

Atrazine-free Corn Programs.

Project Code: 03-6A-E70 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
 Trial Status: Final Updated: 10-31-03

Objective:

Identify effective herbicide programs for use in atrazine protected watersheds.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. XANST	cocklebur, common	Xanthium strumarium L.
3. AMATA	waterhemp, common	Amaranthus rudis Sauer
4. ABUTH	velvetleaf	Abutilon theophrasti Medicus
5. IPOSS	morningglory, species	Ipomoea sp.

Crop 1: ZEAMX corn, field Variety: DKC 60-17 RR
 Planting Method: Seeded Planting Date: 5-23-03
 Rate: 28000 S/A Depth: 1.5 IN
 Row Spacing: 30 IN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3
 Tillage Type: Reduced-Till Study Design: Randomized complete block
 Previous Crop, Year: GLXMA, 2002

Field Prep./Maintenance: N 150 LB/A, P205 50 LB/A, K20 150 LB/A

Soil Name: Stoy % OM: 2.1 pH: 5.7 CEC: 7
 Texture: Silt loam Fert. Level: P1: 82 LB/A, K: 266 LB/A

APPLICATION DESCRIPTION

	A	B
Application Date:	5-24-03	6-20-03
Time of Day:	14:30	10:00
Application Method:	Spray	Spray
Application Timing:	PRE	2-4"W
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	68 F	76 F
% Relative Humidity:	52	50
Wind Velocity, Unit:	0 MPH	2-3 MPH

CROP STAGE AT EACH APPLICATION

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

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:		SETFA
Stage(leaves):		3-4
Height(inches):		2-4
Density:		Low
Weed 2 Code:		XANST
Stage(leaves):		4-8
Height(inches):		2-6
Density:		Medium
Weed 3 Code:		AMATA
Stage(leaves):		4-8
Height(inches):		1-5
Density:		Low
Weed 4 Code:		ABUTH
Stage(leaves):		2-4
Height(inches):		1-3
Density:		Low

Weed 5 Code:	IPOSS
Stage(leaves):	0-3
Height(inches):	1-2
Density:	Low

APPLICATION EQUIPMENT

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

NOTES:

Harvested Oct-27-03, (2) 30 inch rows by 22 ft.

