

MSU Weed Science Research Program

Comparison of Conventional and No-Till Weed Control Options in Soybean

Trial ID: NTS06-08
 Conducted: B8 - W Adams

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Date Planted: 5/13/08
 Variety: Asgrow 2107
 Population: 210,000 seeds/Acre
 Soil Type: Sandy loam
 Plot Size: 10 X 35 FT

Row Spacing: 7.5 IN
 No. of Reps: 4
 % OM: 2.5
 pH: 7.3
 Design: RANDOMIZED COMPLETE BLOCK

Tillage: No-till / Soil finish x2 on 5/13/08
 Previous crop: Soybean
 Fertilizer: None at planting

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
2.	THLAR	PENNYCRESS, FIELD	THLASPI ARVENSE L.
3.	POAAN	BLUEGRASS, ANNUAL	POA ANNUA
4.	STEME	CHICKWEED, COMMON	STELLARIA MEDIA (L.)
5.	AMASS	REDROOT PIGWEED, POWELL AMARANTH	AMARANTHUS SP.
Crop	Code	Common Name	
1.	GLXMA	SOYBEAN	

Application Description

	A	B	C	D
Application Timing:	7 EPP	PRE	POST	R3
Date Treated:	5/5/08	5/13/08	6/13/08	7/28/08
Time Treated:	4: 45 PM	8: 45 PM	12: 30 PM	3: 30 PM
% Cloud Cover:	65	10	80	50
Air Temp., Unit:	74 F	60 F	82 F	84 F
% Relative Humidity:	30	48	64	45
Wind Speed/Unit/Dir:	5 mph W	S	6 mph S	2 mph NW
Soil Temp., Unit:	73 F	59 F	76 F	77 F
Soil/Leaf Surface M:	5 5	5 5	2 5	5 5
Soil Moist (1=w 5=d):	5	4	2	4

Crop Stage at Each Application

	A	B	C	D
Crop Name:	GLXMA	GLXMA	GLXMA	GLXMA
Height (In.):	--	--	4-5	26
Stage (L):	--	--	V2	R3

Weed Stage at Each Application

	A	B	C	D
Weed 1 Name:	CHEAL	CHEAL	CHEAL	CHEAL
Height (In.):	.25-1.5	--	2-4	--
Stage (L):	coty-8	--	6-10	--
Weed 2 Name:	THLAR	THLAR	THLAR	THLAR
Height (In.):	1-2.5 dia	--	--	--
Stage (L):	rosette	--	--	--
Weed 3 Name:	POAAN	POAAN	POAAN	POAAN
Height (In.):	2	--	2.5-3	--
Stage (L):	flowering	--	flowering	--
Weed 4 Name:	STEME	STEME	STEME	STEME
Height (In.):	2-4 dia	--	4-12 dia	--
Stage (L):	flowering	--	flowering	--
Weed 5 Name:	AMASS	AMASS	AMASS	AMASS
Height (In.):	--	--	1-3.5	--
Stage (L):	--	--	4-many	--

Weed Density (plants/sq. ft.)

	1	2	3	4
Date:	7/25/08	7/25/08	7/25/08	7/25/08
Weed Name:	CHEAL	CAPSP	BRAKA	THLAR
Density:	11	0.125	0.375	0.75

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Appl	Sprayer Type	Speed MPH	Nozzle Type	Application Equipment				GPA	Carrier	PSI
				Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width			
A	Cub	3.8	AirMix	11003	24	20	100	19	water	28
B	Cub	3.8	AirMix	11003	24	20	100	19	water	28
C	Cub	3.8	AirMix	11003	24	20	100	19	water	28
D	Cub	3.8	AirMix	11003	38	20	100	19	water	28

Comments: 7/28/08- R3 Headline application - Drove 'Cub' spray tractor though all treatments so there would not be soybean yield differences due to tractor wheel track.

