

MSU Weed Science Research Program

Soil-applied Residual Herbicides for Use in Soybean

Trial ID: SOY03-08
 Conducted: T-10 Botany

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Date Planted: 5/8/08
 Variety: Pioneer 92M33
 Population: 156,000 seeds/Acre
 Soil Type: Sandy loam
 Plot Size: 10 X 35 FT

Row Spacing: 30 IN
 No. of Reps: 4
 % OM: 2.5
 pH: 7.6
 Design: RANDOMIZED COMPLETE BLOCK

Tillage: Fall chisel plow, soil finish x2 on 5/8/08
 Fertilizer: None at planting

Crop and Weed Description

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

Application Description

	A	B	C
Application Timing:	PRE	MPOS	POST
Date Treated:	5/8/08	6/12/08	6/18/08
Time Treated:	5:30 PM	12:30 PM	9:00 AM
% Cloud Cover:	100	90	100
Air Temp., Unit:	59 F	82 F	55 F
% Relative Humidity:	49	59	70
Wind Speed/Unit/Dir:	8 mph E	5 mph S	4 mph NW
Soil Temp., Unit:	61 F	74 F	59 F
Soil/Leaf Surface M:	5 -	4 5	5 5
Soil Moist (1=w 5=d):	5	3	5

Crop Stage at Each Application

	A	B	C
Crop Name:	GLXMA	GLXMA	GLXMA
Height (In.):	--	6-8	6-9
Stage (L):	--	V2	V3-V4

Weed Stage at Each Application

	A	B	C
Weed 1 Name:	ANGR	ANGR	ANGR
Height (In.):	--	2-5	1-11
Stage (L):	--	2-3	1-4
Weed 2 Name:	AMBEL	AMBEL	AMBEL
Height (In.):	--	1-4	2-6
Stage (L):	--	2-6	4-many
Weed 3 Name:	BRAKA	BRAKA	BRAKA
Height (In.):	--	4-12	7-20
Stage (L):	--	flowering	flowering
Weed 4 Name:	CHEAL	CHEAL	CHEAL
Height (In.):	--	1-4	2-5
Stage (L):	--	4-10	6-many
Weed 5 Name:	AMASS	AMASS	AMASS
Height (In.):	--	.5-1	--
Stage (L):	--	4-8	--
Weed 6 Name:	ABUTH	ABUTH	ABUTH
Height (In.):	--	.5-2	2-4
Stage (L):	--	1-3	2-4

MSU Weed Science Research Program

Soil-applied Residual Herbicides for Use in Soybean

Trial ID: SOY03-08
 Conducted: T-10 Botany

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Density (plants/sq. ft.)

	1	2	3	4	5	6	7
Date:	7/25/08	7/25/08	7/25/08	7/25/08	7/25/08	7/25/08	7/25/08
Weed Name:	CHEAL	ABUTH	ANGR	AMAPO	AMBEL	SOLPT	BRAKA
Density:	11.9	0.25	184.75	0.25	14	0.25	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	23	20	100	19	water	28
C	Cub	3.8	AirMix	11003	26	20	100	19	water	28

