

Sequential Herbicide Programs in Corn.

00-22-S110

OBJECTIVE: Evaluate various preemergence followed by postemergence sequential herbicide programs for use in corn.

SUMMARY: Corn injury ranged from 1 to 15% at 7 days after postemergence herbicide applications (DAPO). The greatest injury was observed with Distinct (15%) and PCC196 (10%). By 28 DAPO no corn injury was observed from any treatment.

All herbicide treatments provided excellent control of giant foxtail. Yellow nutsedge control tended to be greatest from treatments that included Dual II Magnum. Velvetleaf control was at least 90% from all sequential herbicide treatments except Degree followed by Buctril/ Atrazine and Outlook followed Clarity. Treatments that included Shotgun, PCC196, or Distinct controlled at least 91% of ivyleaf morningglory. Corn yield ranged from 108 to 176 bu/A.

HERBICIDES

AATREX 90 WG
 ACCENT 75 WG
 BASIS GOLD 90 WG
 BICEP II MAGNUM 5.5 L
 BUCTRIL/ATRAZINE 3 L
 CELEBRITY PLUS 70 WG
 CLARITY 4 EC
 DEGREE 3.8 ME
 DISTINCT 70 WG
 DUAL II MAGNUM 7.64 EC
 GUARDSMAN 5 L
 HORNET 68.5 WG
 LEADOFF 5 L
 MARKSMAN 3.2 L
 NORTHSTAR 47.4 WG
 OUTLOOK 6 EC
 PCC196 3.28 L
 PROWL 3.3 EC
 SHOTGUN 3.25 L
 SPIRIT 57 WG
 TOPNOTCH 3.2 ME
 AWAKEN 100 LIQ
 LI 700 100 LIQ

WEEDS

FOXTAIL, GIANT
 MORNINGGLORY, IVYLEAF
 NUTSEGE, YELLOW
 VELVETLEAF

CROP

CORN, FIELD

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Sequential Herbicide Programs in Corn.

Project Code: 00-22-S110 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.

Crop 1:	ZEAMX CORN, FIELD	Variety:	P33G28 LL
Planting Method:	SEEDED	Planting Date:	May-2-00
Rate:	28000 S/A	Depth:	1.5 IN
Row Spacing:	30 IN		

Plot Width, Unit:	10 FT	Plot Length, Unit:	27 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 0 LB/A

Soil Name:	CLARKSDALE	% OM: 2.5	pH: 6.3	CEC: 12
Texture:	SILT LOAM	P ₁ : 68 LB/A,	K: 441 LB/A	

APPLICATION DESCRIPTION

	A	B	C
Application Date:	May-3-00	May-19-00	May-25-00
Time of Day:	15:45	6:00	12:30
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	3-5"CN	6-10"CN
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	68 F	68 F	72 F
% Relative Humidity:	96	98	22
Wind Velocity, Unit:	4-6 MPH	4-6 MPH	2-4 MPH
Soil Moisture:	NORMAL	NORMAL	NORMAL
% Cloud Cover:	100	100	0

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	NA	ZEAMX V2	ZEAMX V4
Height, Unit:	NA	4-5 IN	7-9 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code:		SETFA	SETFA
Stage(leaves):		2-3	2-4
Height(inches):		1-2	2-4
Density:		MEDIUM	MEDIUM
Weed 2 Code:		CYPES	CYPES
Stage(leaves):		3-4	3-5
Height(inches):		2-3	3-5
Density:		LOW	MEDIUM
Weed 3 Code:			ABUTH
Stage(leaves):			COTL-2
Height(inches):			1-3
Density:			LOW
Weed 4 Code:		IPOHE	IPOHE
Stage(leaves):		COTL-1	COTL-2
Height(inches):		1-2	2-4
Density:		MEDIUM	MEDIUM

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-22-00, (2) 30 inch rows by 24 ft.

