

# Corn, Tilled Weed Control Studies

12-12-06 (06-2A-M110)

Southern Illinois University

Residual Herbicide Programs in Conventional Corn.

Project Code: 06-2A-M110      Location: Belleville Research Center  
Investigator: Bryan Young

Investigator: Bryan Young, Associate Professor, Southern Illinois University

City State Zip Country:      Belleville      IL 62221 USA  
Trial Status: Final      Updated:      10-23-06

## Objective:

Evaluate various preemergence and preemergence plus early postemergence programs for reduced-till conventional corn.

Weed Code	Common Name	Scientific Name
1. CYPES	nutsedge, yellow	Cyperus esculentus L.
2. XANST	cocklebur, common	Xanthium strumarium L.
3. SETFA	foxtail, giant	Setaria faberi Herrm.
4. ABUTH	velvetleaf	Abutilon theophrasti Medicus
5. AMATA	waterhemp, common	Amaranthus rudis Sauer

Crop 1:            ZEAMX corn, field            Variety:            33K44  
Planting Method: Seeded            Planting Date:    5-23-06  
Rate:            28000 S/A            Depth:            1.5 IN  
Row Spacing:    30 IN

Plot Width, Unit: 10 FT            Plot Length, Unit: 28 FT            Reps: 4  
Tillage Type: Reduced-Till            Study Design: Randomized complete block  
Previous Crop, Year: GLXMA, 2005  
Field Prep./Maintenance: N 150 LB/A, P205 0 LB/A, K20 100 LB/A

Soil Name: Weir            % OM: 1.6            pH: 6.2            CEC: 7  
Texture: Silt loam            Fert. Level: P1: 93 LB/A, K: 448 LB/A

## APPLICATION DESCRIPTION

	A	B	C
Application Date:	5-23-06	6-8-06	6-13-06
Time of Day:	17:00	12:00	13:30
Application Method:	Spray	Spray	Spray
Application Timing:	PRE	1-2"W	3-5"W
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	79 F	86 F	76 F
% Relative Humidity:	44	48	54
Wind Velocity, Unit:	5 MPH	3-5 MPH	5-6 MPH
Dew Presence (Y/N):	N	N	
Soil Moisture:	NORMAL	NORMAL	NORMAL

## CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMX NA	ZEAMX V3	ZEAMX V4
Height, Unit:	NA NA	6-8 IN	10 IN

## WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code:		CYPES	CYPES
Stage (leaves):		2-4	5-6
Height (inches):		0-3	3-5
Density:		Low	Low
Weed 2 Code:		XANST	XANST
Stage (leaves):		2-4	4-6
Height (inches):		0-2	4-5
Density:		Low	Low
Weed 3 Code:		SETFA	SETFA
Stage (leaves):		2-4	3-4
Height (inches):		0-3	3-4
Density:		Low	Low
Weed 4 Code:		ABUTH	ABUTH
Stage (leaves):		2-4	2-3
Height (inches):		0-2	2-3
Density:		Low	Low

## APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	CO2 sprayer	CO2 sprayer	CO2 sprayer
Operating Pressure:	40 PSI	40 PSI	40 PSI
Nozzle Type:	Flat fan	Flat fan	Flat fan
Nozzle Size:	8003	8002	8002
Boom Length, Unit:	7.5 FT	7.5 FT	7.5 FT
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

NOTES:

Residual Herbicide Programs in Conventional Corn.

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Weed Code  
 Crop Code  
 Rating Data Type  
 Rating Unit  
 Rating Date  
 Trt-Eval Interval

ZEAMX ZEAMX ZEAMX ZEAMX ZEAMX ZEAMX ZEAMX ZEAMX ZEAMX  
 Moisture Yield Injury Injury Injury Injury Injury Injury Injury  
 Percent bu/A Percent Percent Percent Percent Percent Percent Percent  
 10-11-06 10-11-06 6-4-06 6-11-06 6-15-06 6-22-06 6-25-06 6-27-06 7-9-06  
 7 DAE 14 DAE 7 DA-B 14 DA-B 28 DAE 14 DA-C 42 DAE

