MSU Weed Science Research Program

Effectiveness and longevity of residual herbicides in soybean

Trial ID: SOY03-11 Study Dir.: Sprague, Powell
Conducted: C-12C Crops Investigator: Christy Sprague

Date Planted: 5/10/2011 **Row Spacing:** 30 IN
Variety: Pioneer 92M61 **No. of Reps:** 4
Population: 155,000 **% OM:** 3.4
Soil Type: Silt Loam **pH:** 7.7
Plot Size: 10 **X** 30 **FT** **Design:** RANDOMIZED COMPLETE BLOCK

Tillage: Fallow 2010 - Installed tile drainage, spring soil finish
Fertilizer: None at planting

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1.	ANGR	ANNUAL GRASS	mainly foxtail species
2.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
3.	AMBEL	RAGWEED, COMMON	AMBROSIA ARTEMISIIFOLIA L.
4.	AMAPO	AMARANTH, POWELL	AMARANTHUS POWELLII S.WATS.
5.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
6.	DATST	JIMSONWEED	DATURA STRAMONIUM L.
7.	POROL	PURSLANE, COMMON	PORTULACA OLERACEA L.
Crop	**Code**	**Common Name**	
1.	GLXMA	SOYBEAN	

Application Description

	A
Application Timing:	PRE
Date Treated:	5/10/2011
Time Treated:	6:00 PM
% Cloud Cover:	100
Air Temp., Unit:	70 F
% Relative Humidity:	48
Wind Speed/Unit/Dir:	5 mph SE
Soil Temp., Unit:	65 F
Soil/Leaf Surface M:	5 5
Soil Moist (1=w 5=d):	3

Crop Stage at Each Application

	A
Crop Name:	GLXMA
Height (In.):	-
Stage (L):	-

Weed Stage at Each Application

	A
Weed 1 Name:	ANGR
Height (In.):	-
Stage (L):	-
Weed 2 Name:	CHEAL
Height (In.):	-
Stage (L):	-
Weed 3 Name:	AMBEL
Height (In.):	-
Stage (L):	-
Weed 4 Name:	AMAPO
Height (In.):	-
Stage (L):	-

Weed Density (plants/sq. ft.)

	1	2	3	4	5	6	7
Weed Name:	ANGR	CHEAL	AMAPO	AMBEL	ABUTH	DATST	POROL
Density:	2	<1	<1	8	<1	<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	19"	20"	100"	19	Water	28

Comments: Roundup PowerMax (32 fl oz/A) + AMS (17 lb/100 gal) was applied on June 25, 2011 to the entire study.

MSU Weed Science Research Program

Effectiveness and longevity of residual herbicides in soybean

Trial ID: SOY03-11 Study Dir.: Sprague, Powell
Conducted: C-12C Crops Investigator: Christy Sprague

