

MSU Weed Science Research Program

Weed control in non-GMO soybean

Trial ID: SOY07-12 Study Dir.: Sprague, Powell
 Conducted: T-12 Campus Investigator: Christy Sprague

Date Planted: May/17/2012 **Row Spacing:** 30 IN
Variety: ZFS 830 Low Lin **No. of Reps:** 4
Population: 150,000 seeds/acre **% OM:** 3.6
Soil Type: Loam **pH:** 6.7
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
Application Timing:	PRE	POST	LPOS
Date Treated:	May/17/2012	Jun/12/2012	Jun/14/2012
Time Treated:	5:45 PM	4:00 PM	12:45 PM
% Cloud Cover:	10	10	10
Air Temp., Unit:	74 F	72 F	80 F
% Relative Humidity:	26	37	29
Wind Speed/Unit/Dir:	1 mph W	12 mph NW	3 mph SE
Soil Temp., Unit:	69 F	76 F	79 F
Soil/Leaf Surface M:	3 -	5 5	5 5
Soil Moist (1=w 5=d):	3	5	5

Crop Stage at Each Application

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

Weed Stage at Each Application

	A	B	C
Weed 1 Name:	ANGR	ANGR	ANGR
Height (In.):	-	5"	10"
Stage (L):	-	4	6
Weed 2 Name:	CHEAL	CHEAL	CHEAL
Height (In.):	-	4"	3.5"
Stage (L):	-	10	14
Weed 3 Name:	AMAPO	AMAPO	AMAPO
Height (In.):	-	4"	3"
Stage (L):	-	8	7
Weed 4 Name:	AMBEL	AMBEL	AMBEL
Height (In.):	-	3"	4.5"
Stage (L):	-	6	17
Weed 5 Name:	ABUTH	ABUTH	ABUTH
Height (In.):	-	3"	3"
Stage (L):	-	4	5

Weed Density (plants/sq. ft.)

Date:	1 Jul/09/2012
Weed Name:	ANGR
Density:	41
Date:	Jul/09/2012
Weed Name:	CHEAL
Density:	4
Date:	Jul/09/2012
Weed Name:	AMAPO
Density:	5
Date:	Jul/09/2012
Weed Name:	AMBEL
Density:	3
Date:	Jul/09/2012
Weed Name:	ABUTH
Density:	<1

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Appl	Sprayer	Speed	Nozzle	Application Equipment				GPA	Carrier	PSI
				Nozzle	Nozzle	Nozzle	Boom			
A	Cub	3.8	AI XR	11003	22"	20"	100"	19	Water	28
B	Cub	3.8	AI XR	11003	24"	20"	100"	19	Water	28
C	Cub	3.8	AI XR	11003	25"	20"	100"	19	Water	28

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Weed control in non-GMO soybean

Trial ID: SOY07-12
Conducted: T-12 CampusStudy Dir.: Sprague, Powell
Investigator: Christy Sprague

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 No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code					
1	Valor	51	WG	2.5	oz/a	PRE	A	8	64	80	85	60
	Prowl H2O	3.8	L	2	pt/a	PRE	A					
	Flexstar	1.88	L	1	pt/a	POST	B					
	Harmony SG	50	WG	0.125	oz/a	POST	B					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	NIS		L	0.25	% v/v	POST	B					
2	Valor	51	WG	2.5	oz/a	PRE	A	7	64	60	88	64
	Zidua	85	WG	2.5	oz/a	PRE	A					
	Flexstar	1.88	L	1	pt/a	POST	B					
	Harmony SG	50	WG	0.125	oz/a	POST	B					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
3	Valor XLT	40.3	WG	4	oz/a	PRE	A	6	68	64	97	68
	Sencor	75	WG	4	oz/a	PRE	A					
	Cobra	2	L	8	fl oz/a	POST	B					
	Harmony SG	50	WG	0.125	oz/a	POST	B					
	Assure II	0.88	L	7	fl oz/a	POST	B					
	NIS		L	0.25	% v/v	POST	B					
4	Valor XLT	40.3	WG	4	oz/a	PRE	A	7	63	67	99	71
	Zidua	85	WG	2.5	oz/a	PRE	A					
	Cobra	2	L	8	fl oz/a	POST	B					
	Harmony SG	50	WG	0.125	oz/a	POST	B					
	Assure II	0.88	L	7	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
5	Envive (3.5 oz)							6	66	74	92	66
	Classic (Premix)	25	WG	1.28	oz/a	PRE	A					
	Harmony SG (Premix)	50	WG	0.192	oz/a	PRE	A					
	Valor (Premix)	51	WG	2	oz/a	PRE	A					
	Prowl H2O	3.8	L	2	pt/a	PRE	A					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
	Flexstar	1.88	L	1	pt/a	LPOS	C					
	Harmony SG	50	WG	0.125	oz/a	LPOS	C					
	NIS		L	0.25	% v/v	LPOS	C					
6	Canopy	75	WG	2.25	oz/a	PRE	A	5	66	73	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					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
	Flexstar	1.88	L	1	pt/a	LPOS	C					
	Harmony SG	50	WG	0.125	oz/a	LPOS	C					
	COC		L	1	% v/v	LPOS	C					
7	Boundary	6.5	L	2.4	pt/a	PRE	A	2	61	45	74	63
	Basagran	4	L	1	qt/a	POST	B					
	Flexstar	1.88	L	1	pt/a	POST	B					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
	AMS		WG	2.5	lb/a	POST	B					

