

## Weed Management in Roundup Ready Corn.

00-21S-MW70

**OBJECTIVE:** Evaluate weed management programs in Roundup Ready corn.

**SUMMARY:** Corn injury was 22% at 28 days after treatment (DAT) in plots treated with Marksman. Little to no corn injury was observed with all other herbicide treatments. Giant foxtail control was greater than 90% from all treatments except a single application of Roundup Ultra alone or tank mixed with Hornet or ZA 1296. Common cocklebur control was 68 to 75% from single applications of Roundup Ultra alone. Tank mixing Roundup Ultra with Hornet, applying a sequential application of Roundup Ultra, or applying Harness and Harness Xtra preemergence increased common cocklebur control. Roundup Ultra alone controlled only 38% of ivyleaf morningglory. Ivyleaf morningglory control was increased to at least 90% when Roundup Ultra was tank mixed with FulTime, or Harness Xtra or FulTime was applied preemergence. All herbicide treatments controlled at least 87% of velvetleaf. Prickly sida control was increased when Roundup Ultra was tank mixed with Hornet, ZA 1296 or FulTime and when Harness Xtra was applied preemergence.

Corn yield ranged from 72 bu/A in nontreated plots to 175 bu/A. The greatest yield was generally observed in plots that received a preemergence herbicide application.

### HERBICIDES

BASIS GOLD 90 WG  
 BICEP II MAGNUM 5.5 L  
 CELEBRITY PLUS 70 WG  
 DUAL II MAGNUM 7.64 EC  
 FULTIME 4 SC  
 HARNESS 7 EC  
 HARNESS XTRA 5.6 L  
 HORNET 68.5 WG  
 MARKSMAN 3.2 L  
 MON 69423 5 SC  
 READY MASTER ATZ 4 SC  
 ROUNDUP ULTRA 3 SL  
 SPIRIT 57 WG  
 ZA1296 4 EC

### WEEDS

COCKLEBUR, COMMON  
 FOXTAIL, GIANT  
 MORNINGGLORY, IVYLEAF  
 NUTSEDGE, YELLOW  
 SIDA, PRICKLY  
 VELVETLEAF

### CROP

CORN, FIELD

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Weed Management in Roundup Ready Corn.

Project Code: 00-21S-MW70 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. ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
4. IPOHE	MORNINGGLORY, IVYLEAF	IPOMOEA HEDERACEA (L.) JACQ.
5. XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM
6. SIDSP	SIDA, PRICKLY	SIDA SPINOSA L.

Crop 1:	ZEAMX CORN, FIELD	Variety:	DK 626 RR
Planting Method:	SEEDED	Planting Date:	May-4-00
Rate:	28000 S/A	Depth:	1.5 IN
Row Spacing:	30 IN		

Plot Width, Unit:	10 FT	Plot Length, Unit:	30 FT	Reps:	3
Tillage Type:	REDUCED-TILL	Study Design:	RCB		
Previous Crop, Year:	GLXMA, 1999	Fertilizer applied:	N 150 LB/A, P <sub>2</sub> O <sub>5</sub> 50 LB/A, K <sub>2</sub> O 150 LB/A		

Soil Name:	EBBERT	% OM: 2.6	pH: 5.7	CEC: 14
Texture:	SILT LOAM	P <sub>1</sub> : 72 LB/A,	K: 351 LB/A	

APPLICATION DESCRIPTION

	A	B	C	D	E
Application Date:	May-5-00	May-24-00	May-30-00	Jun-2-00	Jun-7-00
Time of Day:	18:00	11:30	14:00	16:00	9:30
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	2-4"W-1	2-4"W-2	12-18"CN	2-4"W-RG
Applic. Placement:	BROSOL	BROFOL	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	80 F	82 F	82 F	77 F	67 F
% Relative Humidity:	96	34	65	52	85
Wind Velocity, Unit:	5 MPH	2-3 MPH	3-5 MPH	4-6 MPH	0-5 MPH
Soil Moisture:	DRY	NORMAL	NORMAL	NORMAL	NORMAL
% Cloud Cover:		0	0	10	0

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E
Crop 1 Code, Stage:	NA	ZEAMX V3	ZEAMX V5	ZEAMX V6	ZEAMX V6
Height, Unit:	NA	8-10 IN	11-13 IN	14-16 IN	20 IN