Comments: Previous Crop- Fallow

MSU Weed Science Research Program

Soil-applied Residual Herbicides for Use in Soybean

Trial ID: SOY03-08
 Conducted: T-10 Botany

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Code		ANGR	CHEAL	AMBEL
Crop Code		GLXMA		
Rating Data Type		injury	control	control
Rating Unit		percent	percent	percent
Rating Date		6/5/08	6/5/08	6/5/08
Trt-Eval Interval		28 DA-A	28 DA-A	28 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
1	Envive (2.5 oz/A)							0	59	98	86
1	Classic	25	WG	0.92	oz/a	PRE	A				
1	Harmony SG	50	SG	0.15	oz/a	PRE	A				
1	Valor	51	WG	1.43	oz/a	PRE	A				
1	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
1	AMS		WG	17	lb/100 gal	POST	C				
2	Envive (3.5 oz/A)							0	63	99	90
2	Classic	25	WG	1.28	oz/a	PRE	A				
2	Harmony SG	50	SG	0.208	oz/a	PRE	A				
2	Valor	51	WG	2	oz/a	PRE	A				
2	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
2	AMS		WG	17	lb/100 gal	POST	C				
3	Envive (4.5 oz/A)							1	64	99	94
3	Classic	25	WG	1.68	oz/a	PRE	A				
3	Harmony SG	50	SG	0.266	oz/a	PRE	A				
3	Valor	51	WG	2.6	oz/a	PRE	A				
3	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
3	AMS		WG	17	lb/100 gal	POST	C				
4	Valor XLT	40.3	WG	3	oz/a	PRE	A	0	64	96	92
4	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
4	AMS		WG	17	lb/100 gal	POST	C				
5	Valor XLT	40.3	WG	3.5	oz/a	PRE	A	0	64	99	93
5	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
5	AMS		WG	17	lb/100 gal	POST	C				
6	Untreated							0	0	0	0
7	Valor SX	51	WG	2	oz/a	PRE	A	0	0	23	20
7	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
7	AMS		WG	17	lb/100 gal	POST	C				
8	V-53482	0.83	EC	9.6	fl oz/a	PRE	A	0	0	48	30
8	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
8	AMS		WG	17	lb/100 gal	POST	C				
9	Valor SX	51	WG	2.5	oz/a	PRE	A	0	0	30	25
9	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
9	AMS		WG	17	lb/100 gal	POST	C				
10	Canopy	75	WG	3	oz/a	PRE	A	1	69	99	94
10	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
10	AMS		WG	17	lb/100 gal	POST	C				
11	Prefix	5.29	L	1.5	pt/a	PRE	A	0	50	74	78
11	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
11	AMS		WG	17	lb/100 gal	POST	C				

MSU Weed Science Research Program

Soi l -appl ied Resi dual Herbi ci des for Use i n Soybean

Trial ID: SOY03-08
 Conducted: T-10 Botany

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Code									ANGR	CHEAL	AMBEL
Crop Code									GLXMA		
Rating Data Type									injury	control	control
Rating Unit									percent	percent	percent
Rating Date									6/5/08	6/5/08	6/5/08
Trt-Eval Interval									28 DA-A	28 DA-A	28 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
12	Prefix	5.29	L	2	pt/a	PRE	A	0	53	86	80
12	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
12	AMS		WG	17	lb/100 gal	POST	C				
13	Gangster FR (FirstRate)	84	WG	0.4	oz/a	PRE	A	2	71	99	97
13	Gangster V (Valor)	51	WG	2	oz/a	PRE	A				
13	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
13	AMS		WG	17	lb/100 gal	POST	C				
14	Gangster FR (FirstRate)	84	WG	0.5	oz/a	PRE	A	2	75	99	98
14	Gangster V (Valor)	51	WG	2.5	oz/a	PRE	A				
14	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
14	AMS		WG	17	lb/100 gal	POST	C				
15	Boundary	6.5	EC	1.5	pt/a	PRE	A	0	53	73	54
15	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
15	AMS		WG	17	lb/100 gal	POST	C				
16	Authority MTZ	45	DF	12	oz/a	PRE	A	0	54	99	57
16	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
16	AMS		WG	17	lb/100 gal	POST	C				
17	Authority First	70	DF	3	oz/a	PRE	A	2	73	98	97
17	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
17	AMS		WG	17	lb/100 gal	POST	C				
18	Authority Assist	4	L	5	fl oz/a	PRE	A	0	81	99	93
18	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
18	AMS		WG	17	lb/100 gal	POST	C				
19	Touchdown Total	4.17	SL	24	fl oz/a	MPOS	B	0	0	0	0
19	AMS		WG	17	lb/100 gal	MPOS	B				
20	Touchdown Total	4.17	SL	24	fl oz/a	MPOS	B	0	0	0	0
20	AMS		WG	17	lb/100 gal	MPOS	B				
20	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	D				
20	AMS		WG	17	lb/100 gal	LPOS	D				

LSD (P=.10)	1.1	7.6	6.9	11.6
Standard Deviation	0.9	6.4	5.8	9.8
CV	254.23	14.38	8.25	15.37

