

Evaluation of Grass Control in No-Till Corn.

00-2C-W140

OBJECTIVE: Evaluate residual grass control of several corn herbicides applied preemergence and up to 30 days before planting.

SUMMARY: None of the herbicides caused any corn injury. The grass herbicides applied EPP 30 (30 days before planting) provided 0 to 70% control of giant foxtail 42 days after planting (DAP). Giant foxtail control increased by 27 to 80% 42 DAP with the herbicides applied EPP 15 compared with the herbicides applied EPP 30. In most instances, the greatest giant foxtail control was achieved with the grass herbicides applied PRE. Basis applied EPP15 and PRE controlled giant foxtail, 97 to 100%, 42 DAP. Barnyardgrass control may have been influenced by the poor giant foxtail control where the herbicides were applied either EPP 30 or EPP 15. Barnyardgrass control ranged from 87 to 100%. Corn yield ranged from 46 to 167 bu/A. Generally, corn yield increased as the application of grass herbicides was delayed until planting.

HERBICIDES

AXIOM 68 WG
 BALANCE 75 WG
 BASIS 75 WG
 CLARITY 4 EC
 DEGREE 3.8 ME
 DUAL II MAGNUM 7.64 EC
 HARNESS 7 EC
 OUTLOOK 6 EC
 PRINCEP 90 WG
 ROUNDUP ULTRA 3 SL
 TOPNOTCH 3.2 ME

WEEDS

BARNYARDGRASS
 FOXTAIL, GIANT

CROP

CORN, FIELD

Ronald Krausz

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Evaluation of Grass Control in No-Till Corn.

Project Code: 00-2C-W140 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

Weed Code	Common Name	Scientific Name
1. SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2. ECHCG	BARNYARDGRASS	ECHINOCHLOA CRUS-GALLI (L.) P.BEAUV.

Crop 1:	ZEAMX CORN, FIELD	Variety:	P33G28 LL
Planting Method:	SEEDED	Planting Date:	May-11-00
Rate:	28000 S/A	Depth:	1.5 IN
Row Spacing:	30 IN		

Plot Width, Unit:	10 FT	Plot Length, Unit:	28 FT	Reps:	3
Tillage Type:	NO-TILL	Study Design:	RCB		
Previous Crop, Year:	GLXMA, 1999	Fertilizer applied:	N 150 LB/A,	P ₂ O ₅ 50 LB/A,	K ₂ O 150 LB/A

Soil Name:	WEIR	% OM: 1.6	pH: 6.9	CEC: 8
Texture:	SILT LOAM	P ₁ : 72 LB/A,	K: 384 LB/A	

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	Apr-10-00	Apr-25-00	May-12-00	May-26-00	Jun-2-00	Jun-2-00
Time of Day:	10:30	9:00	13:30	7:30	6:00	6:00
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	EPP30	EPP,5	PRE	3"BL-1	3"BL-2	3"BL-3
Applic. Placement:	BROFOL	BROFOL	BROFOL	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	58 F	57 F	82 F	62 F	80 F	80 F
% Relative Humidity:	50	80	90	96	96	96
Wind Velocity, Unit:	3 MPH	3 MPH	9-15 MPH	2-3 MPH	0-1 MPH	0-1 MPH
Soil Moisture:	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
% Cloud Cover:			30	100	10	10

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Crop 1 Code, Stage:	NA	NA	ZEAMX PRE	ZEAMX V1-V2	ZEAMX V4	ZEAMX V4
Height, Unit:	NA	NA	NA	4-5 IN	7-10 IN	7-10 IN

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Weed 1 Code:				SETFA	SETFA	SETFA
Stage(leaves):				4-5	2-3	2-3
Height(inches):				3-4	1-3	1-3
Density:				LOW	LOW	LOW

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	CO ₂ SPRAY	CO ₂ SPRAY	CO ₂ SPRAY	CO ₂ SPRAY	CO ₂ SPRAY	CO ₂ SPRAY
Operating Pressure:	40 PSI	40 PSI	40 PSI	40 PSI	40 PSI	40 PSI
Nozzle Type:	FLAT FAN	FLAT FAN	FLAT FAN	FLAT FAN	FLAT FAN	FLAT FAN
Nozzle Size:	8003	8003	8003	8002	8002	8002
Boom Length, Unit:	7.33 FT	7.33 FT	7.33 FT	7.33 FT	7.33 FT	7.33 FT
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA	20 GPA	20 GPA	20 GPA

NOTES:

