMAPO	AMAPO	AMAPO	AMAPO
Height (In.):	-	5"	5"	3"
Stage (L):	-	9	9	4-8
Weed 4 Name:	AMBEL	AMBEL	AMBEL	AMBEL
Height (In.):	-	3"	3"	4"
Stage (L):	-	7	7	8
Weed 5 Name:	ABUTH	ABUTH	ABUTH	ABUTH
Height (In.):	-	2"	2"	-
Stage (L):	-	3	3	-

Weed Density (plants/sq. ft.)

Date:	1 Jul/09/2012
Weed Name:	ANGR
Density:	32
Date:	Jul/09/2012
Weed Name:	CHEAL
Density:	9
Date:	Jul/09/2012
Weed Name:	AMAPO
Density:	3
Date:	Jul/09/2012
Weed Name:	AMBEL
Density:	8
Date:	Jul/09/2012
Weed Name:	ABUTH
Density:	<1

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Appl	Sprayer	Speed	Application Equipment							
			Nozzle	Nozzle	Nozzle	Nozzle	Boom	GPA	Carrier	PSI
A	Cub	3.8	AI XR	11003	22"	20"	100"	19	Water	28
B	Cub	3.8	AI XR	11003	22"	20"	100"	19	Water	28
C	Cub	3.8	AI XR	11003	25"	20"	100"	19	Water	28
D	Cub	3.8	AI XR	11003	35"	20"	100"	19	Water	28

Comments: Treatments #23-25 are planted with DF 9231 Liberty Link seed.

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Comparison of commercial herbicide programs in soybean

Trial ID: SOY02-12
 Conducted: T-10 Campus

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Code								ANGR	CHEAL	AMAPO	AMBEL
Crop Code							GLXMA				
Rating Data Type							injury	control	control	control	control
Rating Unit							percent	percent	percent	percent	percent
Rating Date							Jun/11/2012	Jun/11/2012	Jun/11/2012	Jun/11/2012	Jun/11/2012
Trt-Eval Interval							25 DA-A	25 DA-A	25 DA-A	25 DA-A	25 DA-A
ARM Action Codes											
# Subsamples, Dec.							0	0	0	0	0
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg	Appl Code					
1	Canopy	75	WG	2.25 oz/a	PRE	A	10	65	73	94	69
	Valor	51	WG	2 oz/a	PRE	A					
	Sencor	75	WG	2 oz/a	PRE	A					
	Prowl H2O	3.8	L	2 pt/a	PRE	A					
2	Valor	51	WG	3 oz/a	PRE	A	11	53	60	91	54
	Roundup PowerMax	4.5	SL	22 fl oz/a	POST	C					
	AMS		WG	17 lb/100 gal	POST	C					
3	Linex	4	L	1.5 pt/a	PRE	A	0	40	74	90	58
	Roundup PowerMax	4.5	SL	22 fl oz/a	POST	C					
	AMS		WG	17 lb/100 gal	POST	C					
4	Linex	4	L	0.75 pt/a	PRE	A	1	41	85	64	65
	Sencor	75	WG	5.33 oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	22 fl oz/a	POST	C					
	AMS		WG	17 lb/100 gal	POST	C					
5	Boundary	6.5	L	1.5 pt/a	PRE	A	4	68	58	79	61
	Touchdown Total	4.17	SL	24 fl oz/a	POST	C					
	AMS		WG	17 lb/100 gal	POST	C					
6	Prefix	5.29	L	2 pt/a	PRE	A	1	64	25	75	56
	Touchdown Total	4.17	SL	24 fl oz/a	POST	C					
	AMS		WG	17 lb/100 gal	POST	C					
7	Prefix	5.29	L	2 pt/a	PRE	A	0	64	48	52	69
	Sharpen	2.85	L	1 fl oz/a	PRE	A					
	Touchdown Total	4.17	SL	24 fl oz/a	POST	C					
	AMS		WG	17 lb/100 gal	POST	C					
8	OpTill Pro - OpTill	68	WG	2 oz/a	PRE	A	0	47	65	81	65
	OpTill Pro - Outlook6		L	10 fl oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	22 fl oz/a	POST	C					
	AMS		WG	8.5 lb/100 gal	POST	C					
9	Zidua	85	WG	2.5 oz/a	PRE	A	0	75	40	79	64
	Sharpen	2.85	L	1 fl oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	22 fl oz/a	POST	C					
	AMS		WG	8.5 lb/100 gal	POST	C					
10	Fierce	76	WG	3 oz/a	PRE	A	13	59	66	93	64
	Roundup PowerMax	4.5	SL	22 fl oz/a	POST	C					
	AMS		WG	17 lb/100 gal	POST	C					
11	Fierce XLT (4 oz)						19	64	76	90	74
	Valor (Premix)	51	WG	2 oz/a	PRE	A					
	Classic (Premix)	25	WG	1.25 oz/a	PRE	A					
	V-10206 (Premix)	85	WG	1 oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	22 fl oz/a	POST	C					
	AMS		WG	17 lb/100 gal	POST	C					
12	Sonic	70	WG	3 oz/a	PRE	A	1	63	99	78	59
	Durango DMA	4	SL	24 fl oz/a	POST	C					
	AMS		WG	17 lb/100 gal	POST	C					
13	Authority First	70	WG	6.45 oz/a	PRE	A	6	73	99	89	80
	Dual II Magnum	7.64	L	1 pt/a	PRE	A					
	Cadet	0.91	L	0.6 fl oz/a	POST	C					
	Roundup PowerMax	4.5	SL	22 fl oz/a	POST	C					
	AMS		WG	17 lb/100 gal	POST	C					