MSU Weed Science Research Program

Soil-applied Residual Herbicides for Use in Soybean

Trial ID: SOY03-08
 Conducted: T-10 Botany

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Code	AMAPO	ABUTH	BRAKA	ANGR
Crop Code				
Rating Data Type	control	control	control	control
Rating Unit	percent	percent	percent	percent
Rating Date	6/5/08	6/5/08	6/5/08	6/30/08
Trt-Eval Interval	28 DA-A	28 DA-A	28 DA-A	53 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
1	Envive (2.5 oz/A)							99	99	99	89
1	Classic	25	WG	0.92	oz/a	PRE	A				
1	Harmony SG	50	SG	0.15	oz/a	PRE	A				
1	Valor	51	WG	1.43	oz/a	PRE	A				
1	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
1	AMS		WG	17	lb/100 gal	POST	C				
2	Envive (3.5 oz/A)							99	99	99	86
2	Classic	25	WG	1.28	oz/a	PRE	A				
2	Harmony SG	50	SG	0.208	oz/a	PRE	A				
2	Valor	51	WG	2	oz/a	PRE	A				
2	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
2	AMS		WG	17	lb/100 gal	POST	C				
3	Envive (4.5 oz/A)							99	98	99	88
3	Classic	25	WG	1.68	oz/a	PRE	A				
3	Harmony SG	50	SG	0.266	oz/a	PRE	A				
3	Valor	51	WG	2.6	oz/a	PRE	A				
3	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
3	AMS		WG	17	lb/100 gal	POST	C				
4	Valor XLT	40.3	WG	3	oz/a	PRE	A	99	99	99	87
4	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
4	AMS		WG	17	lb/100 gal	POST	C				
5	Valor XLT	40.3	WG	3.5	oz/a	PRE	A	74	99	99	85
5	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
5	AMS		WG	17	lb/100 gal	POST	C				
6	Untreated							0	0	0	0
7	Valor SX	51	WG	2	oz/a	PRE	A	99	97	61	93
7	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
7	AMS		WG	17	lb/100 gal	POST	C				
8	V-53482	0.83	EC	9.6	fl oz/a	PRE	A	99	87	73	95
8	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
8	AMS		WG	17	lb/100 gal	POST	C				
9	Valor SX	51	WG	2.5	oz/a	PRE	A	99	97	67	92
9	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
9	AMS		WG	17	lb/100 gal	POST	C				
10	Canopy	75	WG	3	oz/a	PRE	A	99	99	99	84
10	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
10	AMS		WG	17	lb/100 gal	POST	C				
11	Prefix	5.29	L	1.5	pt/a	PRE	A	99	66	98	98
11	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
11	AMS		WG	17	lb/100 gal	POST	C				

MSU Weed Science Research Program

Soi l -appl ied Resi dual Herbi ci des for Use i n Soybean

Trial ID: SOY03-08
 Conducted: T-10 Botany

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Code	AMAPO	ABUTH	BRAKA	ANGR
Crop Code				
Rating Data Type	control	control	control	control
Rating Unit	percent	percent	percent	percent
Rating Date	6/5/08	6/5/08	6/5/08	6/30/08
Trt-Eval Interval	28 DA-A	28 DA-A	28 DA-A	53 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
12	Prefix	5.29	L	2	pt/a	PRE	A	99	81	98	98
12	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
12	AMS		WG	17	lb/100 gal	POST	C				
13	Gangster FR (FirstRate)	84	WG	0.4	oz/a	PRE	A	99	99	99	85
13	Gangster V (Valor)	51	WG	2	oz/a	PRE	A				
13	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
13	AMS		WG	17	lb/100 gal	POST	C				
14	Gangster FR (FirstRate)	84	WG	0.5	oz/a	PRE	A	99	99	99	85
14	Gangster V (Valor)	51	WG	2.5	oz/a	PRE	A				
14	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
14	AMS		WG	17	lb/100 gal	POST	C				
15	Boundary	6.5	EC	1.5	pt/a	PRE	A	99	85	90	98
15	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
15	AMS		WG	17	lb/100 gal	POST	C				
16	Authority MTZ	45	DF	12	oz/a	PRE	A	99	98	81	91
16	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
16	AMS		WG	17	lb/100 gal	POST	C				
17	Authority First	70	DF	3	oz/a	PRE	A	99	99	99	89
17	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
17	AMS		WG	17	lb/100 gal	POST	C				
18	Authority Assist	4	L	5	fl oz/a	PRE	A	99	99	99	88
18	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
18	AMS		WG	17	lb/100 gal	POST	C				
19	Touchdown Total	4.17	SL	24	fl oz/a	MPOS	B	0	0	0	78
19	AMS		WG	17	lb/100 gal	MPOS	B				
20	Touchdown Total	4.17	SL	24	fl oz/a	MPOS	B	0	0	0	81
20	AMS		WG	17	lb/100 gal	MPOS	B				
20	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	D				
20	AMS		WG	17	lb/100 gal	LPOS	D				