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Weed Code	Crop Code	Rating Data Type	Rating Unit	Rating Date	Trt-Eval Interval	Treatments															
						ZEAMX	ZEAMX	ZEAMX	SETFA	SETFA	SETFA	XANST	XANST	XANST	AMATA	AMATA	AMATA				
						Yield	Injury	Injury	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control			
						bu/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent		
						10-27-03	6-18-03	7-11-03	6-18-03	7-11-03	8-15-03	6-18-03	7-11-03	8-15-03	6-18-03	7-11-03	8-15-03	6-18-03	7-11-03		
						-2 DA-B	21 DA-B	-2 DA-B	21 DA-B	56 DA-B	-2 DA-B	21 DA-B	56 DA-B	-2 DA-B	21 DA-B	56 DA-B	-2 DA-B	21 DA-B	56 DA-B		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code												
1	NONTREATED									18	0	0	0	0	0	0	0	0	0	0	
2	DEGREE	3.8	ME	2.0	LB A/A	2.1	QT/A	PRE	A	117	0	0	99	95	95	37	99	99	99	99	
2	YUKON	67.5	WG	0.169	LB A/A	4	OZ/A	2-4"	W B												
2	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	% V/V	2-4"	W B												
3	DEGREE	3.8	ME	2.0	LB A/A	2.1	QT/A	PRE	A	112	0	0	99	99	99	30	94	93	99	99	
3	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	2-4"	W B												
3	AMS	100	DRY	2.0	% W/W	2	% W/W	2-4"	W B												
4	CINCH	7.64	EC	1.4	LB A/A	1.47	PT/A	PRE	A	132	0	0	99	99	99	52	88	92	99	99	
4	STEADFAST	75	WG	0.035	LB A/A	0.75	OZ/A	2-4"	W B												
4	PRIME OIL COC	100	LIQ	1.0	% V/V	1	% V/V	2-4"	W B												
4	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B												
5	CAMIX	3.67	EC	2.2	LB A/A	2.4	QT/A	PRE	A	116	0	0	99	99	99	92	97	98	99	99	
5	NORTHSTAR	47.4	WG	0.148	LB A/A	5	OZ/A	2-4"	W B												
5	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	% V/V	2-4"	W B												
5	28% UAN	100	LIQ	2.0	% V/V	2	% V/V	2-4"	W B												
6	DEGREE	3.8	ME	2.0	LB A/A	2.1	QT/A	PRE	A	102	0	0	99	99	99	82	68	67	99	99	
6	BALANCE PRO	4	SC	0.07	LB A/A	2.24	FL OZ/A	PRE	A												
7	DEGREE	3.8	ME	2.0	LB A/A	2.1	QT/A	PRE	A	109	0	0	99	96	95	97	95	96	99	95	
7	HORNET	68.5	WG	0.214	LB A/A	5	OZ/A	PRE	A												
8	OUTLOOK	6	EC	0.85	LB A/A	1.13	PT/A	PRE	A	128	0	0	99	98	99	57	91	95	99	99	
8	DISTINCT	70	WG	0.175	LB A/A	4	OZ/A	2-4"	W B												
8	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	% V/V	2-4"	W B												
8	28% UAN	100	LIQ	1.25	% V/V	1.25	% V/V	2-4"	W B												
9	DUAL II MAGNUM	7.64	EC	1.4	LB A/A	1.47	PT/A	PRE	A	114	0	0	99	99	99	28	96	96	99	99	
9	CALLISTO	4	SC	0.094	LB A/A	3	FL OZ/A	2-4"	W B												
9	PRIME OIL COC	100	LIQ	1.0	% V/V	1	% V/V	2-4"	W B												
9	28% UAN	100	LIQ	2.5	% V/V	2.5	% V/V	2-4"	W B												
10	DUAL II MAGNUM	7.64	EC	1.4	LB A/A	1.47	PT/A	PRE	A	116	0	0	99	99	99	40	96	95	99	99	
10	TOUCHDOWN TOTAL	4.17	SC	0.75	LB AE/A	23	FL OZ/A	2-4"	W B												
10	CALLISTO	4	SC	0.094	LB A/A	3	FL OZ/A	2-4"	W B												
10	AMS	100	DRY	2.0	% W/W	2	% W/W	2-4"	W B												
11	CAMIX	3.67	EC	2.2	LB A/A	2.4	QT/A	PRE	A	114	0	0	99	99	99	89	75	78	99	98	
LSD (P=.05)										34.7	0.0	0.0	0.0	3.6	3.4	25.4	17.1	13.5	0.0	1.9	1.2

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	ZEAMX Yield	ZEAMX Injury	ZEAMX Injury	SETFA Control	SETFA Control	SETFA Control	XANST Control	XANST Control	XANST Control	AMATA Control	AMATA Control	AMATA Control	
										bu/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
										10-27-03	6-18-03	7-11-03	6-18-03	7-11-03	8-15-03	6-18-03	7-11-03	8-15-03	6-18-03	7-11-03	8-15-03	
										-2 DA-B	21 DA-B	-2 DA-B	21 DA-B	56 DA-B	-2 DA-B	21 DA-B	56 DA-B	-2 DA-B	21 DA-B	56 DA-B	-2 DA-B	21 DA-B
Replicate F										0.247	0.000	0.000	0.000	0.088	0.007	0.494	3.104	2.883	0.000	1.224	1.000	
Replicate Prob(F)										0.7834	1.0000	1.0000	1.0000	0.9158	0.9926	0.6174	0.0670	0.0794	1.0000	0.3150	0.3855	
Treatment F										6.892	0.000	0.000	0.000	590.773	648.537	13.398	24.902	40.104	0.000	2230.490	5499.212	
Treatment Prob(F)										0.0002	1.0000	1.0000	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	1.0000	0.0001	0.0001	

Weed Code	ABUTH	ABUTH	ABUTH	IPOSS	IPOSS	IPOSS
Crop Code						
Rating Data Type	Control	Control	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date	6-18-03	7-11-03	8-15-03	6-18-03	7-11-03	8-15-03
Trt-Eval Interval	-2 DA-B	21 DA-B	56 DA-B	-2 DA-B	21 DA-B	56 DA-B

