

Weed Management Systems in Conventional and Herbicide Resistant Corn.

00-51E-S240

OBJECTIVE: Evaluate herbicide programs in Roundup Ready, Liberty Link, IT, and conventional corn hybrids for weed control, grain yield, and return over investment.

SUMMARY: Corn injury ranged from 21 to 24% at 7 DAT for treatments containing Basis Gold. No corn injury was observed from any treatment by 28 DAT. All herbicide treatments controlled at least 84% of yellow nutsedge and 96% of Pennsylvania smartweed. Common cocklebur and giant ragweed control was at least 88% from all treatments except Basis Gold and Bicep II Magnum applied alone. All treatments provided at least 90% control of giant foxtail except Liberty ATZ (70%). Common waterhemp control was 91% or greater for all treatments except Lightning and Lightning plus Aatrex. Corn yield in the handweeded plots was greatest with the hybrid and least Roundup Ready with the conventional hybrid. Corn yield in all herbicide treated plots was similar to the handweeded plots within each hybrid. Overall return on investment was greatest with the Roundup Ready hybrid.

HERBICIDES

AATREX 90 WG
BALANCE 75 WG
BASIS GOLD 90 WG
BICEP II MAGNUM 5.5 L
DUAL II MAGNUM 7.64 EC
LIBERTY 1.67 EC
LIBERTY ATZ 4.32 EC
LIGHTNING 70 WG
NORTHSTAR 47.4 WG
ROUNDUP ULTRA 3 SL

WEEDS

COCKLEBUR, COMMON
FOXTAIL, GIANT
MORNINGGLORY, IVYLEAF
NUTSEDGE, YELLOW
RAGWEED, GIANT
SMARTWEED, PENNSYLVANIA
WATERHEMP, COMMON

CROP

CORN, FIELD

Bryan Young and Scott Nolte

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Weed Management Systems in Conventional and Herbicide Resistant Corn.

Project Code: 00-51E-S240 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. CYPES	NUTSEDGE, YELLOW	CYPERUS ESCULENTUS L.
3. AMBTR	RAGWEED, GIANT	AMBROSIA TRIFIDA L.
4. POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENNSYLVANICUM L.
5. XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM
6. IPOHE	MORNINGGLORY, IVYLEAF	IPOMOEA HEDERACEA (L.) JACQ.
7. AMATA	WATERHEMP, COMMON	AMARANTHUS RUDIS SAUER

Crop 1:	ZEAMX CORN, FIELD	Variety:	SEE NOTE
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:	REDUCED-TILL	Study Design:	SPLIT-PLOT	
Previous Crop, Year:	GLXMA, 1999	Fertilizer applied:	N 150 LB/A,	P ₂ O ₅ 0 LB/A, K ₂ O 0 LB/A

Soil Name:	WEIR	% OM: 2.1	pH: 6.5	CEC: 11
Texture:	SILT LOAM	P ₁ : 91 LB/A,	K: 405 LB/A	

APPLICATION DESCRIPTION

	A	B	C	D
Application Date:	May-5-00	May-25-00	Jun-1-00	Jun-9-00
Time of Day:	17:30	7:00	7:00	7:30
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	2-4"W-1	2-4"W-2	2-4"RG
Applic. Placement:	BROSOI	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	80 F	72 F	78 F	66 F
% Relative Humidity:	24	86	80	96
Wind Velocity, Unit:	3-5 MPH	0-1 MPH	0-1 MPH	1-3 MPH
Soil Moisture:	NORMAL	NORMAL	NORMAL	DRY

CROP STAGE AT EACH APPLICATION

	A	B	C	D
Crop 1 Code, Stage:	ZEAMX PRE	ZEAMX V4	ZEAMX V5	ZEAMX V6
Height, Unit:	NA	9-11 IN	10-14 IN	22-24 IN

