

MSU Weed Science Research Program

Different systems for early-season weed control in Roundup Ready soybean

Trial ID: SOY03-10 Study Dir.: Sprague, Powell
 Conducted: T-10 Center Investigator: Christy Sprague

Date Planted: 5/28/2010 Row Spacing: 30 IN
 Variety: Pioneer 92M61 No. of Reps: 4
 Population: 157,000 Seeds/Acre % OM: 2.9
 Soil Type: Loam pH: 7.6
 Plot Size: 10 X 35 FT Design: RANDOMIZED COMPLETE BLOCK

Tillage: Fall chisel plow and spring soil finish
 Fertilizer: None

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1.	ANGR	mainly foxtail species	SETARIA SP.
2.	AMASS	REDROOT PIGWEED, POWELL AMARANTH	AMARANTHUS SP.
3.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
4.	AMBEL	RAGWEED, COMMON	AMBROSIA ARTEMISIIFOLIA L.
5.	BRAKA	MUSTARD, WILD	BRASSICA KABER (DC.) L.C. Wheeler
6.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
Crop	Code	Common Name	
1.	GLXMA	SOYBEAN	

Application Description

	A	B	C
Application Timing:	PRE	MPOS	LPOS
Date Treated:	5/28/2010	6/21/2010	6/28/2010
Time Treated:	2:00 pm	9:30 am	8:45 am
% Cloud Cover:	0	0	98
Air Temp., Unit:	83 F	76 F	73 F
% Relative Humidity:	52	60	81
Wind Speed/Unit/Dir:	4 mph NE	5 mph SE	4 mph SE
Soil Temp., Unit:	79 F	71 F	71 F
Soil/Leaf Surface M:	5 -	4 5	1 3
Soil Moist (1=w 5=d):	3	3	1

Crop Stage at Each Application

	A	B	C
Crop Name:	GLXMA	GLXMA	GLXMA
Height (In.):	-	4-6"	10-13"
Stage (L):	-	V4	V4

Weed Stage at Each Application

	A	B	C
Weed 1 Name:	ANGR	ANGR	ANGR
Height (In.):	-	3-6"	6-14"
Stage (L):	-	3-4	4-5
Weed 2 Name:	AMASS	AMASS	AMASS
Height (In.):	-	2-4"	4-10"
Stage (L):	-	8-12	5-7
Weed 3 Name:	CHEAL	CHEAL	CHEAL
Height (In.):	-	2-4"	2-8"
Stage (L):	-	8-12	6-12
Weed 4 Name:	AMBEL	AMBEL	AMBEL
Height (In.):	-	2-4"	2-12"
Stage (L):	-	4-5	4-8
Weed 5 Name:	BRAKA	BRAKA	BRAKA
Height (In.):	-	3-6"	5-20"
Stage (L):	-	4-6	4-6
Weed 6 Name:	ABUTH	ABUTH	ABUTH
Height (In.):	-	3"	5"
Stage (L):	-	5	4

Weed Density (plants/sq. ft.)

	1	2	3	4	5	6
Weed Name:	ANGR	CHEAL	AMBEL	AMASS	ABUTH	BRAKA
Density:	15	3	2	7	<1	1

Application Equipment

Appl	Sprayer Type	Speed MPH	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	GPA	Carrier	PSI
A	Cub	3.8	AirMix	11003	21"	20"	100"	19	water	28
B	cub	3.8	AirMix	11003	26"	20"	100"	19	water	28
C	Cub	3.8	AirMix	11003	25"	20"	100"	19	water	28

