

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14
 Conducted: Campus T-12

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Date Planted: May/21/2014
Variety: Pioneer 26T76R
Population: 150,000 seeds/A
Soil Type: Loam
Plot Size: 10 X 35 FT

Row Spacing: 30 IN
No. of Reps: 4
% OM: 3.8
pH: 7.3
Design: RANDOMIZED COMPLETE BLOCK

Tillage: Fall chisel plow. Spring soil finish 2x.
Fertilizer: None

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1.	ANGR	mainly foxtail species	SETARIA SP.
2.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
3.	AMAPO	AMARANTH, POWELL	AMARANTHUS POWELLII S.WATS.
4.	AMBEL	RAGWEED, COMMON	AMBROSIA ARTEMISIIFOLIA L.
5.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
Crop	Code	Common Name	
1.	GLXMA	SOYBEAN	

Application Description

	A	B
Application Timing:	PRE	POST
Date Treated:	May/22/2014	Jun/16/2014
Time Treated:	8:10 AM	1:10 PM
% Cloud Cover:	10	50
Air Temp., Unit:	61 F	85 F
% Relative Humidity:	68	42
wind Speed/Unit/Dir:	9 mph NW	4 mph SW
Soil Temp., Unit:	67 F	77 F
Soil/Leaf Surface M:	4 -	5 5
Soil Moist (1=w 5=d):	4	5

Crop Stage at Each Application

	A	B
Crop Name:	GLXMA	GLXMA
Height (In.):	-	6"
Stage (L):	-	V2-V3

Weed Stage at Each Application

	A	B
Weed 1 Name:	ANGR	ANGR
Height (In.):	-	0.25-7"
Stage (L):	-	1-10
Weed 2 Name:	CHEAL	CHEAL
Height (In.):	-	1-6"
Stage (L):	-	4-Many
Weed 3 Name:	AMAPO	AMAPO
Height (In.):	-	1-3"
Stage (L):	-	2-18
Weed 4 Name:	AMBEL	AMBEL
Height (In.):	-	0.5-4"
Stage (L):	-	2-10
Weed 5 Name:	ABUTH	ABUTH
Height (In.):	-	1-3"
Stage (L):	-	2-6

Weed Density (plants/sq. ft.)

	1	2	3	4	5	6
Date:	Jul/17/2014	Jul/17/2014	Jul/17/2014	Jul/17/2014	Jul/17/2014	Jul/17/2014
Weed Name:	ANGR	CHEAL	AMAPO	AMBEL	ABUTH	SINAR
Density:	29	2	<1	4	<1	<1

Application Equipment

Appl	Sprayer	Speed	Nozzle	Nozzle	Nozzle	Nozzle	Boom	GPA	Carrier	PSI
	Type	MPH	Type	Size	Height	Spacing	width			
A	Cub	3.8	AIXR	11003	21"	20"	100"	19	Water	30
B	Cub	3.8	AIXR	11003	27"	20"	100"	19	Water	30

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14
 Conducted: Campus T-12

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code								ANGR	CHEAL
Crop Code								GLXMA	GLXMA
Rating Data Type								injury	injury
Rating Unit								percent	percent
Rating Date								Jun/13/2014	Jun/16/2014
Trt-Eval Interval								22 DA-A	25 DA-A
# Subsamples, Dec.								25 DA-A	25 DA-A
Trt No.	Treatment	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code		
1	Authority First	70	WG	6.4	oz/a	PRE	A	0	0
1	Cadet	0.91	L	0.6	fl oz/a	POST	B		64
1	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B		90
1	Crop oil concentrate		L	1	% v/v	POST	B		
1	AMS		WG	17	lb/100 gal	POST	B		
2	Authority First	70	WG	6.4	oz/a	PRE	A	0	0
2	Marvel	3	L	7.25	fl oz/a	POST	B		70
2	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B		96
2	Crop oil concentrate		L	1	% v/v	POST	B		
2	AMS		WG	17	lb/100 gal	POST	B		
3	Authority First	70	WG	4	oz/a	PRE	A	0	0
3	Marvel	3	L	7.25	fl oz/a	POST	B		70
3	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B		93
3	Crop oil concentrate		L	1	% v/v	POST	B		
3	AMS		WG	17	lb/100 gal	POST	B		
4	Authority MTZ	45	WG	12	oz/a	PRE	A	0	0
4	Cadet	0.91	L	0.6	fl oz/a	POST	B		70
4	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B		90
4	Crop oil concentrate		L	1	% v/v	POST	B		
4	AMS		WG	17	lb/100 gal	POST	B		
5	Authority MTZ	45	WG	12	oz/a	PRE	A	0	0
5	Marvel	3	L	7.25	fl oz/a	POST	B		72
5	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B		91
5	Crop oil concentrate		L	1	% v/v	POST	B		
5	AMS		WG	17	lb/100 gal	POST	B		
6	Untreated							0	0
7	Authority XL	70	WG	4	oz/a	PRE	A	0	0
7	Cadet	0.91	L	0.6	fl oz/a	POST	B		68
7	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B		84
7	Crop oil concentrate		L	1	% v/v	POST	B		
7	AMS		WG	17	lb/100 gal	POST	B		
8	Authority XL	70	WG	4	oz/a	PRE	A	0	0
8	Marvel	3	L	7.25	fl oz/a	POST	B		67
8	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B		86
8	Crop oil concentrate		L	1	% v/v	POST	B		
8	AMS		WG	17	lb/100 gal	POST	B		
9	Authority MAXX	66	WG	6	oz/a	PRE	A	0	0
9	Cadet	0.91	L	0.6	fl oz/a	POST	B		66
9	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B		86
9	Crop oil concentrate		L	1	% v/v	POST	B		
9	AMS		WG	17	lb/100 gal	POST	B		
10	Authority MAXX	66	WG	6	oz/a	PRE	A	0	0
10	Marvel	3	L	7.25	fl oz/a	POST	B		70
10	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B		93
10	Crop oil concentrate		L	1	% v/v	POST	B		
10	AMS		WG	17	lb/100 gal	POST	B		

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14
 Conducted: Campus T-12

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code										ANGR	CHEAL		
Crop Code													
Rating Data Type										GLXMA injury percent Jun/13/2014 22 DA-A	GLXMA injury percent Jun/16/2014 25 DA-A	control percent Jun/16/2014 25 DA-A	control percent Jun/16/2014 25 DA-A
Rating Unit													
Rating Date													
Trt-Eval Interval													
# Subsamples, Dec.													