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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	Rate	Grow	Appl					
No. Name	Conc	Type	Unit	Stg	Code						
8 Python	80	WG	0.8	oz/a	PRE	A	2	60	59	70	64
Boundary	6.5	L	2	pt/a	PRE	A					
Select Max	0.97	L	9	fl oz/a	POST	B					
COC		L	1	% v/v	POST	B					
AMS		WG	2.5	lb/a	POST	B					
Basagran	4	L	1	qt/a	LPOS	C					
Flexstar	1.88	L	1	pt/a	LPOS	C					
COC		L	1	% v/v	LPOS	C					
AMS		WG	2.5	lb/a	LPOS	C					
9 Authority XL	70	WG	3.2	oz/a	PRE	A	1	65	63	86	67
Boundary	6.5	L	2	pt/a	PRE	A					
Harmony SG	50	WG	0.125	oz/a	POST	B					
Select Max	0.97	L	9	fl oz/a	POST	B					
NIS		L	0.25	% v/v	POST	B					
Flexstar	1.88	L	1	pt/a	LPOS	C					
COC		L	1	% v/v	LPOS	C					
AMS		WG	2.5	lb/a	LPOS	C					
10 Sencor	75	WG	5	oz/a	PRE	A	2	63	57	71	63
Dual II Magnum	7.64	L	1.33	pt/a	PRE	A					
Linex	4	L	1	pt/a	PRE	A					
Raptor	1	L	5	fl oz/a	POST	B					
COC		L	1	% v/v	POST	B					
AMS		WG	2.5	lb/a	POST	B					
Flexstar	1.88	L	1	pt/a	LPOS	C					
COC		L	1	% v/v	LPOS	C					
AMS		WG	2.5	lb/a	LPOS	C					
11 Canopy	75	WG	4	oz/a	PRE	A	0	56	59	71	64
Prefix	5.29	L	2	pt/a	PRE	A					
Harmony SG	50	WG	0.125	oz/a	POST	B					
Select Max	0.97	L	9	fl oz/a	POST	B					
NIS		L	0.25	% v/v	POST	B					
Cobra	2	L	8	fl oz/a	LPOS	C					
COC		L	1	% v/v	LPOS	C					
12 OpTill Pro - OpTill	68	WG	2	oz/a	PRE	A	1	66	53	84	68
OpTill Pro - Outlook	6	L	10	fl oz/a	PRE	A					
Outlook	6	L	8	fl oz/a	PRE	A					
Sencor	75	WG	5	oz/a	PRE	A					
Cobra	2	L	8	fl oz/a	POST	B					
COC		L	1	% v/v	POST	B					
Harmony SG	50	WG	0.125	oz/a	LPOS	C					
Select Max	0.97	L	9	fl oz/a	LPOS	C					
NIS		L	0.25	% v/v	LPOS	C					
13 Untreated							0	0	0	0	0
14 Authority MTZ	45	WG	13	oz/a	PRE	A	1	66	92	77	64
Dual II Magnum	7.64	L	1	pt/a	PRE	A					
Flexstar	1.88	L	1	pt/a	POST	B					
Select Max	0.97	L	9	fl oz/a	POST	B					
COC		L	1	% v/v	POST	B					
AMS		WG	2.5	lb/a	POST	B					
15 Command	3	ME	21	fl oz/a	PRE	A	4	72	96	70	69
Authority MTZ	45	WG	13	oz/a	PRE	A					
Flexstar	1.88	L	1	pt/a	POST	B					
Select Max	0.97	L	9	fl oz/a	POST	B					
COC		L	1	% v/v	POST	B					
AMS		WG	2.5	lb/a	POST	B					

