

Control of Giant Ragweed and Waterhemp in Corn.

00-24B-E60

OBJECTIVE: Evaluate preemergence and preemergence/postemergence applications for control of giant ragweed and common waterhemp in corn.

SUMMARY: Corn injury ranging from 11 to 23% was observed in plots treated with Epic, SIU2000-H1 and SIU2000-H2 at 14 days after planting. No corn injury was observed from any treatment on June 22. All herbicide treatments provided excellent control of giant foxtail. Yellow nutsedge control was greatest with treatments that included Dual II Magnum. Giant ragweed control on June 22 was at least 87% from all treatments except Axiom AT plus Aatrex and SIU2000-H1. All treatments controlled 98 to 99% of common waterhemp except Axiom followed by Hornet (86%). Common ragweed control was at least 91% from all treatments except SIU2000-H1 (83%) and Dual II Magnum followed by Hornet plus Aim (87%). Only treatments that included Aatrex, Liberty ATZ or Clarity provided good control of ivyleaf morningglory. Common cocklebur control was highly variable but tended to be greatest with treatments that included Hornet.

Corn yield ranged from 25 bu/A in the nontreated plots to 149 bu/A. Corn yields were usually highest in plots treated with a sequential application of a preemergence herbicide followed by Hornet or Liberty ATZ.

HERBICIDES

AATREX 90 WG
 AIM 40 WG
 AXIOM 68 WG
 AXIOM AT 75 WG
 CLARITY 4 EC
 DUAL II MAGNUM 7.64 EC
 EPIC 58 WG
 HORNET 68.5 WG
 LIBERTY ATZ 4.32 EC
 SIU2000-H1 71.5 WG
 SIU2000-H2

WEEDS

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

CROP

CORN, FIELD

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Control of Giant Ragweed and Waterhemp in Corn.

Project Code: 00-24B-E60 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. AMBEL	RAGWEED, COMMON	AMBROSIA ARTEMISIIFOLIA L.
5. IPOHE	MORNINGGLORY, IVYLEAF	IPOMOEA HEDERACEA (L.) JACQ.
6. POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENNSYLVANICUM L.
7. XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L.
8. AMATA	WATERHEMP, COMMON	AMARANTHUS RUDIS SAUER

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

Plot Width, Unit:	10 FT	Plot Length, Unit:	27.5 FT	Reps:	3
Tillage Type:	REDUCED-TILL	Study Design:	RCB		
Previous Crop, Year:	GLXMA, 1999	Fertilizer applied:	N 150 LB/A,	P ₂ O ₅ 0 LB/A,	K ₂ O 150 LB/A

Soil Name:	RUSHVILLE	% OM: 2.4	pH: 6.2	CEC: 13
Texture:	SILT LOAM	P ₁ : 73 LB/A,	K: 286 LB/A	

APPLICATION DESCRIPTION

	A	B
Application Date:	May-4-00	May-25-00
Time of Day:	5:30	9:00
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	2-4"W
Applic. Placement:	BROSOL	BROFOL
Air Temp., Unit:	70 F	72 F
% Relative Humidity:	94	28
Wind Velocity, Unit:	3-5 MPH	1-2 MPH
Soil Moisture:		NORMAL
% Cloud Cover:	-	0

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	NA	ZEAMX V4
Height, Unit:	NA	8-11 IN

WEED STAGE AT EACH APPLICATION

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

APPLICATION EQUIPMENT

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

NOTES:

Harvested Sep-30-00, (2) 30 inch rows by 24.5 ft.