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code					
11	Authority Assist	4	L	5	fl oz/a	PRE	A	0	0	67	81	
11	Cadet	0.91	L	0.6	fl oz/a	POST	B					
11	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
11	Crop oil concentrate		L	1	% v/v	POST	B					
11	AMS		WG	17	lb/100 gal	POST	B					
12	Authority Assist	4	L	5	fl oz/a	PRE	A	0	0	63	84	
12	Marvel	3	L	7.25	fl oz/a	POST	B					
12	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
12	Crop oil concentrate		L	1	% v/v	POST	B					
12	AMS		WG	17	lb/100 gal	POST	B					
13	Authority Elite	7	L	25	fl oz/a	PRE	A	10	5	84	91	
13	Cadet	0.91	L	0.6	fl oz/a	POST	B					
13	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
13	Crop oil concentrate		L	1	% v/v	POST	B					
13	AMS		WG	17	lb/100 gal	POST	B					
14	Authority Elite	7	L	25	fl oz/a	PRE	A	8	5	85	89	
14	Marvel	3	L	7.25	fl oz/a	POST	B					
14	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
14	Crop oil concentrate		L	1	% v/v	POST	B					
14	AMS		WG	17	lb/100 gal	POST	B					
15	Authority First	70	WG	4	oz/a	PRE	A	0	0	66	87	
15	Anthem	2.15	L	6	fl oz/a	POST	B					
15	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
15	Crop oil concentrate		L	1	% v/v	POST	B					
15	AMS		WG	17	lb/100 gal	POST	B					
16	Authority First	70	WG	6.4	oz/a	PRE	A	0	0	72	88	
16	Anthem	2.15	L	6	fl oz/a	POST	B					
16	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
16	Crop oil concentrate		L	1	% v/v	POST	B					
16	AMS		WG	17	lb/100 gal	POST	B					
17	Authority MTZ	45	WG	12	oz/a	PRE	A	0	0	72	91	
17	Anthem	2.15	L	6	fl oz/a	POST	B					
17	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
17	Crop oil concentrate		L	1	% v/v	POST	B					
17	AMS		WG	17	lb/100 gal	POST	B					
18	Authority XL	70	WG	4	oz/a	PRE	A	0	0	66	96	
18	Anthem	2.15	L	6	fl oz/a	POST	B					
18	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
18	Crop oil concentrate		L	1	% v/v	POST	B					
18	AMS		WG	17	lb/100 gal	POST	B					
19	Authority MAXX	66	WG	4	oz/a	PRE	A	0	0	69	91	
19	Anthem	2.15	L	6	fl oz/a	POST	B					
19	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B					
19	Crop oil concentrate		L	1	% v/v	POST	B					
19	AMS		WG	17	lb/100 gal	POST	B					

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14 Study Dir.: Sprague and Powell
 Conducted: Campus T-12 Investigator: Christy Sprague

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												25 DA-A	25 DA-A
# Subsamples, Dec.												25 DA-A	25 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code						
20	Authority Elite	7	L	25	fl oz/a	PRE	A	13	8	82	85		
20	Anthem	2.15	L	6	fl oz/a	POST	B						
20	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B						
20	Crop oil concentrate		L	1	% v/v	POST	B						
20	AMS		WG	17	lb/100 gal	POST	B						
LSD (P=.05)								1.3	1.6	10.4	12.4		
CV								60.86	123.53	10.93	10.42		

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

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14
 Conducted: Campus T-12

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code							AMAPO	AMBEL	SINAR	GLXMA	
Crop Code							control	control	control	injury	
Rating Data Type							percent	percent	percent	percent	
Rating Unit							Jun/16/2014	Jun/16/2014	Jun/16/2014	Jun/23/2014	
Rating Date							25 DA-A	25 DA-A	25 DA-A	7 DA-B	
Trt-Eval Interval											
# Subsamples, Dec.											
Trt No.	Treatment	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code				
1	Authority First	70	WG	6.4	oz/a	PRE	A	99	70	98	9
1	Cadet	0.91	L	0.6	fl oz/a	POST	B				
1	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
1	Crop oil concentrate		L	1	% v/v	POST	B				
1	AMS		WG	17	lb/100 gal	POST	B				
2	Authority First	70	WG	6.4	oz/a	PRE	A	99	75	92	20
2	Marvel	3	L	7.25	fl oz/a	POST	B				
2	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
2	Crop oil concentrate		L	1	% v/v	POST	B				
2	AMS		WG	17	lb/100 gal	POST	B				
3	Authority First	70	WG	4	oz/a	PRE	A	98	71	95	26
3	Marvel	3	L	7.25	fl oz/a	POST	B				
3	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
3	Crop oil concentrate		L	1	% v/v	POST	B				
3	AMS		WG	17	lb/100 gal	POST	B				
4	Authority MTZ	45	WG	12	oz/a	PRE	A	99	63	80	7
4	Cadet	0.91	L	0.6	fl oz/a	POST	B				
4	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
4	Crop oil concentrate		L	1	% v/v	POST	B				
4	AMS		WG	17	lb/100 gal	POST	B				
5	Authority MTZ	45	WG	12	oz/a	PRE	A	98	64	84	28
5	Marvel	3	L	7.25	fl oz/a	POST	B				
5	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
5	Crop oil concentrate		L	1	% v/v	POST	B				
5	AMS		WG	17	lb/100 gal	POST	B				
6	Untreated							0	0	0	0
7	Authority XL	70	WG	4	oz/a	PRE	A	99	68	95	7
7	Cadet	0.91	L	0.6	fl oz/a	POST	B				
7	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
7	Crop oil concentrate		L	1	% v/v	POST	B				
7	AMS		WG	17	lb/100 gal	POST	B				
8	Authority XL	70	WG	4	oz/a	PRE	A	99	65	90	28
8	Marvel	3	L	7.25	fl oz/a	POST	B				
8	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
8	Crop oil concentrate		L	1	% v/v	POST	B				
8	AMS		WG	17	lb/100 gal	POST	B				
9	Authority MAXX	66	WG	6	oz/a	PRE	A	97	64	92	6
9	Cadet	0.91	L	0.6	fl oz/a	POST	B				
9	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
9	Crop oil concentrate		L	1	% v/v	POST	B				
9	AMS		WG	17	lb/100 gal	POST	B				
10	Authority MAXX	66	WG	6	oz/a	PRE	A	99	63	90	25
10	Marvel	3	L	7.25	fl oz/a	POST	B				
10	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
10	Crop oil concentrate		L	1	% v/v	POST	B				
10	AMS		WG	17	lb/100 gal	POST	B				