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	ZEAMX Moisture Percent	ZEAMX Yield bu/A	ZEAMX Injury Percent	ZEAMX Injury Percent	ZEAMX Injury Percent	ZEAMX Injury Percent	ZEAMX Injury Percent	ZEAMX Injury Percent
1	LEXAR	3.7	L	2.77	lb ai/a	3	qt/a	PRE	A	18.2	150	0	0	0	0	0	0
2	LEXAR	3.7	L	1.39	lb ai/a	1.5	qt/a	PRE	A	18.0	134	0	0	0	0	0	0
2	LEXAR	3.7	L	1.39	lb ai/a	1.5	qt/a	1-2"W	B								
3	LUMAX	3.94	L	2.46	lb ai/a	2.5	qt/a	PRE	A	17.8	128	0	0	0	0	0	0
3	AATREX	90	WG	1.0	lb ai/a	1.11	lb/a	PRE	A								
4	LUMAX	3.94	L	1.48	lb ai/a	1.5	qt/a	PRE	A	17.9	145	0	0	0	0	0	0
4	AATREX	90	WG	1.0	lb ai/a	1.11	lb/a	PRE	A								
4	LUMAX	3.94	L	1.48	lb ai/a	1.5	qt/a	1-2"W	B								
5	KEYSTONE	5.25	L	3.15	lb ai/a	2.4	qt/a	PRE	A	18.3	133	1	0	0	0	0	0
5	HORNET	68.5	WG	0.128	lb ai/a	3	oz/a	PRE	A								
6	DEGREE XTRA	4	L	3	lb ai/a	3	qt/a	PRE	A	17.6	127	2	0	0	0	0	0
6	BALANCE PRO	4	SC	0.047	lb ai/a	1.5	fl oz/a	PRE	A								
7	RADIUS	4	SC	0.56	lb ai/a	18	fl oz/a	PRE	A	17.8	138	0	0	0	0	0	0
7	AATREX	90	WG	1.0	lb ai/a	1.11	lb/a	PRE	A								
8	GUARDSMAN MAX	5	L	2.5	lb ai/a	4	pt/a	PRE	A	17.6	140	0	0	0	0	0	0
8	DISTINCT	70	WG	0.175	lb ai/a	4	oz/a	1-2"W	B								
9	NONTREATED									17.2	33	0	0	0	0	0	0
10	BICEP II MAGNUM	5.5	L	2.9	lb ai/a	2.1	qt/a	PRE	A	17.3	136	0	0	0	0	0	0
10	CALLISTO	4	SC	0.094	lb ai/a	3	fl oz/a	3-5"W	C								
10	AATREX	90	WG	0.25	lb ai/a	4.44	oz/a	3-5"W	C								
10	PRIME OIL COC	100	LIQ	1.0	% v/v	1	% v/v	3-5"W	C								
10	28% UAN	100	LIQ	2.5	% v/v	2.5	% v/v	3-5"W	C								
11	CONFIDENTIAL																
12	CONFIDENTIAL																
13	DEGREE XTRA	4	L	3.33	lb ai/a	3.33	qt/a	PRE	A	17.7	150	1	0	0	0	0	0
13	AATREX	90	WG	0.57	lb ai/a	10.1	oz/a	PRE	A								
14	DEGREE XTRA	4	L	3.7	lb ai/a	3.7	qt/a	PRE	A	18.4	130	1	0	0	0	0	0
15	KEYSTONE	5.25	L	3.94	lb ai/a	3	qt/a	PRE	A	18.1	129	2	0	0	0	0	0
16	HARNESS XTRA	5.6	L	4.06	lb ai/a	2.9	qt/a	PRE	A	18.1	136	0	0	0	0	0	0
LSD (P=.05)										0.81	29.8	0.8	0.0	0.0	0.0	0.0	0.0
Replicate F										2.721	5.867	0.836	0.000	0.000	0.000	0.000	0.000
Replicate Prob(F)										0.0574	0.0021	0.4822	1.0000	1.0000	1.0000	1.0000	1.0000
Treatment F										1.595	7.616	5.491	0.000	0.000	0.000	0.000	0.000
Treatment Prob(F)										0.1287	0.0001	0.0001	1.0000	1.0000	1.0000	1.0000	1.0000