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Weed Code								ANGR	CHEAL	AMAPO	AMBEL
Crop Code								GLXMA			
Rating Data Type								injury	control	control	control
Rating Unit								percent	percent	percent	percent
Rating Date								Jun/11/2012	Jun/11/2012	Jun/11/2012	Jun/11/2012
Trt-Eval Interval								25 DA-A	25 DA-A	25 DA-A	25 DA-A
ARM Action Codes											
# Subsamples, Dec.								0	0	0	0
Trt Treatment	Form	Form	Rate	Grow	Appl						
No. Name	Conc	Type	Unit	Stg	Code						
14 Authority XL	70	WG	3.2 oz/a	PRE	A	1		45	91	85	58
Dual II Magnum	7.64	L	1 pt/a	PRE	A						
Cadet	0.91	L	0.6 fl oz/a	POST	C						
Roundup PowerMax	4.5	SL	22 fl oz/a	POST	C						
AMS		WG	17 lb/100 gal	POST	C						
15 Command	3	ME	1.3 pt/a	PRE	A	11		90	86	56	77
Dual II Magnum	7.64	L	1 pt/a	PRE	A						
Sencor	75	WG	5 oz/a	PRE	A						
Cadet	0.91	L	0.6 fl oz/a	POST	C						
Roundup PowerMax	4.5	SL	22 fl oz/a	POST	C						
AMS		WG	17 lb/100 gal	POST	C						
16 Boundary	6.5	L	1.5 pt/a	PRE	A	4		65	60	60	64
Flexstar GT	2.82	L	3.5 pt/a	POST	C						
MSO		L	1 % v/v	POST	C						
AMS		WG	17 lb/100 gal	POST	C						
17 Classic	25	WG	0.33 oz/a	MPOS	B						
Abundit Extra	3	SL	32 fl oz/a	MPOS	B						
AMS		WG	17 lb/100 gal	MPOS	B						
18 Warrant	3	L	3 pt/a	MPOS	B						
Roundup PowerMax	4.5	SL	22 fl oz/a	MPOS	B						
AMS		WG	17 lb/100 gal	MPOS	B						
19 FirstRate	84	WG	0.3 oz/a	MPOS	B						
Durango DMA	4	SL	24 fl oz/a	MPOS	B						
AMS		WG	17 lb/100 gal	MPOS	B						
Durango DMA	4	SL	24 fl oz/a	LPOS	D						
AMS		WG	17 lb/100 gal	LPOS	D						
20 Roundup PowerMax	4.5	SL	22 fl oz/a	POST	C						
AMS		WG	17 lb/100 gal	POST	C						
21 Roundup PowerMax	4.5	SL	22 fl oz/a	MPOS	B						
AMS		WG	17 lb/100 gal	MPOS	B						
Roundup PowerMax	4.5	SL	22 fl oz/a	LPOS	D						
AMS		WG	17 lb/100 gal	LPOS	D						
22 Untreated						0		0	0	0	0
23 Liberty Link seed						0		40	68	92	64
Valor XLT	40.3	WG	3 oz/a	PRE	A						
Liberty	2.34	L	29 fl oz/a	POST	C						
AMS		WG	8.5 lb/100 gal	POST	C						
24 Liberty Link seed											
Prefix	5.29	L	2 pt/a	MPOS	B						
Liberty	2.34	L	29 fl oz/a	MPOS	B						
AMS		WG	8.5 lb/100 gal	MPOS	B						
25 Liberty Link seed											
Liberty	2.34	L	29 fl oz/a	MPOS	B						
AMS		WG	8.5 lb/100 gal	MPOS	B						
Liberty	2.34	L	29 fl oz/a	LPOS	D						
AMS		WG	8.5 lb/100 gal	LPOS	D						
LSD (P=.05)						6.9		24.0	16.7	24.8	15.8
CV						108.49		29.83	17.9	23.22	18.16