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E
Weed 1 Code:		SETFA	SETFA	SETFA	
Stage(leaves):		3-4	3-4	4-5	
Height(inches):		3-7	3-4	4-6	
Density:		HIGH	MEDIUM		
Weed 2 Code:		CYPES	CYPES	CYPES	CYPES
Stage(leaves):		4-6	5-6	7-8	3-5
Height(inches):		2-4	3-4	4-5	2-4
Density:		LOW	MEDIUM	MEDIUM	MEDIUM
Weed 3 Code:		ABUTH	ABUTH	ABUTH	ABUTH
Stage(leaves):		2-3	2-3	4-5	2
Height(inches):		2-4	2-4	4-6	2
Density:		LOW	LOW		LOW
Weed 4 Code:		IPOHE	IPOHE	IPOHE	IPOHE
Stage(leaves):		2-3	2-4	7-9	2-3
Height(inches):		2-3	2-4	3-4	1-2
Density:		MEDIUM	HIGH		MEDIUM
Weed 5 Code:		XANST	XANST	XANST	XANST
Stage(leaves):		3-4	4-5	5-7	2
Height(inches):		2-4	2-5	10-12	2-3
Density:		HIGH	HIGH	HIGH	LOW
Weed 6 Code:		SIDSP	SIDSP	SIDSP	SIDSP
Stage(leaves):		2-3	3-4	4-5	1-2
Height(inches):		1-3	2-3	3-4	0-1
Density:		LOW	LOW	LOW	LOW

APPLICATION EQUIPMENT

	A	B	C	D	E
Appl. Equipment:	CO <sub>2</sub> SPRAY	CO <sub>2</sub> SPRAY	CO <sub>2</sub> SPRAY	CO <sub>2</sub> SPRAY	CO <sub>2</sub> SPRAY
Operating Pressure:	40 PSI	40 PSI	40 PSI	40 PSI	40 PSI
Nozzle Type:	FLAT FAN	FLAT FAN	FLAT FAN	FLAT FAN	FLAT FAN
Nozzle Size:	8003	8002	8002	8002	8002
Boom Length, Unit:	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

NOTES:

Harvested Sep-27-00, (2) 30 inch rows by 22 ft.

TABLE. WEED MANAGEMENT IN ROUNDUP READY CORN. PROJECT CODE:00-21S-MW70

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD	ZEAMX INJURY				CONTROL, DAYS AFTER 12-18"CN												
								DAT		DA		SETFA		CYPES		XANST		IPOHE		ABUTH		SIDSP		
								14	28	14	28	14	28	14	28	14	28	14	28	14	28	14	28	
								BU/A	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
1 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	2-4"W-1	B	147	3	0	0	0	77	85	88	87	82	68	47	38	93	87	91	83
2 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	2-4"W-1	B	151	3	0	0	0	99	93	95	93	96	87	83	85	98	98	98	95
2 ROUNDUP ULTRA	3 SL	0.56	LB AE/A	1.5	PT/A	2-4"W-RG	E																	
3 HARNESS	7 EC	0.875	LB A/A	1.0	PT/A	PRE	A	156	0	0	0	0	99	95	83	87	96	90	43	47	99	95	97	87
3 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	12-18"CN	D																	
4 HARNESS XTRA	5.6 L	1.4	LB A/A	2.0	PT/A	PRE	A	154	0	0	0	0	99	93	73	82	96	92	88	92	96	95	99	90
4 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	12-18"CN	D																	
5 HARNESS	7 EC	0.875	LB A/A	1.0	PT/A	2-4"W-1	B	135	2	0	0	0	98	95	87	83	73	72	67	75	92	87	97	87
5 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	2-4"W-1	B																	
6 HARNESS XTRA	5.6 L	1.4	LB A/A	2.0	PT/A	2-4"W-1	B	133	0	0	0	0	99	95	87	85	87	87	87	90	95	95	97	90
6 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	2-4"W-1	B																	
7 READY MASTER A	4 SC	2.0	LB A/A	2.0	QT/A	2-4"W-1	B	150	0	0	0	0	99	97	88	88	88	90	92	92	99	96	98	90
8 MON 69423	5 SC	3.38	LB A/A	5.4	PT/A	2-4"W-1	B	153	0	0	0	0	99	95	90	92	95	92	88	92	99	96	99	92
9 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33	PT/A	PRE	A	152	20	22	20	22	93	92	95	93	96	92	96	95	88	93	95	92
9 MARKSMAN	3.2 L	1.4	LB A/A	3.5	PT/A	2-4"W-2	C																	
10 BICEP II MAGNUM	5.5 L	2.89	LB A/A	2.1	QT/A	PRE	A	158	0		0	0	96	93	95	93	25	37	60	73	87	91	98	92
11 BICEP II MAGNUM	5.5 L	2.89	LB A/A	2.1	QT/A	PRE	A	157	0	0	0	0	95	93	96	95	90	95	90	92	98	99	99	93
11 SPIRIT	57 WG	0.035	LB A/A	0.98	OZ/A	12-18"CN	D																	
11 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	12-18"CN	D																	
11 28% UAN	100 LIQ	2.5	% V/V	2.5	%V/V	12-18"CN	D																	
12 BASIS GOLD	90 WG	0.783	LB A/A	13.9	OZ/A	2-4"W-1	B	143	0	0	0	0	97	88	77	72	45	32	85	82	93	93	93	93
12 PRIME OIL COC	100 LIQ	1.0	QT/A	1.0	QT/A	2-4"W-1	B																	
12 28% UAN	100 LIQ	4.0	QT/A	4.0	QT/A	2-4"W-1	B																	
13 CELEBRITY PLUS	70 WG	0.206	LB A/A	4.7	OZ/A	2-4"W-1	B	162	0	0	0	0	96	92	80	73	82	82	52	67	95	93	87	80
13 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	2-4"W-1	B																	
13 28% UAN	100 LIQ	4.0	QT/A	4.0	QT/A	2-4"W-1	B																	

