

MSU Weed Science Research Program

Benefits of Residual Herbicides for Weed Control in No-Till Soybean II

Trial ID: NTS06-06  
 Conducted: Ionia County

Study Dir.: Sprague, Armstrong, Powell  
 Investigator: Christy Sprague

**Date Planted:** 5/10/2006  
**Variety:** Asgrow 2170  
**Population:** 210,000 seeds/acre  
**Soil Type:** Loam  
**Plot Size:** 15 X 35 FT  
**Row Spacing:** 7.5 IN  
**No. of Reps:** 4  
**% OM:** 3.0  
**pH:** 6.0  
**Design:** RANDOMIZED COMPLETE BLOCK

**Tillage:** No-Till  
**Fertilizer:** None at planting

**Crop and Weed Description**

Weed	Code	Common Name	Scientific Name
1.	AMBEL	RAGWEED, COMMON	AMBROSIA ARTEMISIIFOLIA
2.	ERICA	HORSEWEED-MARESTAIL	ERIGERON CANADENSIS L.
3.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
4.	ANGR	Annual grass	mainly foxtail, panicum
5.	MEDLU	MEDIC, BLACK	MEDICAGO LUPULINA L.
Crop	Code	Common Name	
1.	GLXMA	SOYBEAN	

**Application Description**

	A	B	C	D
<b>Application Timing:</b>	7D EPP	M.Post	Post	L.Post
<b>Date Treated:</b>	5/3/2006	6/15/2006	6/23/2006	7/10/2006
<b>Time Treated:</b>	8:00 pm	4:00 pm	11:00 pm	12:00 pm
<b>% Cloud Cover:</b>	75	25	100	5
<b>Air Temp., Unit:</b>	69 F	82 F	64 F	71 F
<b>% Relative Humidity:</b>	67	27	46	32
<b>Wind Speed/Unit/Dir:</b>	1 mph SW	6 mph W	3 mph W	2 mph NE
<b>Soil Temp., Unit:</b>	64 F	72 F	67 F	73 F
<b>Soil/Leaf Surface M:</b>	5	5 5	3 5	5 5
<b>Soil Moist (1=w 5=d):</b>	5	5	3	4

**Crop Stage at Each Application**

	A	B	C	D
<b>Crop Name:</b>	GLXMA	GLXMA	GLXMA	GLXMA
<b>Height (In.):</b>	-	3-5"	6-8"	13"
<b>Stage (L):</b>	-	v1	v3	R 1

**Weed Stage at Each Application**

	A	B	C	D
<b>Weed 1 Name:</b>	AMBEL	AMBEL	AMBEL	AMBEL
<b>Height (In.):</b>	0.5-1"	1-6"	2-6"	7-20"
<b>Stage (L):</b>	coty-2	2-8	4-many	many
<b>Weed 2 Name:</b>	ERICA	ERICA	ERICA	ERICA
<b>Height (In.):</b>	2-4"	-	3-5"	10-14"
<b>Stage (L):</b>	8-10	-	many	many
<b>Weed 3 Name:</b>	CHEAL	CHEAL	CHEAL	CHEAL
<b>Height (In.):</b>	-	1-3"	2-10"	4-20"
<b>Stage (L):</b>	-	4-many	many	many
<b>Weed 4 Name:</b>	ANGR	ANGR	ANGR	ANGR
<b>Height (In.):</b>	-	0.5-5"	1-8"	-
<b>Stage (L):</b>	-	1-4	1-6	-
<b>Weed 5 Name:</b>	MEDLU	MEDLU	MEDLU	MEDLU
<b>Height (In.):</b>	-	-	1.5-3"	-
<b>Stage (L):</b>	-	-	many	-