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								CYPES	CYPES	CYPES	CYPES	XANST	XANST	XANST	XANST			
								Control	Control	Control	Control	Control	Control	Control	Control			
								Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent			
								6-11-06	6-25-06	7-9-06	7-23-06	6-11-06	6-25-06	7-9-06	7-23-06			
								14 DAE	28 DAE	42 DAE	56 DAE	14 DAE	28 DAE	42 DAE	56 DAE			
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code									
1	LEXAR	3.7	L	2.77	lb ai/a	3	qt/a	PRE	A	96	94	94	92	98	99	98	98	
2	LEXAR	3.7	L	1.39	lb ai/a	1.5	qt/a	PRE	A	98	98	98	98	99	99	99	99	
2	LEXAR	3.7	L	1.39	lb ai/a	1.5	qt/a	1-2"W	B									
3	LUMAX	3.94	L	2.46	lb ai/a	2.5	qt/a	PRE	A	99	99	99	99	99	99	98	98	
3	AATREX	90	WG	1.0	lb ai/a	1.11	lb/a	PRE	A									
4	LUMAX	3.94	L	1.48	lb ai/a	1.5	qt/a	PRE	A	98	99	99	99	99	99	99	99	
4	AATREX	90	WG	1.0	lb ai/a	1.11	lb/a	PRE	A									
4	LUMAX	3.94	L	1.48	lb ai/a	1.5	qt/a	1-2"W	B									
5	KEYSTONE	5.25	L	3.15	lb ai/a	2.4	qt/a	PRE	A	97	90	90	90	99	99	98	99	
5	HORNET	68.5	WG	0.128	lb ai/a	3	oz/a	PRE	A									
6	DEGREE XTRA	4	L	3	lb ai/a	3	qt/a	PRE	A	96	86	88	88	98	98	95	95	
6	BALANCE PRO	4	SC	0.047	lb ai/a	1.5	fl oz/a	PRE	A									
7	RADIUS	4	SC	0.56	lb ai/a	18	fl oz/a	PRE	A	92	83	86	88	95	97	94	93	
7	AATREX	90	WG	1.0	lb ai/a	1.11	lb/a	PRE	A									
8	GUARDSMAN MAX	5	L	2.5	lb ai/a	4	pt/a	PRE	A	97	98	98	98	99	99	98	97	
8	DISTINCT	70	WG	0.175	lb ai/a	4	oz/a	1-2"W	B									
9	NONTREATED									0	0	0	0	0	0	0	0	
10	BICEP II MAGNUM	5.5	L	2.9	lb ai/a	2.1	qt/a	PRE	A	96	98	97	98	92	99	98	98	
10	CALLISTO	4	SC	0.094	lb ai/a	3	fl oz/a	3-5"W	C									
10	AATREX	90	WG	0.25	lb ai/a	4.44	oz/a	3-5"W	C									
10	PRIME OIL COC	100	LIQ	1.0	% v/v	1	% v/v	3-5"W	C									
10	28% UAN	100	LIQ	2.5	% v/v	2.5	% v/v	3-5"W	C									
11	CONFIDENTIAL																	
12	CONFIDENTIAL																	
13	DEGREE XTRA	4	L	3.33	lb ai/a	3.33	qt/a	PRE	A	96	89	89	89	98	96	94	94	
13	AATREX	90	WG	0.57	lb ai/a	10.1	oz/a	PRE	A									
14	DEGREE XTRA	4	L	3.7	lb ai/a	3.7	qt/a	PRE	A	96	86	89	89	96	95	93	92	
15	KEYSTONE	5.25	L	3.94	lb ai/a	3	qt/a	PRE	A	97	88	89	89	98	98	98	96	
16	HARNESS XTRA	5.6	L	4.06	lb ai/a	2.9	qt/a	PRE	A	98	90	93	93	98	98	97	96	
LSD (P=.05)										2.3	5.2	5.3	4.8	3.5	2.5	3.4	4.5	
Replicate F										3.161	0.760	0.789	0.818	1.011	0.610	1.972	1.885	
Replicate Prob(F)										0.0352	0.5233	0.5074	0.4915	0.3983	0.6123	0.1340	0.1482	
Treatment F										997.180	188.903	187.554	226.804	460.398	914.166	461.496	266.042	
Treatment Prob(F)										0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	