LSD (P=.10)	13.1	7.8	9.4	4.1
Standard Deviation	11.1	6.6	7.9	3.5
CV	13.35	8.22	10.16	4.14

MSU Weed Science Research Program

Soi l -appl ied Resi dual Herbi ci des for Use i n Soybean

Trial ID: SOY03-08
 Conducted: T-10 Botany

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Code	CHEAL	AMBEL	AMAPO	ABUTH
Crop Code				
Rating Data Type	control	control	control	control
Rating Unit	percent	percent	percent	percent
Rating Date	6/30/08	6/30/08	6/30/08	6/30/08
Trt-Eval Interval	53 DA-A	53 DA-A	53 DA-A	53 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
1	Envive (2.5 oz/A)							99	97	99	99
1	Classic	25	WG	0.92	oz/a	PRE	A				
1	Harmony SG	50	SG	0.15	oz/a	PRE	A				
1	Valor	51	WG	1.43	oz/a	PRE	A				
1	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
1	AMS		WG	17	lb/100 gal	POST	C				
2	Envive (3.5 oz/A)							99	97	99	99
2	Classic	25	WG	1.28	oz/a	PRE	A				
2	Harmony SG	50	SG	0.208	oz/a	PRE	A				
2	Valor	51	WG	2	oz/a	PRE	A				
2	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
2	AMS		WG	17	lb/100 gal	POST	C				
3	Envive (4.5 oz/A)							99	98	99	99
3	Classic	25	WG	1.68	oz/a	PRE	A				
3	Harmony SG	50	SG	0.266	oz/a	PRE	A				
3	Valor	51	WG	2.6	oz/a	PRE	A				
3	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
3	AMS		WG	17	lb/100 gal	POST	C				
4	Valor XLT	40.3	WG	3	oz/a	PRE	A	99	98	99	99
4	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
4	AMS		WG	17	lb/100 gal	POST	C				
5	Valor XLT	40.3	WG	3.5	oz/a	PRE	A	99	98	99	99
5	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
5	AMS		WG	17	lb/100 gal	POST	C				
6	Untreated							0	0	0	0
7	Valor SX	51	WG	2	oz/a	PRE	A	99	98	99	99
7	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
7	AMS		WG	17	lb/100 gal	POST	C				
8	V-53482	0.83	EC	9.6	fl oz/a	PRE	A	99	98	99	99
8	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
8	AMS		WG	17	lb/100 gal	POST	C				
9	Valor SX	51	WG	2.5	oz/a	PRE	A	99	92	99	97
9	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
9	AMS		WG	17	lb/100 gal	POST	C				
10	Canopy	75	WG	3	oz/a	PRE	A	99	99	99	99
10	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
10	AMS		WG	17	lb/100 gal	POST	C				
11	Prefix	5.29	L	1.5	pt/a	PRE	A	99	99	99	92
11	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
11	AMS		WG	17	lb/100 gal	POST	C				

MSU Weed Science Research Program

Soi l -appl ied Resi dual Herbi ci des for Use i n Soybean

Trial ID: SOY03-08
 Conducted: T-10 Botany

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Code	CHEAL	AMBEL	AMAPO	ABUTH
Crop Code				
Rating Data Type	control	control	control	control
Rating Unit	percent	percent	percent	percent
Rating Date	6/30/08	6/30/08	6/30/08	6/30/08
Trt-Eval Interval	53 DA-A	53 DA-A	53 DA-A	53 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
12	Prefix	5.29	L	2	pt/a	PRE	A	99	97	99	96
12	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
12	AMS		WG	17	lb/100 gal	POST	C				
13	Gangster FR (FirstRate)	84	WG	0.4	oz/a	PRE	A	99	98	99	99
13	Gangster V (Valor)	51	WG	2	oz/a	PRE	A				
13	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
13	AMS		WG	17	lb/100 gal	POST	C				
14	Gangster FR (FirstRate)	84	WG	0.5	oz/a	PRE	A	99	98	99	99
14	Gangster V (Valor)	51	WG	2.5	oz/a	PRE	A				
14	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
14	AMS		WG	17	lb/100 gal	POST	C				
15	Boundary	6.5	EC	1.5	pt/a	PRE	A	99	92	99	97
15	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
15	AMS		WG	17	lb/100 gal	POST	C				
16	Authority MTZ	45	DF	12	oz/a	PRE	A	99	95	99	99
16	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
16	AMS		WG	17	lb/100 gal	POST	C				
17	Authority First	70	DF	3	oz/a	PRE	A	99	98	99	99
17	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
17	AMS		WG	17	lb/100 gal	POST	C				
18	Authority Assist	4	L	5	fl oz/a	PRE	A	99	96	99	99
18	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
18	AMS		WG	17	lb/100 gal	POST	C				
19	Touchdown Total	4.17	SL	24	fl oz/a	MPOS	B	98	81	98	99
19	AMS		WG	17	lb/100 gal	MPOS	B				
20	Touchdown Total	4.17	SL	24	fl oz/a	MPOS	B	99	91	97	99
20	AMS		WG	17	lb/100 gal	MPOS	B				
20	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	D				
20	AMS		WG	17	lb/100 gal	LPOS	D				