WEED STAGE AT EACH APPLICATION

	A	B	C	D
Weed 1 Code:		SETFA		SETFA
Stage(leaves):		1-3		3-4
Height(inches):		1-4		2-4
Density:		HIGH		LOW
Weed 2 Code:		CYPES	CYPES	CYPES
Stage(leaves):		3-4	6-7	6-7
Height(inches):		3-4	2-5	2-5
Density:		MEDIUM	LOW	LOW
Weed 3 Code:		AMBTR	AMBTR	AMBTR
Stage(leaves):		4-6	2-4	2-4
Height(inches):		2-5	2-4	2-5
Density:		MEDIUM	LOW	LOW
Weed 4 Code:		POLPY		
Stage(leaves):		2-4		
Height(inches):		1-4		
Density:		LOW		
Weed 5 Code:		XANST	XANST	XANST
Stage(leaves):		2-4	2-4	2-3
Height(inches):		2-4	2-4	2-4
Density:		MEDIUM	LOW	LOW
Weed 6 Code:		IPOHE	IPOHE	IPOHE
Stage(leaves):		COTL-3	COTL-3	2-3
Height(inches):		2-4	2-4	2-4
Density:		MEDIUM	LOW	LOW
Weed 7 Code:		AMATA		
Stage(leaves):		3-5		
Height(inches):		1-3		
Density:		LOW		

APPLICATION EQUIPMENT

	A	B	C	D
Appl. Equipment:	CO, SPRAY	CO, SPRAY	CO, SPRAY	CO, 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:	7.5 FT	7.5 FT	7.5 FT	7.5 FT
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA	20 GPA

NOTES:

CORN HYBRIDS ARE P33G28LL, DK626RR, GARST 8342 IT, AND P33G26 FOR LL, RR, IT, AND CONVENTIONAL, RESPECTIVELY. SEE TREATMENT LIST. Harvested Sep-28-00, (2) 30 inch rows by 24 ft.

TABLE. WEED MANAGEMENT SYSTEMS IN CONVENTIONAL AND HERBICIDE RESISTANT CORN. PROJECT CODE:00-51E-S240

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD	RETURN	ZEAMX					CONTROL, DAYS AFTER TREATMENT											
									INJURY					PLANTS	SETFA				CYPES						
									DAT		56				EOS	DAT		56		DAT		56			
									7	14	28	DAP	EOS			14	28	DAP	EOS	14	28	DAP	EOS		
							BU/A	\$/A	%	%	%	%	%	%	%	%	%	%	%	%					
1 LIBERTY LINK 1 NONTREATED							15			0	0	0	0	0	21.1	0	0	0	0	0	0	0	0	0	0
2 LIBERTY LINK 2 BICEP II MAGNUM 2 HANDWEED	5.5 L	2.89	LB A/A	2.1 QT/A	PRE	A	158			0	0	0	0	0	23.4	99	99	99	99	99	99	99	99	99	99
3 LIBERTY LINK 3 BICEP II MAGNUM	5.5 L	2.89	LB A/A	2.1 QT/A	PRE	A	133			0	0	0	0	0	27.0	98	99	95	95	98	99	95	84		