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

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Weed Code									ANGR	CHEAL	AMAPO	AMBEL
Crop Code									GLXMA			
Rating Data Type									injury	control	control	control
Rating Unit									percent	percent	percent	percent
Rating Date									Jun/25/2012	Jun/25/2012	Jun/25/2012	Jun/25/2012
Trt-Eval Interval									14 DA-B	14 DA-B	14 DA-B	14 DA-B
ARM Action Codes												
# Subsamples, Dec.									0	0	0	0
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code					
1	Canopy	75	WG	2.25	oz/a	PRE	A	1	63	67	99	65
	Valor	51	WG	2	oz/a	PRE	A					
	Sencor	75	WG	2	oz/a	PRE	A					
	Prowl H2O	3.8	L	2	pt/a	PRE	A					
2	Valor	51	WG	3	oz/a	PRE	A	2	99	98	99	92
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
3	Linex	4	L	1.5	pt/a	PRE	A	0	99	96	99	90
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
4	Linex	4	L	0.75	pt/a	PRE	A	0	99	99	99	94
	Sencor	75	WG	5.33	oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
5	Boundary	6.5	L	1.5	pt/a	PRE	A	0	99	81	99	90
	Touchdown Total	4.17	SL	24	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
6	Prefix	5.29	L	2	pt/a	PRE	A	0	99	77	99	98
	Touchdown Total	4.17	SL	24	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
7	Prefix	5.29	L	2	pt/a	PRE	A	0	99	82	99	98
	Sharpen	2.85	L	1	fl oz/a	PRE	A					
	Touchdown Total	4.17	SL	24	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
8	OpTill Pro - OpTill	68	WG	2	oz/a	PRE	A	2	99	92	99	92
	OpTill Pro - Outlook6		L	10	fl oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
9	Zidua	85	WG	2.5	oz/a	PRE	A	0	99	88	99	98
	Sharpen	2.85	L	1	fl oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
10	Fierce	76	WG	3	oz/a	PRE	A	2	99	98	99	97
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
11	Fierce XLT (4 oz)							2	99	99	99	98
	Valor (Premix)	51	WG	2	oz/a	PRE	A					
	Classic (Premix)	25	WG	1.25	oz/a	PRE	A					
	V-10206 (Premix)	85	WG	1	oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
12	Sonic	70	WG	3	oz/a	PRE	A	1	99	98	99	99
	Durango DMA	4	SL	24	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
13	Authority First	70	WG	6.45	oz/a	PRE	A	9	99	99	99	88
	Dual II Magnum	7.64	L	1	pt/a	PRE	A					
	Cadet	0.91	L	0.6	fl oz/a	POST	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
14	Authority XL	70	WG	3.2	oz/a	PRE	A	9	99	99	99	80
	Dual II Magnum	7.64	L	1	pt/a	PRE	A					
	Cadet	0.91	L	0.6	fl oz/a	POST	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					

