

Long-Term Tillage by Herbicide Study in a Transgenic Corn and Soybean Rotation.

00-9B-CORN

OBJECTIVE: To evaluate weed control and weed population shifts over a long period of time in transgenic crops.

SUMMARY: There was no difference between Roundup Ultra and Touchdown 5 in “burndown” of little barley, mouseear chickweed, horseweed, and purslane speedwell in no-till. Giant foxtail control ranged from 19 to 100% in no-till and 41 to 100% in reduced-till. Liberty alone provided greater control of yellow nutsedge in no-till (100%) compared with reduced-till (58%). Soil herbicides alone and soil herbicides followed by Liberty controlled common waterhemp, 100%, in reduced-till, whereas in no-till, the same treatments controlled common waterhemp 85 to 98% . A single application of Liberty provided poor control of ivyleaf morningglory and velvetleaf in no-till and reduced-till. Sequential applications of Liberty increased control of ivyleaf morningglory and velvetleaf by 20 to 40% compared with a single application of Liberty. In no-till, Liberty plus atrazine applied postemergence controlled weeds, 93 to 100%, but in reduced-till, the same treatment controlled weeds, 86 to 90%. Weed control with Basis Gold ranged from 63 to 93%. Basis Gold controlled common cocklebur, 86% and 63%, in no-till and reduced-till, respectively. None of the herbicides caused injury. Corn yield ranged from 20 to 176 bu/A.

HERBICIDES

AATREX 90 WG
ACCENT 75 WG
BASIS GOLD 90 WG
BICEP II MAGNUM 5.5 L
DUAL II MAGNUM 7.64 EC
LIBERTY 1.67 EC
ROUNDUP ULTRA 3 SL
TOUCHDOWN 5 5 SL

WEEDS

BARLEY, LITTLE
CHICKWEED, MOUSEEAR
COCKLEBUR, COMMON
FOXTAIL, GIANT
HORSEWEED
MORNINGGLORY, IVYLEAF
NUTSEGE, YELLOW
SPEEDWELL, PURSLANE
VELVETLEAF
WATERHEMP, COMMON

CROP

CORN, FIELD

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PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Long-Term Tillage by Herbicide Study in a Transgenic Corn and Soybean Rotation.

Project Code: 00-9B-CORN 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. AMATA	WATERHEMP, COMMON	AMARANTHUS RUDIS SAUER
3. ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
4. IPOHE	MORNINGGLORY, IVYLEAF	IPOMOEA HEDERACEA (L.) JACQ.
5. XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM
6. ERICA	HORSEWEED	CONYZA CANADENSIS (L.) CRONG.
7. CERVU	CHICKWEED, MOUSEEAR	CERASTIUM VULGATUM L.
8. HORPU	BARLEY, LITTLE	HORDEUM PUSILLUM
9. VERPG	SPEEDWELL, PURSLANE	VERONICA PEREGRINA L.
10. CYPES	NUTSEDGE, YELLOW	CYPERUS ESCULENTUS L.

Crop 1:	ZEAMX CORN, FIELD	Variety:	P33G28 LL
Planting Method:	SEEDED	Planting Date:	May-3-00
Rate:	28000 S/A	Depth:	1.5 IN
Row Spacing:	30 IN		

Plot Width, Unit:	10 FT	Plot Length, Unit:	27 FT	Reps:	4
Tillage Type:	SEE NOTE	Study Design:	SPLIT-PLOT		
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:	EBBERT	% OM:	2.2	pH:	6.9	CEC:	14
Texture:	SILT LOAM	P ₁	73 LB/A,	K	383 LB/A		

APPLICATION DESCRIPTION

	A	B	C	D
Application Date:	May-4-00	May-25-00	Jun-6-00	Jun-1-00
Time of Day:	19:00	20:00	14:30	10:00
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	2-4"W-1	10DA2-4"	2-4"W-2
Applic. Placement:	BROSOI	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	77 F	80 F	68 F	80 F
% Relative Humidity:	56	18	24	70
Wind Velocity, Unit:	3 MPH	0 MPH	5 MPH	3-5 MPH
Soil Moisture:	NORMAL	NORMAL	NORMAL	NORMAL

CROP STAGE AT EACH APPLICATION

	A	B	C	D
Crop 1 Code, Stage:	NA	ZEAMX V3	ZEAMX V6	ZEAMX V5
Height, Unit:	NA	6-10 IN	14-22 IN	9-14 IN