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14
 Conducted: Campus T-12

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code	AMAPO	AMBEL	SINAR	GLXMA
Crop Code				
Rating Data Type	control	control	control	injury
Rating Unit	percent	percent	percent	percent
Rating Date	Jun/16/2014	Jun/16/2014	Jun/16/2014	Jun/23/2014
Trt-Eval Interval	25 DA-A	25 DA-A	25 DA-A	7 DA-B
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
11	Authority Assist	4	L	5	fl oz/a	PRE	A	99	61	87	8
11	Cadet	0.91	L	0.6	fl oz/a	POST	B				
11	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
11	Crop oil concentrate		L	1	% v/v	POST	B				
11	AMS		WG	17	lb/100 gal	POST	B				
12	Authority Assist	4	L	5	fl oz/a	PRE	A	99	61	79	25
12	Marvel	3	L	7.25	fl oz/a	POST	B				
12	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
12	Crop oil concentrate		L	1	% v/v	POST	B				
12	AMS		WG	17	lb/100 gal	POST	B				
13	Authority Elite	7	L	25	fl oz/a	PRE	A	99	61	84	7
13	Cadet	0.91	L	0.6	fl oz/a	POST	B				
13	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
13	Crop oil concentrate		L	1	% v/v	POST	B				
13	AMS		WG	17	lb/100 gal	POST	B				
14	Authority Elite	7	L	25	fl oz/a	PRE	A	99	65	84	28
14	Marvel	3	L	7.25	fl oz/a	POST	B				
14	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
14	Crop oil concentrate		L	1	% v/v	POST	B				
14	AMS		WG	17	lb/100 gal	POST	B				
15	Authority First	70	WG	4	oz/a	PRE	A	99	70	92	8
15	Anthem	2.15	L	6	fl oz/a	POST	B				
15	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
15	Crop oil concentrate		L	1	% v/v	POST	B				
15	AMS		WG	17	lb/100 gal	POST	B				
16	Authority First	70	WG	6.4	oz/a	PRE	A	99	71	95	18
16	Anthem	2.15	L	6	fl oz/a	POST	B				
16	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
16	Crop oil concentrate		L	1	% v/v	POST	B				
16	AMS		WG	17	lb/100 gal	POST	B				
17	Authority MTZ	45	WG	12	oz/a	PRE	A	98	61	92	17
17	Anthem	2.15	L	6	fl oz/a	POST	B				
17	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
17	Crop oil concentrate		L	1	% v/v	POST	B				
17	AMS		WG	17	lb/100 gal	POST	B				
18	Authority XL	70	WG	4	oz/a	PRE	A	99	63	95	9
18	Anthem	2.15	L	6	fl oz/a	POST	B				
18	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
18	Crop oil concentrate		L	1	% v/v	POST	B				
18	AMS		WG	17	lb/100 gal	POST	B				
19	Authority MAXX	66	WG	4	oz/a	PRE	A	99	62	92	12
19	Anthem	2.15	L	6	fl oz/a	POST	B				
19	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
19	Crop oil concentrate		L	1	% v/v	POST	B				
19	AMS		WG	17	lb/100 gal	POST	B				

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14 Study Dir.: Sprague and Powell
 Conducted: Campus T-12 Investigator: Christy Sprague

Weed Code	AMAPO	AMBEL	SINAR	GLXMA
Crop Code				
Rating Data Type	control	control	control	injury
Rating Unit	percent	percent	percent	percent
Rating Date	Jun/16/2014	Jun/16/2014	Jun/16/2014	Jun/23/2014
Trt-Eval Interval	25 DA-A	25 DA-A	25 DA-A	7 DA-B

Subsamples, Dec.

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
20	Authority Elite	7	L	25	fl oz/a	PRE	A	99	63	78	18
20	Anthem	2.15	L	6	fl oz/a	POST	B				
20	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
20	Crop oil concentrate		L	1	% v/v	POST	B				
20	AMS		WG	17	lb/100 gal	POST	B				
LSD (P=.05)								1.7	4.6	8.2	6.8
CV								1.26	5.25	6.83	31.69

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

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14
 Conducted: Campus T-12

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code							ANGR	CHEAL	AMAPO	AMBEL	
Crop Code											
Rating Data Type							control	control	control	control	
Rating Unit							percent	percent	percent	percent	
Rating Date							Jun/23/2014	Jun/23/2014	Jun/23/2014	Jun/23/2014	
Trt-Eval Interval							7 DA-B	7 DA-B	7 DA-B	7 DA-B	
# Subsamples, Dec.											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code				
1	Authority First	70	WG	6.4	oz/a	PRE	A	92	99	99	93
1	Cadet	0.91	L	0.6	fl oz/a	POST	B				
1	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
1	Crop oil concentrate		L	1	% v/v	POST	B				
1	AMS		WG	17	lb/100 gal	POST	B				
2	Authority First	70	WG	6.4	oz/a	PRE	A	85	99	99	98
2	Marvel	3	L	7.25	fl oz/a	POST	B				
2	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
2	Crop oil concentrate		L	1	% v/v	POST	B				
2	AMS		WG	17	lb/100 gal	POST	B				
3	Authority First	70	WG	4	oz/a	PRE	A	86	99	99	99
3	Marvel	3	L	7.25	fl oz/a	POST	B				
3	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
3	Crop oil concentrate		L	1	% v/v	POST	B				
3	AMS		WG	17	lb/100 gal	POST	B				
4	Authority MTZ	45	WG	12	oz/a	PRE	A	96	99	99	76
4	Cadet	0.91	L	0.6	fl oz/a	POST	B				
4	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
4	Crop oil concentrate		L	1	% v/v	POST	B				
4	AMS		WG	17	lb/100 gal	POST	B				
5	Authority MTZ	45	WG	12	oz/a	PRE	A	85	99	99	98
5	Marvel	3	L	7.25	fl oz/a	POST	B				
5	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
5	Crop oil concentrate		L	1	% v/v	POST	B				
5	AMS		WG	17	lb/100 gal	POST	B				
6	Untreated							0	0	0	0
7	Authority XL	70	WG	4	oz/a	PRE	A	95	99	99	90
7	Cadet	0.91	L	0.6	fl oz/a	POST	B				
7	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
7	Crop oil concentrate		L	1	% v/v	POST	B				
7	AMS		WG	17	lb/100 gal	POST	B				
8	Authority XL	70	WG	4	oz/a	PRE	A	89	99	99	99
8	Marvel	3	L	7.25	fl oz/a	POST	B				
8	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
8	Crop oil concentrate		L	1	% v/v	POST	B				
8	AMS		WG	17	lb/100 gal	POST	B				
9	Authority MAXX	66	WG	6	oz/a	PRE	A	97	99	99	90
9	Cadet	0.91	L	0.6	fl oz/a	POST	B				
9	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
9	Crop oil concentrate		L	1	% v/v	POST	B				
9	AMS		WG	17	lb/100 gal	POST	B				
10	Authority MAXX	66	WG	6	oz/a	PRE	A	86	99	99	99
10	Marvel	3	L	7.25	fl oz/a	POST	B				
10	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
10	Crop oil concentrate		L	1	% v/v	POST	B				
10	AMS		WG	17	lb/100 gal	POST	B				