TABLE. SEQUENTIAL HERBICIDE PROGRAMS IN CORN. PROJECT CODE:00-22-S110

TREATMENT	FORM.	RATE	UNIT	PROD	RATE	APPL TIME	APPL CODE	YIELD	ZEAMX INJURY				CONTROL											
									7 DAT	DA			SETFA			CYPES			ABUTH			IPOHE		
										14 DA	6-10"CN		DA			DA			DA			DA		
											3-5"CN	28	56	14 DA	28	56	14 DA	28	56	14 DA	28	56	14 DA	28
BU/A	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%				
1 NONTREATED								109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2 DEGREE	3.8 ME	1.76	LB A/A	3.7	PT/A	PRE	A	158	3	3	0	0	99	99	98	97	80	78	89	81	81	98	95	94
2 BUCTRIL/ATRAZINE	3 L	0.75	LB A/A	2.0	PT/A	6-10"CN	C																	
3 OUTLOOK	6 EC	0.75	LB A/A	1.0	PT/A	PRE	A	169	7	10	0	0	99	99	97	96	65	67	99	99	97	98	87	85
3 MARKSMAN	3.2 L	1.4	LB A/A	3.5	PT/A	3-5"CN	B																	
3 28% UAN	100 LIQ	2.5	% V/V	2.5	%V/V	3-5"CN	B																	
4 DUAL II MAGNUM	7.64 EC	1.24	LB A/A	1.3	PT/A	PRE	A	158	2	0	0	0	99	99	98	99	88	87	99	96	95	93	85	87
4 NORTHSTAR	47.4 WG	0.148	LB A/A	5.0	OZ/A	6-10"CN	C																	
4 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	6-10"CN	C																	
4 28% UAN	100 LIQ	2.5	% V/V	2.5	%V/V	6-10"CN	C																	
5 OUTLOOK	6 EC	0.75	LB A/A	1.0	PT/A	PRE	A	155	7	7	0	0	99	98	96	98	75	70	99	87	83	96	82	82
5 CLARITY	4 EC	0.5	LB A/A	16.0	OZ/A	3-5"CN	B																	
5 28% UAN	100 LIQ	2.5	% V/V	2.5	%V/V	3-5"CN	B																	
6 DUAL II MAGNUM	7.64 EC	1.24	LB A/A	1.3	PT/A	PRE	A	175	6	0	0	0	99	98	97	98	83	82	99	99	99	93	65	60
6 SPIRIT	57 WG	0.036	LB A/A	1.01	OZ/A	6-10"CN	C																	
6 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	6-10"CN	C																	
6 28% UAN	100 LIQ	2.5	% V/V	2.5	%V/V	6-10"CN	C																	
7 OUTLOOK	6 EC	0.75	LB A/A	1.0	PT/A	PRE	A	135	15	5	0	0	99	99	98	98	78	72	98	99	97	95	92	91
7 DISTINCT	70 WG	0.263	LB A/A	6.0	OZ/A	6-10"CN	C																	
7 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	6-10"CN	C																	
7 28% UAN	100 LIQ	1.25	% V/V	1.25	%V/V	6-10"CN	C																	
8 TOPNOTCH	3.2 ME	1.6	LB A/A	4.0	PT/A	PRE	A	150	3	2	0	0	99	99	98	95	65	58	99	99	98	96	72	67
8 HORNET	68.5 WG	0.128	LB A/A	3.0	OZ/A	6-10"CN	C																	
8 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	6-10"CN	C																	
9 OUTLOOK	6 EC	0.52	LB A/A	11.1	OZ/A	PRE	A	141	5	3	0	0	99	99	96	96	77	70	99	95	93	97	87	83
9 CELEBRITY PLUS	70 WG	0.21	LB A/A	4.8	OZ/A	6-10"CN	C																	
9 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	6-10"CN	C																	
9 28% UAN	100 LIQ	2.5	% V/V	2.5	%V/V	6-10"CN	C																	
10 LEADOFF	5 L	0.94	LB A/A	1.5	PT/A	PRE	A	169	2	0	0	0	99	99	97	92	62	53	99	95	93	99	90	88
10 BASIS GOLD	90 WG	0.78	LB A/A	13.9	OZ/A	6-10"CN	C																	
10 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	6-10"CN	C																	
10 28% UAN	100 LIQ	2.5	% V/V	2.5	%V/V	6-10"CN	C																	
11 GUARDSMAN	5 L	0.94	LB A/A	1.5	PT/A	PRE	A	157	1	0	0	0	99	99	97	98	83	83	98	90	90	98	87	85
11 CELEBRITY PLUS	70 WG	0.21	LB A/A	4.8	OZ/A	6-10"CN	C																	
11 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	6-10"CN	C																	
11 28% UAN	100 LIQ	2.5	% V/V	2.5	%V/V	6-10"CN	C																	

(CONTINUED)

