

MSU Weed Science Research Program

Soil-applied (PRE) weed control programs in corn

Trial ID: C02-14 Study Dir.: Sprague and Powell  
 Conducted: Campus T-17 Investigator: Christy Sprague

Date Planted: May/08/2014 Row Spacing: 30 IN  
 Variety: P9807 AM No. of Reps: 4  
 Population: 32,000 seeds/A % OM: 4.1  
 Soil Type: Loam pH: 6.6  
 Plot Size: 10 X 35 FT Design: RANDOMIZED COMPLETE BLOCK

Tillage: Fall chisel plow, spring soil finish  
 Fertilizer: 300 lb urea broadcast, 150 lb 19-19-19 starter

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1.	ANGR	mainly foxtail species	SETARIA SP.
2.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
3.	AMAPO	AMARANTH, POWELL	AMARANTHUS POWELLII S.WATS.
4.	AMBEL	RAGWEED, COMMON	AMBROSIA ARTEMISIIFOLIA L.
5.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
Crop	Code	Common Name	
1.	ZEAMX	CORN, FIELD	

Application Description

	A	B
Application Timing:	PRE	POST
Date Treated:	May/08/2014	Jun/09/2014
Time Treated:	8:15 PM	10:30 AM
% Cloud Cover:	10	10
Air Temp., Unit:	85 F	75 F
% Relative Humidity:	48.9	60
Wind Speed/Unit/Dir:	5 mph S	3 mph E
Soil Temp., Unit:	60 F	61 F
Soil/Leaf Surface M:	4 -	5 5
Soil Moist (1=w 5=d):	4	5

Crop Stage at Each Application

	A	B
Crop Name:	ZEAMX	ZEAMX
Height (In.):	-	13"
Stage (L):	-	V5-V6

Weed Stage at Each Application

	A	B
Weed 1 Name:	ANGR	ANGR
Height (In.):	-	4"
Stage (L):	-	4
Weed 2 Name:	CHEAL	CHEAL
Height (In.):	-	2"
Stage (L):	-	8
Weed 3 Name:	AMAPO	AMAPO
Height (In.):	-	2"
Stage (L):	-	8
Weed 4 Name:	AMBEL	AMBEL
Height (In.):	-	2"
Stage (L):	-	2-8
Weed 5 Name:	ABUTH	ABUTH
Height (In.):	-	2"
Stage (L):	-	4

Weed Density (plants/sq. ft.)

	1	2	3	4	5
Date:	Jul/17/2014	Jul/17/2014	Jul/17/2014	Jul/17/2014	Jul/17/2014
Weed Name:	ANGR	CHEAL	AMAPO	AMBEL	ABUTH
Density:	1	6	<1	3	1

Application Equipment

Appl	Sprayer	Speed	Nozzle	Nozzle	Nozzle	Nozzle	Boom				
	Type	MPH	Type	Size	Height	Spacing	Width	GPA	Carrier	PSI	
A	Cub	3.8	AIXR	11003	21"	20"	100"	19	Water	30	
B	Cub	3.8	AIXR	11003	25"	20"	100"	19	Water	30	