WEED STAGE AT EACH APPLICATION

	A	B	C	D
Weed 1 Code:		SETFA	SETFA	
Stage(leaves):		2-4	4-6	
Height(inches):		2-5	8-16	
Density:		HIGH	HIGH	
Weed 2 Code:			AMATA	
Stage(leaves):			6-8	
Height(inches):			4-10	
Density:			MEDIUM	
Weed 3 Code:		ABUTH	ABUTH	ABUTH
Stage(leaves):		2-3	4-8	2-3
Height(inches):		2-4	12-16	2-4
Density:		MEDIUM	LOW	LOW
Weed 4 Code:		IPOHE	IPOHE	IPOHE
Stage(leaves):		3-4	4-6	COTL-2
Height(inches):		2-4	6-8	1-3
Density:		MEDIUM	LOW	LOW
Weed 5 Code:		XANST	XANST	XANST
Stage(leaves):		4-6	6	2-4
Height(inches):		3-4	6-8	2-4
Density:		MEDIUM	LOW	LOW
Weed 6 Code:	ERICA			
Stage(leaves):	10+			
Height(inches):	3-5			
Density:	MEDIUM			

(continued)

Long-Term Tillage by Herbicide Study in a Transgenic Corn and Soybean Rotation.

Project Code: 00-9B-CORN Location: Belleville Research Center

(continued)

Weed 7 Code: CERVU
 Stage(leaves): 10+
 Height(inches): 4-6
 Density: MEDIUM

Weed 8 Code: HORPU
 Stage(leaves): 5-6
 Height(inches): 4-12
 Density: HIGH

APPLICATION EQUIPMENT

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

NOTES:

TILLAGES ARE NO-TILL AND REDUCED-TILL, SEE TREATMENT LIST.

Harvested Oct-06-00, (2) 30 inch rows by 24 ft.

TABLE. LONG-TERM TILLAGE BY HERBICIDE STUDY IN A TRANSGENIC CORN AND SOYBEAN ROTATION. PROJECT CODE:00-9B-CORN

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD	CONTROL, MAY 25				ZEAMX			CONTROL							
								BU/A	%	%	%	%	INJURY, DAT			HEIGHT	DAYS AFTER TREATMENT			CYPES		
													14	28	56		SETFA			CYPES		
																	14	28	56	14	28	56
1 CORN IN 2000 1 NO-TILL 1 NONTREATED							20	0	0	0	0	0	0	76	0	0	0	0	0	0		
2 CORN IN 2000 2 NO-TILL 2 ROUNDUP ULTRA 2 HANDWEED	3 SL	0.75	LB AE/A	2.0	PT/A	PRE	A	153	100	100	100	100	0	0	0	111	100	100	100	100	100	
3 CORN IN 2000 3 NO-TILL 3 ROUNDUP ULTRA 3 BICEP II MAGNUM 3 AATREX	3 SL 5.5 L 90 WG	0.75 2.88 0.4	LB AE/A LB A/A LB A/A	2.0 2.1 7.1	PT/A QT/A OZ/A	PRE PRE PRE	A A A	137	100	100	100	100	0	0	0	111	100	100	93	100	100	100
4 CORN IN 2000 4 NO-TILL 4 ROUNDUP ULTRA 4 BICEP II MAGNUM 4 AATREX 4 LIBERTY 4 AMS	3 SL 5.5 L 90 WG 1.67 EC 100 DRY	0.75 2.88 0.4 0.27 3.0	LB AE/A LB A/A LB A/A LB A/A LB/A	2.0 2.1 7.1 20.7 3.0	PT/A QT/A OZ/A OZ/A LB/A	PRE PRE PRE 2-4"W-2 2-4"W-2	A A A D D	167	100	100	100	100	0	0	0	114	95	94	94	100	100	100
5 CORN IN 2000 5 NO-TILL 5 ROUNDUP ULTRA 5 BICEP II MAGNUM 5 AATREX 5 ACCENT 5 PRIME OIL COC	3 SL 5.5 L 90 WG 75 WG 100 LIQ	0.75 2.88 0.4 0.031 1.0	LB AE/A LB A/A LB A/A LB A/A % V/V	2.0 2.1 7.1 0.66 1.0	PT/A QT/A OZ/A OZ/A %V/V	PRE PRE PRE 2-4"W-2 2-4"W-2	A A A D D	156	100	100	100	100	0	0	0	112	100	78	100	100	100	100
6 CORN IN 2000 6 NO-TILL 6 ROUNDUP ULTRA 6 DUAL II MAGNUM 6 LIBERTY 6 AMS	3 SL 7.64 EC 1.67 EC 100 DRY	0.75 1.27 0.27 3.0	LB AE/A LB A/A LB A/A LB/A	2.0 1.33 20.7 3.0	PT/A PT/A OZ/A LB/A	PRE PRE 2-4"W-1 2-4"W-1	A A B B	140	100	100	100	100	0	0	0	113	98	93	93	100	100	100
7 CORN IN 2000 7 NO-TILL 7 ROUNDUP ULTRA 7 LIBERTY 7 AMS 7 LIBERTY 7 AMS	3 SL 1.67 EC 100 DRY 1.67 EC 100 DRY	0.75 0.27 3.0 0.27 3.0	LB AE/A LB A/A LB/A LB A/A LB/A	2.0 20.7 3.0 20.7 3.0	PT/A OZ/A LB/A OZ/A LB/A	PRE 2-4"W-1 2-4"W-1 10DA2-4" 10DA2-4"	A B B C C	159	100	100	100	100	0	0	0	113	63	86	86	85	94	94