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								ANGR	CHEAL	AMASS	AMBEL	BRAKA	
Weed Code													
Crop Code								GLXMA					
Rating Data Type								injury	control	control	control	control	
Rating Unit								percent	percent	percent	percent	percent	
Rating Date								6/21/2010	6/21/2010	6/21/2010	6/21/2010	6/21/2010	
Trt-Eval Interval								0 DA-B	0 DA-B	0 DA-B	0 DA-B	0 DA-B	
# Subsamples, Dec.								0	0	0	0	0	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Grow Stg	Appl Code						
1	Prefix	5.29	L	2	pt/a	PRE	A	13	99	92	99	95	99
1	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	C						
1	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C						
2	Boundary	6.5	L	1.5	pt/a	PRE	A	10	99	99	99	76	99
2	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	C						
2	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C						
3	Boundary	6.5	L	1.5	pt/a	PRE	A	13	99	99	99	75	99
3	Flexstar GT	3.31	SL	3	pt/a	LPOS	C						
3	Activator 90		L	0.25	% v/v	LPOS	C						
3	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C						
4	Touchdown Total	4.17	SL	24	fl oz/a	MPOS	B	0	0	0	0	0	0
4	N-PAK AMS Liquid		L	2.5	% v/v	MPOS	B						
5	Flexstar GT	3.31	SL	3	pt/a	MPOS	B	0	0	0	0	0	0
5	Activator 90		L	0.25	% v/v	MPOS	B						
5	N-PAK AMS Liquid		L	2.5	% v/v	MPOS	B						
6	Sequence	5.25	L	3	pt/a	MPOS	B	0	0	0	0	0	0
6	N-PAK AMS Liquid		L	2.5	% v/v	MPOS	B						
6	Flexstar GT	3.31	SL	3	pt/a	LPOS	C						
6	Activator 90		L	0.25	% v/v	LPOS	C						
6	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C						
7	Untreated							0	0	0	0	0	0
8	Touchdown Total	4.17	SL	24	fl oz/a	MPOS	B	0	0	0	0	0	0
8	N-PAK AMS Liquid		L	2.5	% v/v	MPOS	B						
8	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	C						
8	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C						
9	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	C	0	0	0	0	0	0
9	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C						
LSD (P=.05)								2.5	0.5	2.2	0.0	3.6	0.0
Standard Deviation								1.7	0.3	1.5	0.0	2.5	0.0
CV								44.61	1.01	4.73	0.0	8.97	0.0

Means followed by same letter do not significantly differ (P=.05, LSD)
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Weed Code								ANGR	CHEAL	AMASS	AMBEL	ABUTH	
Crop Code								GLXMA					
Rating Data Type								injury	control	control	control	control	
Rating Unit								percent	percent	percent	percent	percent	
Rating Date								6/28/2010	6/28/2010	6/28/2010	6/28/2010	6/28/2010	
Trt-Eval Interval								7 DA-B	7 DA-B	7 DA-B	7 DA-B	7 DA-B	
# Subsamples, Dec.								0	0	0	0	0	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Grow Stg	Appl Code						
1	Prefix	5.29	L	2	pt/a	PRE	A	0	95	83	99	93	70
1	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	C						
1	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C						
2	Boundary	6.5	L	1.5	pt/a	PRE	A	0	97	99	99	74	99
2	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	C						
2	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C						
3	Boundary	6.5	L	1.5	pt/a	PRE	A	0	97	99	99	74	99
3	Flexstar GT	3.31	SL	3	pt/a	LPOS	C						
3	Activator 90		L	0.25	% v/v	LPOS	C						
3	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C						
4	Touchdown Total	4.17	SL	24	fl oz/a	MPOS	B	0	92	99	99	98	99
4	N-PAK AMS Liquid		L	2.5	% v/v	MPOS	B						
5	Flexstar GT	3.31	SL	3	pt/a	MPOS	B	14	96	99	99	98	99
5	Activator 90		L	0.25	% v/v	MPOS	B						
5	N-PAK AMS Liquid		L	2.5	% v/v	MPOS	B						
6	Sequence	5.25	L	3	pt/a	MPOS	B	3	95	80	99	99	97
6	N-PAK AMS Liquid		L	2.5	% v/v	MPOS	B						
6	Flexstar GT	3.31	SL	3	pt/a	LPOS	C						
6	Activator 90		L	0.25	% v/v	LPOS	C						
6	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C						
7	Untreated							0	0	0	0	0	0
8	Touchdown Total	4.17	SL	24	fl oz/a	MPOS	B	0	93	99	99	99	99
8	N-PAK AMS Liquid		L	2.5	% v/v	MPOS	B						
8	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	C						
8	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C						
9	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	C	0	0	0	0	0	0
9	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C						
LSD (P=.05)								1.2	4.6	1.4	0.0	3.8	2.3
Standard Deviation								0.8	3.2	1.0	0.0	2.6	1.6
CV								44.78	4.3	1.32	0.0	3.74	2.16