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14
 Conducted: Campus T-12

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code	ANGR	CHEAL	AMAPO	AMBEL
Crop Code				
Rating Data Type	control	control	control	control
Rating Unit	percent	percent	percent	percent
Rating Date	Jun/23/2014	Jun/23/2014	Jun/23/2014	Jun/23/2014
Trt-Eval Interval	7 DA-B	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				
11	Authority Assist	4	L	5	fl oz/a	PRE	A	91	99	99	90
11	Cadet	0.91	L	0.6	fl oz/a	POST	B				
11	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
11	Crop oil concentrate		L	1	% v/v	POST	B				
11	AMS		WG	17	lb/100 gal	POST	B				
12	Authority Assist	4	L	5	fl oz/a	PRE	A	85	98	99	99
12	Marvel	3	L	7.25	fl oz/a	POST	B				
12	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
12	Crop oil concentrate		L	1	% v/v	POST	B				
12	AMS		WG	17	lb/100 gal	POST	B				
13	Authority Elite	7	L	25	fl oz/a	PRE	A	97	99	99	76
13	Cadet	0.91	L	0.6	fl oz/a	POST	B				
13	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
13	Crop oil concentrate		L	1	% v/v	POST	B				
13	AMS		WG	17	lb/100 gal	POST	B				
14	Authority Elite	7	L	25	fl oz/a	PRE	A	95	99	99	99
14	Marvel	3	L	7.25	fl oz/a	POST	B				
14	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
14	Crop oil concentrate		L	1	% v/v	POST	B				
14	AMS		WG	17	lb/100 gal	POST	B				
15	Authority First	70	WG	4	oz/a	PRE	A	96	99	99	92
15	Anthem	2.15	L	6	fl oz/a	POST	B				
15	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
15	Crop oil concentrate		L	1	% v/v	POST	B				
15	AMS		WG	17	lb/100 gal	POST	B				
16	Authority First	70	WG	6.4	oz/a	PRE	A	97	99	99	96
16	Anthem	2.15	L	6	fl oz/a	POST	B				
16	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
16	Crop oil concentrate		L	1	% v/v	POST	B				
16	AMS		WG	17	lb/100 gal	POST	B				
17	Authority MTZ	45	WG	12	oz/a	PRE	A	97	99	99	90
17	Anthem	2.15	L	6	fl oz/a	POST	B				
17	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
17	Crop oil concentrate		L	1	% v/v	POST	B				
17	AMS		WG	17	lb/100 gal	POST	B				
18	Authority XL	70	WG	4	oz/a	PRE	A	96	99	99	91
18	Anthem	2.15	L	6	fl oz/a	POST	B				
18	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
18	Crop oil concentrate		L	1	% v/v	POST	B				
18	AMS		WG	17	lb/100 gal	POST	B				
19	Authority MAXX	66	WG	4	oz/a	PRE	A	95	99	99	96
19	Anthem	2.15	L	6	fl oz/a	POST	B				
19	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
19	Crop oil concentrate		L	1	% v/v	POST	B				
19	AMS		WG	17	lb/100 gal	POST	B				

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14 Study Dir.: Sprague and Powell
 Conducted: Campus T-12 Investigator: Christy Sprague

Weed Code	ANGR	CHEAL	AMAPO	AMBEL
Crop Code				
Rating Data Type	control	control	control	control
Rating Unit	percent	percent	percent	percent
Rating Date	Jun/23/2014	Jun/23/2014	Jun/23/2014	Jun/23/2014
Trt-Eval Interval	7 DA-B	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				
20	Authority Elite	7	L	25	fl oz/a	PRE	A	97	99	99	90
20	Anthem	2.15	L	6	fl oz/a	POST	B				
20	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
20	Crop oil concentrate		L	1	% v/v	POST	B				
20	AMS		WG	17	lb/100 gal	POST	B				
LSD (P=.05)								7.5	0.5	0.0	8.4
CV								6.04	0.4	0.0	6.79

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

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14
 Conducted: Campus T-12

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code		SINAR		ANGR		CHEAL					
Crop Code		GLXMA									
Rating Data Type		control		control		control					
Rating Unit		percent		percent		percent					
Rating Date		Jun/23/2014		Jun/30/2014		Jun/30/2014					
Trt-Eval Interval		7 DA-B		14 DA-B		14 DA-B					
# Subsamples, Dec.											
Trt No.	Treatment	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code				
1	Authority First	70	WG	6.4	oz/a	PRE	A	99	7	98	99
1	Cadet	0.91	L	0.6	fl oz/a	POST	B				
1	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
1	Crop oil concentrate		L	1	% v/v	POST	B				
1	AMS		WG	17	lb/100 gal	POST	B				
2	Authority First	70	WG	6.4	oz/a	PRE	A	99	14	93	99
2	Marvel	3	L	7.25	fl oz/a	POST	B				
2	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
2	Crop oil concentrate		L	1	% v/v	POST	B				
2	AMS		WG	17	lb/100 gal	POST	B				
3	Authority First	70	WG	4	oz/a	PRE	A	99	15	90	99
3	Marvel	3	L	7.25	fl oz/a	POST	B				
3	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
3	Crop oil concentrate		L	1	% v/v	POST	B				
3	AMS		WG	17	lb/100 gal	POST	B				
4	Authority MTZ	45	WG	12	oz/a	PRE	A	99	7	93	99
4	Cadet	0.91	L	0.6	fl oz/a	POST	B				
4	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
4	Crop oil concentrate		L	1	% v/v	POST	B				
4	AMS		WG	17	lb/100 gal	POST	B				
5	Authority MTZ	45	WG	12	oz/a	PRE	A	99	16	90	99
5	Marvel	3	L	7.25	fl oz/a	POST	B				
5	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
5	Crop oil concentrate		L	1	% v/v	POST	B				
5	AMS		WG	17	lb/100 gal	POST	B				
6	Untreated							0	0	0	0
7	Authority XL	70	WG	4	oz/a	PRE	A	99	9	97	99
7	Cadet	0.91	L	0.6	fl oz/a	POST	B				
7	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
7	Crop oil concentrate		L	1	% v/v	POST	B				
7	AMS		WG	17	lb/100 gal	POST	B				
8	Authority XL	70	WG	4	oz/a	PRE	A	99	19	93	99
8	Marvel	3	L	7.25	fl oz/a	POST	B				
8	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
8	Crop oil concentrate		L	1	% v/v	POST	B				
8	AMS		WG	17	lb/100 gal	POST	B				
9	Authority MAXX	66	WG	6	oz/a	PRE	A	99	5	96	99
9	Cadet	0.91	L	0.6	fl oz/a	POST	B				
9	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
9	Crop oil concentrate		L	1	% v/v	POST	B				
9	AMS		WG	17	lb/100 gal	POST	B				
10	Authority MAXX	66	WG	6	oz/a	PRE	A	99	14	92	99
10	Marvel	3	L	7.25	fl oz/a	POST	B				
10	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
10	Crop oil concentrate		L	1	% v/v	POST	B				
10	AMS		WG	17	lb/100 gal	POST	B				