4 LIBERTY LINK 4 BICEP II MAGNUM 4 LIBERTY 4 AMS	5.5 L 1.67 EC 100 DRY	1.44 0.313 2.0	LB A/A LB A/A % W/W	1.05 QT/A 24.0 OZ/A 2.0 % W/W	PRE 2-4"W-2 2-4"W-2	A C C	144			0	0	0	0	0	25.3	99	97	97	97	98	91	91	94		
5 LIBERTY LINK 5 BALANCE 5 LIBERTY ATZ 5 AMS	75 WG 4.32 EC 100 DRY	0.094 1.35 2.0	LB A/A LB A/A % W/W	2.0 OZ/A 40.0 OZ/A 2.0 % W/W	PRE 2-4"W-2 2-4"W-2	A C C	147			0	0	0	0	0	23.3	99	98	98	97	99	94	94	94		
6 LIBERTY LINK 6 AATREX 6 LIBERTY 6 AMS	90 WG 1.67 EC 100 DRY	1.8 0.313 2.0	LB A/A LB A/A % W/W	2.0 LB/A 24.0 OZ/A 2.0 % W/W	PRE 2-4"W-2 2-4"W-2	A C C	153			0	0	0	0	0	24.4	97	93	93	95	92	87	87	92		
7 LIBERTY LINK 7 LIBERTY ATZ 7 AMS	4.32 EC 100 DRY	1.35 2.0	LB A/A % W/W	40.0 OZ/A 2.0 % W/W	2-4"W-1 2-4"W-1	B B	151			0	0	0	0	0	26.5	93	92	92	70	95	95	95	84		
8 LIBERTY LINK 8 LIBERTY 8 AMS 8 LIBERTY 8 AMS	1.67 EC 100 DRY 1.67 EC 100 DRY	0.261 2.0 0.261 2.0	LB A/A % W/W LB A/A % W/W	20.0 OZ/A 2.0 % W/W 20.0 OZ/A 2.0 % W/W	2-4"W-1 2-4"W-1 2-4"RGIN 2-4"RGIN	B B D D	141			6	10	0	10	0	24.6	95	98	95	95	92	89	92	90		
9 ROUNDUP READY 9 NONTREATED							30			0	0	0	0	0	18.7	0	0	0	0	0	0	0	0	0	0
10 ROUNDUP READY 10 BICEP II MAGNUM 10 HANDWEED	5.5 L	2.89	LB A/A	2.1 QT/A	PRE	A	182			0	0	0	0	0	27.2	99	99	99	99	99	99	99	99	99	99
11 ROUNDUP READY 11 BICEP II MAGNUM	5.5 L	2.89	LB A/A	2.1 QT/A	PRE	A	186			0	0	0	0	0	28.4	98	99	96	95	98	99	95	88		
12 ROUNDUP READY 12 BICEP II MAGNUM 12 ROUNDUP ULTRA 12 AMS	5.5 L 3 SL 100 DRY	1.44 0.75 2.0	LB A/A LB AE/A % W/W	1.05 QT/A 1.0 QT/A 2.0 % W/W	PRE 2-4"W-2 2-4"W-2	A C C	199			0	0	0	0	0	26.8	99	98	98	97	99	90	90	94		
13 ROUNDUP READY 13 BALANCE 13 ROUNDUP ULTRA 13 AATREX 13 AMS	75 WG 3 SL 90 WG 100 DRY	0.094 0.75 1.0 2.0	LB A/A LB AE/A LB A/A % W/W	2.0 OZ/A 1.0 QT/A 1.11 LB/A 2.0 % W/W	PRE 2-4"W-2 2-4"W-2 2-4"W-2	A C C C	188			0	0	0	0	0	27.7	99	98	98	98	99	97	97	95		