TABLE. EVALUATION OF GRASS CONTROL IN NO-TILL CORN. PROJECT CODE:00-2C-W140

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD	ZEAMX		CONTROL, DAP					
								INJURY, DAP		SETFA			ECHCG		
								21	42	0	21	42	0	21	42
BU/A	%	%	%	%	%	%	%	%	%						
1 NONTREATED							46	0	0	3	0	0	0	0	0
2 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	EPP30 A	114	0	0	100	80	0	100	87	90
2 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33	PT/A	EPP30 A									
2 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-1 D									
2 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-1 D									
3 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	EPP30 A	104	0	0	100	83	0	100	90	90
3 TOPNOTCH	3.2 ME	1.8	LB A/A	4.5	PT/A	EPP30 A									
3 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-1 D									
3 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-1 D									
4 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	EPP30 A	78	0	0	100	80	0	100	87	90
4 HARNESS	7 EC	1.8	LB A/A	2.06	PT/A	EPP30 A									
4 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-1 D									
4 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-1 D									
5 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	EPP30 A	120	0	0	100	88	0	100	90	90
5 DEGREE	3.8 ME	1.8	LB A/A	3.8	PT/A	EPP30 A									
5 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-1 D									
5 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-1 D									
6 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	EPP30 A	110	0	0	100	80	0	100	90	90
6 OUTLOOK	6 EC	0.75	LB A/A	1.0	PT/A	EPP30 A									
6 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-1 D									
6 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-1 D									
7 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	EPP30 A	108	0	0	100	93	0	100	92	92
7 AXIOM	68 WG	0.72	LB A/A	1.06	LB/A	EPP30 A									
7 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-1 D									
7 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-1 D									
8 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	EPP30 A	149	0	0	100	99	70	100	99	99
8 BASIS	75 WG	0.047	LB A/A	1.0	OZ/A	EPP30 A									
8 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-1 D									
8 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-1 D									
9 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	EPP30 A	123	0	0	100	88	0	100	92	90
9 BALANCE	75 WG	0.094	LB A/A	2.0	OZ/A	EPP30 A									
9 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-1 D									
9 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-1 D									
10 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	EPP30 A	144	0	0	100	90	17	100	92	92
10 PRINCEP	90 WG	1.0	LB A/A	1.11	LB/A	EPP30 A									
10 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-1 D									
10 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-1 D									
11 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	EPP15 B	124	0	0	100	85	70	100	90	90
11 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33	PT/A	EPP15 B									
11 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-2 E									
11 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-2 E									
12 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	EPP15 B	132	0	0	100	92	75	100	92	90
12 TOPNOTCH	3.2 ME	1.8	LB A/A	4.5	PT/A	EPP15 B									
12 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-2 E									
12 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-2 E									
13 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	EPP15 B	98	0	0	100	87	50	100	87	87
13 HARNESS	7 EC	1.8	LB A/A	2.06	PT/A	EPP15 B									
13 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-2 E									
13 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-2 E									
14 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	EPP15 B	147	0	0	100	93	80	100	93	93
14 DEGREE	3.8 ME	1.8	LB A/A	3.8	PT/A	EPP15 B									
14 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-2 E									
14 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-2 E									
15 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	EPP15 B	124	0	0	100	87	50	100	90	90
15 OUTLOOK	6 EC	0.75	LB A/A	1.0	PT/A	EPP15 B									
15 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-2 E									
15 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-2 E									

(CONTINUED)

TABLE. EVALUATION OF GRASS CONTROL IN NO-TILL CORN. PROJECT CODE:00-2C-W140 (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD	ZEAMX			CONTROL, DAP					
								INJURY, DAP		SETFA			ECHCG			
								21	42	0	21	42	0	21	42	
							BU/A	%	%	%	%	%	%	%	%	%
16 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	EPP15 B	152	0	0	100	87	75	100	90	90	
16 AXIOM	68 WG	0.72	LB A/A	1.06	LB/A	EPP15 B										
16 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-2 E										
16 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-2 E										
17 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	EPP15 B	166	0	0	100	99	97	100	99	99	
17 BASIS	75 WG	0.047	LB A/A	1.0	OZ/A	EPP15 B										
17 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-2 E										
17 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-2 E										
18 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	EPP15 B	141	0	0	100	95	80	100	94	94	
18 BALANCE	75 WG	0.094	LB A/A	2.0	OZ/A	EPP15 B										
18 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-2 E										
18 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-2 E										
19 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	EPP15 B	152	0	0	100	95	83	100	95	95	
19 PRINCEP	90 WG	1.0	LB A/A	1.11	LB/A	EPP15 B										
19 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-2 E										
19 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-2 E										
20 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	PRE C	155	0	0	0	100	97	0	100	100	
20 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33	PT/A	PRE C										
20 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-3 F										
20 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-3 F										
21 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	PRE C	151	0	0	0	100	98	0	100	100	
21 TOPNOTCH	3.2 ME	1.8	LB A/A	4.5	PT/A	PRE C										
21 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-3 F										
21 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-3 F										
22 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	PRE C	147	0	0	0	100	95	0	100	100	
22 HARNESS	7 EC	1.8	LB A/A	2.06	PT/A	PRE C										
22 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-3 F										
22 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-3 F										
23 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	PRE C	155	0	0	0	100	97	0	100	100	
23 DEGREE	3.8 ME	1.8	LB A/A	3.8	PT/A	PRE C										
23 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-3 F										
23 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-3 F										
24 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	PRE C	131	0	0	0	100	92	0	100	100	
24 OUTLOOK	6 EC	0.75	LB A/A	1.0	PT/A	PRE C										
24 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-3 F										
24 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-3 F										
25 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	PRE C	147	0	0	0	100	100	0	100	100	
25 AXIOM	68 WG	0.72	LB A/A	1.06	LB/A	PRE C										
25 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-3 F										
25 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-3 F										
26 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	PRE C	131	0	0	0	100	100	0	100	100	
26 BASIS	75 WG	0.047	LB A/A	1.0	OZ/A	PRE C										
26 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-3 F										
26 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-3 F										
27 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	PRE C	154	0	0	0	100	100	0	100	100	
27 BALANCE	75 WG	0.094	LB A/A	2.0	OZ/A	PRE C										
27 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-3 F										
27 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-3 F										
28 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	PRE C	167	0	0	0	100	100	0	100	100	
28 PRINCEP	90 WG	1.0	LB A/A	1.11	LB/A	PRE C										
28 CLARITY	4 EC	0.5	LB A/A	1.0	PT/A	3"BL-3 F										
28 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	3"BL-3 F										
LSD							28	0	0	2	7	19	0	4	3	
P							0.01	1.0	1.0	0.01	0.01	0.01	1.0	0.01	0.01	

1. PROTOCOL: SIU/RFK.

2. DAP = DAYS AFTER PLANTING.

3. RATING DATES:

0 DAP, 21 DAP, AND 42 DAP ON MAY-11-00, JUN-1-00, AND JUN-22-00, RESPECTIVELY.