(CONTINUED)

TABLE. WEED MANAGEMENT IN ROUNDUP READY CORN. PROJECT CODE:00-21S-MW70 (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD	ZEAMX INJURY				CONTROL, DAYS AFTER 12-18"CN													
								DA				SETFA		CYPES		XANST		IPOHE		ABUTH		SIDSP			
								DAT		12-18"CN		14	28	14	28	14	28	14	28	14	28	14	28	14	28
								14	28	14	28	%	%	%	%	%	%	%	%	%	%	%	%	%	%
14 HARNESS	7 EC	1.17	LB A/A	1.34	PT/A	PRE	A	175	0	0	0	0	98	93	93	95	88	87	87	87	98	96	96	90	
14 ROUNDUP ULTRA	3 SL	0.56	LB AE/A	1.5	PT/A	2-4"W-2	C																		
14 AMS	100 DRY	2.0	% W/W	2.0	%W/W	2-4"W-2	C																		
15 HARNESS	7 EC	1.17	LB A/A	1.34	PT/A	PRE	A	160	0	0	0	0	97	93	93	92	90	92	88	92	95	93	96	93	
15 ROUNDUP ULTRA	3 SL	0.56	LB AE/A	1.5	PT/A	2-4"W-2	C																		
15 HORNET	68.5 WG	0.128	LB A/A	3.0	OZ/A	2-4"W-2	C																		
15 AMS	100 DRY	2.0	% W/W	2.0	%W/W	2-4"W-2	C																		
16 ROUNDUP ULTRA	3 SL	0.56	LB AE/A	1.5	PT/A	2-4"W-1	B	153	0	0	0	0	80	85	78	67	82	75	45	38	93	90	93	87	
16 AMS	100 DRY	2.0	% W/W	2.0	%W/W	2-4"W-1	B																		
17 ROUNDUP ULTRA	3 SL	0.56	LB AE/A	1.5	PT/A	2-4"W-1	B	159	0	0	0	0	85	85	87	85	96	96	73	67	98	96	99	92	
17 HORNET	68.5 WG	0.128	LB A/A	3.0	OZ/A	2-4"W-1	B																		
17 AMS	100 DRY	2.0	% W/W	2.0	%W/W	2-4"W-1	B																		
18 ROUNDUP ULTRA	3 SL	0.56	LB AE/A	1.5	PT/A	2-4"W-1	B	159	0	0	0	0	78	85	92	90	88	82	72	68	98	96	98	92	
18 ZA1296	4 EC	0.094	LB A/A	3.0	OZ/A	2-4"W-1	B																		
18 AMS	100 DRY	2.0	% W/W	2.0	%W/W	2-4"W-1	B																		
19 FULTIME	4 SC	2.7	LB A/A	5.4	PT/A	2-4"W-1	B	166	0	0	0	0	99	98	93	93	93	90	90	92	95	95	99	95	
19 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	2-4"W-1	B																		
19 AMS	100 DRY	2.0	% W/W	2.0	%W/W	2-4"W-1	B																		
20 FULTIME	4 SC	2.7	LB A/A	5.4	PT/A	PRE	A	170	0	0	0	0	99	95	95	95	95	95	92	90	99	98	99	95	
20 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	12-18"CN	D																		
20 AMS	100 DRY	2.0	% W/W	2.0	%W/W	12-18"CN	D																		
21 NONTREATED								72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LSD								23	4	2	3	2	7	8	15	8	11	7	16	11	7	7	6	4	
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	

1. PROTOCOL: MONSANTO TRTS 1-13 (2000-01-46-08); DOW TRTS 14-17 (ANNUAL WC IN RR FIELD CORN).
2. RATING DATES:  
 14 DAYS AFTER 2-4"W-1, 2-4"W-2 AND 12-18"CN APPLICATIONS ON JUN-7-00, JUN-13-00 AND JUN-16-00, RESPECTIVELY.  
 14 DAYS AFTER 12-18"CN WAS ALSO 23, 17, AND 9 DAYS AFTER 2-4"W-1, 2-4"W-2, AND 2-4"RG, RESPECTIVELY.  
 28 DAYS AFTER 2-4"W-1, 2-4"W-2 AND 12-18"CN APPLICATIONS ON JUN-21-00 AND JUN-27-00 AND JUN-30-00, RESPECTIVELY.  
 28 DAYS AFTER 12-18"CN WAS ALSO 37, 31, AND 23 DAYS AFTER 2-4"W-1, 2-4"W-2, AND 2-4"RG, RESPECTIVELY.
3. THERE WAS NO CROP INJURY DUE TO PRE APPLICATION.