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**Application Equipment**

<b>Appl</b>	<b>Sprayer</b>	<b>Speed</b>	<b>Nozzle</b>	<b>Nozzle</b>	<b>Nozzle</b>	<b>Nozzle</b>	<b>Boom</b>			
	<b>Type</b>	<b>MPH</b>	<b>Type</b>	<b>Size</b>	<b>Height</b>	<b>Spacing</b>	<b>Width</b>	<b>GPA</b>	<b>Carrier</b>	<b>PSI</b>
<b>A</b>	Cub	3.8	AirMix	11003	22"	20"	180"	19	water	27
<b>B</b>	Cub	3.8	AirMix	11003	22"	20"	180"	19	water	27
<b>C</b>	Cub	3.8	AirMix	11003	26"	20"	180"	19	water	27
<b>D</b>	Cub	3.8	AirMix	11003	34"	20"	180"	19	water	27

**Comments:** Common ragweed and marestail may be ALS resistant.

Previous Crop- Corn. Previous Herbicides- Harness Xtra, 2,4-D Ester, and Roundup.

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Weed Code						AMBEL	AMBEL	AMBEL	AMBEL	GLXMA	GLXMA	
Crop Code										moisture	yield	
Rating Data Type						control	control	control	control	percent	bu/acre	
Rating Unit						percent	percent	percent	percent	percent		
Rating Date						6/15/2006	6/23/2006	7/10/2006	7/28/2006	10/10/2006	10/10/2006	
Trt-Eval Interval						43 DA-A	51 DA-A	68 DA-A	86 DA-A	160 DA-A	at 13% M	
Trt No.	Treatment Name	Form Conc	Rate	Unit	Grow Stg	Appl Code						
1	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A	0	5	0	0	11.8	41.4
1	2,4-D Ester	4	1	pt/a	7 EPP	A						
1	AMS		17	lb/100 gal	7 EPP	A						
2	Canopy	75	3	oz/a	7 EPP	A	70	54	38	40	11.5	45.4
2	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A						
2	2,4-D Ester	4	1	pt/a	7 EPP	A						
2	AMS		17	lb/100 gal	7 EPP	A						
3	Boundary	6.5	1.75	pt/a	7 EPP	A	90	68	65	61	11.4	52.4
3	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A						
3	2,4-D Ester	4	1	pt/a	7 EPP	A						
3	AMS		17	lb/100 gal	7 EPP	A						
4	Untreated						0	0	0	0	11.6	42.1
5	Valor	51	2.5	oz/a	7 EPP	A	84	55	55	56	11.7	45.0
5	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A						
5	2,4-D Ester	4	1	pt/a	7 EPP	A						
5	AMS		17	lb/100 gal	7 EPP	A						
6	Extreme	2.17	3	pt/a	7 EPP	A	49	24	21	19	13.0	38.2
6	Roundup WeatherMax	4.5	5.5	fl oz/a	7 EPP	A						
6	2,4-D Ester	4	1	pt/a	7 EPP	A						
6	Activator 90 NIS		0.25	% v/v	7 EPP	A						
6	AMS		17	lb/100 gal	7 EPP	A						
7	Prowl H2O	3.8	2	pt/a	7 EPP	A	72	18	20	19	11.9	40.4
7	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A						
7	2,4-D Ester	4	1	pt/a	7 EPP	A						
7	AMS		17	lb/100 gal	7 EPP	A						
8	Linex	4	1	pt/a	7 EPP	A	73	29	26	30	12.0	40.1
8	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A						
8	2,4-D Ester	4	1	pt/a	7 EPP	A						
8	AMS		17	lb/100 gal	7 EPP	A						
9	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A			98	99	11.2	64.9
9	2,4-D Ester	4	1	pt/a	7 EPP	A						
9	AMS		17	lb/100 gal	7 EPP	A						
9	Roundup WeatherMax	4.5	22	fl oz/a	MPOS	B						
9	AMS		17	lb/100 gal	MPOS	B						
10	Canopy	75	3	oz/a	7 EPP	A			98	99	11.1	62.2
10	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A						
10	2,4-D Ester	4	1	pt/a	7 EPP	A						
10	AMS		17	lb/100 gal	7 EPP	A						
10	Roundup WeatherMax	4.5	22	fl oz/a	MPOS	B						
10	AMS		17	lb/100 gal	MPOS	B						
11	Boundary	6.5	1.75	pt/a	7 EPP	A			96	99	11.1	61.4
11	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A						
11	2,4-D Ester	4	1	pt/a	7 EPP	A						
11	AMS		17	lb/100 gal	7 EPP	A						
11	Roundup WeatherMax	4.5	22	fl oz/a	MPOS	B						
11	AMS		17	lb/100 gal	MPOS	B						
12	Roundup WeatherMax	4.5	22	fl oz/a	MPOS	B			98	99	11.2	64.8
12	AMS		17	lb/100 gal	MPOS	B						