TABLE. SEQUENTIAL HERBICIDE PROGRAMS IN CORN. PROJECT CODE:00-22-S110 (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD	ZEAMX INJURY				CONTROL													
								7 DAT	14 DA		6-10"CN		SETFA			CYPES			ABUTH			IPOHE			
									3-5"CN	DA		6-10"CN		DA			DA			DA			DA		
										28	56	28	56	3-5"CN	28	56	3-5"CN	28	56	3-5"CN	28	56	3-5"CN	28	56
BU/A	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%					
12 AATREX	90 WG	1.5	LB A/A	1.67	LB/A	PRE	A	173	4	3	0	0	99	99	97	93	77	73	99	99	97	99	91	85	
12 PROWL	3.3 EC	1.05	LB A/A	2.55	PT/A	6-10"CN	C																		
12 ACCENT	75 WG	0.0313	LB A/A	0.67	OZ/A	6-10"CN	C																		
12 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	6-10"CN	C																		
12 28% UAN	100 LIQ	2.5	% V/V	2.5	%V/V	6-10"CN	C																		
13 PROWL	3.3 EC	1.05	LB A/A	2.55	PT/A	PRE	A	160	3	0	0	0	99	99	97	62	47	38	99	99	97	99	92	89	
13 BASIS GOLD	90 WG	0.782	LB A/A	14.0	OZ/A	6-10"CN	C																		
13 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	6-10"CN	C																		
13 28% UAN	100 LIQ	2.5	% V/V	2.5	%V/V	6-10"CN	C																		
14 PROWL	3.3 EC	1.05	LB A/A	2.55	PT/A	PRE	A	163	7	5	0	0	99	99	97	96	72	68	99	99	97	99	87	85	
14 BICEP II MAGNUM	5.5 L	1.37	LB A/A	2.0	PT/A	PRE	A																		
14 MARKSMAN	3.2 L	0.6	LB A/A	1.5	PT/A	3-5"CN	B																		
14 ACTIVATOR 90	100 LIQ	0.25	LB A/A	0.02	PT/A	3-5"CN	B																		
15 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33	PT/A	PRE	A	159	3	3	0	0	99	99	98	98	87	85	99	99	98	99	94	93	
15 SHOTGUN	3.25 L	0.813	LB A/A	2.0	PT/A	3-5"CN	B																		
16 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33	PT/A	PRE	A	154	3	7	0	0	99	99	98	98	85	80	99	98	97	99	94	93	
16 SHOTGUN	3.25 L	1.02	LB A/A	2.5	PT/A	3-5"CN	B																		
16 LI 700	100 LIQ	0.25	% V/V	0.25	%V/V	3-5"CN	B																		
17 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33	PT/A	PRE	A	162	5	15	0	0	99	99	97	98	88	83	99	98	96	99	96	93	
17 SHOTGUN	3.25 L	1.22	LB A/A	3.0	PT/A	3-5"CN	B																		
18 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33	PT/A	PRE	A	150	5	15	0	0	99	99	98	99	90	90	99	98	97	99	94	93	
18 SHOTGUN	3.25 L	1.22	LB A/A	3.0	PT/A	3-5"CN	B																		
18 AWAKEN	100 LIQ	3.0	LB A/A	3.84	OZ/A	3-5"CN	B																		
19 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33	PT/A	PRE	A	171	8	7	0	0	99	99	97	98	85	83	99	93	92	99	93	92	
19 PCC196	3.28 L	0.82	LB A/A	2.0	PT/A	3-5"CN	B																		
20 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33	PT/A	PRE	A	137	10	18	0	0	99	99	97	98	88	87	99	99	97	99	93	92	
20 PCC196	3.28 L	1.23	LB A/A	3.0	PT/A	3-5"CN	B																		
21 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33	PT/A	PRE	A	176	10	12	0	0	99	99	98	97	90	86	99	98	96	99	95	95	
21 PCC196	3.28 L	1.64	LB A/A	4.0	PT/A	3-5"CN	B																		
22 DUAL II MAGNUM	7.64 EC	1.27	LB A/A	1.33	PT/A	PRE	A	108	3	0	0	0	99	98	97	97	83	78	0	0	0	23	0	0	
LSD								36	5	4	0	0	0	2	2	14	10	12	6	11	11	7	6	8	
P								0.02	0.01	0.01	1.0	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	

1. PROTOCOL: BASF TRTS 1-11 (H00404GLS3); AMCY TRTS 12-14; UAP TRTS 15-22.
2. RATING DATES:
 7 DAYS AFTER 3-5"CN AND 6-10"CN APPLICATIONS ON MAY-26-00 AND JUN-1-00, RESPECTIVELY.
 14 DA 3-5"CN, AND 28 AND 56 DA 6-10"CN ON JUN-2-00, JUN-22-00, AND JUL-20-00, RESPECTIVELY.