(CONTINUED)

TABLE. WEED MANAGEMENT SYSTEMS IN CONVENTIONAL AND HERBICIDE RESISTANT CORN. PROJECT CODE:00-51E-S240 (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD	RETURN	ZEAMX						CONTROL, DAYS AFTER TREATMENT								
									INJURY						SETFA				CYPES				
									DAT		56		PLANTS		DAT		56		DAT		56		
									7	14	28	DAP	EOS	EOS	14	28	DAP	EOS	14	28	DAP	EOS	
							BU/A	\$/A	%	%	%	%	%	%	000/A	%	%	%	%	%	%	%	
14 ROUNDUP READY							178		0	0	0	0	0	25.2	98	97	97	97	95	91	91	94	
14 AATREX	90 WG	1.8	LB A/A	2.0	LB/A	PRE																	
14 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	1.0	QT/A	2-4"W-2																	
14 AMS	100 DRY	2.0	% W/W	2.0	% W/W	2-4"W-2																	
15 ROUNDUP READY							167		0	0	0	0	0	29.1	98	97	97	94	96	96	96	90	
15 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	1.0	QT/A	2-4"W-1																	
15 AATREX	90 WG	1.0	LB A/A	1.11	LB/A	2-4"W-1																	
15 AMS	100 DRY	2.0	% W/W	2.0	% W/W	2-4"W-1																	
16 ROUNDUP READY							185		3	0	0	0	0	25.9	97	98	97	95	96	90	96	90	
16 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	1.0	QT/A	2-4"W-1																	
16 AMS	100 DRY	2.0	% W/W	2.0	% W/W	2-4"W-1																	
16 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	1.0	QT/A	2-4"RGIN																	
16 AMS	100 DRY	2.0	% W/W	2.0	% W/W	2-4"RGIN																	
17 IT							17		0	0	0	0	0	19.2	0	0	0	0	0	0	0	0	
17 NONTREATED																							
18 IT							140		0	0	0	0	0	27.1	99	99	99	99	99	99	99	99	
18 BICEP II MAGNUM	5.5 L	2.89	LB A/A	2.1	QT/A	PRE																	
18 HANDWEED																							
19 IT							112			0	0	0	0	26.7	98	99	95	95	98	98	95	87	
19 BICEP II MAGNUM	5.5 L	2.89	LB A/A	2.1	QT/A	PRE																	
20 IT							144		0	0	0	0	0	28.4	99	98	98	97	99	95	95	94	
20 BICEP II MAGNUM	5.5 L	1.44	LB A/A	1.05	QT/A	PRE																	
20 LIGHTNING	70 WG	0.056	LB A/A	1.3	OZ/A	2-4"W-2																	
20 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	% V/V	2-4"W-2																	
20 28% UAN	100 LIQ	2.5	% V/V	2.5	% V/V	2-4"W-2																	
21 IT							151		0	0	0	0	0	28.5	99	98	98	97	94	95	95	96	
21 BALANCE	75 WG	0.094	LB A/A	2.0	OZ/A	PRE																	
21 LIGHTNING	70 WG	0.056	LB A/A	1.3	OZ/A	2-4"W-2																	
21 AATREX	90 WG	1.0	LB A/A	1.11	LB/A	2-4"W-2																	
21 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	% V/V	2-4"W-2																	
21 28% UAN	100 LIQ	2.5	% V/V	2.5	% V/V	2-4"W-2																	
22 IT							154		0	0	0	0	0	27.4	95	91	91	97	90	90	90	94	
22 AATREX	90 WG	1.8	LB A/A	2.0	LB/A	PRE																	
22 LIGHTNING	70 WG	0.056	LB A/A	1.3	OZ/A	2-4"W-2																	
22 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	% V/V	2-4"W-2																	
22 28% UAN	100 LIQ	2.5	% V/V	2.5	% V/V	2-4"W-2																	
23 IT							129		0	0	0	0	0	28.1	81	88	88	92	96	94	94	86	
23 LIGHTNING	70 WG	0.056	LB A/A	1.3	OZ/A	2-4"W-1																	
23 AATREX	90 WG	1.0	LB A/A	1.11	LB/A	2-4"W-1																	
23 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	% V/V	2-4"W-1																	
23 28% UAN	100 LIQ	2.5	% V/V	2.5	% V/V	2-4"W-1																	
24 IT							110		0	0	0	0	0	28.3	90	93	93	95	84	95	95	90	
24 LIGHTNING	70 WG	0.056	LB A/A	1.3	OZ/A	2-4"W-1																	
24 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	% V/V	2-4"W-1																	
24 28% UAN	100 LIQ	2.5	% V/V	2.5	% V/V	2-4"W-1																	

(CONTINUED)