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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	Rate	Unit	Stg	Code					
16	Authority MTZ	45	WG	16	oz/a	PRE	A	1	68	99	80	63
	Flexstar	1.88	L	1	pt/a	POST	B					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
	AMS		WG	2.5	lb/a	POST	B					
17	Authority XL	70	WG	3.2	oz/a	PRE	A	1	55	63	76	60
	Flexstar	1.88	L	1	pt/a	POST	B					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
	AMS		WG	2.5	lb/a	POST	B					
18	Authority XL	70	WG	3.2	oz/a	PRE	A	1	56	61	83	63
	Cadet	0.91	L	0.6	fl oz/a	POST	B					
	Flexstar	1.88	L	12	fl oz/a	POST	B					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
	AMS		WG	2.5	lb/a	POST	B					
19	Authority First	70	WG	6.4	oz/a	PRE	A	0	65	85	90	71
	Cadet	0.91	L	0.6	fl oz/a	POST	B					
	Flexstar	1.88	L	12	fl oz/a	POST	B					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
	AMS		WG	2.5	lb/a	POST	B					
20	Valor	51	WG	3	oz/a	PRE	A	6	67	49	89	67
	Flexstar	1.88	L	1	pt/a	POST	B					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
	AMS		WG	2.5	lb/a	POST	B					
LSD (P=.05)								3.3	7.2	16.2	21.0	7.8
CV								81.01	8.36	17.7	18.77	8.97

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

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Weed Code	Crop Code	Rating Data Type	Rating Unit	Rating Date	Trt-Eval Interval	ARM Action Codes	# Subsamples, Dec.	GLXMA injury percent Jun/19/2012 7 DA-B	GLXMA injury percent Jun/26/2012 12 DA-C	ANGR control percent Jun/26/2012 12 DA-C	CHEAL control percent Jun/26/2012 12 DA-C	AMAPO control percent Jun/26/2012 12 DA-C
								0	0	0	0	0
Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Grow Stg	Appl Code					
1	Valor	51	WG	2.5	oz/a	PRE	A	29	16	87	91	99
	Prowl H2O	3.8	L	2	pt/a	PRE	A					
	Flexstar	1.88	L	1	pt/a	POST	B					
	Harmony SG	50	WG	0.125	oz/a	POST	B					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	NIS		L	0.25	% v/v	POST	B					
2	Valor	51	WG	2.5	oz/a	PRE	A	34	15	89	86	99
	Zidua	85	WG	2.5	oz/a	PRE	A					
	Flexstar	1.88	L	1	pt/a	POST	B					
	Harmony SG	50	WG	0.125	oz/a	POST	B					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
3	Valor XLT	40.3	WG	4	oz/a	PRE	A	30	14	65	73	99
	Sencor	75	WG	4	oz/a	PRE	A					
	Cobra	2	L	8	fl oz/a	POST	B					
	Harmony SG	50	WG	0.125	oz/a	POST	B					
	Assure II	0.88	L	7	fl oz/a	POST	B					
	NIS		L	0.25	% v/v	POST	B					
4	Valor XLT	40.3	WG	4	oz/a	PRE	A	33	23	80	80	99
	Zidua	85	WG	2.5	oz/a	PRE	A					
	Cobra	2	L	8	fl oz/a	POST	B					
	Harmony SG	50	WG	0.125	oz/a	POST	B					
	Assure II	0.88	L	7	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
5	Envive (3.5 oz)							21	11	89	82	93
	Classic (Premix)	25	WG	1.28	oz/a	PRE	A					
	Harmony SG (Premix)	50	WG	0.192	oz/a	PRE	A					
	Valor (Premix)	51	WG	2	oz/a	PRE	A					
	Prowl H2O	3.8	L	2	pt/a	PRE	A					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
	Flexstar	1.88	L	1	pt/a	LPOS	C					
	Harmony SG	50	WG	0.125	oz/a	LPOS	C					
	NIS		L	0.25	% v/v	LPOS	C					
6	Canopy	75	WG	2.25	oz/a	PRE	A	23	12	89	88	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					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
	Flexstar	1.88	L	1	pt/a	LPOS	C					
	Harmony SG	50	WG	0.125	oz/a	LPOS	C					
	COC		L	1	% v/v	LPOS	C					
7	Boundary	6.5	L	2.4	pt/a	PRE	A	35	12	85	83	92
	Basagran	4	L	1	qt/a	POST	B					
	Flexstar	1.88	L	1	pt/a	POST	B					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
	AMS		WG	2.5	lb/a	POST	B					