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Weed Code						AMBEL	AMBEL	AMBEL	AMBEL	GLXMA	GLXMA
Crop Code						control	control	control	control	moisture	yield
Rating Data Type						percent	percent	percent	percent	percent	bu/acre
Rating Unit						6/15/2006	6/23/2006	7/10/2006	7/28/2006	10/10/2006	10/10/2006
Rating Date						43 DA-A	51 DA-A	68 DA-A	86 DA-A	160 DA-A	at 13% M
Trt-Eval Interval											
Trt No.	Treatment Name	Form Conc	Rate	Unit	Grow Stg	Appl Code					
13	Valor	51	2.5	oz/a	7 EPP	A					
13	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A	99	99	11.2	60.2	
13	2,4-D Ester	4	1	pt/a	7 EPP	A					
13	AMS	17	17	lb/100 gal	7 EPP	A					
13	Roundup WeatherMax	4.5	22	fl oz/a	MPOS	B					
13	AMS	17	17	lb/100 gal	MPOS	B					
14	Extreme	2.17	3	pt/a	7 EPP	A	99	99	11.3	62.6	
14	Roundup WeatherMax	4.5	5.5	fl oz/a	7 EPP	A					
14	2,4-D Ester	4	1	pt/a	7 EPP	A					
14	Activator 90 NIS		0.25	% v/v	7 EPP	A					
14	AMS	17	17	lb/100 gal	7 EPP	A					
14	Roundup WeatherMax	4.5	22	fl oz/a	MPOS	B					
14	AMS	17	17	lb/100 gal	MPOS	B					
15	Prowl H2O	3.8	2	pt/a	7 EPP	A	98	99	11.3	62.5	
15	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A					
15	2,4-D Ester	4	1	pt/a	7 EPP	A					
15	AMS	17	17	lb/100 gal	7 EPP	A					
15	Roundup WeatherMax	4.5	22	fl oz/a	MPOS	B					
15	AMS	17	17	lb/100 gal	MPOS	B					
16	Linex	4	1	pt/a	7 EPP	A	97	99	11.2	62.2	
16	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A					
16	2,4-D Ester	4	1	pt/a	7 EPP	A					
16	AMS	17	17	lb/100 gal	7 EPP	A					
16	Roundup WeatherMax	4.5	22	fl oz/a	MPOS	B					
16	AMS	17	17	lb/100 gal	MPOS	B					
17	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A	96	99	11.1	63.8	
17	2,4-D Ester	4	1	pt/a	7 EPP	A					
17	AMS	17	17	lb/100 gal	7 EPP	A					
17	Roundup WeatherMax	4.5	22	fl oz/a	POST	C					
17	AMS	17	17	lb/100 gal	POST	C					
18	Canopy	75	3	oz/a	7 EPP	A	98	99	11.1	61.0	
18	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A					
18	2,4-D Ester	4	1	pt/a	7 EPP	A					
18	AMS	17	17	lb/100 gal	7 EPP	A					
18	Roundup WeatherMax	4.5	22	fl oz/a	POST	C					
18	AMS	17	17	lb/100 gal	POST	C					
19	Boundary	6.5	1.75	pt/a	7 EPP	A	98	99	11.1	64.7	
19	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A					
19	2,4-D Ester	4	1	pt/a	7 EPP	A					
19	AMS	17	17	lb/100 gal	7 EPP	A					
19	Roundup WeatherMax	4.5	22	fl oz/a	POST	C					
19	AMS	17	17	lb/100 gal	POST	C					
20	Roundup WeatherMax	4.5	22	fl oz/a	POST	C	86	99	11.1	62.3	
20	AMS	17	17	lb/100 gal	POST	C					
21	Valor	51	2.5	oz/a	7 EPP	A	99	99	11.1	57.7	
21	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A					
21	2,4-D Ester	4	1	pt/a	7 EPP	A					
21	AMS	17	17	lb/100 gal	7 EPP	A					
21	Roundup WeatherMax	4.5	22	fl oz/a	POST	C					
21	AMS	17	17	lb/100 gal	POST	C					