TABLE. WEED MANAGEMENT SYSTEMS IN CONVENTIONAL AND HERBICIDE RESISTANT CORN. PROJECT CODE:00-51E-S240 (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD	RETURN	ZEAMX					CONTROL, DAYS AFTER TREATMENT										
									INJURY					PLANTS	SETFA				CYPES					
									DAT		56		EOS		EOS	14	28	DAP	EOS	14	28	DAP	EOS	
									7	14	28	DAP												EOS
BU/A	\$/A	%	%	%	%	%	000/A	%	%	%	%	%	%	%	%	%	%							
25 CONVENTIONAL 25 NONTREATED							31		0	0	0	0	0	17.3	0	0	0	0	0	0	0	0	0	0
26 CONVENTIONAL 26 BICEP II MAGNUM 26 HANDWEED	5.5 L	2.89	LB A/A	2.1 QT/A	PRE	A	135		0	0	0	0	0	22.0	99	99	99	99	99	99	99	99	99	99
27 CONVENTIONAL 27 BICEP II MAGNUM	5.5 L	2.89	LB A/A	2.1 QT/A	PRE	A	125			0	0	0	0	25.9	98	99	95	95	98	98	94	84		
28 CONVENTIONAL 28 BICEP II MAGNUM 28 BASIS GOLD 28 PRIME OIL COC 28 28% UAN	5.5 L 90 WG 100 LIQ 100 LIQ	1.44 0.788 1.0 2.5	LB A/A LB A/A % V/V % V/V	1.05 QT/A 14.0 OZ/A 1.0 % V/V 2.5 % V/V	PRE 2-4"W-2 2-4"W-2 2-4"W-2	A C C C	132		21	6	0	0	0	27.0	99	98	98	97	99	96	96	94		
29 CONVENTIONAL 29 BALANCE 29 BASIS GOLD 29 PRIME OIL COC 29 28% UAN	75 WG 90 WG 100 LIQ 100 LIQ	0.094 0.788 1.0 2.5	LB A/A LB A/A % V/V % V/V	2.0 OZ/A 14.0 OZ/A 1.0 % V/V 2.5 % V/V	PRE 2-4"W-2 2-4"W-2 2-4"W-2	A C C C	144		24	6	0	0	0	24.8	99	98	98	96	92	86	86	93		
30 CONVENTIONAL 30 AATREX 30 BASIS GOLD 30 PRIME OIL COC 30 28% UAN	90 WG 90 WG 100 LIQ 100 LIQ	1.0 0.788 1.0 2.5	LB A/A LB A/A % V/V % V/V	1.11 LB/A 14.0 OZ/A 1.0 % V/V 2.5 % V/V	PRE 2-4"W-2 2-4"W-2 2-4"W-2	A C C C	157		24	5	0	0	0	26.2	98	97	97	97	93	86	86	92		
31 CONVENTIONAL 31 BASIS GOLD 31 PRIME OIL COC 31 28% UAN	90 WG 100 LIQ 100 LIQ	0.788 1.0 2.5	LB A/A % V/V % V/V	14.0 OZ/A 1.0 % V/V 2.5 % V/V	2-4"W-1 2-4"W-1 2-4"W-1	B B B	158		0	0	0	0	0	27.4	92	93	93	95	96	94	94	89		
32 CONVENTIONAL 32 DUAL II MAGNUM 32 NORTHSTAR 32 ACTIVATOR 90 32 28% UAN	7.64 EC 47.4 WG 100 LIQ 100 LIQ	1.27 0.148 0.25 2.5	LB A/A LB A/A % V/V % V/V	1.3 PT/A 5.0 OZ/A 0.25 % V/V 2.5 % V/V	PRE 2-4"W-1 2-4"W-1 2-4"W-1	A B B B	117		1	0	0	0	0	25.4	99	98	98	95	99	98	98	90		
LSD P							35 0.01		3 0.01	2 0.01	0 1.0	0 1.0	0 1.0	3.7 0.01	2 0.01	2 0.01	2 0.01	3 0.01	3 0.01	4 0.01	4 0.01	3 0.01		

(CONTINUED)