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Weed Code	Crop Code	Rating Data Type	Rating Unit	Rating Date	Trt-Eval Interval	# Subsamples, Dec.	ZEAMX injury percent	ANGR control percent	CHEAL control percent	AMAPO control percent	AMBEL control percent	
							Jun/06/2014 29 DA-A	Jun/06/2014 29 DA-A	Jun/06/2014 29 DA-A	Jun/06/2014 29 DA-A	Jun/06/2014 29 DA-A	
							0	0	0	0	0	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code					
1	Acuron	3.44	L	3	qt/a	PRE	A	0	99	99	99	99
2	Acuron	3.44	L	3	qt/a	PRE	A	0	99	99	99	99
2	AAtrex	90	WG	0.83	lb/a	PRE	A	0	99	99	99	99
3	Lumax EZ	3.67	L	2.7	qt/a	PRE	A	0	99	99	99	99
4	Lexar EZ	3.7	L	3	qt/a	PRE	A	0	99	99	99	99
5	Balance Flexx	2	L	4	fl oz/a	PRE	A	0	99	99	99	99
5	Dual II Magnum	7.64	L	1.33	pt/a	PRE	A	0	99	99	99	99
6	Balance Flexx	2	L	4	fl oz/a	PRE	A	0	99	99	99	99
6	Bicep II Magnum	5.5	L	2	qt/a	PRE	A	0	99	99	99	99
7	Corvus	2.63	L	5.6	oz/a	PRE	A	0	99	99	99	99
8	Corvus	2.63	L	5.6	oz/a	PRE	A	0	99	99	99	99
8	AAtrex	90	WG	1.67	lb/a	PRE	A	0	99	99	99	99
9	Instigate	45.8	WG	6	oz/a	PRE	A	0	99	99	99	99
9	AAtrex	90	WG	1.67	lb/a	PRE	A	0	99	99	99	99
10	Untreated							0	0	0	0	0
11	Zidua	85	WG	2.5	oz/a	PRE	A	0	99	98	99	96
11	Sharpen	2.85	L	3	fl oz/a	PRE	A	0	99	99	99	96
12	Verdict	5.57	L	15	fl oz/a	PRE	A	0	99	99	99	92
13	Verdict	5.5	L	15	fl oz/a	PRE	A	0	99	96	98	97
13	Outlook	6	L	7.5	fl oz/a	PRE	A	0	99	99	99	97
14	Harness Xtra	5.6	L	2	qt/a	PRE	A	0	99	99	99	96
15	Bicep II Magnum	5.5	L	2.1	qt/a	PRE	A	0	99	99	99	93
16	Anthem ATZ	4.5	L	1	qt/a	PRE	A	0	99	96	99	85
17	TripleFLEXX	4.16	L	3	pt/a	PRE	A	0	99	99	99	98
18	TripleFLEXX	4.16	L	3	pt/a	PRE	A	1	99	99	99	99
18	AAtrex	90	WG	1.67	lb/a	PRE	A	0	99	99	99	99
19	Acuron	3.44	L	3	qt/a	PRE	A	0	99	99	99	99
19	Status	56	WG	5	oz/a	POST	B					
19	Touchdown Total	4.17	SL	30	fl oz/a	POST	B					
19	N-Pak AMS		L	2.5	% v/v	POST	B					
20	Bicep II Magnum	5.5	L	1.1	qt/a	PRE	A	0	99	99	99	53
20	Halex GT	4.38	L	3.6	pt/a	POST	B					
20	Surfactant		L	0.25	% v/v	POST	B					
20	N-Pak AMS		L	2.5	% v/v	POST	B					
LSD (P=.05)								0.8	0.3	2.6	0.6	6.2
CV								894.43	0.24	1.96	0.48	4.88

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

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Soil-applied (PRE) weed control programs in corn

Trial ID: C02-14 Study Dir.: Sprague and Powell  
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Weed Code								ABUTH	ZEAMX	ANGR	CHEAL	AMAPO
Crop Code								control	injury	control	control	control
Rating Data Type								percent	percent	percent	percent	percent
Rating Unit								Jun/06/2014	Jun/23/2014	Jun/23/2014	Jun/23/2014	Jun/23/2014
Rating Date								29 DA-A	14 DA-B	14 DA-B	14 DA-B	14 DA-B
Trt-Eval Interval								0	0	0	0	0
# Subsamples, Dec.												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code					
1	Acuron	3.44	L	3	qt/a	PRE	A	99	0	99	99	99
2	Acuron	3.44	L	3	qt/a	PRE	A	99	0	99	99	99
2	AAtrex	90	WG	0.83	lb/a	PRE	A					
3	Lumax EZ	3.67	L	2.7	qt/a	PRE	A	99	0	99	99	99
4	Lexar EZ	3.7	L	3	qt/a	PRE	A	99	0	99	99	99
5	Balance Flexx	2	L	4	fl oz/a	PRE	A	99	0	99	99	99
5	Dual II Magnum	7.64	L	1.33	pt/a	PRE	A					
6	Balance Flexx	2	L	4	fl oz/a	PRE	A	99	0	99	99	99
6	Bicep II Magnum	5.5	L	2	qt/a	PRE	A					
7	Corvus	2.63	L	5.6	oz/a	PRE	A	99	1	99	99	99
8	Corvus	2.63	L	5.6	oz/a	PRE	A	99	5	99	99	99
8	AAtrex	90	WG	1.67	lb/a	PRE	A					
9	Instigate	45.8	WG	6	oz/a	PRE	A	99	2	98	99	99
9	AAtrex	90	WG	1.67	lb/a	PRE	A					
10	Untreated							0	0	0	0	0
11	Zidua	85	WG	2.5	oz/a	PRE	A	99	0	99	89	97
11	Sharpen	2.85	L	3	fl oz/a	PRE	A					
12	Verdict	5.57	L	15	fl oz/a	PRE	A	99	0	99	94	98
13	Verdict	5.5	L	15	fl oz/a	PRE	A	98	0	99	90	99
13	Outlook	6	L	7.5	fl oz/a	PRE	A					
14	Harness Xtra	5.6	L	2	qt/a	PRE	A	86	0	99	99	99
15	Bicep II Magnum	5.5	L	2.1	qt/a	PRE	A	74	0	99	96	99
16	Anthem ATZ	4.5	L	1	qt/a	PRE	A	86	0	96	93	99
17	TripleFLEXX	4.16	L	3	pt/a	PRE	A	99	1	99	99	99
18	TripleFLEXX	4.16	L	3	pt/a	PRE	A	99	2	99	99	99
18	AAtrex	90	WG	1.67	lb/a	PRE	A					
19	Acuron	3.44	L	3	qt/a	PRE	A	99	0	99	99	99
19	Status	56	WG	5	oz/a	POST	B					
19	Touchdown Total	4.17	SL	30	fl oz/a	POST	B					
19	N-Pak AMS		L	2.5	% v/v	POST	B					
20	Bicep II Magnum	5.5	L	1.1	qt/a	PRE	A	55	0	99	99	99
20	Halex GT	4.38	L	3.6	pt/a	POST	B					
20	Surfactant		L	0.25	% v/v	POST	B					
20	N-Pak AMS		L	2.5	% v/v	POST	B					
LSD (P=.05)								6.6	1.5	1.5	6.0	1.5
CV								5.2	188.98	1.15	4.57	1.15