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14
Conducted: Campus T-12Study Dir.: Sprague and Powell
Investigator: Christy Sprague

Weed Code	SINAR	GLXMA	ANGR	CHEAL
Crop Code				
Rating Data Type	control	injury	control	control
Rating Unit	percent	percent	percent	percent
Rating Date	Jun/23/2014	Jun/30/2014	Jun/30/2014	Jun/30/2014
Trt-Eval Interval	7 DA-B	14 DA-B	14 DA-B	14 DA-B
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
11	Authority Assist	4	L	5	fl oz/a	PRE	A	99	8	97	99
11	Cadet	0.91	L	0.6	fl oz/a	POST	B				
11	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
11	Crop oil concentrate		L	1	% v/v	POST	B				
11	AMS		WG	17	lb/100 gal	POST	B				
12	Authority Assist	4	L	5	fl oz/a	PRE	A	99	15	89	98
12	Marvel	3	L	7.25	fl oz/a	POST	B				
12	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
12	Crop oil concentrate		L	1	% v/v	POST	B				
12	AMS		WG	17	lb/100 gal	POST	B				
13	Authority Elite	7	L	25	fl oz/a	PRE	A	99	4	99	99
13	Cadet	0.91	L	0.6	fl oz/a	POST	B				
13	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
13	Crop oil concentrate		L	1	% v/v	POST	B				
13	AMS		WG	17	lb/100 gal	POST	B				
14	Authority Elite	7	L	25	fl oz/a	PRE	A	99	13	97	99
14	Marvel	3	L	7.25	fl oz/a	POST	B				
14	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
14	Crop oil concentrate		L	1	% v/v	POST	B				
14	AMS		WG	17	lb/100 gal	POST	B				
15	Authority First	70	WG	4	oz/a	PRE	A	99	8	98	99
15	Anthem	2.15	L	6	fl oz/a	POST	B				
15	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
15	Crop oil concentrate		L	1	% v/v	POST	B				
15	AMS		WG	17	lb/100 gal	POST	B				
16	Authority First	70	WG	6.4	oz/a	PRE	A	99	9	99	99
16	Anthem	2.15	L	6	fl oz/a	POST	B				
16	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
16	Crop oil concentrate		L	1	% v/v	POST	B				
16	AMS		WG	17	lb/100 gal	POST	B				
17	Authority MTZ	45	WG	12	oz/a	PRE	A	99	7	99	99
17	Anthem	2.15	L	6	fl oz/a	POST	B				
17	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
17	Crop oil concentrate		L	1	% v/v	POST	B				
17	AMS		WG	17	lb/100 gal	POST	B				
18	Authority XL	70	WG	4	oz/a	PRE	A	99	6	98	99
18	Anthem	2.15	L	6	fl oz/a	POST	B				
18	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
18	Crop oil concentrate		L	1	% v/v	POST	B				
18	AMS		WG	17	lb/100 gal	POST	B				
19	Authority MAXX	66	WG	4	oz/a	PRE	A	99	6	99	99
19	Anthem	2.15	L	6	fl oz/a	POST	B				
19	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
19	Crop oil concentrate		L	1	% v/v	POST	B				
19	AMS		WG	17	lb/100 gal	POST	B				

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14 Study Dir.: Sprague and Powell
 Conducted: Campus T-12 Investigator: Christy Sprague

Weed Code	SINAR		ANGR	CHEAL
Crop Code		GLXMA		
Rating Data Type	control	injury	control	control
Rating Unit	percent	percent	percent	percent
Rating Date	Jun/23/2014	Jun/30/2014	Jun/30/2014	Jun/30/2014
Trt-Eval Interval	7 DA-B	14 DA-B	14 DA-B	14 DA-B
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
20	Authority Elite	7	L	25	fl oz/a	PRE	A	99	9	99	99
20	Anthem	2.15	L	6	fl oz/a	POST	B				
20	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
20	Crop oil concentrate		L	1	% v/v	POST	B				
20	AMS		WG	17	lb/100 gal	POST	B				
LSD (P=.05)								0.0	4.1	4.0	0.7
CV								0.0	30.41	3.09	0.54