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Weed Code								ANGR	CHEAL	AMAPO	AMBEL	
Crop Code								GLXMA				
Rating Data Type								injury	control	control	control	
Rating Unit								percent	percent	percent	percent	
Rating Date								Jun/25/2012	Jun/25/2012	Jun/25/2012	Jun/25/2012	
Trt-Eval Interval								14 DA-B	14 DA-B	14 DA-B	14 DA-B	
ARM Action Codes												
# Subsamples, Dec.								0	0	0	0	
Trt	Treatment	Form	Form	Rate	Grow	Appl						
No.	Name	Conc	Type	Rate	Unit	Stg	Code					
15	Command	3	ME	1.3	pt/a	PRE	A	9	99	99	98	
	Dual II Magnum	7.64	L	1	pt/a	PRE	A					
	Sencor	75	WG	5	oz/a	PRE	A					
	Cadet	0.91	L	0.6	fl oz/a	POST	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
16	Boundary	6.5	L	1.5	pt/a	PRE	A	13	99	99	98	
	Flexstar GT	2.82	L	3.5	pt/a	POST	C					
	MSO		L	1	% v/v	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
17	Classic	25	WG	0.33	oz/a	MPOS	B	3	98	94	99	
	Abundit Extra	3	SL	32	fl oz/a	MPOS	B					
	AMS		WG	17	lb/100 gal	MPOS	B					
18	Warrant	3	L	3	pt/a	MPOS	B	2	99	80	99	
	Roundup PowerMax	4.5	SL	22	fl oz/a	MPOS	B					
	AMS		WG	17	lb/100 gal	MPOS	B					
19	FirstRate	84	WG	0.3	oz/a	MPOS	B	2	99	97	99	
	Durango DMA	4	SL	24	fl oz/a	MPOS	B					
	AMS		WG	17	lb/100 gal	MPOS	B					
	Durango DMA	4	SL	24	fl oz/a	LPOS	D					
	AMS		WG	17	lb/100 gal	LPOS	D					
20	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C	0	99	83	99	
	AMS		WG	17	lb/100 gal	POST	C					
21	Roundup PowerMax	4.5	SL	22	fl oz/a	MPOS	B	0	98	89	99	
	AMS		WG	17	lb/100 gal	MPOS	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	LPOS	D					
	AMS		WG	17	lb/100 gal	LPOS	D					
22	Untreated							0	0	0	0	
23	Liberty Link seed							0	97	99	99	
	Valor XLT	40.3	WG	3	oz/a	PRE	A					
	Liberty	2.34	L	29	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
24	Liberty Link seed							18	84	95	87	
	Prefix	5.29	L	2	pt/a	MPOS	B					
	Liberty	2.34	L	29	fl oz/a	MPOS	B					
	AMS		WG	8.5	lb/100 gal	MPOS	B					
25	Liberty Link seed							2	96	98	99	
	Liberty	2.34	L	29	fl oz/a	MPOS	B					
	AMS		WG	8.5	lb/100 gal	MPOS	B					
	Liberty	2.34	L	29	fl oz/a	LPOS	D					
	AMS		WG	8.5	lb/100 gal	LPOS	D					
LSD (P=.05)								2.1	5.5	4.7	2.4	6.0
CV								51.88	4.17	3.77	1.83	4.8

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

MSU Weed Science Research Program

Weed Code	ABUTH		ANGR	CHEAL	AMAPO
Crop Code		GLXMA			
Rating Data Type	control	injury	control	control	control
Rating Unit	percent	percent	percent	percent	percent
Rating Date	Jun/25/2012	Jul/09/2012	Jul/09/2012	Jul/09/2012	Jul/09/2012
Trt-Eval Interval	14 DA-B	28 DA-B	28 DA-B	28 DA-B	28 DA-B
ARM Action Codes					
# Subsamples, Dec.	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code					
1	Canopy	75	WG	2.25	oz/a	PRE	A	99	0	75	69	99
	Valor	51	WG	2	oz/a	PRE	A					
	Sencor	75	WG	2	oz/a	PRE	A					
	Prowl H2O	3.8	L	2	pt/a	PRE	A					
2	Valor	51	WG	3	oz/a	PRE	A	99	0	99	99	99
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
3	Linex	4	L	1.5	pt/a	PRE	A	99	0	99	97	99
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
4	Linex	4	L	0.75	pt/a	PRE	A	99	0	99	99	99
	Sencor	75	WG	5.33	oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
5	Boundary	6.5	L	1.5	pt/a	PRE	A	99	0	99	89	99
	Touchdown Total	4.17	SL	24	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
6	Prefix	5.29	L	2	pt/a	PRE	A	99	0	99	87	99
	Touchdown Total	4.17	SL	24	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
7	Prefix	5.29	L	2	pt/a	PRE	A	99	0	99	92	99
	Sharpen	2.85	L	1	fl oz/a	PRE	A					
	Touchdown Total	4.17	SL	24	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
8	OpTill Pro - OpTill	68	WG	2	oz/a	PRE	A	99	0	99	99	99
	OpTill Pro - Outlook6		L	10	fl oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
9	Zidua	85	WG	2.5	oz/a	PRE	A	99	0	99	96	99
	Sharpen	2.85	L	1	fl oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
10	Fierce	76	WG	3	oz/a	PRE	A	99	0	99	99	99
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
11	Fierce XLT (4 oz)							99	0	98	99	99
	Valor (Premix)	51	WG	2	oz/a	PRE	A					
	Classic (Premix)	25	WG	1.25	oz/a	PRE	A					
	V-10206 (Premix)	85	WG	1	oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
12	Sonic	70	WG	3	oz/a	PRE	A	99	0	99	99	99
	Durango DMA	4	SL	24	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
13	Authority First	70	WG	6.45	oz/a	PRE	A	99	0	99	99	99
	Dual II Magnum	7.64	L	1	pt/a	PRE	A					
	Cadet	0.91	L	0.6	fl oz/a	POST	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
14	Authority XL	70	WG	3.2	oz/a	PRE	A	99	0	99	99	99
	Dual II Magnum	7.64	L	1	pt/a	PRE	A					
	Cadet	0.91	L	0.6	fl oz/a	POST	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					

