

Lightning Combinations in Clearfield Corn.

00-24B-W80

OBJECTIVE: Determine the effectiveness of various tank-mix partners with Lightning in Clearfield Corn.

SUMMARY: Corn injury was 7 to 10% at 14 days after postemergence herbicide application (DAPO) from treatments that included Aim. No corn injury was observed from any treatment by 28 DAPO.

All herbicide treatments provided excellent control of giant foxtail. All treatments that included a preemergence herbicide provided excellent control of common waterhemp. Lightning alone controlled only 3% of common waterhemp at 56 DAPO. Tank mixing Distinct, Aatrex or ZA 1296 with Lightning increased common waterhemp control to at least 85%. All herbicide treatments except Lightning alone and Lightning plus Aim provided good control of common ragweed at 56 DAPO. Giant ragweed control was greatest when Aatrex, Clarity, Distinct, Marksman or ZA 1296 was tank mixed with Lightning.

Corn yield ranged from 21 bu/A in nontreated plots to 157 bu/A. Corn yield tended to be highest in plots that received a sequential application of Aatrex followed by Lightning.

HERBICIDES

AATREX 90 WG
AIM 40 WG
CLARITY 4 EC
DISTINCT 70 WG
GUARDSMAN 5 L
LIGHTNING 70 WG
MARKSMAN 3.2 L
PROWL 3.3 EC
ZA1296 4 EC

WEEDS

FOXTAIL, GIANT
NUTSEDGE, YELLOW
RAGWEED, COMMON
RAGWEED, GIANT
WATERHEMP, COMMON

CROP

CORN, FIELD

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PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Lightning Combinations in Clearfield Corn.

Project Code: 00-24B-W80 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. AMATA	WATERHEMP, COMMON	AMARANTHUS RUDIS SAUER
4. AMBEL	RAGWEED, COMMON	AMBROSIA ARTEMISIIFOLIA L.
5. AMBTR	RAGWEED, GIANT	AMBROSIA TRIFIDA L.

Crop 1:	ZEAMX CORN, FIELD	Variety:	GARST 8342 IT
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:	27.5 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: 73 LB/A,	K: 286 LB/A	

APPLICATION DESCRIPTION

	A	B	C
Application Date:	May-4-00	May-24-00	May-31-00
Time of Day:	18:30	13:00	9:30
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	2-4"W-1	2-4"W-2
Applic. Placement:	BROSOL	BROFOL	BROFOL
Air Temp., Unit:	77 F	85 F	80 F
% Relative Humidity:	56	37	85
Wind Velocity, Unit:	3-5 MPH	2-4 MPH	1-3 MPH
Soil Moisture:	NORMAL	NORMAL	NORMAL
% Cloud Cover:			0

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	NA	ZEAMX V4	ZEAMX V5
Height, Unit:	NA	10 IN	14 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code:		SETFA	SETFA
Stage(leaves):		2-4	1-3
Height(inches):		3-6	1-3
Density:		HIGH	LOW
Weed 2 Code:		CYPES	CYPES
Stage(leaves):		3-4	4-6
Height(inches):		3-4	4-6
Density:		MEDIUM	MEDIUM
Weed 3 Code:		AMATA	
Stage(leaves):		2-5	
Height(inches):		1-4	
Density:		HIGH	
Weed 4 Code:		AMBEL	AMBEL
Stage(leaves):		2-6	COTL-2
Height(inches):		2-4	1-4
Density:		LOW	LOW
Weed 5 Code:		AMBTR	AMBTR
Stage(leaves):		2-6	COTL-4
Height(inches):		4-8	1-4
Density:		HIGH	HIGH

APPLICATION EQUIPMENT

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

NOTES:

Harvested Sep-29-00, (2) 30 inch rows by 24.5 ft.