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

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14
 Conducted: Campus T-12

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code								AMAPO	AMBEL	SINAR	GLXMA
Crop Code											
Rating Data Type								control	control	control	injury
Rating Unit								percent	percent	percent	percent
Rating Date								Jun/30/2014	Jun/30/2014	Jun/30/2014	Jul/14/2014
Trt-Eval Interval								14 DA-B	14 DA-B	14 DA-B	28 DA-B
# Subsamples, Dec.											
Trt No.	Treatment	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code				
1	Authority First	70	WG	6.4	oz/a	PRE	A	99	93	99	2
1	Cadet	0.91	L	0.6	fl oz/a	POST	B				
1	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
1	Crop oil concentrate		L	1	% v/v	POST	B				
1	AMS		WG	17	lb/100 gal	POST	B				
2	Authority First	70	WG	6.4	oz/a	PRE	A	99	99	99	6
2	Marvel	3	L	7.25	fl oz/a	POST	B				
2	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
2	Crop oil concentrate		L	1	% v/v	POST	B				
2	AMS		WG	17	lb/100 gal	POST	B				
3	Authority First	70	WG	4	oz/a	PRE	A	99	98	99	7
3	Marvel	3	L	7.25	fl oz/a	POST	B				
3	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
3	Crop oil concentrate		L	1	% v/v	POST	B				
3	AMS		WG	17	lb/100 gal	POST	B				
4	Authority MTZ	45	WG	12	oz/a	PRE	A	99	89	99	3
4	Cadet	0.91	L	0.6	fl oz/a	POST	B				
4	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
4	Crop oil concentrate		L	1	% v/v	POST	B				
4	AMS		WG	17	lb/100 gal	POST	B				
5	Authority MTZ	45	WG	12	oz/a	PRE	A	99	97	99	5
5	Marvel	3	L	7.25	fl oz/a	POST	B				
5	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
5	Crop oil concentrate		L	1	% v/v	POST	B				
5	AMS		WG	17	lb/100 gal	POST	B				
6	Untreated							0	0	0	0
7	Authority XL	70	WG	4	oz/a	PRE	A	99	94	99	4
7	Cadet	0.91	L	0.6	fl oz/a	POST	B				
7	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
7	Crop oil concentrate		L	1	% v/v	POST	B				
7	AMS		WG	17	lb/100 gal	POST	B				
8	Authority XL	70	WG	4	oz/a	PRE	A	99	99	99	7
8	Marvel	3	L	7.25	fl oz/a	POST	B				
8	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
8	Crop oil concentrate		L	1	% v/v	POST	B				
8	AMS		WG	17	lb/100 gal	POST	B				
9	Authority MAXX	66	WG	6	oz/a	PRE	A	99	92	99	2
9	Cadet	0.91	L	0.6	fl oz/a	POST	B				
9	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
9	Crop oil concentrate		L	1	% v/v	POST	B				
9	AMS		WG	17	lb/100 gal	POST	B				
10	Authority MAXX	66	WG	6	oz/a	PRE	A	99	99	99	5
10	Marvel	3	L	7.25	fl oz/a	POST	B				
10	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
10	Crop oil concentrate		L	1	% v/v	POST	B				
10	AMS		WG	17	lb/100 gal	POST	B				

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14
 Conducted: Campus T-12

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

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

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
11	Authority Assist	4	L	5	fl oz/a	PRE	A	99	89	99	3
11	Cadet	0.91	L	0.6	fl oz/a	POST	B				
11	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
11	Crop oil concentrate		L	1	% v/v	POST	B				
11	AMS		WG	17	lb/100 gal	POST	B				
12	Authority Assist	4	L	5	fl oz/a	PRE	A	99	97	99	6
12	Marvel	3	L	7.25	fl oz/a	POST	B				
12	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
12	Crop oil concentrate		L	1	% v/v	POST	B				
12	AMS		WG	17	lb/100 gal	POST	B				
13	Authority Elite	7	L	25	fl oz/a	PRE	A	99	86	98	1
13	Cadet	0.91	L	0.6	fl oz/a	POST	B				
13	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
13	Crop oil concentrate		L	1	% v/v	POST	B				
13	AMS		WG	17	lb/100 gal	POST	B				
14	Authority Elite	7	L	25	fl oz/a	PRE	A	99	98	99	5
14	Marvel	3	L	7.25	fl oz/a	POST	B				
14	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
14	Crop oil concentrate		L	1	% v/v	POST	B				
14	AMS		WG	17	lb/100 gal	POST	B				
15	Authority First	70	WG	4	oz/a	PRE	A	99	98	99	3
15	Anthem	2.15	L	6	fl oz/a	POST	B				
15	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
15	Crop oil concentrate		L	1	% v/v	POST	B				
15	AMS		WG	17	lb/100 gal	POST	B				
16	Authority First	70	WG	6.4	oz/a	PRE	A	99	97	99	2
16	Anthem	2.15	L	6	fl oz/a	POST	B				
16	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
16	Crop oil concentrate		L	1	% v/v	POST	B				
16	AMS		WG	17	lb/100 gal	POST	B				
17	Authority MTZ	45	WG	12	oz/a	PRE	A	99	94	99	3
17	Anthem	2.15	L	6	fl oz/a	POST	B				
17	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
17	Crop oil concentrate		L	1	% v/v	POST	B				
17	AMS		WG	17	lb/100 gal	POST	B				
18	Authority XL	70	WG	4	oz/a	PRE	A	99	96	99	4
18	Anthem	2.15	L	6	fl oz/a	POST	B				
18	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
18	Crop oil concentrate		L	1	% v/v	POST	B				
18	AMS		WG	17	lb/100 gal	POST	B				
19	Authority MAXX	66	WG	4	oz/a	PRE	A	99	92	99	4
19	Anthem	2.15	L	6	fl oz/a	POST	B				
19	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
19	Crop oil concentrate		L	1	% v/v	POST	B				
19	AMS		WG	17	lb/100 gal	POST	B				

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14 Study Dir.: Sprague and Powell
 Conducted: Campus T-12 Investigator: Christy Sprague

Weed Code	AMAPO	AMBEL	SINAR	GLXMA
Crop Code				
Rating Data Type	control	control	control	injury
Rating Unit	percent	percent	percent	percent
Rating Date	Jun/30/2014	Jun/30/2014	Jun/30/2014	Jul/14/2014
Trt-Eval Interval	14 DA-B	14 DA-B	14 DA-B	28 DA-B

Subsamples, Dec.

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
20	Authority Elite	7	L	25	fl oz/a	PRE	A	99	90	99	4
20	Anthem	2.15	L	6	fl oz/a	POST	B				
20	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
20	Crop oil concentrate		L	1	% v/v	POST	B				
20	AMS		WG	17	lb/100 gal	POST	B				
LSD (P=.05)								0.0	4.7	0.8	3.1
CV								0.0	3.71	0.56	60.54