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 Investigator: Bryan Young

Weed Code	Crop Code	Rating Data Type	Rating Unit	Rating Date	Trt-Eval Interval	SETFA	SETFA	SETFA	SETFA	ABUTH	ABUTH	ABUTH
						Control Percent	Control Percent	Control Percent	Control Percent	Control Percent	Control Percent	Control Percent
						6-11-06	6-25-06	7-9-06	7-23-06	6-25-06	7-9-06	7-23-06
						14 DAE	28 DAE	42 DAE	56 DAE	28 DAE	42 DAE	56 DAE
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code			
1	LEXAR	3.7 L		2.77 lb ai/a		3 qt/a		PRE	A	99	98	97
2	LEXAR	3.7 L		1.39 lb ai/a		1.5 qt/a		PRE	A	98	97	95
2	LEXAR	3.7 L		1.39 lb ai/a		1.5 qt/a		1-2"W	B	94	99	99
3	LUMAX	3.94 L		2.46 lb ai/a		2.5 qt/a		PRE	A	99	98	98
3	AATREX	90 WG		1.0 lb ai/a		1.11 lb/a		PRE	A	98	98	98
4	LUMAX	3.94 L		1.48 lb ai/a		1.5 qt/a		PRE	A	98	98	98
4	AATREX	90 WG		1.0 lb ai/a		1.11 lb/a		PRE	A	98	98	98
4	LUMAX	3.94 L		1.48 lb ai/a		1.5 qt/a		1-2"W	B	98	98	98
5	KEYSTONE	5.25 L		3.15 lb ai/a		2.4 qt/a		PRE	A	99	98	97
5	HORNET	68.5 WG		0.128 lb ai/a		3 oz/a		PRE	A	98	97	98
6	DEGREE XTRA	4 L		3 lb ai/a		3 qt/a		PRE	A	99	98	97
6	BALANCE PRO	4 SC		0.047 lb ai/a		1.5 fl oz/a		PRE	A	98	97	98
7	RADIUS	4 SC		0.56 lb ai/a		18 fl oz/a		PRE	A	99	98	96
7	AATREX	90 WG		1.0 lb ai/a		1.11 lb/a		PRE	A	97	97	98
8	GUARDSMAN MAX	5 L		2.5 lb ai/a		4 pt/a		PRE	A	99	99	99
8	DISTINCT	70 WG		0.175 lb ai/a		4 oz/a		1-2"W	B	98	98	98
9	NONTREATED									0	0	0
10	BICEP II MAGNUM	5.5 L		2.9 lb ai/a		2.1 qt/a		PRE	A	99	98	97
10	CALLISTO	4 SC		0.094 lb ai/a		3 fl oz/a		3-5"W	C	97	97	97
10	AATREX	90 WG		0.25 lb ai/a		4.44 oz/a		3-5"W	C	99	99	99
10	PRIME OIL COC	100 LIQ		1.0 % v/v		1 % v/v		3-5"W	C			
10	28% UAN	100 LIQ		2.5 % v/v		2.5 % v/v		3-5"W	C			
11	CONFIDENTIAL											
12	CONFIDENTIAL											
13	DEGREE XTRA	4 L		3.33 lb ai/a		3.33 qt/a		PRE	A	99	98	97
13	AATREX	90 WG		0.57 lb ai/a		10.1 oz/a		PRE	A	97	97	97
14	DEGREE XTRA	4 L		3.7 lb ai/a		3.7 qt/a		PRE	A	99	98	98
15	KEYSTONE	5.25 L		3.94 lb ai/a		3 qt/a		PRE	A	99	99	99
16	HARNESS XTRA	5.6 L		4.06 lb ai/a		2.9 qt/a		PRE	A	99	99	98
LSD (P=.05)										0.9	0.7	1.6
Replicate F										1.412	1.238	0.667
Replicate Prob(F)										0.2539	0.3090	0.5771
Treatment F										0.8726	0.4496	0.0012
Treatment Prob(F)										6876.856	10179.491	2063.251
										1809.416	2137.319	874.028
										751.369	0.0001	0.0001

Residual Herbicide Programs in Conventional Corn.