TABLE. WEED MANAGEMENT SYSTEMS IN CONVENTIONAL AND HERBICIDE RESISTANT CORN. PROJECT CODE:00-51E-S240 (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	CONTROL, DAYS AFTER TREATMENT																					
							AMBTR				AMATA				XANST				IPOHE				POLPY					
							DAT		56		DAT		56		DAT		56		DAT		56		DAT		56			
							14	28	DAP	EOS	14	28	DAP	EOS	14	28	DAP	EOS	14	28	DAP	EOS	14	28	DAP	EOS		
% % % %				% % % %				% % % %				% % % %				% % % %												
1 LIBERTY LINK 1 NONTREATED							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2 LIBERTY LINK 2 BICEP II MAGNUM 2 HANDWEED	5.5 L	2.89	LB A/A	2.1	QT/A	PRE	A	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99					
3 LIBERTY LINK 3 BICEP II MAGNUM	5.5 L	2.89	LB A/A	2.1	QT/A	PRE	A	94	96	41	41		99	97	94	76	91	33	49		97	96	33	83		99	94	96
4 LIBERTY LINK 4 BICEP II MAGNUM 4 LIBERTY 4 AMS	5.5 L 1.67 EC 100 DRY	1.44 0.313	LB A/A LB A/A	1.05 24.0	QT/A OZ/A	PRE 2-4"W-2	A C	96	94	94	90	99	97	97	97	97	96	96	92	97	95	95	93	99	97	97	97	
5 LIBERTY LINK 5 BALANCE 5 LIBERTY ATZ 5 AMS	75 WG 4.32 EC 100 DRY	0.094 1.35	LB A/A LB A/A	2.0 40.0	OZ/A OZ/A	PRE 2-4"W-2	A C	98	98	98	96	99	98	98	97	99	98	98	96	98	98	98	95	99	98	98	97	
6 LIBERTY LINK 6 AATREX 6 LIBERTY 6 AMS	90 WG 1.67 EC 100 DRY	1.8 0.313	LB A/A LB A/A	2.0 24.0	LB/A OZ/A	PRE 2-4"W-2	A C	95	92	92	92	99	97	97	96	96	93	93	93	96	91	91	93	99	96	96	97	
7 LIBERTY LINK 7 LIBERTY ATZ 7 AMS	4.32 EC 100 DRY	1.35	LB A/A	40.0	OZ/A	2-4"W-1	B	98	96	96	89	97	97	97	96	97	97	97	88	99	96	96	88	98	98	98	97	
8 LIBERTY LINK 8 LIBERTY 8 AMS 8 LIBERTY 8 AMS	1.67 EC 100 DRY 1.67 EC 100 DRY	0.261 2.0	LB A/A % W/W	20.0 2.0	OZ/A % W/W	2-4"W-1 2-4"W-1	B B	97	98	97	92	98	98	98	93	97	98	97	93	96	97	96	81	98	98	98	97	
9 ROUNDUP READY 9 NONTREATED								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10 ROUNDUP READY 10 BICEP II MAGNUM 10 HANDWEED	5.5 L	2.89	LB A/A	2.1	QT/A	PRE	A	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	
11 ROUNDUP READY 11 BICEP II MAGNUM	5.5 L	2.89	LB A/A	2.1	QT/A	PRE	A	95	95	51	60		99	97	97	84	91	40	72		97	95	35	90		99	95	97
12 ROUNDUP READY 12 BICEP II MAGNUM 12 ROUNDUP ULTRA 12 AMS	5.5 L 3 SL 100 DRY	1.44 0.75	LB A/A LB AE/A	1.05 1.0	QT/A QT/A	PRE 2-4"W-2	A C	96	95	95	94	99	98	98	97	97	96	96	95	97	93	93	94	99	97	97	97	
13 ROUNDUP READY 13 BALANCE 13 ROUNDUP ULTRA 13 AATREX 13 AMS	75 WG 3 SL 90 WG 100 DRY	0.094 0.75	LB A/A LB AE/A	2.0 1.0	OZ/A QT/A	PRE 2-4"W-2	A C	98	97	97	95	99	98	98	97	98	98	98	96	98	97	97	94	99	97	97	97	

(CONTINUED)