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

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14
 Conducted: Campus T-12

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

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

Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Grow Stg	Appl Code				
1	Authority First	70	WG	6.4	oz/a	PRE	A	97	99	99	97
1	Cadet	0.91	L	0.6	fl oz/a	POST	B				
1	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
1	Crop oil concentrate		L	1	% v/v	POST	B				
1	AMS		WG	17	lb/100 gal	POST	B				
2	Authority First	70	WG	6.4	oz/a	PRE	A	99	99	99	99
2	Marvel	3	L	7.25	fl oz/a	POST	B				
2	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
2	Crop oil concentrate		L	1	% v/v	POST	B				
2	AMS		WG	17	lb/100 gal	POST	B				
3	Authority First	70	WG	4	oz/a	PRE	A	93	99	99	99
3	Marvel	3	L	7.25	fl oz/a	POST	B				
3	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
3	Crop oil concentrate		L	1	% v/v	POST	B				
3	AMS		WG	17	lb/100 gal	POST	B				
4	Authority MTZ	45	WG	12	oz/a	PRE	A	87	99	99	84
4	Cadet	0.91	L	0.6	fl oz/a	POST	B				
4	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
4	Crop oil concentrate		L	1	% v/v	POST	B				
4	AMS		WG	17	lb/100 gal	POST	B				
5	Authority MTZ	45	WG	12	oz/a	PRE	A	92	99	99	94
5	Marvel	3	L	7.25	fl oz/a	POST	B				
5	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
5	Crop oil concentrate		L	1	% v/v	POST	B				
5	AMS		WG	17	lb/100 gal	POST	B				
6	Untreated							0	0	0	0
7	Authority XL	70	WG	4	oz/a	PRE	A	96	99	99	97
7	Cadet	0.91	L	0.6	fl oz/a	POST	B				
7	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
7	Crop oil concentrate		L	1	% v/v	POST	B				
7	AMS		WG	17	lb/100 gal	POST	B				
8	Authority XL	70	WG	4	oz/a	PRE	A	93	98	99	99
8	Marvel	3	L	7.25	fl oz/a	POST	B				
8	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
8	Crop oil concentrate		L	1	% v/v	POST	B				
8	AMS		WG	17	lb/100 gal	POST	B				
9	Authority MAXX	66	WG	6	oz/a	PRE	A	97	99	99	94
9	Cadet	0.91	L	0.6	fl oz/a	POST	B				
9	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
9	Crop oil concentrate		L	1	% v/v	POST	B				
9	AMS		WG	17	lb/100 gal	POST	B				
10	Authority MAXX	66	WG	6	oz/a	PRE	A	95	99	99	99
10	Marvel	3	L	7.25	fl oz/a	POST	B				
10	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
10	Crop oil concentrate		L	1	% v/v	POST	B				
10	AMS		WG	17	lb/100 gal	POST	B				

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14
 Conducted: Campus T-12

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

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

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
11	Authority Assist	4	L	5	fl oz/a	PRE	A	90	99	99	84
11	Cadet	0.91	L	0.6	fl oz/a	POST	B				
11	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
11	Crop oil concentrate		L	1	% v/v	POST	B				
11	AMS		WG	17	lb/100 gal	POST	B				
12	Authority Assist	4	L	5	fl oz/a	PRE	A	90	99	99	95
12	Marvel	3	L	7.25	fl oz/a	POST	B				
12	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
12	Crop oil concentrate		L	1	% v/v	POST	B				
12	AMS		WG	17	lb/100 gal	POST	B				
13	Authority Elite	7	L	25	fl oz/a	PRE	A	98	99	99	88
13	Cadet	0.91	L	0.6	fl oz/a	POST	B				
13	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
13	Crop oil concentrate		L	1	% v/v	POST	B				
13	AMS		WG	17	lb/100 gal	POST	B				
14	Authority Elite	7	L	25	fl oz/a	PRE	A	99	99	99	93
14	Marvel	3	L	7.25	fl oz/a	POST	B				
14	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
14	Crop oil concentrate		L	1	% v/v	POST	B				
14	AMS		WG	17	lb/100 gal	POST	B				
15	Authority First	70	WG	4	oz/a	PRE	A	99	99	99	95
15	Anthem	2.15	L	6	fl oz/a	POST	B				
15	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
15	Crop oil concentrate		L	1	% v/v	POST	B				
15	AMS		WG	17	lb/100 gal	POST	B				
16	Authority First	70	WG	6.4	oz/a	PRE	A	99	99	99	97
16	Anthem	2.15	L	6	fl oz/a	POST	B				
16	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
16	Crop oil concentrate		L	1	% v/v	POST	B				
16	AMS		WG	17	lb/100 gal	POST	B				
17	Authority MTZ	45	WG	12	oz/a	PRE	A	99	99	99	91
17	Anthem	2.15	L	6	fl oz/a	POST	B				
17	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
17	Crop oil concentrate		L	1	% v/v	POST	B				
17	AMS		WG	17	lb/100 gal	POST	B				
18	Authority XL	70	WG	4	oz/a	PRE	A	99	99	99	97
18	Anthem	2.15	L	6	fl oz/a	POST	B				
18	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
18	Crop oil concentrate		L	1	% v/v	POST	B				
18	AMS		WG	17	lb/100 gal	POST	B				
19	Authority MAXX	66	WG	4	oz/a	PRE	A	99	99	99	96
19	Anthem	2.15	L	6	fl oz/a	POST	B				
19	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
19	Crop oil concentrate		L	1	% v/v	POST	B				
19	AMS		WG	17	lb/100 gal	POST	B				

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14 Study Dir.: Sprague and Powell
 Conducted: Campus T-12 Investigator: Christy Sprague

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

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
20	Authority Elite	7	L	25	fl oz/a	PRE	A	98	99	99	92
20	Anthem	2.15	L	6	fl oz/a	POST	B				
20	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B				
20	Crop oil concentrate		L	1	% v/v	POST	B				
20	AMS		WG	17	lb/100 gal	POST	B				
LSD (P=.05)								3.6	0.6	0.0	4.8
CV								2.82	0.48	0.0	3.79

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

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14
 Conducted: Campus T-12

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code	SINAR		
Crop Code		GLXMA	GLXMA
Rating Data Type	control	moisture	yield
Rating Unit	percent	percent	bu/acre
Rating Date	Jul/14/2014	Nov/03/2014	Nov/03/2014
Trt-Eval Interval	28 DA-B	140 DA-B	at 13% M
# Subsamples, Dec.			