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Weed Code	Crop Code	Rating Data Type	Rating Unit	Rating Date	Trt-Eval Interval	ARM Action Codes	# Subsamples, Dec.	GLXMA injury percent Jun/19/2012 7 DA-B	GLXMA injury percent Jun/26/2012 12 DA-C	ANGR control percent Jun/26/2012 12 DA-C	CHEAL control percent Jun/26/2012 12 DA-C	AMAPO control percent Jun/26/2012 12 DA-C
								0	0	0	0	0
Trt	Treatment	Form	Form	Rate	Grow	Appl						
No.	Name	Conc	Type	Unit	Stg	Code						
8	Python	80	WG	0.8	oz/a	PRE A	25	11	88	82	77	
	Boundary	6.5	L	2	pt/a	PRE A						
	Select Max	0.97	L	9	fl oz/a	POST B						
	COC		L	1	% v/v	POST B						
	AMS		WG	2.5	lb/a	POST B						
	Basagran	4	L	1	qt/a	LPOS C						
	Flexstar	1.88	L	1	pt/a	LPOS C						
	COC		L	1	% v/v	LPOS C						
	AMS		WG	2.5	lb/a	LPOS C						
9	Authority XL	70	WG	3.2	oz/a	PRE A	24	9	87	83	99	
	Boundary	6.5	L	2	pt/a	PRE A						
	Harmony SG	50	WG	0.125	oz/a	POST B						
	Select Max	0.97	L	9	fl oz/a	POST B						
	NIS		L	0.25	% v/v	POST B						
	Flexstar	1.88	L	1	pt/a	LPOS C						
	COC		L	1	% v/v	LPOS C						
	AMS		WG	2.5	lb/a	LPOS C						
10	Sencor	75	WG	5	oz/a	PRE A	23	12	90	85	99	
	Dual II Magnum	7.64	L	1.33	pt/a	PRE A						
	Linex	4	L	1	pt/a	PRE A						
	Raptor	1	L	5	fl oz/a	POST B						
	COC		L	1	% v/v	POST B						
	AMS		WG	2.5	lb/a	POST B						
	Flexstar	1.88	L	1	pt/a	LPOS C						
	COC		L	1	% v/v	LPOS C						
	AMS		WG	2.5	lb/a	LPOS C						
11	Canopy	75	WG	4	oz/a	PRE A	26	16	70	71	99	
	Prefix	5.29	L	2	pt/a	PRE A						
	Harmony SG	50	WG	0.125	oz/a	POST B						
	Select Max	0.97	L	9	fl oz/a	POST B						
	NIS		L	0.25	% v/v	POST B						
	Cobra	2	L	8	fl oz/a	LPOS C						
	COC		L	1	% v/v	LPOS C						
12	OpTill Pro - OpTill	68	WG	2	oz/a	PRE A	43	21	83	85	99	
	OpTill Pro - Outlook	6	L	10	fl oz/a	PRE A						
	Outlook	6	L	8	fl oz/a	PRE A						
	Sencor	75	WG	5	oz/a	PRE A						
	Cobra	2	L	8	fl oz/a	POST B						
	COC		L	1	% v/v	POST B						
	Harmony SG	50	WG	0.125	oz/a	LPOS C						
	Select Max	0.97	L	9	fl oz/a	LPOS C						
	NIS		L	0.25	% v/v	LPOS C						
13	Untreated						0	0	0	0	0	
14	Authority MTZ	45	WG	13	oz/a	PRE A	21	8	92	90	87	
	Dual II Magnum	7.64	L	1	pt/a	PRE A						
	Flexstar	1.88	L	1	pt/a	POST B						
	Select Max	0.97	L	9	fl oz/a	POST B						
	COC		L	1	% v/v	POST B						
	AMS		WG	2.5	lb/a	POST B						
15	Command	3	ME	21	fl oz/a	PRE A	24	7	97	91	88	
	Authority MTZ	45	WG	13	oz/a	PRE A						
	Flexstar	1.88	L	1	pt/a	POST B						
	Select Max	0.97	L	9	fl oz/a	POST B						
	COC		L	1	% v/v	POST B						
	AMS		WG	2.5	lb/a	POST B						

MSU Weed Science Research Program

Weed Code								ANGR	CHEAL	AMAPO	
Crop Code								GLXMA	GLXMA		
Rating Data Type								injury	injury		
Rating Unit								percent	percent	control	
Rating Date								percent	percent	percent	
Trt-Eval Interval								Jun/19/2012	Jun/26/2012	Jun/26/2012	
ARM Action Codes								7 DA-B	12 DA-C	12 DA-C	
# Subsamples, Dec.								0	0	0	
Trt Treatment	Form	Form	Rate	Grow	Appl						
No. Name	Conc	Type	Rate	Unit	Stg	Code					
16 Authority MTZ	45	WG	16	oz/a	PRE	A	23	9	94	94	95
Flexstar	1.88	L	1	pt/a	POST	B					
Select Max	0.97	L	9	fl oz/a	POST	B					
COC		L	1	% v/v	POST	B					
AMS		WG	2.5	lb/a	POST	B					
17 Authority XL	70	WG	3.2	oz/a	PRE	A	19	9	89	61	79
Flexstar	1.88	L	1	pt/a	POST	B					
Select Max	0.97	L	9	fl oz/a	POST	B					
COC		L	1	% v/v	POST	B					
AMS		WG	2.5	lb/a	POST	B					
18 Authority XL	70	WG	3.2	oz/a	PRE	A	20	10	92	59	87
Cadet	0.91	L	0.6	fl oz/a	POST	B					
Flexstar	1.88	L	12	fl oz/a	POST	B					
Select Max	0.97	L	9	fl oz/a	POST	B					
COC		L	1	% v/v	POST	B					
AMS		WG	2.5	lb/a	POST	B					
19 Authority First	70	WG	6.4	oz/a	PRE	A	19	8	89	84	92
Cadet	0.91	L	0.6	fl oz/a	POST	B					
Flexstar	1.88	L	12	fl oz/a	POST	B					
Select Max	0.97	L	9	fl oz/a	POST	B					
COC		L	1	% v/v	POST	B					
AMS		WG	2.5	lb/a	POST	B					
20 Valor	51	WG	3	oz/a	PRE	A	21	8	92	46	92
Flexstar	1.88	L	1	pt/a	POST	B					
Select Max	0.97	L	9	fl oz/a	POST	B					
COC		L	1	% v/v	POST	B					
AMS		WG	2.5	lb/a	POST	B					
LSD (P=.05)							4.8	4.5	5.3	7.8	9.6
CV							13.81	28.02	4.59	7.32	7.66