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								ANGR	CHEAL	THLAR	AMAPO
Weed Code											
Crop Code											
Rating Data Type								control	control	control	control
Rating Unit								percent	percent	percent	percent
Rating Date								6/26/08	6/26/08	6/26/08	6/26/08
Trt-Eval Interval								52 DA-A	52 DA-A	52 DA-A	52 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
1	Conventional Tillage							99	98	99	99
1	Prowl H2O	3.8	L	2	pt/a	PRE	B				
1	Roundup WeatherMax	4.5	SL	22	fl oz/a	POST	C				
1	AMS		WG	17	lb/100 gal	POST	C				
2	Conventional Tillage							99	99	99	99
2	Roundup WeatherMax	4.5	SL	22	fl oz/a	POST	C				
2	AMS		WG	17	lb/100 gal	POST	C				
3	Conventional Tillage							99	99	99	99
3	Prowl H2O	3.8	L	2	pt/a	PRE	B				
3	Roundup WeatherMax	4.5	SL	22	fl oz/a	POST	C				
3	AMS		WG	17	lb/100 gal	POST	C				
3	Headline	2.09	L	6	fl oz/a	R3	D				
3	Activator 90		L	0.25	% v/v	R3	D				
4	Conventional Tillage							0	0	0	0
4	Untreated										
5	No-Tillage							99	99	99	99
5	Extreme	2.17	L	3	pt/a	7 EPP	A				
5	2,4-D Ester	3.8	L	1	pt/a	7 EPP	A				
5	Activator 90		L	0.25	% v/v	7 EPP	A				
5	AMS		WG	17	lb/100 gal	7 EPP	A				
5	Roundup WeatherMax	4.5	SL	22	fl oz/a	POST	C				
5	AMS		WG	17	lb/100 gal	POST	C				
6	No-Tillage							99	99	99	99
6	Roundup WeatherMax	4.5	SL	22	fl oz/a	7 EPP	A				
6	2,4-D Ester	3.8	L	1	pt/a	7 EPP	A				
6	AMS		WG	17	lb/100 gal	7 EPP	A				
6	Roundup WeatherMax	4.5	SL	22	fl oz/a	POST	C				
6	AMS		WG	17	lb/100 gal	POST	C				
7	No-Tillage							99	99	99	99
7	Extreme	2.17	L	3	pt/a	7 EPP	A				
7	2,4-D Ester	3.8	L	1	pt/a	7 EPP	A				
7	Activator 90		L	0.25	% v/v	7 EPP	A				
7	AMS		WG	17	lb/100 gal	7 EPP	A				
7	Roundup WeatherMax	4.5	SL	22	fl oz/a	POST	C				
7	AMS		WG	17	lb/100 gal	POST	C				
7	Headline	2.09	L	6	fl oz/a	R3	D				
7	Activator 90		L	0.25	% v/v	R3	D				
8	No-Tillage							0	0	0	0
8	Untreated										
LSD (P=.10)								0.0	0.8	0.0	0.0
Standard Deviation								0.0	0.7	0.0	0.0
CV								0.0	0.91	0.0	0.0

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Weed Code	ANGR	CHEAL	THLAR	AMAPO
Crop Code				
Rating Data Type	control	control	control	control
Rating Unit	percent	percent	percent	percent
Rating Date	7/11/08	7/11/08	7/11/08	7/11/08
Trt-Eval Interval	67 DA-A	67 DA-A	67 DA-A	67 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
1	Conventional Tillage							99	99	99	99
1	Prowl H2O	3.8	L	2	pt/a	PRE	B				
1	Roundup WeatherMax	4.5	SL	22	fl oz/a	POST	C				
1	AMS		WG	17	lb/100 gal	POST	C				
2	Conventional Tillage							99	99	99	99
2	Roundup WeatherMax	4.5	SL	22	fl oz/a	POST	C				
2	AMS		WG	17	lb/100 gal	POST	C				
3	Conventional Tillage							99	99	99	99
3	Prowl H2O	3.8	L	2	pt/a	PRE	B				
3	Roundup WeatherMax	4.5	SL	22	fl oz/a	POST	C				
3	AMS		WG	17	lb/100 gal	POST	C				
3	Headline	2.09	L	6	fl oz/a	R3	D				
3	Activator 90		L	0.25	% v/v	R3	D				
4	Conventional Tillage							0	0	0	0
4	Untreated										
5	No-Tillage							99	99	99	99
5	Extreme	2.17	L	3	pt/a	7 EPP	A				
5	2,4-D Ester	3.8	L	1	pt/a	7 EPP	A				
5	Activator 90		L	0.25	% v/v	7 EPP	A				
5	AMS		WG	17	lb/100 gal	7 EPP	A				
5	Roundup WeatherMax	4.5	SL	22	fl oz/a	POST	C				
5	AMS		WG	17	lb/100 gal	POST	C				
6	No-Tillage							99	99	99	99
6	Roundup WeatherMax	4.5	SL	22	fl oz/a	7 EPP	A				
6	2,4-D Ester	3.8	L	1	pt/a	7 EPP	A				
6	AMS		WG	17	lb/100 gal	7 EPP	A				
6	Roundup WeatherMax	4.5	SL	22	fl oz/a	POST	C				
6	AMS		WG	17	lb/100 gal	POST	C				
7	No-Tillage							99	99	99	99
7	Extreme	2.17	L	3	pt/a	7 EPP	A				
7	2,4-D Ester	3.8	L	1	pt/a	7 EPP	A				
7	Activator 90		L	0.25	% v/v	7 EPP	A				
7	AMS		WG	17	lb/100 gal	7 EPP	A				
7	Roundup WeatherMax	4.5	SL	22	fl oz/a	POST	C				
7	AMS		WG	17	lb/100 gal	POST	C				
7	Headline	2.09	L	6	fl oz/a	R3	D				
7	Activator 90		L	0.25	% v/v	R3	D				
8	No-Tillage							0	0	0	0
8	Untreated										
LSD (P=.10)								0.2	0.0	0.0	0.3
Standard Deviation								0.2	0.0	0.0	0.3
CV								0.24	0.0	0.0	0.34