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	GLXMA	ANGR	CHEAL	AMAPO	AMBEL	ABUTH	DATST	POROL
	Weed Code														
	Crop Code														
	Rating Data Type							injury	control	control	control	control	control	control	control
	Rating Unit							percent	percent	percent	percent	percent	percent	percent	percent
	Rating Date							6/8/2011	6/8/2011	6/8/2011	6/8/2011	6/8/2011	6/8/2011	6/8/2011	6/8/2011
	Trt-Eval Interval							29 DA-A	29 DA-A	29 DA-A	29 DA-A	29 DA-A	29 DA-A	29 DA-A	29 DA-A
	# Subsamples, Dec.							0	0	0	0	0	0	0	0
1	Untreated							0	0	0	0	0	0	0	0
2	Valor	51	WG	2	oz/a	PRE	A	8	85	99	99	56	93	99	99
3	Valor XLT	40.3	WG	3	oz/a	PRE	A	28	99	99	99	87	99	99	99
4	Fierce	76	WG	3	oz/a	PRE	A	31	99	99	99	83	99	99	99
5	Fierce	76	WG	3.75	oz/a	PRE	A	34	99	99	99	86	99	99	99
6	Fierce	76	WG	4.5	oz/a	PRE	A	36	99	99	99	89	99	99	99
7	Authority Assist	4	L	5	fl oz/a	PRE	A	16	89	99	99	63	99	99	99
8	Prefix	5.29	L	2	pt/a	PRE	A	15	99	99	99	87	53	99	99
9	Authority First	70	WG	3.2	oz/a	PRE	A	15	96	99	99	76	99	99	99
10	OpTill	68	WG	2	oz/a	PRE	A	11	98	99	99	64	99	99	99
11	V-10206	85	WG	1	oz/a	PRE	A	34	99	99	99	89	99	99	99
11	Valor	51	WG	1	oz/a	PRE	A								
11	Classic	25	WG	1.25	oz/a	PRE	A								
12	OpTill	68	WG	2	oz/a	PRE	A	30	99	99	99	84	99	99	99
12	V-10206	85	WG	1.5	oz/a	PRE	A								
13	Authority MTZ	45	WG	12	oz/a	PRE	A	16	93	99	99	76	99	99	99
14	Authority XL	70	WG	2.4	oz/a	PRE	A	15	99	99	99	60	99	99	99
LSD (P=.05)								9.9	9.4	0.0	0.0	11.6	3.9	0.0	0.0
Standard Deviation								6.9	6.6	0.0	0.0	8.1	2.7	0.0	0.0
CV								33.69	7.39	0.0	0.0	11.32	3.08	0.0	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.

MSU Weed Science Research Program

Effectiveness and longevity of residual herbicides in soybean

Trial ID: SOY03-11 Study Dir.: Sprague, Powell
Conducted: C-12C Crops Investigator: Christy Sprague

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	Need to spray 1= yes 2= no	GLXMA injury percent	ANGR control percent	CHEAL control percent	AMAPO control percent	AMBEL control percent	ABUTH control percent
	Rating Date							6/8/2011	6/14/2011	6/14/2011	6/14/2011	6/14/2011	6/14/2011	6/14/2011
	Trt-Eval Interval							29 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A
	# Subsamples, Dec.							0	0	0	0	0	0	0
1	Untreated							1	0	0	0	0	0	0
2	Valor	51	WG	2	oz/a	PRE	A	2	4	77	99	99	63	97
3	Valor XLT	40.3	WG	3	oz/a	PRE	A	2	21	97	99	99	84	99
4	Fierce	76	WG	3	oz/a	PRE	A	2	18	97	99	99	78	99
5	Fierce	76	WG	3.75	oz/a	PRE	A	2	29	98	99	99	84	99
6	Fierce	76	WG	4.5	oz/a	PRE	A	2	31	99	99	99	89	99
7	Authority Assist	4	L	5	fl oz/a	PRE	A	2	9	93	99	99	60	99
8	Prefix	5.29	L	2	pt/a	PRE	A	2	8	99	99	99	87	72
9	Authority First	70	WG	3.2	oz/a	PRE	A	2	9	95	99	99	75	99
10	OpTill	68	WG	2	oz/a	PRE	A	2	6	96	99	99	60	99
11	V-10206	85	WG	1	oz/a	PRE	A	2	33	99	99	99	84	99
11	Valor	51	WG	1	oz/a	PRE	A							
11	Classic	25	WG	1.25	oz/a	PRE	A							
12	OpTill	68	WG	2	oz/a	PRE	A	2	15	99	99	99	82	99
12	V-10206	85	WG	1.5	oz/a	PRE	A							
13	Authority MTZ	45	WG	12	oz/a	PRE	A	2	9	91	99	99	73	99
14	Authority XL	70	WG	2.4	oz/a	PRE	A	2	13	98	99	99	55	99
	LSD (P=.05)							0.0	7.5	5.4	0.4	0.0	10.3	1.2
	Standard Deviation							0.0	5.2	3.8	0.3	0.0	7.2	0.9
	CV							0.0	36.09	4.28	0.29	0.0	10.39	0.96

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.