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		Jun/26/2012	Jun/26/2012	Jul/10/2012	Jul/10/2012	Jul/10/2012						
Trt-Eval Interval		12 DA-C	12 DA-C	26 DA-C	26 DA-C	26 DA-C						
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	Valor	51	WG	2.5	oz/a	PRE	A	86	95	2	86	89
	Prowl H2O	3.8	L	2	pt/a	PRE	A					
	Flexstar	1.88	L	1	pt/a	POST	B					
	Harmony SG	50	WG	0.125	oz/a	POST	B					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	NIS		L	0.25	% v/v	POST	B					
2	Valor	51	WG	2.5	oz/a	PRE	A	88	97	5	95	82
	Zidua	85	WG	2.5	oz/a	PRE	A					
	Flexstar	1.88	L	1	pt/a	POST	B					
	Harmony SG	50	WG	0.125	oz/a	POST	B					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
3	Valor XLT	40.3	WG	4	oz/a	PRE	A	80	92	1	76	77
	Sencor	75	WG	4	oz/a	PRE	A					
	Cobra	2	L	8	fl oz/a	POST	B					
	Harmony SG	50	WG	0.125	oz/a	POST	B					
	Assure II	0.88	L	7	fl oz/a	POST	B					
	NIS		L	0.25	% v/v	POST	B					
4	Valor XLT	40.3	WG	4	oz/a	PRE	A	90	99	4	84	83
	Zidua	85	WG	2.5	oz/a	PRE	A					
	Cobra	2	L	8	fl oz/a	POST	B					
	Harmony SG	50	WG	0.125	oz/a	POST	B					
	Assure II	0.88	L	7	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
5	Envive (3.5 oz)							80	92	0	95	87
	Classic (Premix)	25	WG	1.28	oz/a	PRE	A					
	Harmony SG (Premix)	50	WG	0.192	oz/a	PRE	A					
	Valor (Premix)	51	WG	2	oz/a	PRE	A					
	Prowl H2O	3.8	L	2	pt/a	PRE	A					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
	Flexstar	1.88	L	1	pt/a	LPOS	C					
	Harmony SG	50	WG	0.125	oz/a	LPOS	C					
	NIS		L	0.25	% v/v	LPOS	C					
6	Canopy	75	WG	2.25	oz/a	PRE	A	81	99	0	97	84
	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					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
	Flexstar	1.88	L	1	pt/a	LPOS	C					
	Harmony SG	50	WG	0.125	oz/a	LPOS	C					
	COC		L	1	% v/v	LPOS	C					
7	Boundary	6.5	L	2.4	pt/a	PRE	A	99	99	1	76	84
	Basagran	4	L	1	qt/a	POST	B					
	Flexstar	1.88	L	1	pt/a	POST	B					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
	AMS		WG	2.5	lb/a	POST	B					