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Weed Code									
Crop Code								GLXMA	GLXMA
Rating Data Type								moisture	yield
Rating Unit								percent	bu/acre
Rating Date								10/20/08	10/20/08
Trt-Eval Interval								168 DA-A	at 13% M

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code		
1	Conventional Tillage							12.3	41.7
1	Prowl H2O	3.8	L	2	pt/a	PRE	B		
1	Roundup WeatherMax	4.5	SL	22	fl oz/a	POST	C		
1	AMS		WG	17	lb/100 gal	POST	C		
2	Conventional Tillage							12.2	39.3
2	Roundup WeatherMax	4.5	SL	22	fl oz/a	POST	C		
2	AMS		WG	17	lb/100 gal	POST	C		
3	Conventional Tillage							12.2	39.0
3	Prowl H2O	3.8	L	2	pt/a	PRE	B		
3	Roundup WeatherMax	4.5	SL	22	fl oz/a	POST	C		
3	AMS		WG	17	lb/100 gal	POST	C		
3	Headline	2.09	L	6	fl oz/a	R3	D		
3	Activator 90		L	0.25	% v/v	R3	D		
4	Conventional Tillage							13.1	8.8
4	Untreated								
5	No-Tillage							12.2	39.4
5	Extreme	2.17	L	3	pt/a	7 EPP	A		
5	2,4-D Ester	3.8	L	1	pt/a	7 EPP	A		
5	Activator 90		L	0.25	% v/v	7 EPP	A		
5	AMS		WG	17	lb/100 gal	7 EPP	A		
5	Roundup WeatherMax	4.5	SL	22	fl oz/a	POST	C		
5	AMS		WG	17	lb/100 gal	POST	C		
6	No-Tillage							12.0	39.6
6	Roundup WeatherMax	4.5	SL	22	fl oz/a	7 EPP	A		
6	2,4-D Ester	3.8	L	1	pt/a	7 EPP	A		
6	AMS		WG	17	lb/100 gal	7 EPP	A		
6	Roundup WeatherMax	4.5	SL	22	fl oz/a	POST	C		
6	AMS		WG	17	lb/100 gal	POST	C		
7	No-Tillage							12.4	41.9
7	Extreme	2.17	L	3	pt/a	7 EPP	A		
7	2,4-D Ester	3.8	L	1	pt/a	7 EPP	A		
7	Activator 90		L	0.25	% v/v	7 EPP	A		
7	AMS		WG	17	lb/100 gal	7 EPP	A		
7	Roundup WeatherMax	4.5	SL	22	fl oz/a	POST	C		
7	AMS		WG	17	lb/100 gal	POST	C		
7	Headline	2.09	L	6	fl oz/a	R3	D		
7	Activator 90		L	0.25	% v/v	R3	D		
8	No-Tillage								0.0
8	Untreated								
LSD (P=.10)								0.85	5.19
Standard Deviation								0.69	4.27
CV								5.57	13.67