TABLE. WEED MANAGEMENT SYSTEMS IN CONVENTIONAL AND HERBICIDE RESISTANT CORN. PROJECT CODE:00-51E-S240 (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	CONTROL, DAYS AFTER TREATMENT																															
							AMBTR				AMATA				XANST				IPOHE				POLPY															
							DAT		56		DAT		56		DAT		56		DAT		56		DAT		56													
							14	28	DAP	EOS	14	28	DAP	EOS	14	28	DAP	EOS	14	28	DAP	EOS	14	28	DAP	EOS												
																				%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
14 ROUNDUP READY							96	93	93	93	99	98	98	97	96	95	95	95	97	94	94	94	99	98	98	97												
14 AATREX	90 WG	1.8 LB A/A	2.0 LB/A	PRE	A																																	
14 ROUNDUP ULTRA	3 SL	0.75 LB AE/A	1.0 QT/A	2-4"W-2	C																																	
14 AMS	100 DRY	2.0 % W/W	2.0 % W/W	2-4"W-2	C																																	
15 ROUNDUP READY							98	97	97	93	99	98	98	96	98	98	98	94	99	97	97	93	98	98	98	97												
15 ROUNDUP ULTRA	3 SL	0.75 LB AE/A	1.0 QT/A	2-4"W-1	B																																	
15 AATREX	90 WG	1.0 LB A/A	1.11 LB/A	2-4"W-1	B																																	
15 AMS	100 DRY	2.0 % W/W	2.0 % W/W	2-4"W-1	B																																	
16 ROUNDUP READY							97	98	97	92	98	98	98	96	98	98	98	94	97	97	97	90	98	98	98	97												
16 ROUNDUP ULTRA	3 SL	0.75 LB AE/A	1.0 QT/A	2-4"W-1	B																																	
16 AMS	100 DRY	2.0 % W/W	2.0 % W/W	2-4"W-1	B																																	
16 ROUNDUP ULTRA	3 SL	0.75 LB AE/A	1.0 QT/A	2-4"RGIN	D																																	
16 AMS	100 DRY	2.0 % W/W	2.0 % W/W	2-4"RGIN	D																																	
17 IT							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0												
17 NONTREATED																																						
18 IT							99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99												
18 BICEP II MAGNUM	5.5 L	2.89 LB A/A	2.1 QT/A	PRE	A																																	
18 HANDWEED																																						
19 IT							90	95	43	48		99	97	96	80	91	37	52	94	94	33	93		99	94	97												
19 BICEP II MAGNUM	5.5 L	2.89 LB A/A	2.1 QT/A	PRE	A																																	
20 IT							95	92	92	93	99	97	97	97	95	95	95	93	97	94	94	94	99	96	96	97												
20 BICEP II MAGNUM	5.5 L	1.44 LB A/A	1.05 QT/A	PRE	A																																	
20 LIGHTNING	70 WG	0.056 LB A/A	1.3 OZ/A	2-4"W-2	C																																	
20 ACTIVATOR 90	100 LIQ	0.25 % V/V	0.25 % V/V	2-4"W-2	C																																	
20 28% UAN	100 LIQ	2.5 % V/V	2.5 % V/V	2-4"W-2	C																																	
21 IT							98	98	98	96	99	98	98	97	99	98	98	97	98	98	98	96	99	98	98	97												
21 BALANCE	75 WG	0.094 LB A/A	2.0 OZ/A	PRE	A																																	
21 LIGHTNING	70 WG	0.056 LB A/A	1.3 OZ/A	2-4"W-2	C																																	
21 AATREX	90 WG	1.0 LB A/A	1.11 LB/A	2-4"W-2	C																																	
21 ACTIVATOR 90	100 LIQ	0.25 % V/V	0.25 % V/V	2-4"W-2	C																																	
21 28% UAN	100 LIQ	2.5 % V/V	2.5 % V/V	2-4"W-2	C																																	
22 IT							94	91	91	94	90	90	90	91	95	94	94	95	94	92	92	92	99	96	96	97												
22 AATREX	90 WG	1.8 LB A/A	2.0 LB/A	PRE	A																																	
22 LIGHTNING	70 WG	0.056 LB A/A	1.3 OZ/A	2-4"W-2	C																																	
22 ACTIVATOR 90	100 LIQ	0.25 % V/V	0.25 % V/V	2-4"W-2	C																																	
22 28% UAN	100 LIQ	2.5 % V/V	2.5 % V/V	2-4"W-2	C																																	
23 IT							96	97	97	91	88	87	87	79	95	97	97	93	97	95	95	89	98	98	98	96												
23 LIGHTNING	70 WG	0.056 LB A/A	1.3 OZ/A	2-4"W-1	B																																	
23 AATREX	90 WG	1.0 LB A/A	1.11 LB/A	2-4"W-1	B																																	
23 ACTIVATOR 90	100 LIQ	0.25 % V/V	0.25 % V/V	2-4"W-1	B																																	
23 28% UAN	100 LIQ	2.5 % V/V	2.5 % V/V	2-4"W-1	B																																	
24 IT							91	97	97	91	0	0	0	0	90	97	97	92	92	95	95	85	96	98	98	97												
24 LIGHTNING	70 WG	0.056 LB A/A	1.3 OZ/A	2-4"W-1	B																																	
24 ACTIVATOR 90	100 LIQ	0.25 % V/V	0.25 % V/V	2-4"W-1	B																																	
24 28% UAN	100 LIQ	2.5 % V/V	2.5 % V/V	2-4"W-1	B																																	

(CONTINUED)