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Weed Code								ANGR	CHEAL	AMASS	AMBEL	ABUTH	
Crop Code								GLXMA					
Rating Data Type								injury	control	control	control	control	
Rating Unit								percent	percent	percent	percent	percent	
Rating Date								7/26/2010	7/26/2010	7/26/2010	7/26/2010	7/26/2010	
Trt-Eval Interval								35 DA-B	35 DA-B	35 DA-B	35 DA-B	35 DA-B	
# Subsamples, Dec.								0	0	0	0	0	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code						
1	Prefix	5.29	L	2	pt/a	PRE	A	0	99	99	99	99	99
1	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	C						
1	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C						
2	Boundary	6.5	L	1.5	pt/a	PRE	A	0	99	99	99	98	99
2	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	C						
2	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C						
3	Boundary	6.5	L	1.5	pt/a	PRE	A	0	99	99	99	99	99
3	Flexstar GT	3.31	SL	3	pt/a	LPOS	C						
3	Activator 90		L	0.25	% v/v	LPOS	C						
3	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C						
4	Touchdown Total	4.17	SL	24	fl oz/a	MPOS	B	0	85	88	93	91	97
4	N-PAK AMS Liquid		L	2.5	% v/v	MPOS	B						
5	Flexstar GT	3.31	SL	3	pt/a	MPOS	B	0	89	91	93	96	99
5	Activator 90		L	0.25	% v/v	MPOS	B						
5	N-PAK AMS Liquid		L	2.5	% v/v	MPOS	B						
6	Sequence	5.25	L	3	pt/a	MPOS	B	0	99	99	99	99	99
6	N-PAK AMS Liquid		L	2.5	% v/v	MPOS	B						
6	Flexstar GT	3.31	SL	3	pt/a	LPOS	C						
6	Activator 90		L	0.25	% v/v	LPOS	C						
6	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C						
7	Untreated							0	0	0	0	0	0
8	Touchdown Total	4.17	SL	24	fl oz/a	MPOS	B	0	97	99	99	99	99
8	N-PAK AMS Liquid		L	2.5	% v/v	MPOS	B						
8	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	C						
8	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C						
9	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	C	6	99	89	91	92	98
9	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C						
LSD (P=.05)								0.6	3.3	4.1	3.0	3.4	1.5
Standard Deviation								0.4	2.3	2.8	2.0	2.3	1.0
CV								57.74	2.68	3.32	2.38	2.73	1.18

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Weed Code

Crop Code	GLXMA	GLXMA
Rating Data Type	moisture	yield
Rating Unit	percent	bu/acre
Rating Date	10/11/2010	10/11/2010
Trt-Eval Interval	112 DA-B	at 13% M
# Subsamples, Dec.	1	1

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code		
1	Prefix	5.29	L	2	pt/a	PRE	A	8.5	42.5
1	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	C		
1	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C		
2	Boundary	6.5	L	1.5	pt/a	PRE	A	8.5	42.9
2	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	C		
2	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C		
3	Boundary	6.5	L	1.5	pt/a	PRE	A	8.5	43.2
3	Flexstar GT	3.31	SL	3	pt/a	LPOS	C		
3	Activator 90		L	0.25	% v/v	LPOS	C		
3	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C		
4	Touchdown Total	4.17	SL	24	fl oz/a	MPOS	B	8.5	44.5
4	N-PAK AMS Liquid		L	2.5	% v/v	MPOS	B		
5	Flexstar GT	3.31	SL	3	pt/a	MPOS	B	8.5	42.5
5	Activator 90		L	0.25	% v/v	MPOS	B		
5	N-PAK AMS Liquid		L	2.5	% v/v	MPOS	B		
6	Sequence	5.25	L	3	pt/a	MPOS	B	8.4	46.1
6	N-PAK AMS Liquid		L	2.5	% v/v	MPOS	B		
6	Flexstar GT	3.31	SL	3	pt/a	LPOS	C		
6	Activator 90		L	0.25	% v/v	LPOS	C		
6	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C		
7	Untreated							8.6	15.4
8	Touchdown Total	4.17	SL	24	fl oz/a	MPOS	B	8.5	46.7
8	N-PAK AMS Liquid		L	2.5	% v/v	MPOS	B		
8	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	C		
8	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C		
9	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	C	8.4	45.2
9	N-PAK AMS Liquid		L	2.5	% v/v	LPOS	C		
LSD (P=.05)								0.44	5.44
Standard Deviation								0.30	3.72
CV								3.56	9.08

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

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.