MSU Weed Science Research Program

Weed Code							AMBEL	ABUTH	GLXMA	ANGR	CHEAL
Crop Code							control	control	injury	control	control
Rating Data Type							percent	percent	percent	percent	percent
Rating Unit							Jun/26/2012	Jun/26/2012	Jul/10/2012	Jul/10/2012	Jul/10/2012
Rating Date							12 DA-C	12 DA-C	26 DA-C	26 DA-C	26 DA-C
Trt-Eval Interval											
ARM Action Codes							0	0	0	0	0
# Subsamples, Dec.											
Trt	Treatment	Form	Form	Rate	Grow	Appl					
No.	Name	Conc	Type	Unit	Stg	Code					
8	Python	80	WG	0.8	oz/a	PRE A	98	99	0	97	83
	Boundary	6.5	L	2	pt/a	PRE A					
	Select Max	0.97	L	9	fl oz/a	POST B					
	COC		L	1	% v/v	POST B					
	AMS		WG	2.5	lb/a	POST B					
	Basagran	4	L	1	qt/a	LPOS C					
	Flexstar	1.88	L	1	pt/a	LPOS C					
	COC		L	1	% v/v	LPOS C					
	AMS		WG	2.5	lb/a	LPOS C					
9	Authority XL	70	WG	3.2	oz/a	PRE A	93	99	0	92	81
	Boundary	6.5	L	2	pt/a	PRE A					
	Harmony SG	50	WG	0.125	oz/a	POST B					
	Select Max	0.97	L	9	fl oz/a	POST B					
	NIS		L	0.25	% v/v	POST B					
	Flexstar	1.88	L	1	pt/a	LPOS C					
	COC		L	1	% v/v	LPOS C					
	AMS		WG	2.5	lb/a	LPOS C					
10	Sencor	75	WG	5	oz/a	PRE A	93	99	2	95	85
	Dual II Magnum	7.64	L	1.33	pt/a	PRE A					
	Linex	4	L	1	pt/a	PRE A					
	Raptor	1	L	5	fl oz/a	POST B					
	COC		L	1	% v/v	POST B					
	AMS		WG	2.5	lb/a	POST B					
	Flexstar	1.88	L	1	pt/a	LPOS C					
	COC		L	1	% v/v	LPOS C					
	AMS		WG	2.5	lb/a	LPOS C					
11	Canopy	75	WG	4	oz/a	PRE A	85	92	2	75	76
	Prefix	5.29	L	2	pt/a	PRE A					
	Harmony SG	50	WG	0.125	oz/a	POST B					
	Select Max	0.97	L	9	fl oz/a	POST B					
	NIS		L	0.25	% v/v	POST B					
	Cobra	2	L	8	fl oz/a	LPOS C					
	COC		L	1	% v/v	LPOS C					
12	OpTill Pro - OpTill	68	WG	2	oz/a	PRE A	96	99	1	90	84
	OpTill Pro - Outlook	6	L	10	fl oz/a	PRE A					
	Outlook	6	L	8	fl oz/a	PRE A					
	Sencor	75	WG	5	oz/a	PRE A					
	Cobra	2	L	8	fl oz/a	POST B					
	COC		L	1	% v/v	POST B					
	Harmony SG	50	WG	0.125	oz/a	LPOS C					
	Select Max	0.97	L	9	fl oz/a	LPOS C					
	NIS		L	0.25	% v/v	LPOS C					
13	Untreated						0	0	0	0	0
14	Authority MTZ	45	WG	13	oz/a	PRE A	95	99	0	95	92
	Dual II Magnum	7.64	L	1	pt/a	PRE A					
	Flexstar	1.88	L	1	pt/a	POST B					
	Select Max	0.97	L	9	fl oz/a	POST B					
	COC		L	1	% v/v	POST B					
	AMS		WG	2.5	lb/a	POST B					
15	Command	3	ME	21	fl oz/a	PRE A	99	99	0	96	93
	Authority MTZ	45	WG	13	oz/a	PRE A					
	Flexstar	1.88	L	1	pt/a	POST B					
	Select Max	0.97	L	9	fl oz/a	POST B					
	COC		L	1	% v/v	POST B					
	AMS		WG	2.5	lb/a	POST B					

MSU Weed Science Research Program

Weed Code						AMBEL	ABUTH	GLXMA	ANGR	CHEAL
Crop Code						control	control	injury	control	control
Rating Data Type						percent	percent	percent	percent	percent
Rating Unit						Jun/26/2012	Jun/26/2012	Jul/10/2012	Jul/10/2012	Jul/10/2012
Rating Date						12 DA-C	12 DA-C	26 DA-C	26 DA-C	26 DA-C
Trt-Eval Interval										
ARM Action Codes										
# Subsamples, Dec.						0	0	0	0	0
Trt Treatment	Form	Form	Rate	Grow	Appl					
No. Name	Conc	Type	Rate	Unit	Stg Code					
16 Authority MTZ	45	WG	16	oz/a	PRE A	95	99	1	96	94
Flexstar	1.88	L	1	pt/a	POST B					
Select Max	0.97	L	9	fl oz/a	POST B					
COC		L	1	% v/v	POST B					
AMS		WG	2.5	lb/a	POST B					
17 Authority XL	70	WG	3.2	oz/a	PRE A	98	99	0	92	76
Flexstar	1.88	L	1	pt/a	POST B					
Select Max	0.97	L	9	fl oz/a	POST B					
COC		L	1	% v/v	POST B					
AMS		WG	2.5	lb/a	POST B					
18 Authority XL	70	WG	3.2	oz/a	PRE A	91	99	0	95	69
Cadet	0.91	L	0.6	fl oz/a	POST B					
Flexstar	1.88	L	12	fl oz/a	POST B					
Select Max	0.97	L	9	fl oz/a	POST B					
COC		L	1	% v/v	POST B					
AMS		WG	2.5	lb/a	POST B					
19 Authority First	70	WG	6.4	oz/a	PRE A	97	99	0	93	88
Cadet	0.91	L	0.6	fl oz/a	POST B					
Flexstar	1.88	L	12	fl oz/a	POST B					
Select Max	0.97	L	9	fl oz/a	POST B					
COC		L	1	% v/v	POST B					
AMS		WG	2.5	lb/a	POST B					
20 Valor	51	WG	3	oz/a	PRE A	96	99	0	97	65
Flexstar	1.88	L	1	pt/a	POST B					
Select Max	0.97	L	9	fl oz/a	POST B					
COC		L	1	% v/v	POST B					
AMS		WG	2.5	lb/a	POST B					
LSD (P=.05)						8.6	5.2	1.9	6.1	9.6
CV						7.0	3.94	147.95	5.0	8.66