TABLE. CONTROL OF GIANT RAGWEED AND WATERHEMP IN CORN. PROJECT CODE:00-24B-E60

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD	ZEAMX				CONTROL										
								INJURY			SETFA			CYPES			AMBTR			AMBEL		
								14	DA 2-4"W		AT	DA 2-4"W		AT	DA 2-4"W		AT	DA 2-4"W		AT	DA 2-4"W	
								DAP	14	28	POST	14	28	POST	14	28	POST	14	28	POST	14	28
BU/A	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%							
1 AXIOM AT	75 WG	1.875	LB A/A	2.5 LB/A	PRE	A	87	3	8	0	99	99	98	77	63	50	97	85	83	99	98	91
1 AATREX	90 WG	0.75	LB A/A	13.3 OZ/A	PRE	A																
2 EPIC	58 WG	0.435	LB A/A	12.0 OZ/A	PRE	A	92	20	3	0	99	99	99	48	32	17	95	93	91	99	99	99
3 EPIC	58 WG	0.435	LB A/A	12.0 OZ/A	PRE	A	107	23	0	0	99	99	99	60	62	62	97	93	93	99	99	99
3 AATREX	90 WG	1.25	LB A/A	1.4 LB/A	PRE	A																
4 SIU2000-H1	71.5 WG	0.715	LB A/A	16.0 OZ/A	PRE	A	70	15	7	0	99	99	99	77	60	55	90	83	81	99	99	83
5 SIU2000-H2					PRE	A	106	11	0	0	99	99	99	50	43	32	98	96	98	99	99	99
6 AXIOM	68 WG	0.723	LB A/A	17.0 OZ/A	PRE	A	97	8	3	0	99	98	99	65	67	67	58	88	93	88	95	93
6 HORNET	68.5 WG	0.128	LB A/A	3.0 OZ/A	2-4"W	B																
6 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25 %V/V	2-4"W	B																
6 28% UAN	100 LIQ	2.5	% V/V	2.5 %V/V	2-4"W	B																
7 AXIOM	68 WG	0.34	LB A/A	8.0 OZ/A	PRE	A	149	2	0	0	99	99	99	33	68	65	13	92	93	75	99	99
7 LIBERTY ATZ	4.32 EC	1.08	LB A/A	32.0 OZ/A	2-4"W	B																
7 AMS	100 DRY	3.0	LB/A	3.0 LB/A	2-4"W	B																
8 EPIC	58 WG	0.181	LB A/A	5.0 OZ/A	PRE	A	129	4	5	0	99	99	99	45	77	72	62	90	89	92	99	98
8 LIBERTY ATZ	4.32 EC	1.08	LB A/A	32.0 OZ/A	2-4"W	B																
8 AMS	100 DRY	3.0	LB/A	3.0 LB/A	2-4"W	B																
9 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33 PT/A	PRE	A	141	0	3	0	99	99	99	93	97	91	20	95	96	33	99	99
9 HORNET	68.5 WG	0.128	LB A/A	3.0 OZ/A	2-4"W	B																
9 AATREX	90 WG	1.0	LB A/A	1.11 LB/A	2-4"W	B																
9 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0 %V/V	2-4"W	B																
9 AMS	100 DRY	2.0	% W/W	2.0 %W/W	2-4"W	B																
10 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33 PT/A	PRE	A	115	0	3	0	99	99	98	93	95	87	20	87	87	30	88	87
10 HORNET	68.5 WG	0.128	LB A/A	3.0 OZ/A	2-4"W	B																
10 AIM	40 WG	0.008	LB A/A	0.32 OZ/A	2-4"W	B																
10 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25 %V/V	2-4"W	B																
10 AMS	100 DRY	2.0	% W/W	2.0 %W/W	2-4"W	B																
11 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33 PT/A	PRE	A	131	0	3	0	99	99	99	93	73	87	25	90	92	43	93	96
11 HORNET	68.5 WG	0.128	LB A/A	3.0 OZ/A	2-4"W	B																
11 CLARITY	4 EC	0.125	LB A/A	4.0 OZ/A	2-4"W	B																
11 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25 %V/V	2-4"W	B																
11 AMS	100 DRY	2.0	% W/W	2.0 %W/W	2-4"W	B																
12 NONTREATED							25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LSD							42	8	8	0	0	1	1	30	22	21	20	10	12	25	4	16
P							0.01	0.01	0.5	1.0	1.0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

(CONTINUED)