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

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								AMBEL	ABUTH	ZEAMX	ANGR	CHEAL
								control	control	injury	control	control
								percent	percent	percent	percent	percent
								Jun/23/2014	Jun/23/2014	Jul/10/2014	Jul/10/2014	Jul/10/2014
								14 DA-B	14 DA-B	31 DA-B	31 DA-B	31 DA-B
								0	0	0	0	0
Trt	Treatment	Form	Form	Rate	Grow	Appl						
No.	Name	Conc	Type	Unit	Stg	Code						
1	Acuron	3.44	L	3 qt/a	PRE	A	99	99	0	99	99	
2	Acuron	3.44	L	3 qt/a	PRE	A	99	99	0	99	99	
2	AAtrex	90	WG	0.83 lb/a	PRE	A						
3	Lumax EZ	3.67	L	2.7 qt/a	PRE	A	99	99	0	99	99	
4	Lexar EZ	3.7	L	3 qt/a	PRE	A	98	99	0	99	99	
5	Balance Flexx	2	L	4 fl oz/a	PRE	A	99	99	0	99	99	
5	Dual II Magnum	7.64	L	1.33 pt/a	PRE	A						
6	Balance Flexx	2	L	4 fl oz/a	PRE	A	99	99	0	99	99	
6	Bicep II Magnum	5.5	L	2 qt/a	PRE	A						
7	Corvus	2.63	L	5.6 oz/a	PRE	A	99	99	0	99	99	
8	Corvus	2.63	L	5.6 oz/a	PRE	A	99	99	0	99	99	
8	AAtrex	90	WG	1.67 lb/a	PRE	A						
9	Instigate	45.8	WG	6 oz/a	PRE	A	99	99	0	98	99	
9	AAtrex	90	WG	1.67 lb/a	PRE	A						
10	Untreated						0	0	0	0	0	
11	Zidua	85	WG	2.5 oz/a	PRE	A	92	99	0	99	81	
11	Sharpen	2.85	L	3 fl oz/a	PRE	A						
12	Verdict	5.57	L	15 fl oz/a	PRE	A	89	99	0	99	89	
13	Verdict	5.5	L	15 fl oz/a	PRE	A	97	94	0	99	89	
13	Outlook	6	L	7.5 fl oz/a	PRE	A						
14	Harness Xtra	5.6	L	2 qt/a	PRE	A	89	84	0	99	94	
15	Bicep II Magnum	5.5	L	2.1 qt/a	PRE	A	81	73	0	99	96	
16	Anthem ATZ	4.5	L	1 qt/a	PRE	A	75	81	0	94	92	
17	TripleFLEXX	4.16	L	3 pt/a	PRE	A	96	99	0	98	99	
18	TripleFLEXX	4.16	L	3 pt/a	PRE	A	99	99	0	99	99	
18	AAtrex	90	WG	1.67 lb/a	PRE	A						
19	Acuron	3.44	L	3 qt/a	PRE	A	99	99	0	99	99	
19	Status	56	WG	5 oz/a	POST	B						
19	Touchdown Total	4.17	SL	30 fl oz/a	POST	B						
19	N-Pak AMS		L	2.5 % v/v	POST	B						
20	Bicep II Magnum	5.5	L	1.1 qt/a	PRE	A	99	99	0	99	99	
20	Halex GT	4.38	L	3.6 pt/a	POST	B						
20	Surfactant		L	0.25 % v/v	POST	B						
20	N-Pak AMS		L	2.5 % v/v	POST	B						
LSD (P=.05)								6.4	6.3	0.0	1.7	7.4
CV								5.03	4.89	0.0	1.3	5.76