(CONTINUED)

TABLE. LONG-TERM TILLAGE BY HERBICIDE STUDY IN A TRANSGENIC CORN AND SOYBEAN ROTATION. PROJECT CODE:00-9B-CORN (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD BU/A	CONTROL, MAY 25				ZEAMX			CONTROL DAYS AFTER TREATMENT						
								HORPU	CERVU	ERICA	VERPG	INJURY, DAT			HEIGHT EOS INCH	SETFA			CYPES		
												14	28	56		14	28	56	14	28	56
8 CORN IN 2000 8 NO-TILL							125	100	100	100	100	0	0	0	111	50	19	19	100	100	100
8 TOUCHDOWN 5 8 LIBERTY	5 SL 1.67 EC	1.0 0.27	LB A/A LB A/A	1.6 20.7	PT/A OZ/A	PRE 2-4"W-1	A B														
8 AMS	100 DRY	3.0	LB/A	3.0	LB/A	2-4"W-1	B														
9 CORN IN 2000 9 NO-TILL							140	100	100	100	100	0	0	0	112	64	31	31	100	100	100
9 ROUNDUP ULTRA 9 LIBERTY	3 SL 1.67 EC	0.75 0.27	LB AE/A LB A/A	2.0 20.7	PT/A OZ/A	PRE 2-4"W-1	A B														
9 AATREX 9 AMS	90 WG 100 DRY	0.75 3.0	LB A/A LB/A	13.3 3.0	OZ/A LB/A	2-4"W-1 2-4"W-1	B B														
10 CORN IN 2000 10 NO-TILL							133	100	100	100	100	0	0	0	112	100	91	91	95	95	95
10 ROUNDUP ULTRA 10 BASIS GOLD	3 SL 90 WG	0.75 0.79	LB AE/A LB A/A	2.0 14.0	PT/A OZ/A	PRE 2-4"W-1	A B														
10 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W-1	B														
11 CORN IN 2000 11 REDUCED-TILL 11 NONTREATED							85					0	0	0	93	0	0	0	0	0	0
12 CORN IN 2000 12 REDUCED-TILL 12 CULTIVATE 12 HANDWEED							141					0	0	0	106	100	100	100	100	100	100
13 CORN IN 2000 13 REDUCED-TILL							153					0	0	0	107	100	100	100	100	100	100
13 BICEP II MAGNUM 13 AATREX	5.5 L 90 WG	2.88 0.4	LB A/A LB A/A	2.1 7.1	QT/A OZ/A	PRE PRE	A A														
14 CORN IN 2000 14 REDUCED-TILL							175					0	0	0	108	100	100	100	100	100	100
14 BICEP II MAGNUM 14 AATREX	5.5 L 90 WG	2.88 0.4	LB A/A LB A/A	2.1 7.1	QT/A OZ/A	PRE PRE	A A														
14 LIBERTY 14 AMS	1.67 EC 100 DRY	0.27 3.0	LB A/A LB/A	20.7 3.0	OZ/A LB/A	2-4"W-2 2-4"W-2	D D														
15 CORN IN 2000 15 REDUCED-TILL							176					0	0	0	108	100	100	100	100	100	100
15 BICEP II MAGNUM 15 AATREX	5.5 L 90 WG	2.88 0.4	LB A/A LB A/A	2.1 7.1	QT/A OZ/A	PRE PRE	A A														
15 ACCENT 15 PRIME OIL COC	75 WG 100 LIQ	0.031 1.0	LB A/A % V/V	0.66 1.0	OZ/A %V/V	2-4"W-2 2-4"W-2	D D														