TABLE. LIGHTNING COMBINATIONS IN CLEARFIELD CORN. PROJECT CODE:00-24B-W80

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD	ZEAMX INJURY			CONTROL, DAYS AFTER 2-4"W-2															
								DA 2-4"W-2			SETFA			CYPES			AMATA			AMBEL			AMBTR			
								14	28	56	14	28	56	14	28	56	14	28	56	14	28	56	14	28	56	
BU/A	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%							
1 AATREX	90 WG	2.0	LB A/A	2.22	LB/A	PRE	A	155	0	0	0	98	99	97	52	73	93	96	92	94	98	98	96	83	77	82
1 LIGHTNING	70 WG	0.056	LB A/A	1.28	OZ/A	2-4"W-2	C																			
1 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W-2	C																			
1 28% UAN	100 LIQ	1.0	QT/A	1.0	QT/A	2-4"W-2	C																			
2 AATREX	90 WG	1.0	LB A/A	1.11	LB/A	PRE	A	157	0	0	0	99	99	99	70	77	93	99	98	99	99	99	99	94	92	94
2 LIGHTNING	70 WG	0.056	LB A/A	1.28	OZ/A	2-4"W-2	C																			
2 AATREX	90 WG	1.0	LB A/A	1.11	LB/A	2-4"W-2	C																			
2 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W-2	C																			
2 28% UAN	100 LIQ	1.0	QT/A	1.0	QT/A	2-4"W-2	C																			
3 AATREX	90 WG	2.0	LB A/A	2.22	LB/A	PRE	A	120	0	0	0	99	99	99	67	80	88	99	98	99	99	98	99	87	79	77
3 LIGHTNING	70 WG	0.056	LB A/A	1.28	OZ/A	2-4"W-2	C																			
3 PROWL	3.3 EC	1.05	LB A/A	2.5	PT/A	2-4"W-2	C																			
3 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W-2	C																			
3 28% UAN	100 LIQ	1.0	QT/A	1.0	QT/A	2-4"W-2	C																			
4 AATREX	90 WG	1.5	LB A/A	1.67	LB/A	PRE	A	127	0	0	0	99	97	99	87	91	94	99	96	97	99	99	99	93	95	96
4 LIGHTNING	70 WG	0.056	LB A/A	1.28	OZ/A	2-4"W-2	C																			
4 DISTINCT	70 WG	0.175	LB A/A	4.0	OZ/A	2-4"W-2	C																			
4 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	2-4"W-2	C																			
4 28% UAN	100 LIQ	1.0	QT/A	1.0	QT/A	2-4"W-2	C																			
5 AATREX	90 WG	1.5	LB A/A	1.67	LB/A	PRE	A	126	0	0	0	98	99	99	80	82	90	99	99	99	99	99	99	90	92	91
5 LIGHTNING	70 WG	0.056	LB A/A	1.28	OZ/A	2-4"W-2	C																			
5 CLARITY	4 EC	0.125	LB A/A	4.0	OZ/A	2-4"W-2	C																			
5 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	2-4"W-2	C																			
5 28% UAN	100 LIQ	1.0	QT/A	1.0	QT/A	2-4"W-2	C																			
6 AATREX	90 WG	1.5	LB A/A	1.67	LB/A	PRE	A	139	0	0	0	98	99	99	68	70	82	99	99	99	99	99	98	94	95	96
6 LIGHTNING	70 WG	0.056	LB A/A	1.28	OZ/A	2-4"W-2	C																			
6 MARKSMAN	3.2 L	0.6	LB A/A	1.5	PT/A	2-4"W-2	C																			
6 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	2-4"W-2	C																			
6 28% UAN	100 LIQ	1.0	QT/A	1.0	QT/A	2-4"W-2	C																			
7 AATREX	90 WG	1.5	LB A/A	1.67	LB/A	PRE	A	131	10	0	0	96	98	98	68	82	86	99	98	99	99	96	96	87	76	73
7 LIGHTNING	70 WG	0.056	LB A/A	1.28	OZ/A	2-4"W-2	C																			
7 AIM	40 WG	0.008	LB A/A	0.32	OZ/A	2-4"W-2	C																			
7 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	2-4"W-2	C																			
7 28% UAN	100 LIQ	1.0	QT/A	1.0	QT/A	2-4"W-2	C																			
8 AATREX	90 WG	1.0	LB A/A	1.11	LB/A	PRE	A	134	0	0	0	93	99	97	63	76	83	99	98	99	99	98	98	93	90	93
8 LIGHTNING	70 WG	0.056	LB A/A	1.28	OZ/A	2-4"W-2	C																			
8 ZA1296	4 EC	0.063	LB A/A	2.0	OZ/A	2-4"W-2	C																			
8 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W-2	C																			
8 28% UAN	100 LIQ	1.0	QT/A	1.0	QT/A	2-4"W-2	C																			