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Crop Code					moisture	yield
Rating Data Type	control	control	control	control	percent	bu/acre
Rating Unit	percent	percent	percent	percent	percent	bu/acre
Rating Date	6/15/2006	6/23/2006	7/10/2006	7/28/2006	10/10/2006	10/10/2006
Trt-Eval Interval	43 DA-A	51 DA-A	68 DA-A	86 DA-A	160 DA-A	at 13% M

Trt No.	Treatment Name	Form Conc	Rate	Unit	Grow Stg	Appl Code				
22	Extreme	2.17	3	pt/a	7 EPP	A				
22	Roundup WeatherMax	4.5	5.5	fl oz/a	7 EPP	A		96	99	11.1
22	2,4-D Ester	4	1	pt/a	7 EPP	A				60.0
22	Activator 90 NIS		0.25	% v/v	7 EPP	A				
22	AMS		17	lb/100 gal	7 EPP	A				
22	Roundup WeatherMax	4.5	22	fl oz/a	POST	C				
22	AMS		17	lb/100 gal	POST	C				
23	Prowl H2O	3.8	2	pt/a	7 EPP	A		93	99	11.2
23	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A				63.0
23	2,4-D Ester	4	1	pt/a	7 EPP	A				
23	AMS		17	lb/100 gal	7 EPP	A				
23	Roundup WeatherMax	4.5	22	fl oz/a	POST	C				
23	AMS		17	lb/100 gal	POST	C				
24	Linex	4	1	pt/a	7 EPP	A		99	99	11.1
24	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A				61.2
24	2,4-D Ester	4	1	pt/a	7 EPP	A				
24	AMS		17	lb/100 gal	7 EPP	A				
24	Roundup WeatherMax	4.5	22	fl oz/a	POST	C				
24	AMS		17	lb/100 gal	POST	C				
25	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A			99	11.3
25	2,4-D Ester	4	1	pt/a	7 EPP	A				57.9
25	AMS		17	lb/100 gal	7 EPP	A				
25	Roundup WeatherMax	4.5	22	fl oz/a	LPOS	D				
25	AMS		17	lb/100 gal	LPOS	D				
26	Canopy	75	3	oz/a	7 EPP	A			99	11.2
26	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A				54.8
26	2,4-D Ester	4	1	pt/a	7 EPP	A				
26	AMS		17	lb/100 gal	7 EPP	A				
26	Roundup WeatherMax	4.5	22	fl oz/a	LPOS	D				
26	AMS		17	lb/100 gal	LPOS	D				
27	Boundary	6.5	1.75	pt/a	7 EPP	A			99	11.3
27	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A				56.6
27	2,4-D Ester	4	1	pt/a	7 EPP	A				
27	AMS		17	lb/100 gal	7 EPP	A				
27	Roundup WeatherMax	4.5	22	fl oz/a	LPOS	D				
27	AMS		17	lb/100 gal	LPOS	D				
28	Roundup WeatherMax	4.5	22	fl oz/a	LPOS	D			98	11.3
28	AMS		17	lb/100 gal	LPOS	D				51.2
29	Valor	51	2.5	oz/a	7 EPP	A			99	11.2
29	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A				62.6
29	2,4-D Ester	4	1	pt/a	7 EPP	A				
29	AMS		17	lb/100 gal	7 EPP	A				
29	Roundup WeatherMax	4.5	22	fl oz/a	LPOS	D				
29	AMS		17	lb/100 gal	LPOS	D				
30	Extreme	2.17	3	pt/a	7 EPP	A			99	11.1
30	Roundup WeatherMax	4.5	5.5	fl oz/a	7 EPP	A				59.0
30	2,4-D Ester	4	1	pt/a	7 EPP	A				
30	Activator 90 NIS		0.25	% v/v	7 EPP	A				
30	AMS		17	lb/100 gal	7 EPP	A				
30	Roundup WeatherMax	4.5	22	fl oz/a	LPOS	D				
30	AMS		17	lb/100 gal	LPOS	D				