(CONTINUED)

TABLE. LONG-TERM TILLAGE BY HERBICIDE STUDY IN A TRANSGENIC CORN AND SOYBEAN ROTATION. PROJECT CODE:00-9B-CORN (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD	CONTROL, MAY 25				ZEAMX			CONTROL DAYS AFTER TREATMENT						
								HORPU	CERVU	ERICA	VERPG	INJURY, DAT			HEIGHT	SETFA			CYPES		
												14	28	56		14	28	56	14	28	56
BU/A	%	%	%	%	%	%	%	%	%	INCH	%	%	%	%	%	%					
16 CORN IN 2000							138					0	0	0	109	100	100	100	100	99	99
16 REDUCED-TILL																					
16 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33	PT/A	PRE	A														
16 LIBERTY	1.67 EC	0.27	LB A/A	20.7	OZ/A	2-4"W-1	B														
16 AMS	100 DRY	3.0	LB/A	3.0	LB/A	2-4"W-1	B														
17 CORN IN 2000							170					0	0	0	109	88	97	97	80	87	87
17 REDUCED-TILL																					
17 LIBERTY	1.67 EC	0.27	LB A/A	20.7	OZ/A	2-4"W-1	B														
17 AMS	100 DRY	3.0	LB/A	3.0	LB/A	2-4"W-1	B														
17 LIBERTY	1.67 EC	0.27	LB A/A	20.7	OZ/A	10DA2-4"	C														
17 AMS	100 DRY	3.0	LB/A	3.0	LB/A	10DA2-4"	C														
18 CORN IN 2000							152					0	0	0	110	85	85	85	59	58	58
18 REDUCED-TILL																					
18 LIBERTY	1.67 EC	0.27	LB A/A	20.7	OZ/A	2-4"W-1	B														
18 AMS	100 DRY	3.0	LB/A	3.0	LB/A	2-4"W-1	B														
19 CORN IN 2000							155					0	0	0	108	66	41	41	80	80	80
19 REDUCED-TILL																					
19 LIBERTY	1.67 EC	0.27	LB A/A	20.7	OZ/A	2-4"W-1	B														
19 AATREX	90 WG	0.75	LB A/A	13.3	OZ/A	2-4"W-1	B														
19 AMS	100 DRY	3.0	LB/A	3.0	LB/A	2-4"W-1	B														
20 CORN IN 2000							161					0	0	0	107	100	85	98	86	85	85
20 REDUCED-TILL																					
20 BASIS GOLD	90 WG	0.79	LB A/A	14.0	OZ/A	2-4"W-1	B														
20 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W-1	B														
LSD							34	0	0	0	0	0	0	0	5	11	28	23	12	9	9
P							0.01	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.01	0.01	0.01	0.01	0.01	0.01	0.01

(CONTINUED)