Trt No.	Treatment	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code			
1	Authority First	70	WG	6.4	oz/a	PRE	A	99	13.8	72.7
1	Cadet	0.91	L	0.6	fl oz/a	POST	B			
1	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B			
1	Crop oil concentrate		L	1	% v/v	POST	B			
1	AMS		WG	17	lb/100 gal	POST	B			
2	Authority First	70	WG	6.4	oz/a	PRE	A	99	13.6	68.5
2	Marvel	3	L	7.25	fl oz/a	POST	B			
2	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B			
2	Crop oil concentrate		L	1	% v/v	POST	B			
2	AMS		WG	17	lb/100 gal	POST	B			
3	Authority First	70	WG	4	oz/a	PRE	A	99	12.8	69.6
3	Marvel	3	L	7.25	fl oz/a	POST	B			
3	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B			
3	Crop oil concentrate		L	1	% v/v	POST	B			
3	AMS		WG	17	lb/100 gal	POST	B			
4	Authority MTZ	45	WG	12	oz/a	PRE	A	99	13.2	71.2
4	Cadet	0.91	L	0.6	fl oz/a	POST	B			
4	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B			
4	Crop oil concentrate		L	1	% v/v	POST	B			
4	AMS		WG	17	lb/100 gal	POST	B			
5	Authority MTZ	45	WG	12	oz/a	PRE	A	99	13.5	68.0
5	Marvel	3	L	7.25	fl oz/a	POST	B			
5	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B			
5	Crop oil concentrate		L	1	% v/v	POST	B			
5	AMS		WG	17	lb/100 gal	POST	B			
6	Untreated							0	14.9	25.5
7	Authority XL	70	WG	4	oz/a	PRE	A	99	13.4	72.2
7	Cadet	0.91	L	0.6	fl oz/a	POST	B			
7	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B			
7	Crop oil concentrate		L	1	% v/v	POST	B			
7	AMS		WG	17	lb/100 gal	POST	B			
8	Authority XL	70	WG	4	oz/a	PRE	A	99	13.4	70.5
8	Marvel	3	L	7.25	fl oz/a	POST	B			
8	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B			
8	Crop oil concentrate		L	1	% v/v	POST	B			
8	AMS		WG	17	lb/100 gal	POST	B			
9	Authority MAXX	66	WG	6	oz/a	PRE	A	99	13.7	70.7
9	Cadet	0.91	L	0.6	fl oz/a	POST	B			
9	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B			
9	Crop oil concentrate		L	1	% v/v	POST	B			
9	AMS		WG	17	lb/100 gal	POST	B			
10	Authority MAXX	66	WG	6	oz/a	PRE	A	99	13.5	70.3
10	Marvel	3	L	7.25	fl oz/a	POST	B			
10	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B			
10	Crop oil concentrate		L	1	% v/v	POST	B			
10	AMS		WG	17	lb/100 gal	POST	B			

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14
 Conducted: Campus T-12

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code		SINAR		
Crop Code		control	GLXMA	GLXMA
Rating Data Type		percent	moisture	yield
Rating Unit		Jul/14/2014	percent	bu/acre
Rating Date		28 DA-B	Nov/03/2014	Nov/03/2014
Trt-Eval Interval			140 DA-B	at 13% M
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code			
11	Authority Assist	4	L	5	fl oz/a	PRE	A	99	13.8	66.7
11	Cadet	0.91	L	0.6	fl oz/a	POST	B			
11	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B			
11	Crop oil concentrate		L	1	% v/v	POST	B			
11	AMS		WG	17	lb/100 gal	POST	B			
12	Authority Assist	4	L	5	fl oz/a	PRE	A	97	13.1	69.7
12	Marvel	3	L	7.25	fl oz/a	POST	B			
12	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B			
12	Crop oil concentrate		L	1	% v/v	POST	B			
12	AMS		WG	17	lb/100 gal	POST	B			
13	Authority Elite	7	L	25	fl oz/a	PRE	A	97	14.4	69.2
13	Cadet	0.91	L	0.6	fl oz/a	POST	B			
13	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B			
13	Crop oil concentrate		L	1	% v/v	POST	B			
13	AMS		WG	17	lb/100 gal	POST	B			
14	Authority Elite	7	L	25	fl oz/a	PRE	A	99	13.3	67.6
14	Marvel	3	L	7.25	fl oz/a	POST	B			
14	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B			
14	Crop oil concentrate		L	1	% v/v	POST	B			
14	AMS		WG	17	lb/100 gal	POST	B			
15	Authority First	70	WG	4	oz/a	PRE	A	99	13.5	71.4
15	Anthem	2.15	L	6	fl oz/a	POST	B			
15	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B			
15	Crop oil concentrate		L	1	% v/v	POST	B			
15	AMS		WG	17	lb/100 gal	POST	B			
16	Authority First	70	WG	6.4	oz/a	PRE	A	99	12.8	70.9
16	Anthem	2.15	L	6	fl oz/a	POST	B			
16	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B			
16	Crop oil concentrate		L	1	% v/v	POST	B			
16	AMS		WG	17	lb/100 gal	POST	B			
17	Authority MTZ	45	WG	12	oz/a	PRE	A	99	13.9	72.3
17	Anthem	2.15	L	6	fl oz/a	POST	B			
17	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B			
17	Crop oil concentrate		L	1	% v/v	POST	B			
17	AMS		WG	17	lb/100 gal	POST	B			
18	Authority XL	70	WG	4	oz/a	PRE	A	99	13.2	71.7
18	Anthem	2.15	L	6	fl oz/a	POST	B			
18	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B			
18	Crop oil concentrate		L	1	% v/v	POST	B			
18	AMS		WG	17	lb/100 gal	POST	B			
19	Authority MAXX	66	WG	4	oz/a	PRE	A	99	13.2	69.9
19	Anthem	2.15	L	6	fl oz/a	POST	B			
19	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B			
19	Crop oil concentrate		L	1	% v/v	POST	B			
19	AMS		WG	17	lb/100 gal	POST	B			

MSU Weed Science Research Program

Weed control with Authority herbicides in soybean

Trial ID: SOY07-14 Study Dir.: Sprague and Powell
 Conducted: Campus T-12 Investigator: Christy Sprague

Weed Code		SINAR		
Crop Code		control	GLXMA	GLXMA
Rating Data Type		percent	moisture	yield
Rating Unit		percent	percent	bu/acre
Rating Date		Jul/14/2014	Nov/03/2014	Nov/03/2014
Trt-Eval Interval		28 DA-B	140 DA-B	at 13% M
# Subsamples, Dec.				

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code			
20	Authority Elite	7	L	25	fl oz/a	PRE	A	99	13.3	71.4
20	Anthem	2.15	L	6	fl oz/a	POST	B			
20	Roundup PowerMax	4.5	SL	32	fl oz/a	POST	B			
20	Crop oil concentrate		L	1	% v/v	POST	B			
20	AMS		WG	17	lb/100 gal	POST	B			
LSD (P=.05)								1.1	0.95	4.26
CV								0.86	4.97	4.43

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