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									
Rating Date	Jul/10/2012	Jul/10/2012	Jul/10/2012	Oct/11/2012	Oct/11/2012							
Trt-Eval Interval	26 DA-C	26 DA-C	26 DA-C	119 DA-C	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	AMAPO	AMBEL	ABUTH	GLXMA moisture	GLXMA yield
1	Valor	51	WG	2.5	oz/a	PRE	A	99	90	96	10.9	42.3
	Prowl H2O	3.8	L	2	pt/a	PRE	A					
	Flexstar	1.88	L	1	pt/a	POST	B					
	Harmony SG	50	WG	0.125	oz/a	POST	B					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	NIS		L	0.25	% v/v	POST	B					
2	Valor	51	WG	2.5	oz/a	PRE	A	99	91	99	11.0	41.1
	Zidua	85	WG	2.5	oz/a	PRE	A					
	Flexstar	1.88	L	1	pt/a	POST	B					
	Harmony SG	50	WG	0.125	oz/a	POST	B					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
3	Valor XLT	40.3	WG	4	oz/a	PRE	A	99	92	99	11.0	34.6
	Sencor	75	WG	4	oz/a	PRE	A					
	Cobra	2	L	8	fl oz/a	POST	B					
	Harmony SG	50	WG	0.125	oz/a	POST	B					
	Assure II	0.88	L	7	fl oz/a	POST	B					
	NIS		L	0.25	% v/v	POST	B					
4	Valor XLT	40.3	WG	4	oz/a	PRE	A	99	90	99	10.9	44.7
	Zidua	85	WG	2.5	oz/a	PRE	A					
	Cobra	2	L	8	fl oz/a	POST	B					
	Harmony SG	50	WG	0.125	oz/a	POST	B					
	Assure II	0.88	L	7	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
5	Envive (3.5 oz)							99	77	93	10.9	42.0
	Classic (Premix)	25	WG	1.28	oz/a	PRE	A					
	Harmony SG (Premix)	50	WG	0.192	oz/a	PRE	A					
	Valor (Premix)	51	WG	2	oz/a	PRE	A					
	Prowl H2O	3.8	L	2	pt/a	PRE	A					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
	Flexstar	1.88	L	1	pt/a	LPOS	C					
	Harmony SG	50	WG	0.125	oz/a	LPOS	C					
	NIS		L	0.25	% v/v	LPOS	C					
6	Canopy	75	WG	2.25	oz/a	PRE	A	99	84	97	11.0	45.9
	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					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
	Flexstar	1.88	L	1	pt/a	LPOS	C					
	Harmony SG	50	WG	0.125	oz/a	LPOS	C					
	COC		L	1	% v/v	LPOS	C					
7	Boundary	6.5	L	2.4	pt/a	PRE	A	92	99	99	10.9	43.1
	Basagran	4	L	1	qt/a	POST	B					
	Flexstar	1.88	L	1	pt/a	POST	B					
	Select Max	0.97	L	9	fl oz/a	POST	B					
	COC		L	1	% v/v	POST	B					
	AMS		WG	2.5	lb/a	POST	B					