MSU Weed Science Research Program

Weed Code							ABUTH		ANGR	CHEAL	AMAPO	
Crop Code								GLXMA				
Rating Data Type							control	injury	control	control	control	
Rating Unit							percent	percent	percent	percent	percent	
Rating Date							Jun/25/2012	Jul/09/2012	Jul/09/2012	Jul/09/2012	Jul/09/2012	
Trt-Eval Interval							14 DA-B	28 DA-B	28 DA-B	28 DA-B	28 DA-B	
ARM Action Codes												
# Subsamples, Dec.							0	0	0	0	0	
Trt No.	Treatment	Form Conc	Form Type	Rate	Unit	Grow Stg	Appl Code					
15	Command	3	ME	1.3	pt/a	PRE	A	99	0	99	99	
	Dual II Magnum	7.64	L	1	pt/a	PRE	A					
	Sencor	75	WG	5	oz/a	PRE	A					
	Cadet	0.91	L	0.6	fl oz/a	POST	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
16	Boundary	6.5	L	1.5	pt/a	PRE	A	99	0	99	96	
	Flexstar GT	2.82	L	3.5	pt/a	POST	C					
	MSO		L	1	% v/v	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
17	Classic	25	WG	0.33	oz/a	MPOS	B	99	0	96	86	
	Abundit Extra	3	SL	32	fl oz/a	MPOS	B					
	AMS		WG	17	lb/100 gal	MPOS	B					
18	Warrant	3	L	3	pt/a	MPOS	B	99	0	98	73	
	Roundup PowerMax	4.5	SL	22	fl oz/a	MPOS	B					
	AMS		WG	17	lb/100 gal	MPOS	B					
19	FirstRate	84	WG	0.3	oz/a	MPOS	B	99	0	98	91	
	Durango DMA	4	SL	24	fl oz/a	MPOS	B					
	AMS		WG	17	lb/100 gal	MPOS	B					
	Durango DMA	4	SL	24	fl oz/a	LPOS	D					
	AMS		WG	17	lb/100 gal	LPOS	D					
20	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C	99	0	99	91	
	AMS		WG	17	lb/100 gal	POST	C					
21	Roundup PowerMax	4.5	SL	22	fl oz/a	MPOS	B	99	0	97	82	
	AMS		WG	17	lb/100 gal	MPOS	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	LPOS	D					
	AMS		WG	17	lb/100 gal	LPOS	D					
22	Untreated							0	0	0	0	
23	Liberty Link seed							99	0	93	96	
	Valor XLT	40.3	WG	3	oz/a	PRE	A					
	Liberty	2.34	L	29	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
24	Liberty Link seed							99	5	77	88	
	Prefix	5.29	L	2	pt/a	MPOS	B					
	Liberty	2.34	L	29	fl oz/a	MPOS	B					
	AMS		WG	8.5	lb/100 gal	MPOS	B					
25	Liberty Link seed							99	0	88	89	
	Liberty	2.34	L	29	fl oz/a	MPOS	B					
	AMS		WG	8.5	lb/100 gal	MPOS	B					
	Liberty	2.34	L	29	fl oz/a	LPOS	D					
	AMS		WG	8.5	lb/100 gal	LPOS	D					
LSD (P=.05)								0.0	0.3	4.2	5.1	3.1
CV								0.0	111.11	3.19	4.08	2.29