TABLE. LONG-TERM TILLAGE BY HERBICIDE STUDY IN A TRANSGENIC CORN AND SOYBEAN ROTATION. PROJECT CODE:00-9B-CORN (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	CONTROL, DAYS AFTER TREATMENT											
							XANST			IPOHE			ABUTH			AMATA		
							14	28	56	14	28	56	14	28	56	14	28	56
% % %			% % %			% % %			% % %									
1 CORN IN 2000							0	0	0	0	0	0	0	0	0	0	0	
1 NO-TILL																		
1 NONTREATED																		
2 CORN IN 2000							100	100	100	100	100	100	100	100	100	100	100	
2 NO-TILL																		
2 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	PRE												
2 HANDWEED																		
3 CORN IN 2000							100	98	96	100	100	100	100	100	100	100	96	
3 NO-TILL																		
3 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	PRE												
3 BICEP II MAGNUM	5.5 L	2.88	LB A/A	2.1	QT/A	PRE												
3 AATREX	90 WG	0.4	LB A/A	7.1	OZ/A	PRE												
4 CORN IN 2000							95	95	95	100	100	100	100	100	100	100	98	
4 NO-TILL																		
4 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	PRE												
4 BICEP II MAGNUM	5.5 L	2.88	LB A/A	2.1	QT/A	PRE												
4 AATREX	90 WG	0.4	LB A/A	7.1	OZ/A	PRE												
4 LIBERTY	1.67 EC	0.27	LB A/A	20.7	OZ/A	2-4"W-2												
4 AMS	100 DRY	3.0	LB/A	3.0	LB/A	2-4"W-2												
5 CORN IN 2000							95	95	95	100	100	100	100	100	100	100	97	
5 NO-TILL																		
5 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	PRE												
5 BICEP II MAGNUM	5.5 L	2.88	LB A/A	2.1	QT/A	PRE												
5 AATREX	90 WG	0.4	LB A/A	7.1	OZ/A	PRE												
5 ACCENT	75 WG	0.031	LB A/A	0.66	OZ/A	2-4"W-2												
5 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W-2												
6 CORN IN 2000							96	94	94	98	98	98	100	100	100	100	85	
6 NO-TILL																		
6 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	PRE												
6 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33	PT/A	PRE												
6 LIBERTY	1.67 EC	0.27	LB A/A	20.7	OZ/A	2-4"W-1												
6 AMS	100 DRY	3.0	LB/A	3.0	LB/A	2-4"W-1												
7 CORN IN 2000							88	100	100	60	97	97	60	97	97	60	95	
7 NO-TILL																		
7 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	PRE												
7 LIBERTY	1.67 EC	0.27	LB A/A	20.7	OZ/A	2-4"W-1												
7 AMS	100 DRY	3.0	LB/A	3.0	LB/A	2-4"W-1												
7 LIBERTY	1.67 EC	0.27	LB A/A	20.7	OZ/A	10DA2-4"												
7 AMS	100 DRY	3.0	LB/A	3.0	LB/A	10DA2-4"												

(CONTINUED)

TABLE. LONG-TERM TILLAGE BY HERBICIDE STUDY IN A TRANSGENIC CORN AND SOYBEAN ROTATION. PROJECT CODE:00-9B-CORN (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	CONTROL, DAYS AFTER TREATMENT											
							XANST			IPOHE			ABUTH			AMATA		
							14	28	56	14	28	56	14	28	56	14	28	56
%	%	%	%	%	%	%	%	%	%	%	%	%						
8 CORN IN 2000							100	100	100	50	50	50	50	50	50	25	25	25
8 NO-TILL																		
8 TOUCHDOWN 5	5 SL	1.0	LB A/A	1.6	PT/A	PRE	A											
8 LIBERTY	1.67 EC	0.27	LB A/A	20.7	OZ/A	2-4"W-1	B											
8 AMS	100 DRY	3.0	LB/A	3.0	LB/A	2-4"W-1	B											
9 CORN IN 2000							100	98	98	100	100	100	98	98	98	94	93	93
9 NO-TILL																		
9 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	PRE	A											
9 LIBERTY	1.67 EC	0.27	LB A/A	20.7	OZ/A	2-4"W-1	B											
9 AATREX	90 WG	0.75	LB A/A	13.3	OZ/A	2-4"W-1	B											
9 AMS	100 DRY	3.0	LB/A	3.0	LB/A	2-4"W-1	B											
10 CORN IN 2000							89	86	86	93	93	93	90	90	90	88	84	84
10 NO-TILL																		
10 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	PRE	A											
10 BASIS GOLD	90 WG	0.79	LB A/A	14.0	OZ/A	2-4"W-1	B											
10 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W-1	B											
11 CORN IN 2000							0	0	0	0	0	0	0	0	0	0	0	0
11 REDUCED-TILL																		
11 NONTREATED																		
12 CORN IN 2000							100	100	100	100	100	100	100	100	100	100	100	100
12 REDUCED-TILL																		
12 CULTIVATE																		
12 HANDWEED																		
13 CORN IN 2000							96	89	84	100	96	96	100	96	93	100	100	100
13 REDUCED-TILL																		
13 BICEP II MAGNUM	5.5 L	2.88	LB A/A	2.1	QT/A	PRE	A											
13 AATREX	90 WG	0.4	LB A/A	7.1	OZ/A	PRE	A											
14 CORN IN 2000							93	94	94	96	97	97	98	99	99	100	100	100
14 REDUCED-TILL																		
14 BICEP II MAGNUM	5.5 L	2.88	LB A/A	2.1	QT/A	PRE	A											
14 AATREX	90 WG	0.4	LB A/A	7.1	OZ/A	PRE	A											
14 LIBERTY	1.67 EC	0.27	LB A/A	20.7	OZ/A	2-4"W-2	D											
14 AMS	100 DRY	3.0	LB/A	3.0	LB/A	2-4"W-2	D											
15 CORN IN 2000							84	84	84	95	97	97	95	96	96	100	100	100
15 REDUCED-TILL																		
15 BICEP II MAGNUM	5.5 L	2.88	LB A/A	2.1	QT/A	PRE	A											
15 AATREX	90 WG	0.4	LB A/A	7.1	OZ/A	PRE	A											
15 ACCENT	75 WG	0.031	LB A/A	0.66	OZ/A	2-4"W-2	D											
15 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W-2	D											