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code						
1	NONTREATED									0	0	0	0	0	0
2	DEGREE	3.8	ME	2.0	LB A/A	2.1	QT/A	PRE	A	60	96	98	90	96	99
2	YUKON	67.5	WG	0.169	LB A/A	4	OZ/A	2-4"	W B						
2	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	% V/V	2-4"	W B						
3	DEGREE	3.8	ME	2.0	LB A/A	2.1	QT/A	PRE	A	65	97	99	95	96	98
3	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	2-4"	W B						
3	AMS	100	DRY	2.0	% W/W	2	% W/W	2-4"	W B						
4	CINCH	7.64	EC	1.4	LB A/A	1.47	PT/A	PRE	A	84	97	98	95	95	98
4	STEADFAST	75	WG	0.035	LB A/A	0.75	OZ/A	2-4"	W B						
4	PRIME OIL COC	100	LIQ	1.0	% V/V	1	% V/V	2-4"	W B						
4	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B						
5	CAMIX	3.67	EC	2.2	LB A/A	2.4	QT/A	PRE	A	99	99	99	98	98	98
5	NORTHSTAR	47.4	WG	0.148	LB A/A	5	OZ/A	2-4"	W B						
5	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	% V/V	2-4"	W B						
5	28% UAN	100	LIQ	2.0	% V/V	2	% V/V	2-4"	W B						
6	DEGREE	3.8	ME	2.0	LB A/A	2.1	QT/A	PRE	A	99	99	99	95	92	93
6	BALANCE PRO	4	SC	0.07	LB A/A	2.24	FL OZ/A	PRE	A						
7	DEGREE	3.8	ME	2.0	LB A/A	2.1	QT/A	PRE	A	99	99	98	97	93	96
7	HORNET	68.5	WG	0.214	LB A/A	5	OZ/A	PRE	A						
8	OUTLOOK	6	EC	0.85	LB A/A	1.13	PT/A	PRE	A	95	97	99	96	97	98
8	DISTINCT	70	WG	0.175	LB A/A	4	OZ/A	2-4"	W B						
8	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	% V/V	2-4"	W B						
8	28% UAN	100	LIQ	1.25	% V/V	1.25	% V/V	2-4"	W B						
9	DUAL II MAGNUM	7.64	EC	1.4	LB A/A	1.47	PT/A	PRE	A	75	99	99	95	99	98
9	CALLISTO	4	SC	0.094	LB A/A	3	FL OZ/A	2-4"	W B						
9	PRIME OIL COC	100	LIQ	1.0	% V/V	1	% V/V	2-4"	W B						
9	28% UAN	100	LIQ	2.5	% V/V	2.5	% V/V	2-4"	W B						
10	DUAL II MAGNUM	7.64	EC	1.4	LB A/A	1.47	PT/A	PRE	A	85	99	99	93	97	98
10	TOUCHDOWN TOTAL	4.17	SC	0.75	LB AE/A	23	FL OZ/A	2-4"	W B						
10	CALLISTO	4	SC	0.094	LB A/A	3	FL OZ/A	2-4"	W B						
10	AMS	100	DRY	2.0	% W/W	2	% W/W	2-4"	W B						
11	CAMIX	3.67	EC	2.2	LB A/A	2.4	QT/A	PRE	A	99	99	99	98	98	98
LSD (P=.05)										24.3	2.3	1.8	6.0	4.1	3.7
Replicate F										0.861	1.075	3.750	4.045	0.298	0.858
Replicate Prob(F)										0.4378	0.3602	0.0414	0.0335	0.7455	0.4390
Treatment F										12.813	1479.345	2279.547	200.285	437.083	550.267
Treatment Prob(F)										0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: Monsanto.
2. CI prior to POST and 21 DA POST; WC prior to POST and 21 and 56 DA POST.
3. Yield.
4. DA-B = days after 2-4"W application. Ratings on 6-18-03 at -2 DA-B are prior to 2-4"W application.