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

MSU Weed Science Research Program

Weed Code	AMBEL	ABUTH	GLXMA	ANGR	CHEAL
Crop Code					
Rating Data Type	control	control	injury	control	control
Rating Unit	percent	percent	percent	percent	percent
Rating Date	Jul/09/2012	Jul/09/2012	Jul/25/2012	Jul/25/2012	Jul/25/2012
Trt-Eval Interval	28 DA-B	28 DA-B	15 DA-D	15 DA-D	15 DA-D
ARM Action Codes					
# Subsamples, Dec.	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code					
1	Canopy	75	WG	2.25	oz/a	PRE	A	67	99	0	63	68
	Valor	51	WG	2	oz/a	PRE	A					
	Sencor	75	WG	2	oz/a	PRE	A					
	Prowl H2O	3.8	L	2	pt/a	PRE	A					
2	Valor	51	WG	3	oz/a	PRE	A	97	99	0	93	98
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
3	Linex	4	L	1.5	pt/a	PRE	A	97	99	0	95	96
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
4	Linex	4	L	0.75	pt/a	PRE	A	99	99	0	93	99
	Sencor	75	WG	5.33	oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
5	Boundary	6.5	L	1.5	pt/a	PRE	A	96	98	0	99	96
	Touchdown Total	4.17	SL	24	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
6	Prefix	5.29	L	2	pt/a	PRE	A	98	99	0	99	96
	Touchdown Total	4.17	SL	24	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
7	Prefix	5.29	L	2	pt/a	PRE	A	99	99	0	99	98
	Sharpen	2.85	L	1	fl oz/a	PRE	A					
	Touchdown Total	4.17	SL	24	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
8	OpTill Pro - OpTill	68	WG	2	oz/a	PRE	A	98	99	0	99	99
	OpTill Pro - Outlook6		L	10	fl oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
9	Zidua	85	WG	2.5	oz/a	PRE	A	99	99	0	99	99
	Sharpen	2.85	L	1	fl oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
10	Fierce	76	WG	3	oz/a	PRE	A	99	99	0	99	99
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
11	Fierce XLT (4 oz)							99	99	0	96	99
	Valor (Premix)	51	WG	2	oz/a	PRE	A					
	Classic (Premix)	25	WG	1.25	oz/a	PRE	A					
	V-10206 (Premix)	85	WG	1	oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
12	Sonic	70	WG	3	oz/a	PRE	A	99	99	0	95	99
	Durango DMA	4	SL	24	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
13	Authority First	70	WG	6.45	oz/a	PRE	A	92	99	0	99	99
	Dual II Magnum	7.64	L	1	pt/a	PRE	A					
	Cadet	0.91	L	0.6	fl oz/a	POST	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
14	Authority XL	70	WG	3.2	oz/a	PRE	A	80	99	0	98	99
	Dual II Magnum	7.64	L	1	pt/a	PRE	A					
	Cadet	0.91	L	0.6	fl oz/a	POST	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					

MSU Weed Science Research Program

Weed Code	AMBEL	ABUTH	GLXMA	ANGR	CHEAL
Crop Code					
Rating Data Type	control	control	injury	control	control
Rating Unit	percent	percent	percent	percent	percent
Rating Date	Jul/09/2012	Jul/09/2012	Jul/25/2012	Jul/25/2012	Jul/25/2012
Trt-Eval Interval	28 DA-B	28 DA-B	15 DA-D	15 DA-D	15 DA-D
ARM Action Codes					
# Subsamples, Dec.	0	0	0	0	0