MSU Weed Science Research Program

Effectiveness and longevity of residual herbicides in soybean

Trial ID: SOY03-11 Study Dir.: Sprague, Powell
Conducted: C-12C Crops Investigator: Christy Sprague

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	Need to spray 1= yes 2= no	GLXMA injury percent	ANGR control percent	CHEAL control percent	AMAPO control percent	AMBEL control percent	ABUTH control percent
	Weed Code									ANGR	CHEAL	AMAPO	AMBEL	ABUTH
	Crop Code								GLXMA					
	Rating Data Type													
	Rating Unit													
	Rating Date							6/14/2011	6/21/2011	6/21/2011	6/21/2011	6/21/2011	6/21/2011	6/21/2011
	Trt-Eval Interval							35 DA-A	42 DA-A	42 DA-A	42 DA-A	42 DA-A	42 DA-A	42 DA-A
	# Subsamples, Dec.							0	0	0	0	0	0	0
1	Untreated							1	0	0	0	0	0	0
2	Valor	51	WG	2	oz/a	PRE	A	1	0	76	96	99	58	96
3	Valor XLT	40.3	WG	3	oz/a	PRE	A	2	19	93	99	99	77	99
4	Fierce	76	WG	3	oz/a	PRE	A	2	10	94	99	99	72	99
5	Fierce	76	WG	3.75	oz/a	PRE	A	2	16	97	99	99	80	99
6	Fierce	76	WG	4.5	oz/a	PRE	A	2	20	98	99	99	82	99
7	Authority Assist	4	L	5	fl oz/a	PRE	A	1	1	91	99	99	54	99
8	Prefix	5.29	L	2	pt/a	PRE	A	2	1	98	99	99	82	63
9	Authority First	70	WG	3.2	oz/a	PRE	A	2	5	94	99	99	72	99
10	OpTill	68	WG	2	oz/a	PRE	A	1	1	91	97	99	59	99
11	V-10206	85	WG	1	oz/a	PRE	A	2	21	98	99	99	79	99
11	Valor	51	WG	1	oz/a	PRE	A							
11	Classic	25	WG	1.25	oz/a	PRE	A							
12	OpTill	68	WG	2	oz/a	PRE	A	2	12	99	99	99	78	99
12	V-10206	85	WG	1.5	oz/a	PRE	A							
13	Authority MTZ	45	WG	12	oz/a	PRE	A	2	3	89	99	99	65	99
14	Authority XL	70	WG	2.4	oz/a	PRE	A	1	9	93	99	99	53	99
LSD (P=.05)								0.4	8.6	7.7	3.1	0.0	10.5	3.2
Standard Deviation								0.2	6.0	5.4	2.1	0.0	7.4	2.2
CV								15.64	71.93	6.26	2.34	0.0	11.36	2.52

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.

MSU Weed Science Research Program

Effectiveness and longevity of residual herbicides in soybean

Trial ID: SOY03-11 Study Dir.: Sprague, Powell
Conducted: C-12C Crops Investigator: Christy Sprague