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Rating Date						43 DA-A	51 DA-A	68 DA-A	86 DA-A	160 DA-A	at 13% M
Trt-Eval Interval											
Trt No.	Treatment Name	Form Conc	Rate	Unit	Grow Stg	Appl Code					
31	Prowl H2O	3.8	2	pt/a	7 EPP	A			99	11.2	61.4
31	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A					
31	2,4-D Ester	4	1	pt/a	7 EPP	A					
31	AMS		17	lb/100 gal	7 EPP	A					
31	Roundup WeatherMax	4.5	22	fl oz/a	LPOS	D					
31	AMS		17	lb/100 gal	LPOS	D					
32	Linex	4	1	pt/a	7 EPP	A			99	11.2	56.5
32	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A					
32	2,4-D Ester	4	1	pt/a	7 EPP	A					
32	AMS		17	lb/100 gal	7 EPP	A					
32	Roundup WeatherMax	4.5	22	fl oz/a	LPOS	D					
32	AMS		17	lb/100 gal	LPOS	D					
33	Roundup WeatherMax	4.5	22	fl oz/a	7 EPP	A			99	11.1	63.8
33	2,4-D Ester	4	1	pt/a	7 EPP	A					
33	AMS		17	lb/100 gal	7 EPP	A					
33	Roundup WeatherMax	4.5	22	fl oz/a	MPOS	B					
33	AMS		17	lb/100 gal	MPOS	B					
33	Roundup WeatherMax	4.5	22	fl oz/a	LPOS	D					
33	AMS		17	lb/100 gal	LPOS	D					
34	Roundup WeatherMax	4.5	22	fl oz/a	MPOS	B			99	11.1	59.2
34	AMS		17	lb/100 gal	MPOS	B					
34	Roundup WeatherMax	4.5	22	fl oz/a	POST	C					
34	AMS		17	lb/100 gal	POST	C					
35	Roundup WeatherMax	4.5	22	fl oz/a	MPOS	B			99	11.2	58.7
35	AMS		17	lb/100 gal	MPOS	B					
35	Roundup WeatherMax	4.5	22	fl oz/a	LPOS	D					
35	AMS		17	lb/100 gal	LPOS	D					
36	Roundup WeatherMax	4.5	22	fl oz/a	POST	C			99	11.2	59.0
36	AMS		17	lb/100 gal	POST	C					
36	Roundup WeatherMax	4.5	22	fl oz/a	LPOS	D					
36	AMS		17	lb/100 gal	LPOS	D					
LSD (P=.05)						13.9	15.0	7.3	5.3	0.75	9.05
Standard Deviation						9.5	10.2	5.1	3.8	0.54	6.46
CV						17.36	32.53	6.96	4.58	4.75	11.4