Trt No.	Treatment	Form Conc	Form Type	Form Rate	Rate Unit	Grow Stg	Appl Code	AMBEL	ABUTH	GLXMA	ANGR	CHEAL
15	Command	3	ME	1.3	pt/a	PRE	A	92	99	0	99	99
	Dual II Magnum	7.64	L	1	pt/a	PRE	A					
	Sencor	75	WG	5	oz/a	PRE	A					
	Cadet	0.91	L	0.6	fl oz/a	POST	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
16	Boundary	6.5	L	1.5	pt/a	PRE	A	99	99	0	98	99
	Flexstar GT	2.82	L	3.5	pt/a	POST	C					
	MSO		L	1	% v/v	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
17	Classic	25	WG	0.33	oz/a	MPOS	B	97	99	0	85	76
	Abundit Extra	3	SL	32	fl oz/a	MPOS	B					
	AMS		WG	17	lb/100 gal	MPOS	B					
18	Warrant	3	L	3	pt/a	MPOS	B	99	98	0	96	61
	Roundup PowerMax	4.5	SL	22	fl oz/a	MPOS	B					
	AMS		WG	17	lb/100 gal	MPOS	B					
19	FirstRate	84	WG	0.3	oz/a	MPOS	B	96	99	0	94	99
	Durango DMA	4	SL	24	fl oz/a	MPOS	B					
	AMS		WG	17	lb/100 gal	MPOS	B					
	Durango DMA	4	SL	24	fl oz/a	LPOS	D					
	AMS		WG	17	lb/100 gal	LPOS	D					
20	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C	96	99	0	87	86
	AMS		WG	17	lb/100 gal	POST	C					
21	Roundup PowerMax	4.5	SL	22	fl oz/a	MPOS	B	96	99	0	89	99
	AMS		WG	17	lb/100 gal	MPOS	B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	LPOS	D					
	AMS		WG	17	lb/100 gal	LPOS	D					
22	Untreated							0	0	0	0	0
23	Liberty Link seed							99	97	0	88	91
	Valor XLT	40.3	WG	3	oz/a	PRE	A					
	Liberty	2.34	L	29	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
24	Liberty Link seed							99	99	0	70	83
	Prefix	5.29	L	2	pt/a	MPOS	B					
	Liberty	2.34	L	29	fl oz/a	MPOS	B					
	AMS		WG	8.5	lb/100 gal	MPOS	B					
25	Liberty Link seed							99	99	0	87	99
	Liberty	2.34	L	29	fl oz/a	MPOS	B					
	AMS		WG	8.5	lb/100 gal	MPOS	B					
	Liberty	2.34	L	29	fl oz/a	LPOS	D					
	AMS		WG	8.5	lb/100 gal	LPOS	D					
LSD (P=.05)								4.2	1.7	0.0	6.3	4.2
CV								3.24	1.3	0.0	5.05	3.35

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

MSU Weed Science Research Program

Weed Code	AMAPO	AMBEL	ABUTH	GLXMA	GLXMA							
Crop Code				moisture	yield							
Rating Data Type	control	control	control	percent	bu/acre							
Rating Unit	percent	percent	percent	percent								
Rating Date	Jul/25/2012	Jul/25/2012	Jul/25/2012	Oct/11/2012	Oct/11/2012							
Trt-Eval Interval	15 DA-D	15 DA-D	15 DA-D	93 DA-D	at 13% M							
ARM Action Codes					TY1							
# Subsamples, Dec.	0	0	0	1	1							
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code					
1	Canopy	75	WG	2.25	oz/a	PRE	A	99	54	99	10.9	14.9
	Valor	51	WG	2	oz/a	PRE	A					
	Sencor	75	WG	2	oz/a	PRE	A					
	Prowl H2O	3.8	L	2	pt/a	PRE	A					
2	Valor	51	WG	3	oz/a	PRE	A	99	98	99	10.5	39.5
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
3	Linex	4	L	1.5	pt/a	PRE	A	99	97	99	10.7	36.8
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
4	Linex	4	L	0.75	pt/a	PRE	A	99	99	99	10.6	38.9
	Sencor	75	WG	5.33	oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
5	Boundary	6.5	L	1.5	pt/a	PRE	A	99	99	98	10.6	37.3
	Touchdown Total	4.17	SL	24	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
6	Prefix	5.29	L	2	pt/a	PRE	A	99	99	99	10.8	33.5
	Touchdown Total	4.17	SL	24	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
7	Prefix	5.29	L	2	pt/a	PRE	A	99	99	99	10.6	33.3
	Sharpen	2.85	L	1	fl oz/a	PRE	A					
	Touchdown Total	4.17	SL	24	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
8	OpTill Pro - OpTill	68	WG	2	oz/a	PRE	A	99	99	99	10.7	33.3
	OpTill Pro - Outlook6		L	10	fl oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
9	Zidua	85	WG	2.5	oz/a	PRE	A	99	99	99	10.6	32.4
	Sharpen	2.85	L	1	fl oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	8.5	lb/100 gal	POST	C					
10	Fierce	76	WG	3	oz/a	PRE	A	99	99	99	10.6	34.9
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
11	Fierce XLT (4 oz)							99	99	99	10.4	36.0
	Valor (Premix)	51	WG	2	oz/a	PRE	A					
	Classic (Premix)	25	WG	1.25	oz/a	PRE	A					
	V-10206 (Premix)	85	WG	1	oz/a	PRE	A					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
12	Sonic	70	WG	3	oz/a	PRE	A	99	99	99	10.5	33.2
	Durango DMA	4	SL	24	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
13	Authority First	70	WG	6.45	oz/a	PRE	A	98	98	99	10.5	35.5
	Dual II Magnum	7.64	L	1	pt/a	PRE	A					
	Cadet	0.91	L	0.6	fl oz/a	POST	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					
14	Authority XL	70	WG	3.2	oz/a	PRE	A	99	85	97	10.3	37.4
	Dual II Magnum	7.64	L	1	pt/a	PRE	A					
	Cadet	0.91	L	0.6	fl oz/a	POST	C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST	C					
	AMS		WG	17	lb/100 gal	POST	C					