TABLE. CONTROL OF GIANT RAGWEED AND WATERHEMP IN CORN. PROJECT CODE:00-24B-E60 (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	CONTROL											
							AMATA			IPOHE			POLPY			XANST		
							AT POST	DA 2-4"W		AT POST	DA 2-4"W		AT POST	DA 2-4"W		AT POST	DA 2-4"W	
%	%	%	%	%	%	%	%	%	%	%	%	%	%	%				
1 AXIOM AT	75 WG	1.875	LB A/A	2.5 LB/A	PRE	A	99	99	96	99	98	93	99	99	99	91	85	43
1 AATREX	90 WG	0.75	LB A/A	13.3 OZ/A	PRE	A												
2 EPIC	58 WG	0.435	LB A/A	12.0 OZ/A	PRE	A	99	99	99	96	88	43	99	99	66	73	78	53
3 EPIC	58 WG	0.435	LB A/A	12.0 OZ/A	PRE	A	99	99	99	99	98	85	99	99	99	91	93	93
3 AATREX	90 WG	1.25	LB A/A	1.4 LB/A	PRE	A												
4 SIU2000-H1	71.5 WG	0.715	LB A/A	16.0 OZ/A	PRE	A	99	99	99	92	85	37	98	93	67	78	60	43
5 SIU2000-H2					PRE	A	99	99	99	99	96	81	99	99	99	99	96	78
6 AXIOM	68 WG	0.723	LB A/A	17.0 OZ/A	PRE	A	99	98	86	60	90	73	95	99	99	82	99	99
6 HORNET	68.5 WG	0.128	LB A/A	3.0 OZ/A	2-4"W	B												
6 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25 %V/V	2-4"W	B												
6 28% UAN	100 LIQ	2.5	% V/V	2.5 %V/V	2-4"W	B												
7 AXIOM	68 WG	0.34	LB A/A	8.0 OZ/A	PRE	A	99	99	99	0	99	95	94	99	98	3	98	93
7 LIBERTY ATZ	4.32 EC	1.08	LB A/A	32.0 OZ/A	2-4"W	B												
7 AMS	100 DRY	3.0	LB/A	3.0 LB/A	2-4"W	B												
8 EPIC	58 WG	0.181	LB A/A	5.0 OZ/A	PRE	A	99	99	99	53	99	94	98	99	99	80	98	98
8 LIBERTY ATZ	4.32 EC	1.08	LB A/A	32.0 OZ/A	2-4"W	B												
8 AMS	100 DRY	3.0	LB/A	3.0 LB/A	2-4"W	B												
9 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33 PT/A	PRE	A	83	99	99	0	99	96	76	99	99	13	99	99
9 HORNET	68.5 WG	0.128	LB A/A	3.0 OZ/A	2-4"W	B												
9 AATREX	90 WG	1.0	LB A/A	1.11 LB/A	2-4"W	B												
9 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0 %V/V	2-4"W	B												
9 AMS	100 DRY	2.0	% W/W	2.0 %W/W	2-4"W	B												
10 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33 PT/A	PRE	A	86	99	98	13	95	88	76	99	89	20	99	98
10 HORNET	68.5 WG	0.128	LB A/A	3.0 OZ/A	2-4"W	B												
10 AIM	40 WG	0.008	LB A/A	0.32 OZ/A	2-4"W	B												
10 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25 %V/V	2-4"W	B												
10 AMS	100 DRY	2.0	% W/W	2.0 %W/W	2-4"W	B												
11 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33 PT/A	PRE	A	96	99	98	17	91	92	94	99	98	0	96	99
11 HORNET	68.5 WG	0.128	LB A/A	3.0 OZ/A	2-4"W	B												
11 CLARITY	4 EC	0.125	LB A/A	4.0 OZ/A	2-4"W	B												
11 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25 %V/V	2-4"W	B												
11 AMS	100 DRY	2.0	% W/W	2.0 %W/W	2-4"W	B												
12 NONTREATED							0	0	0	0	0	0	0	0	0	0	0	0
LSD							17	1	8	24	9	17	25	5	21	28	19	23
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: BAYER TRTS 1-8 (827-00-93302 AND 877-00-93304); DOW TRTS 9-11.
 2. DAP = DAYS AFTER PLANTING.
 3. RATING DATES: 14 DAP, AT POST, 14 DA 2-4"W, AND 28 DA 2-4"W ON MAY-18-00, MAY-25-00, JUN-8-00, AND JUN-22-00, RESPECTIVELY.