Project Code: 06-2A-M110 Location: Belleville Research Center  
 Investigator: Bryan Young

Weed Code	AMATA	AMATA	AMATA
Crop Code			
Rating Data Type	Control	Control	Control
Rating Unit	Percent	Percent	Percent
Rating Date	6-25-06	7-9-06	7-23-06
Trt-Eval Interval	28 DAE	42 DAE	56 DAE

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code			
1	LEXAR	3.7	L	2.77	lb ai/a	3	qt/a	PRE	A	99	99	99
2	LEXAR	3.7	L	1.39	lb ai/a	1.5	qt/a	PRE	A	99	99	99
2	LEXAR	3.7	L	1.39	lb ai/a	1.5	qt/a	1-2"W	B			
3	LUMAX	3.94	L	2.46	lb ai/a	2.5	qt/a	PRE	A	99	99	99
3	AATREX	90	WG	1.0	lb ai/a	1.11	lb/a	PRE	A			
4	LUMAX	3.94	L	1.48	lb ai/a	1.5	qt/a	PRE	A	99	99	99
4	AATREX	90	WG	1.0	lb ai/a	1.11	lb/a	PRE	A			
4	LUMAX	3.94	L	1.48	lb ai/a	1.5	qt/a	1-2"W	B			
5	KEYSTONE	5.25	L	3.15	lb ai/a	2.4	qt/a	PRE	A	99	99	99
5	HORNET	68.5	WG	0.128	lb ai/a	3	oz/a	PRE	A			
6	DEGREE XTRA	4	L	3	lb ai/a	3	qt/a	PRE	A	99	99	99
6	BALANCE PRO	4	SC	0.047	lb ai/a	1.5	fl oz/a	PRE	A			
7	RADIUS	4	SC	0.56	lb ai/a	18	fl oz/a	PRE	A	99	99	99
7	AATREX	90	WG	1.0	lb ai/a	1.11	lb/a	PRE	A			
8	GUARDSMAN MAX	5	L	2.5	lb ai/a	4	pt/a	PRE	A	99	99	99
8	DISTINCT	70	WG	0.175	lb ai/a	4	oz/a	1-2"W	B			
9	NONTREATED									0	0	0
10	BICEP II MAGNUM	5.5	L	2.9	lb ai/a	2.1	qt/a	PRE	A	99	99	99
10	CALLISTO	4	SC	0.094	lb ai/a	3	fl oz/a	3-5"W	C			
10	AATREX	90	WG	0.25	lb ai/a	4.44	oz/a	3-5"W	C			
10	PRIME OIL COC	100	LIQ	1.0	% v/v	1	% v/v	3-5"W	C			
10	28% UAN	100	LIQ	2.5	% v/v	2.5	% v/v	3-5"W	C			
11	CONFIDENTIAL											
12	CONFIDENTIAL											
13	DEGREE XTRA	4	L	3.33	lb ai/a	3.33	qt/a	PRE	A	99	99	99
13	AATREX	90	WG	0.57	lb ai/a	10.1	oz/a	PRE	A			
14	DEGREE XTRA	4	L	3.7	lb ai/a	3.7	qt/a	PRE	A	99	99	99
15	KEYSTONE	5.25	L	3.94	lb ai/a	3	qt/a	PRE	A	99	99	99
16	HARNESS XTRA	5.6	L	4.06	lb ai/a	2.9	qt/a	PRE	A	99	99	99
	LSD (P=.05)									0.0	0.0	0.0
	Replicate F									0.000	0.000	0.000
	Replicate Prob(F)									1.0000	1.0000	1.0000
	Treatment F									0.000	0.000	0.000
	Treatment Prob(F)									1.0000	1.0000	1.0000

Trial Comments

1. Protocol: Syngenta.
2. Ratings: CI 7, 14, 28 + 42 DAE; CI 7 + 14 DA POST; WC 14, 28, 42 + 56 DAE; consider 14 + 28 DA POST for WC if not similar to other evaluation dates.
3. Yield.
4. Application "C" is for 3-5"W or 12" corn, whichever occurs first.
5. DAE = Days after crop emergence. DA-B = Days after 1-2"W application. DA-C = Days after 3-5"W application.
6. At 14 DAE not enough ABUTH and AMATA had emerged for a reliable rating.
7. Harvested 10-11-06, (2) 30 inch rows by 25 ft.