LSD (P=.10)	0.5	4.6	0.9	2.6
Standard Deviation	0.4	3.9	0.8	2.2
CV	0.48	4.33	0.84	2.36

MSU Weed Science Research Program

Soi I -appl ied Resi dual Herbi ci des for Use i n Soybean

Trial ID: SOY03-08
 Conducted: T-10 Botany

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Code	BRAKA	ANGR	CHEAL	AMAPO
Crop Code				
Rating Data Type	control	control	control	control
Rating Unit	percent	percent	percent	percent
Rating Date	6/30/08	7/22/08	7/22/08	7/22/08
Trt-Eval Interval	53 DA-A	75 DA-A	75 DA-A	75 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
1	Envive (2.5 oz/A)							99	87	99	97
1	Classic	25	WG	0.92	oz/a	PRE	A				
1	Harmony SG	50	SG	0.15	oz/a	PRE	A				
1	Valor	51	WG	1.43	oz/a	PRE	A				
1	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
1	AMS		WG	17	lb/100 gal	POST	C				
2	Envive (3.5 oz/A)							99	89	99	99
2	Classic	25	WG	1.28	oz/a	PRE	A				
2	Harmony SG	50	SG	0.208	oz/a	PRE	A				
2	Valor	51	WG	2	oz/a	PRE	A				
2	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
2	AMS		WG	17	lb/100 gal	POST	C				
3	Envive (4.5 oz/A)							99	90	99	99
3	Classic	25	WG	1.68	oz/a	PRE	A				
3	Harmony SG	50	SG	0.266	oz/a	PRE	A				
3	Valor	51	WG	2.6	oz/a	PRE	A				
3	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
3	AMS		WG	17	lb/100 gal	POST	C				
4	Valor XLT	40.3	WG	3	oz/a	PRE	A	99	88	99	99
4	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
4	AMS		WG	17	lb/100 gal	POST	C				
5	Valor XLT	40.3	WG	3.5	oz/a	PRE	A	99	87	99	99
5	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
5	AMS		WG	17	lb/100 gal	POST	C				
6	Untreated							0	0	0	0
7	Valor SX	51	WG	2	oz/a	PRE	A	97	87	99	99
7	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
7	AMS		WG	17	lb/100 gal	POST	C				
8	V-53482	0.83	EC	9.6	fl oz/a	PRE	A	98	85	99	99
8	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
8	AMS		WG	17	lb/100 gal	POST	C				
9	Valor SX	51	WG	2.5	oz/a	PRE	A	99	86	99	99
9	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
9	AMS		WG	17	lb/100 gal	POST	C				
10	Canopy	75	WG	3	oz/a	PRE	A	99	84	99	98
10	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
10	AMS		WG	17	lb/100 gal	POST	C				
11	Prefix	5.29	L	1.5	pt/a	PRE	A	99	97	99	99
11	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
11	AMS		WG	17	lb/100 gal	POST	C				