MSU Weed Science Research Program

Weed Code							AMAPO	AMBEL	ABUTH	GLXMA	GLXMA
Crop Code							control	control	control	moisture	yield
Rating Data Type							percent	percent	percent	percent	bu/acre
Rating Unit							Jul/25/2012	Jul/25/2012	Jul/25/2012	Oct/11/2012	Oct/11/2012
Rating Date							15 DA-D	15 DA-D	15 DA-D	93 DA-D	at 13% M
Trt-Eval Interval											TY1
ARM Action Codes											
# Subsamples, Dec.							0	0	0	1	1
Trt	Treatment	Form	Form	Rate	Grow	Appl					
No.	Name	Conc	Type	Unit	Stg	Code					
15	Command	3	ME	1.3	pt/a	PRE A	99	95	99	10.4	34.6
	Dual II Magnum	7.64	L	1	pt/a	PRE A					
	Sencor	75	WG	5	oz/a	PRE A					
	Cadet	0.91	L	0.6	fl oz/a	POST C					
	Roundup PowerMax	4.5	SL	22	fl oz/a	POST C					
	AMS		WG	17	lb/100 gal	POST C					
16	Boundary	6.5	L	1.5	pt/a	PRE A	97	99	99	10.2	37.2
	Flexstar GT	2.82	L	3.5	pt/a	POST C					
	MSO		L	1	% v/v	POST C					
	AMS		WG	17	lb/100 gal	POST C					
17	Classic	25	WG	0.33	oz/a	MPOS B	96	94	99	10.2	33.4
	Abundit Extra	3	SL	32	fl oz/a	MPOS B					
	AMS		WG	17	lb/100 gal	MPOS B					
18	Warrant	3	L	3	pt/a	MPOS B	99	99	97	10.3	30.7
	Roundup PowerMax	4.5	SL	22	fl oz/a	MPOS B					
	AMS		WG	17	lb/100 gal	MPOS B					
19	FirstRate	84	WG	0.3	oz/a	MPOS B	99	99	99	10.3	35.6
	Durango DMA	4	SL	24	fl oz/a	MPOS B					
	AMS		WG	17	lb/100 gal	MPOS B					
	Durango DMA	4	SL	24	fl oz/a	LPOS D					
	AMS		WG	17	lb/100 gal	LPOS D					
20	Roundup PowerMax	4.5	SL	22	fl oz/a	POST C	93	99	99	10.4	33.5
	AMS		WG	17	lb/100 gal	POST C					
21	Roundup PowerMax	4.5	SL	22	fl oz/a	MPOS B	99	99	99	10.3	32.9
	AMS		WG	17	lb/100 gal	MPOS B					
	Roundup PowerMax	4.5	SL	22	fl oz/a	LPOS D					
	AMS		WG	17	lb/100 gal	LPOS D					
22	Untreated						0	0	0	10.9	5.4
23	Liberty Link seed						98	98	97	11.3	40.8
	Valor XLT	40.3	WG	3	oz/a	PRE A					
	Liberty	2.34	L	29	fl oz/a	POST C					
	AMS		WG	8.5	lb/100 gal	POST C					
24	Liberty Link seed						85	96	99	11.1	34.0
	Prefix	5.29	L	2	pt/a	MPOS B					
	Liberty	2.34	L	29	fl oz/a	MPOS B					
	AMS		WG	8.5	lb/100 gal	MPOS B					
25	Liberty Link seed						99	99	99	11.1	43.5
	Liberty	2.34	L	29	fl oz/a	MPOS B					
	AMS		WG	8.5	lb/100 gal	MPOS B					
	Liberty	2.34	L	29	fl oz/a	LPOS D					
	AMS		WG	8.5	lb/100 gal	LPOS D					
LSD (P=.05)							4.6	4.7	2.2	0.38	7.32
CV							3.46	3.62	1.67	2.53	15.43

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