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/10/2012	Jul/10/2012	Jul/10/2012	Oct/11/2012	Oct/11/2012
Rating Date							26 DA-C	26 DA-C	26 DA-C	119 DA-C	at 13% M
Trt-Eval Interval											TY1
ARM Action Codes											
# Subsamples, Dec.							0	0	0	1	1
Trt Treatment	Form	Form	Rate	Unit	Grow	Appl					
No. Name	Conc	Type			Stg	Code					
8 Python	80	WG	0.8	oz/a	PRE	A	80	97	99	10.8	48.7
Boundary	6.5	L	2	pt/a	PRE	A					
Select Max	0.97	L	9	fl oz/a	POST	B					
COC		L	1	% v/v	POST	B					
AMS		WG	2.5	lb/a	POST	B					
Basagran	4	L	1	qt/a	LPOS	C					
Flexstar	1.88	L	1	pt/a	LPOS	C					
COC		L	1	% v/v	LPOS	C					
AMS		WG	2.5	lb/a	LPOS	C					
9 Authority XL	70	WG	3.2	oz/a	PRE	A	99	94	96	11.0	47.9
Boundary	6.5	L	2	pt/a	PRE	A					
Harmony SG	50	WG	0.125	oz/a	POST	B					
Select Max	0.97	L	9	fl oz/a	POST	B					
NIS		L	0.25	% v/v	POST	B					
Flexstar	1.88	L	1	pt/a	LPOS	C					
COC		L	1	% v/v	LPOS	C					
AMS		WG	2.5	lb/a	LPOS	C					
10 Sencor	75	WG	5	oz/a	PRE	A	99	95	99	10.8	49.1
Dual II Magnum	7.64	L	1.33	pt/a	PRE	A					
Linex	4	L	1	pt/a	PRE	A					
Raptor	1	L	5	fl oz/a	POST	B					
COC		L	1	% v/v	POST	B					
AMS		WG	2.5	lb/a	POST	B					
Flexstar	1.88	L	1	pt/a	LPOS	C					
COC		L	1	% v/v	LPOS	C					
AMS		WG	2.5	lb/a	LPOS	C					
11 Canopy	75	WG	4	oz/a	PRE	A	99	86	89	11.0	38.9
Prefix	5.29	L	2	pt/a	PRE	A					
Harmony SG	50	WG	0.125	oz/a	POST	B					
Select Max	0.97	L	9	fl oz/a	POST	B					
NIS		L	0.25	% v/v	POST	B					
Cobra	2	L	8	fl oz/a	LPOS	C					
COC		L	1	% v/v	LPOS	C					
12 OpTill Pro - OpTill	68	WG	2	oz/a	PRE	A	99	96	98	11.0	50.1
OpTill Pro - Outlook	6	L	10	fl oz/a	PRE	A					
Outlook	6	L	8	fl oz/a	PRE	A					
Sencor	75	WG	5	oz/a	PRE	A					
Cobra	2	L	8	fl oz/a	POST	B					
COC		L	1	% v/v	POST	B					
Harmony SG	50	WG	0.125	oz/a	LPOS	C					
Select Max	0.97	L	9	fl oz/a	LPOS	C					
NIS		L	0.25	% v/v	LPOS	C					
13 Untreated							0	0	0	11.7	15.2
14 Authority MTZ	45	WG	13	oz/a	PRE	A	89	98	99	11.0	50.2
Dual II Magnum	7.64	L	1	pt/a	PRE	A					
Flexstar	1.88	L	1	pt/a	POST	B					
Select Max	0.97	L	9	fl oz/a	POST	B					
COC		L	1	% v/v	POST	B					
AMS		WG	2.5	lb/a	POST	B					
15 Command	3	ME	21	fl oz/a	PRE	A	87	99	99	10.9	49.9
Authority MTZ	45	WG	13	oz/a	PRE	A					
Flexstar	1.88	L	1	pt/a	POST	B					
Select Max	0.97	L	9	fl oz/a	POST	B					
COC		L	1	% v/v	POST	B					
AMS		WG	2.5	lb/a	POST	B					

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/10/2012	Jul/10/2012	Jul/10/2012	Oct/11/2012	Oct/11/2012
Rating Date							26 DA-C	26 DA-C	26 DA-C	119 DA-C	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	Rate	Unit	Stg	Code					
16 Authority MTZ	45	WG	16	oz/a	PRE	A	94	99	99	10.9	49.2
Flexstar	1.88	L	1	pt/a	POST	B					
Select Max	0.97	L	9	fl oz/a	POST	B					
COC		L	1	% v/v	POST	B					
AMS		WG	2.5	lb/a	POST	B					
17 Authority XL	70	WG	3.2	oz/a	PRE	A	83	97	99	11.0	40.7
Flexstar	1.88	L	1	pt/a	POST	B					
Select Max	0.97	L	9	fl oz/a	POST	B					
COC		L	1	% v/v	POST	B					
AMS		WG	2.5	lb/a	POST	B					
18 Authority XL	70	WG	3.2	oz/a	PRE	A	91	96	99	10.9	40.5
Cadet	0.91	L	0.6	fl oz/a	POST	B					
Flexstar	1.88	L	12	fl oz/a	POST	B					
Select Max	0.97	L	9	fl oz/a	POST	B					
COC		L	1	% v/v	POST	B					
AMS		WG	2.5	lb/a	POST	B					
19 Authority First	70	WG	6.4	oz/a	PRE	A	94	97	99	11.0	50.1
Cadet	0.91	L	0.6	fl oz/a	POST	B					
Flexstar	1.88	L	12	fl oz/a	POST	B					
Select Max	0.97	L	9	fl oz/a	POST	B					
COC		L	1	% v/v	POST	B					
AMS		WG	2.5	lb/a	POST	B					
20 Valor	51	WG	3	oz/a	PRE	A	97	98	99	11.1	40.9
Flexstar	1.88	L	1	pt/a	POST	B					
Select Max	0.97	L	9	fl oz/a	POST	B					
COC		L	1	% v/v	POST	B					
AMS		WG	2.5	lb/a	POST	B					
LSD (P=.05)							9.2	5.5	4.8	0.29	6.45
CV							7.23	4.37	3.68	1.88	10.54

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