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	Need to spray 1= yes 2= no	GLXMA injury percent	ANGR control percent	CHEAL control percent	AMAPO control percent	AMBEL control percent	ABUTH control percent
	Weed Code									ANGR	CHEAL	AMAPO	AMBEL	ABUTH
	Crop Code								GLXMA					
	Rating Data Type													
	Rating Unit													
	Rating Date							6/21/2011	7/26/2011	7/26/2011	7/26/2011	7/26/2011	7/26/2011	7/26/2011
	Trt-Eval Interval							42 DA-A	31 DAPO	31 DAPO	31 DAPO	31 DAPO	31 DAPO	31 DAPO
	# Subsamples, Dec.							0	0	0	0	0	0	0
1	Untreated							1	0	92	99	99	78	87
2	Valor	51	WG	2	oz/a	PRE	A	1	0	99	99	99	99	99
3	Valor XLT	40.3	WG	3	oz/a	PRE	A	1	0	99	99	99	99	99
4	Fierce	76	WG	3	oz/a	PRE	A	1	0	99	99	99	99	99
5	Fierce	76	WG	3.75	oz/a	PRE	A	1	0	99	99	99	99	99
6	Fierce	76	WG	4.5	oz/a	PRE	A	1	0	99	99	99	99	99
7	Authority Assist	4	L	5	fl oz/a	PRE	A	1	0	99	99	99	97	99
8	Prefix	5.29	L	2	pt/a	PRE	A	1	0	99	99	99	99	99
9	Authority First	70	WG	3.2	oz/a	PRE	A	1	0	99	99	99	99	99
10	OpTill	68	WG	2	oz/a	PRE	A	1	0	99	99	99	96	99
11	V-10206	85	WG	1	oz/a	PRE	A	1	4	99	99	99	99	99
11	Valor	51	WG	1	oz/a	PRE	A							
11	Classic	25	WG	1.25	oz/a	PRE	A							
12	OpTill	68	WG	2	oz/a	PRE	A	1	0	99	99	99	99	99
12	V-10206	85	WG	1.5	oz/a	PRE	A							
13	Authority MTZ	45	WG	12	oz/a	PRE	A	1	0	99	99	99	98	99
14	Authority XL	70	WG	2.4	oz/a	PRE	A	1	0	98	99	99	92	99
LSD (P=.05)								0.2	1.3	3.5	0.0	0.0	3.4	3.5
Standard Deviation								0.1	0.9	2.5	0.0	0.0	2.4	2.4
CV								13.13	299.63	2.5	0.0	0.0	2.49	2.49

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.

MSU Weed Science Research Program

Effectiveness and longevity of residual herbicides in soybean

Trial ID: SOY03-11 Study Dir.: Sprague, Powell
Conducted: C-12C Crops Investigator: Christy Sprague

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	GLXMA moisture percent 10/8/2011 151 DA-A 1	GLXMA yield bu/acre 10/8/2011 at 13% M 1
	Weed Code								
	Crop Code								
	Rating Data Type								
	Rating Unit								
	Rating Date								
	Trt-Eval Interval								
	# Subsamples, Dec.								
1	Untreated							9.2	48.4
2	Valor	51	WG	2	oz/a	PRE	A	9.2	71.5
3	Valor XLT	40.3	WG	3	oz/a	PRE	A	9.3	63.2
4	Fierce	76	WG	3	oz/a	PRE	A	9.1	70.7
5	Fierce	76	WG	3.75	oz/a	PRE	A	9.4	69.0
6	Fierce	76	WG	4.5	oz/a	PRE	A	9.1	66.7
7	Authority Assist	4	L	5	fl oz/a	PRE	A	8.9	67.9
8	Prefix	5.29	L	2	pt/a	PRE	A	9.0	73.9
9	Authority First	70	WG	3.2	oz/a	PRE	A	8.9	64.8
10	OpTill	68	WG	2	oz/a	PRE	A	8.9	67.0
11	V-10206	85	WG	1	oz/a	PRE	A	9.2	61.1
11	Valor	51	WG	1	oz/a	PRE	A		
11	Classic	25	WG	1.25	oz/a	PRE	A		
12	OpTill	68	WG	2	oz/a	PRE	A	8.9	66.3
12	V-10206	85	WG	1.5	oz/a	PRE	A		
13	Authority MTZ	45	WG	12	oz/a	PRE	A	8.7	73.0
14	Authority XL	70	WG	2.4	oz/a	PRE	A	9.1	61.5
	LSD (P=.05)							0.49	8.27
	Standard Deviation							0.35	5.79
	CV							3.81	8.76

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.