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

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Trial ID: C02-14 Study Dir.: Sprague and Powell  
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Weed Code	AMAPO	AMBEL	ABUTH	ZEAMX	ZEAMX							
Crop Code	control	control	control	moisture	yield							
Rating Data Type	percent	percent	percent	percent	bu/acre							
Rating Unit	Jul/10/2014	Jul/10/2014	Jul/10/2014	Nov/09/2014	Nov/09/2014							
Rating Date	31 DA-B	31 DA-B	31 DA-B	153 DA-B	at 15% M							
Trt-Eval Interval	0	0	0	1	0							
# Subsamples, Dec.												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code					
1	Acuron	3.44	L	3	qt/a	PRE	A	99	99	99	17.4	259
2	Acuron	3.44	L	3	qt/a	PRE	A	99	99	99	17.1	264
2	AAtrex	90	WG	0.83	lb/a	PRE	A					
3	Lumax EZ	3.67	L	2.7	qt/a	PRE	A	99	99	99	17.3	253
4	Lexar EZ	3.7	L	3	qt/a	PRE	A	99	99	99	17.4	256
5	Balance Flexx	2	L	4	fl oz/a	PRE	A	99	99	99	17.9	259
5	Dual II Magnum	7.64	L	1.33	pt/a	PRE	A					
6	Balance Flexx	2	L	4	fl oz/a	PRE	A	99	99	99	17.5	263
6	Bicep II Magnum	5.5	L	2	qt/a	PRE	A					
7	Corvus	2.63	L	5.6	oz/a	PRE	A	99	99	99	17.6	256
8	Corvus	2.63	L	5.6	oz/a	PRE	A	99	99	99	17.6	262
8	AAtrex	90	WG	1.67	lb/a	PRE	A					
9	Instigate	45.8	WG	6	oz/a	PRE	A	99	99	99	18.1	257
9	AAtrex	90	WG	1.67	lb/a	PRE	A					
10	Untreated							0	0	0	18.7	132
11	Zidua	85	WG	2.5	oz/a	PRE	A	99	98	99	18.2	249
11	Sharpen	2.85	L	3	fl oz/a	PRE	A					
12	Verdict	5.57	L	15	fl oz/a	PRE	A	99	89	97	17.9	251
13	Verdict	5.5	L	15	fl oz/a	PRE	A	99	95	94	18.0	258
13	Outlook	6	L	7.5	fl oz/a	PRE	A					
14	Harness Xtra	5.6	L	2	qt/a	PRE	A	99	90	84	17.6	261
15	Bicep II Magnum	5.5	L	2.1	qt/a	PRE	A	99	88	75	17.9	253
16	Anthem ATZ	4.5	L	1	qt/a	PRE	A	99	84	82	17.3	258
17	TripleFLEXX	4.16	L	3	pt/a	PRE	A	99	96	99	17.8	263
18	TripleFLEXX	4.16	L	3	pt/a	PRE	A	99	98	99	18.7	254
18	AAtrex	90	WG	1.67	lb/a	PRE	A					
19	Acuron	3.44	L	3	qt/a	PRE	A	99	99	99	18.1	255
19	Status	56	WG	5	oz/a	POST	B					
19	Touchdown Total	4.17	SL	30	fl oz/a	POST	B					
19	N-Pak AMS		L	2.5	% v/v	POST	B					
20	Bicep II Magnum	5.5	L	1.1	qt/a	PRE	A	99	99	99	17.9	269
20	Halex GT	4.38	L	3.6	pt/a	POST	B					
20	Surfactant		L	0.25	% v/v	POST	B					
20	N-Pak AMS		L	2.5	% v/v	POST	B					
LSD (P=.05)								0.3	6.5	7.5	0.63	15.2
CV								0.24	5.05	5.86	2.5	4.28

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