TABLE. WEED MANAGEMENT SYSTEMS IN CONVENTIONAL AND HERBICIDE RESISTANT CORN. PROJECT CODE:00-51E-S240 (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	CONTROL, DAYS AFTER TREATMENT																																	
							AMBTR				AMATA				XANST				IPOHE				POLPY																	
							DAT	56	DAP	EOS	DAT	56	DAP	EOS	DAT	56	DAP	EOS	DAT	56	DAP	EOS	DAT	56	DAP	EOS														
14	28	56	EOS	14	28	56	EOS	14	28	56	EOS	14	28	56	EOS	14	28	56	EOS																					
																					%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
25 CONVENTIONAL 25 NONTREATED																																								
26 CONVENTIONAL 26 BICEP II MAGNUM 26 HANDWEED	5.5 L	2.89	LB A/A	2.1	QT/A	PRE	A	99	99	99	99	99	99	99	99	99	99	99	99	99	99																			
27 CONVENTIONAL 27 BICEP II MAGNUM	5.5 L	2.89	LB A/A	2.1	QT/A	PRE	A	95	96	39	36		99	97	96	79	91	38	56	97	94	33	90		99	94	97													
28 CONVENTIONAL 28 BICEP II MAGNUM	5.5 L	1.44	LB A/A	1.05	QT/A	PRE	A	98	96	96	94	99	98	98	97	97	96	96	94	98	94	94	92	99	98	98	97													
28 BASIS GOLD	90 WG	0.788	LB A/A	14.0	OZ/A	2-4"W-2	C																																	
28 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	% V/V	2-4"W-2	C																																	
28 28% UAN	100 LIQ	2.5	% V/V	2.5	% V/V	2-4"W-2	C																																	
29 CONVENTIONAL 29 BALANCE	75 WG	0.094	LB A/A	2.0	OZ/A	PRE	A	98	98	98	96	99	98	98	97	98	97	97	95	98	98	98	94	99	98	98	97													
29 BASIS GOLD	90 WG	0.788	LB A/A	14.0	OZ/A	2-4"W-2	C																																	
29 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	% V/V	2-4"W-2	C																																	
29 28% UAN	100 LIQ	2.5	% V/V	2.5	% V/V	2-4"W-2	C																																	
30 CONVENTIONAL 30 AATREX	90 WG	1.0	LB A/A	1.11	LB/A	PRE	A	97	95	95	93	99	96	96	94	96	95	95	94	98	92	92	92	99	97	97	97													
30 BASIS GOLD	90 WG	0.788	LB A/A	14.0	OZ/A	2-4"W-2	C																																	
30 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	% V/V	2-4"W-2	C																																	
30 28% UAN	100 LIQ	2.5	% V/V	2.5	% V/V	2-4"W-2	C																																	
31 CONVENTIONAL 31 BASIS GOLD	90 WG	0.788	LB A/A	14.0	OZ/A	2-4"W-1	B	98	96	96	91	96	94	94	96	94	94	94	82	96	93	93	91	97	98	98	97													
31 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	% V/V	2-4"W-1	B																																	
31 28% UAN	100 LIQ	2.5	% V/V	2.5	% V/V	2-4"W-1	B																																	
32 CONVENTIONAL 32 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.3	PT/A	PRE	A	96	97	97	93	99	96	96	89	98	98	98	93	98	95	95	55	98	98	98	97													
32 NORTHSTAR	47.4 WG	0.148	LB A/A	5.0	OZ/A	2-4"W-1	B																																	
32 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	% V/V	2-4"W-1	B																																	
32 28% UAN	100 LIQ	2.5	% V/V	2.5	% V/V	2-4"W-1	B																																	
LSD								3	3	5	10	3	3	3	6	6	4	3	11	2	2	3	6	0.5	1	2	0.7													
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	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01													

1. PROTOCOL: SIU/SAN.
 2. DAT = DAYS AFTER TREATMENT, AFTER FINAL APPLICATION. DAP = DAYS AFTER PLANTING. EOS = END OF SEASON.
 3. RATING DATES:
 7 DAYS AFTER 2-4"W-1, 2-4"W-2, AND 2-4"RGIN APPLICATIONS ON JUN-1-00, JUN-8-00, AND JUN-16-00, RESPECTIVELY.
 14 DAYS AFTER PRE, 2-4"W-1, 2-4"W-2, AND 2-4"RGIN APPLICATIONS ON MAY-19-00, JUN-8-00, JUN-15-00, AND JUN-23-00, RESPECTIVELY.
 28 DAYS AFTER PRE, 2-4"W-1, 2-4"W-2, AND 2-4"RGIN APPLICATIONS ON JUN-1-00, JUN-22-00, JUN-29-00, AND JUL-7-00, RESPECTIVELY.
 56 DAP, AND EOS ON JUN-28-00, AND AUG-4-00, RESPECTIVELY.