MSU Weed Science Research Program

Soi l -appl ied Resi dual Herbi ci des for Use i n Soybean

Trial ID: SOY03-08
 Conducted: T-10 Botany

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Code		BRAKA	ANGR	CHEAL	AMAPO
Crop Code					
Rating Data Type		control	control	control	control
Rating Unit		percent	percent	percent	percent
Rating Date		6/30/08	7/22/08	7/22/08	7/22/08
Trt-Eval Interval		53 DA-A	75 DA-A	75 DA-A	75 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
12	Prefix	5.29	L	2	pt/a	PRE	A	99	99	99	99
12	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
12	AMS		WG	17	lb/100 gal	POST	C				
13	Gangster FR (FirstRate)	84	WG	0.4	oz/a	PRE	A	99	79	99	99
13	Gangster V (Valor)	51	WG	2	oz/a	PRE	A				
13	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
13	AMS		WG	17	lb/100 gal	POST	C				
14	Gangster FR (FirstRate)	84	WG	0.5	oz/a	PRE	A	99	80	99	98
14	Gangster V (Valor)	51	WG	2.5	oz/a	PRE	A				
14	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
14	AMS		WG	17	lb/100 gal	POST	C				
15	Boundary	6.5	EC	1.5	pt/a	PRE	A	98	98	99	99
15	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
15	AMS		WG	17	lb/100 gal	POST	C				
16	Authority MTZ	45	DF	12	oz/a	PRE	A	98	87	99	99
16	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
16	AMS		WG	17	lb/100 gal	POST	C				
17	Authority First	70	DF	3	oz/a	PRE	A	99	91	99	99
17	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
17	AMS		WG	17	lb/100 gal	POST	C				
18	Authority Assist	4	L	5	fl oz/a	PRE	A	99	87	99	99
18	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
18	AMS		WG	17	lb/100 gal	POST	C				
19	Touchdown Total	4.17	SL	24	fl oz/a	MPOS	B	99	66	99	84
19	AMS		WG	17	lb/100 gal	MPOS	B				
20	Touchdown Total	4.17	SL	24	fl oz/a	MPOS	B	99	90	99	99
20	AMS		WG	17	lb/100 gal	MPOS	B				
20	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	D				
20	AMS		WG	17	lb/100 gal	LPOS	D				

LSD (P=.10)	0.7	3.5	0.1	1.2
Standard Deviation	0.6	2.9	0.1	1.0
CV	0.66	3.55	0.12	1.07

MSU Weed Science Research Program

Soi l -appl ied Resi dual Herbi ci des for Use i n Soybean

Trial ID: SOY03-08
 Conducted: T-10 Botany

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Code	AMBEL	ABUTH	BRAKA	GLXMA
Crop Code				
Rating Data Type	control	control	control	moisture
Rating Unit	percent	percent	percent	percent
Rating Date	7/22/08	7/22/08	7/22/08	10/22/08
Trt-Eval Interval	75 DA-A	75 DA-A	75 DA-A	167 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
1	Envive (2.5 oz/A)							97	99	99	14.1
1	Classic	25	WG	0.92	oz/a	PRE	A				
1	Harmony SG	50	SG	0.15	oz/a	PRE	A				
1	Valor	51	WG	1.43	oz/a	PRE	A				
1	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
1	AMS		WG	17	lb/100 gal	POST	C				
2	Envive (3.5 oz/A)							99	99	99	14.1
2	Classic	25	WG	1.28	oz/a	PRE	A				
2	Harmony SG	50	SG	0.208	oz/a	PRE	A				
2	Valor	51	WG	2	oz/a	PRE	A				
2	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
2	AMS		WG	17	lb/100 gal	POST	C				
3	Envive (4.5 oz/A)							99	99	99	14.2
3	Classic	25	WG	1.68	oz/a	PRE	A				
3	Harmony SG	50	SG	0.266	oz/a	PRE	A				
3	Valor	51	WG	2.6	oz/a	PRE	A				
3	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
3	AMS		WG	17	lb/100 gal	POST	C				
4	Valor XLT	40.3	WG	3	oz/a	PRE	A	99	99	99	14.0
4	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
4	AMS		WG	17	lb/100 gal	POST	C				
5	Valor XLT	40.3	WG	3.5	oz/a	PRE	A	99	99	99	14.1
5	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
5	AMS		WG	17	lb/100 gal	POST	C				
6	Untreated							0	0	0	15.4
7	Valor SX	51	WG	2	oz/a	PRE	A	95	99	99	14.3
7	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
7	AMS		WG	17	lb/100 gal	POST	C				
8	V-53482	0.83	EC	9.6	fl oz/a	PRE	A	93	99	99	14.3
8	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
8	AMS		WG	17	lb/100 gal	POST	C				
9	Valor SX	51	WG	2.5	oz/a	PRE	A	97	99	99	14.1
9	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
9	AMS		WG	17	lb/100 gal	POST	C				
10	Canopy	75	WG	3	oz/a	PRE	A	99	99	99	14.2
10	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
10	AMS		WG	17	lb/100 gal	POST	C				
11	Prefix	5.29	L	1.5	pt/a	PRE	A	99	99	99	14.2
11	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
11	AMS		WG	17	lb/100 gal	POST	C				