(CONTINUED)

TABLE. LIGHTNING COMBINATIONS IN CLEARFIELD CORN. PROJECT CODE:00-24B-W80 (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD	ZEAMX INJURY CONTROL, DAYS AFTER 2-4"W-2																	
								DA 2-4"W-2			SETFA			CYPES			AMATA			AMBEL			AMBTR		
								14	28	56	14	28	56	14	28	56	14	28	56	14	28	56	14	28	56
9 LIGHTNING	70 WG	0.056	LB A/A	1.28	OZ/A	2-4"W-1 B	134	0	0	0	96	99	98	77	70	82	98	87	89	93	94	94	88	77	86
9 ZA1296	4 EC	0.063	LB A/A	2.0	OZ/A	2-4"W-1 B																			
9 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W-1 B																			
9 28% UAN	100 LIQ	1.0	QT/A	1.0	QT/A	2-4"W-1 B																			
10 GUARDSMAN	5 L	2.8	LB A/A	2.24	QT/A	PRE A	110	0	0	0	99	99	99	96	95	96	99	96	96	99	96	98	82	65	70
10 LIGHTNING	70 WG	0.056	LB A/A	1.28	OZ/A	2-4"W-2 C																			
10 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W-2 C																			
10 28% UAN	100 LIQ	1.0	QT/A	1.0	QT/A	2-4"W-2 C																			
11 GUARDSMAN	5 L	2.8	LB A/A	2.24	QT/A	PRE A	115	0	0	0	99	99	99	95	94	92	99	99	98	99	98	99	92	83	83
11 LIGHTNING	70 WG	0.056	LB A/A	1.28	OZ/A	2-4"W-2 C																			
11 AATREX	90 WG	0.5	LB A/A	8.9	OZ/A	2-4"W-2 C																			
11 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W-2 C																			
11 28% UAN	100 LIQ	1.0	QT/A	1.0	QT/A	2-4"W-2 C																			
12 LIGHTNING	70 WG	0.056	LB A/A	1.28	OZ/A	2-4"W-1 B	88	0	0	0	96	99	96	85	95	95	0	3	3	57	58	60	80	83	83
12 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W-1 B																			
12 28% UAN	100 LIQ	1.0	QT/A	1.0	QT/A	2-4"W-1 B																			
13 LIGHTNING	70 WG	0.056	LB A/A	1.28	OZ/A	2-4"W-1 B	114	0	0	0	95	98	98	87	85	93	87	85	92	99	99	98	96	88	94
13 AATREX	90 WG	1.0	LB A/A	1.11	LB/A	2-4"W-1 B																			
13 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W-1 B																			
13 28% UAN	100 LIQ	1.0	QT/A	1.0	QT/A	2-4"W-1 B																			
14 LIGHTNING	70 WG	0.056	LB A/A	1.28	OZ/A	2-4"W-1 B	151	0	0	0	93	98	96	93	85	93	88	78	85	91	98	98	85	82	87
14 DISTINCT	70 WG	0.175	LB A/A	4.0	OZ/A	2-4"W-1 B																			
14 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	2-4"W-1 B																			
14 28% UAN	100 LIQ	1.0	QT/A	1.0	QT/A	2-4"W-1 B																			
15 LIGHTNING	70 WG	0.056	LB A/A	1.28	OZ/A	2-4"W-1 B	122	7	0	0	95	96	96	78	93	96	53	43	48	78	70	75	88	80	82
15 AIM	40 WG	0.008	LB A/A	0.32	OZ/A	2-4"W-1 B																			
15 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	2-4"W-1 B																			
15 28% UAN	100 LIQ	1.0	QT/A	1.0	QT/A	2-4"W-1 B																			
16 NONTREATED							21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LSD							43	1	0	0	4	2	3	27	16	12	6	10	11	11	19	20	8	13	14
P							0.01	0.01	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	0.01	0.01	0.01	0.01

1. PROTOCOL: AMCY.

2. RATING DATES:

14 DA 2-4"W-2, 28 DA 2-4"W-2, AND 56 DA 2-4"W-2 ON JUN-14-00, JUN-28-00, AND JUL-26-00, RESPECTIVELY.