(CONTINUED)

TABLE. LONG-TERM TILLAGE BY HERBICIDE STUDY IN A TRANSGENIC CORN AND SOYBEAN ROTATION. PROJECT CODE:00-9B-CORN (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	CONTROL, DAYS AFTER TREATMENT											
							XANST			IPOHE			ABUTH			AMATA		
							14	28	56	14	28	56	14	28	56	14	28	56
%	%	%	%	%	%	%	%	%	%	%	%	%						
16 CORN IN 2000							90	88	88	76	70	70	80	78	78	100	100	100
16 REDUCED-TILL																		
16 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33	PT/A	PRE	A											
16 LIBERTY	1.67 EC	0.27	LB A/A	20.7	OZ/A	2-4"W-1	B											
16 AMS	100 DRY	3.0	LB/A	3.0	LB/A	2-4"W-1	B											
17 CORN IN 2000							87	93	93	83	93	93	83	93	93	91	93	93
17 REDUCED-TILL																		
17 LIBERTY	1.67 EC	0.27	LB A/A	20.7	OZ/A	2-4"W-1	B											
17 AMS	100 DRY	3.0	LB/A	3.0	LB/A	2-4"W-1	B											
17 LIBERTY	1.67 EC	0.27	LB A/A	20.7	OZ/A	10DA2-4"	C											
17 AMS	100 DRY	3.0	LB/A	3.0	LB/A	10DA2-4"	C											
18 CORN IN 2000							90	89	89	75	75	75	75	63	63	88	88	88
18 REDUCED-TILL																		
18 LIBERTY	1.67 EC	0.27	LB A/A	20.7	OZ/A	2-4"W-1	B											
18 AMS	100 DRY	3.0	LB/A	3.0	LB/A	2-4"W-1	B											
19 CORN IN 2000							88	88	88	90	90	90	88	88	88	88	86	86
19 REDUCED-TILL																		
19 LIBERTY	1.67 EC	0.27	LB A/A	20.7	OZ/A	2-4"W-1	B											
19 AATREX	90 WG	0.75	LB A/A	13.3	OZ/A	2-4"W-1	B											
19 AMS	100 DRY	3.0	LB/A	3.0	LB/A	2-4"W-1	B											
20 CORN IN 2000							79	63	63	90	88	88	84	84	84	86	84	84
20 REDUCED-TILL																		
20 BASIS GOLD	90 WG	0.79	LB A/A	14.0	OZ/A	2-4"W-1	B											
20 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W-1	B											
LSD							10	9	9	7	6	6	8	6	6	12	11	11
P							0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

1. PROTOCOL: SIU/RFK.
2. RATING DATES:
 MAY-25-00 WAS 21 DAYS AFTER BURNDOWN APPLICATION IN NO-TILL PLOTS.
 14 DAYS AFTER PRE, 2-4"W-1, AND 2-4"W-2 ON MAY-18-00, JUN-8-00, AND JUN-15-00, RESPECTIVELY.
 28 DAYS AFTER PRE, 2-4"W-1, AND 2-4"W-2 ON JUN-1-00, JUN-22-00, AND JUN-29-00, RESPECTIVELY.
 56 DAYS AFTER PRE, 2-4"W-1, AND 2-4"W-2 ON JUN-29-00, JUL-20-00, AND JUL-27-00, RESPECTIVELY.
3. STUDY CONDUCTED SINCE 1998 ON SAME AREA.