MSU Weed Science Research Program

Soi l -appl ied Resi dual Herbi ci des for Use i n Soybean

Trial ID: SOY03-08
 Conducted: T-10 Botany

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Code	AMBEL	ABUTH	BRAKA	
Crop Code				GLXMA
Rating Data Type	control	control	control	moisture
Rating Unit	percent	percent	percent	percent
Rating Date	7/22/08	7/22/08	7/22/08	10/22/08
Trt-Eval Interval	75 DA-A	75 DA-A	75 DA-A	167 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
12	Prefix	5.29	L	2	pt/a	PRE	A	99	99	99	13.8
12	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
12	AMS		WG	17	lb/100 gal	POST	C				
13	Gangster FR (FirstRate)	84	WG	0.4	oz/a	PRE	A	95	99	99	14.2
13	Gangster V (Valor)	51	WG	2	oz/a	PRE	A				
13	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
13	AMS		WG	17	lb/100 gal	POST	C				
14	Gangster FR (FirstRate)	84	WG	0.5	oz/a	PRE	A	99	99	99	14.3
14	Gangster V (Valor)	51	WG	2.5	oz/a	PRE	A				
14	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
14	AMS		WG	17	lb/100 gal	POST	C				
15	Boundary	6.5	EC	1.5	pt/a	PRE	A	98	99	99	14.0
15	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
15	AMS		WG	17	lb/100 gal	POST	C				
16	Authority MTZ	45	DF	12	oz/a	PRE	A	99	99	99	14.2
16	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
16	AMS		WG	17	lb/100 gal	POST	C				
17	Authority First	70	DF	3	oz/a	PRE	A	97	99	99	14.1
17	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
17	AMS		WG	17	lb/100 gal	POST	C				
18	Authority Assist	4	L	5	fl oz/a	PRE	A	98	99	99	14.3
18	Touchdown Total	4.17	SL	24	fl oz/a	POST	C				
18	AMS		WG	17	lb/100 gal	POST	C				
19	Touchdown Total	4.17	SL	24	fl oz/a	MPOS	B	78	99	99	14.2
19	AMS		WG	17	lb/100 gal	MPOS	B				
20	Touchdown Total	4.17	SL	24	fl oz/a	MPOS	B	74	99	99	13.8
20	AMS		WG	17	lb/100 gal	MPOS	B				
20	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	D				
20	AMS		WG	17	lb/100 gal	LPOS	D				

LSD (P=.10)	11.8	0.1	0.1	0.28
Standard Deviation	10.0	0.1	0.1	0.24
CV	11.06	0.12	0.12	1.7

MSU Weed Science Research Program

Soil-applied Residual Herbicides for Use in Soybean

Trial ID: SOY03-08
 Conducted: T-10 Botany

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Code
 Crop Code GLXMA
 Rating Data Type yield
 Rating Unit bu/acre
 Rating Date 10/22/08
 Trt-Eval Interval at 13% M

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	
1	Envive (2.5 oz/A)							38.0
1	Classic	25	WG	0.92	oz/a	PRE	A	
1	Harmony SG	50	SG	0.15	oz/a	PRE	A	
1	Valor	51	WG	1.43	oz/a	PRE	A	
1	Touchdown Total	4.17	SL	24	fl oz/a	POST	C	
1	AMS		WG	17	lb/100 gal	POST	C	
2	Envive (3.5 oz/A)							38.1
2	Classic	25	WG	1.28	oz/a	PRE	A	
2	Harmony SG	50	SG	0.208	oz/a	PRE	A	
2	Valor	51	WG	2	oz/a	PRE	A	
2	Touchdown Total	4.17	SL	24	fl oz/a	POST	C	
2	AMS		WG	17	lb/100 gal	POST	C	
3	Envive (4.5 oz/A)							37.6
3	Classic	25	WG	1.68	oz/a	PRE	A	
3	Harmony SG	50	SG	0.266	oz/a	PRE	A	
3	Valor	51	WG	2.6	oz/a	PRE	A	
3	Touchdown Total	4.17	SL	24	fl oz/a	POST	C	
3	AMS		WG	17	lb/100 gal	POST	C	
4	Valor XLT	40.3	WG	3	oz/a	PRE	A	36.3
4	Touchdown Total	4.17	SL	24	fl oz/a	POST	C	
4	AMS		WG	17	lb/100 gal	POST	C	
5	Valor XLT	40.3	WG	3.5	oz/a	PRE	A	38.4
5	Touchdown Total	4.17	SL	24	fl oz/a	POST	C	
5	AMS		WG	17	lb/100 gal	POST	C	
6	Untreated							9.8
7	Valor SX	51	WG	2	oz/a	PRE	A	37.8
7	Touchdown Total	4.17	SL	24	fl oz/a	POST	C	
7	AMS		WG	17	lb/100 gal	POST	C	
8	V-53482	0.83	EC	9.6	fl oz/a	PRE	A	37.8
8	Touchdown Total	4.17	SL	24	fl oz/a	POST	C	
8	AMS		WG	17	lb/100 gal	POST	C	
9	Valor SX	51	WG	2.5	oz/a	PRE	A	39.0
9	Touchdown Total	4.17	SL	24	fl oz/a	POST	C	
9	AMS		WG	17	lb/100 gal	POST	C	
10	Canopy	75	WG	3	oz/a	PRE	A	39.6
10	Touchdown Total	4.17	SL	24	fl oz/a	POST	C	
10	AMS		WG	17	lb/100 gal	POST	C	
11	Prefix	5.29	L	1.5	pt/a	PRE	A	37.7
11	Touchdown Total	4.17	SL	24	fl oz/a	POST	C	
11	AMS		WG	17	lb/100 gal	POST	C	

MSU Weed Science Research Program

Soi l -appl ied Resi dual Herbi ci des for Use i n Soybean

Trial ID: SOY03-08
 Conducted: T-10 Botany

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Code
 Crop Code GLXMA
 Rating Data Type yield
 Rating Unit bu/acre
 Rating Date 10/22/08
 Trt-Eval Interval at 13% M

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	
12	Prefix	5.29	L	2	pt/a	PRE	A	44.6
12	Touchdown Total	4.17	SL	24	fl oz/a	POST	C	
12	AMS		WG	17	lb/100 gal	POST	C	
13	Gangster FR (FirstRate)	84	WG	0.4	oz/a	PRE	A	40.1
13	Gangster V (Valor)	51	WG	2	oz/a	PRE	A	
13	Touchdown Total	4.17	SL	24	fl oz/a	POST	C	
13	AMS		WG	17	lb/100 gal	POST	C	
14	Gangster FR (FirstRate)	84	WG	0.5	oz/a	PRE	A	38.7
14	Gangster V (Valor)	51	WG	2.5	oz/a	PRE	A	
14	Touchdown Total	4.17	SL	24	fl oz/a	POST	C	
14	AMS		WG	17	lb/100 gal	POST	C	
15	Boundary	6.5	EC	1.5	pt/a	PRE	A	36.7
15	Touchdown Total	4.17	SL	24	fl oz/a	POST	C	
15	AMS		WG	17	lb/100 gal	POST	C	
16	Authority MTZ	45	DF	12	oz/a	PRE	A	39.1
16	Touchdown Total	4.17	SL	24	fl oz/a	POST	C	
16	AMS		WG	17	lb/100 gal	POST	C	
17	Authority First	70	DF	3	oz/a	PRE	A	37.7
17	Touchdown Total	4.17	SL	24	fl oz/a	POST	C	
17	AMS		WG	17	lb/100 gal	POST	C	
18	Authority Assist	4	L	5	fl oz/a	PRE	A	37.8
18	Touchdown Total	4.17	SL	24	fl oz/a	POST	C	
18	AMS		WG	17	lb/100 gal	POST	C	
19	Touchdown Total	4.17	SL	24	fl oz/a	MPOS	B	37.4
19	AMS		WG	17	lb/100 gal	MPOS	B	
20	Touchdown Total	4.17	SL	24	fl oz/a	MPOS	B	43.8
20	AMS		WG	17	lb/100 gal	MPOS	B	
20	Touchdown Total	4.17	SL	24	fl oz/a	LPOS	D	
20	AMS		WG	17	lb/100 gal	LPOS	D	

LSD (P=.10) 5.94
 Standard Deviation 5.03
 CV 13.49