Total Preemergence Herbicide Programs in Corn.

01-50E-S80

OBJECTIVE: Evaluate various herbicide programs utilizing only preemergence applications.

SUMMARY: No corn injury was observed from any treatment. All herbicide treatments controlled at least 95% of giant foxtail at 56 days after treatment (DAT). Common cocklebur control was highest with treatments that included Aatrex or Hornet and least with USA 2001. Similarly, treatments with Aatrex or Hornet tended to provide greater control of giant ragweed at 56 DAT compared to Fultime alone, USA 2001, Epic, Guardsman Max, Bicep II Magnum and Degree Xtra. Overall weed control 56 DAT was highest with Balance Pro plus Define plus Aatrex and USA 2001 plus Aatrex.

Corn yield ranged from 105 bu/A in nontreated plots to 218 bu/A. Corn yield was reduced in plots with poor common cocklebur and giant ragweed control.

HERBICIDES	WEEDS	CROP
AATREX 90 WG	cocklebur, common	corn, field
AXIOM 68 WG	foxtail, giant	
BALANCE PRO 4 SC	ragweed, giant	
BICEP II MAGNUM 5.5 L		
DEFINE 60 WG		
DEGREE XTRA 4 L		
EPIC 58 WG		
FULTIME 4 SC		
GUARDSMAN MAX 5 L		
HORNET 68.5 WG		
PRINCEP 90 WG		
USA 2001 71.5 WG		

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Total Preemergence Herbicide Programs in Corn.

Project Code: 01-50E-S80 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
Trial Status: Final **Initiation Date:** 4-27-01

Objective:
Evaluate various herbicide programs utilizing only preemergence applications.

	Weed Code	Common Name	Scientific Name
1.	XANST	cocklebur, common	Xanthium strumarium L.
2.	AMBTR	ragweed, giant	Ambrosia trifida L.
3.	SETFA	foxtail, giant	Setaria faberi Herrm.

Crop 1: ZEAMX corn, field **Variety:** P33G28 LL
Planting Method: Seeded **Planting Date:** 5-9-01
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:** Randomized complete block
Previous Crop, Year: GLXMA, 2000
Field Prep./Maintenance: N 150 LB/A, P2O5 0 LB/A, K2O 200 LB/A

Soil Name: Weir **% OM:** 1.4 **pH:** 6.9 **CEC:** 12
Texture: Silt loam **Fert. Level:** P1: 83 LB/A, K: 181 LB/A

APPLICATION DESCRIPTION

	A
Application Date:	5-10-01
Time of Day:	18:00
Application Method:	Spray
Application Timing:	PRE
Applic. Placement:	BROSOI
Air Temp., Unit:	86 F
% Relative Humidity:	36
Wind Velocity, Unit:	5-10 MPH
Soil Moisture:	NORMAL
% Cloud Cover:	30

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ZEAMX NA
Height, Unit:	NA NA

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	XANST
Weed 2 Code:	AMBTR
Weed 3 Code:	SETFA

APPLICATION EQUIPMENT

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

NOTES: HARVESTED 10-6-01, 2 ROWS X 19 FT.

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	ZEAMX Yield bu/A 10-6-01	ZEAMX Injury Percent 6-7-01 28 DA-A	ZEAMX Injury Percent 7-5-01 56 DA-A	SETFA Control Percent 6-7-01 28 DA-A	SETFA Control Percent 7-5-01 56 DA-A	XANST Control Percent 6-7-01 28 DA-A	XANST Control Percent 7-5-01 56 DA-A	AMBTR Control Percent 6-7-01 28 DA-A	AMBTR Control Percent 7-5-01 56 DA-A
1	NONTREATED									105	0	0	0	0	0	0	0	0
2	FULTIME	4	SC	3.25	LB A/A	3.25	QT/A	PRE	A	186	0	0	99	97	83	77	83	71
3	FULTIME	4	SC	3.25	LB A/A	3.25	QT/A	PRE	A	180	0	0	99	97	89	86	89	81
3	HORNET	68.5	WG	0.128	LB A/A	3	OZ/A	PRE	A									
4	BICEP II MAGNUM	5.5	L	2.89	LB A/A	2.1	QT/A	PRE	A	213	0	0	99	97	88	80	82	79
4	HORNET	68.5	WG	0.128	LB A/A	3	OZ/A	PRE	A									
5	DEGREE XTRA	4	L	3.0	LB A/A	3	QT/A	PRE	A	205	0	0	99	97	91	82	92	76
5	HORNET	68.5	WG	0.128	LB A/A	3	OZ/A	PRE	A									
6	BALANCE PRO	4	SC	0.063	LB A/A	2	OZ/A	PRE	A	211	0	0	99	95	92	82	92	78
6	HORNET	68.5	WG	0.128	LB A/A	3	OZ/A	PRE	A									
6	PRINCEP	90	WG	1.0	LB A/A	1.1	LB/A	PRE	A									
7	AXIOM	68	WG	0.68	LB A/A	16	OZ/A	PRE	A	192	0	0	99	96	92	82	90	74
7	AATREX	90	WG	1.6	LB A/A	1.78	LB/A	PRE	A									
8	EPIC	58	WG	0.435	LB A/A	12	OZ/A	PRE	A	218	0	0	99	97	91	83	90	85
8	AATREX	90	WG	1.35	LB A/A	1.5	LB/A	PRE	A									
9	USA 2001	71.5	WG	0.715	LB A/A	16	OZ/A	PRE	A	213	0	0	99	97	98	88	93	88
9	AATREX	90	WG	1.35	LB A/A	1.5	LB/A	PRE	A									
10	USA 2001	71.5	WG	0.715	LB A/A	16	OZ/A	PRE	A	169	0	0	99	97	83	25	83	22
11	AXIOM	68	WG	0.723	LB A/A	17	OZ/A	PRE	A	191	0	0	99	97	88	75	83	72
11	HORNET	68.5	WG	0.128	LB A/A	3	OZ/A	PRE	A									
12	EPIC	58	WG	0.435	LB A/A	12	OZ/A	PRE	A	146	0	0	99	97	84	62	82	57
13	GUARDSMAN MAX	5	L	2.5	LB A/A	4	PT/A	PRE	A	184	0	0	99	97	85	62	87	55
14	BICEP II MAGNUM	5.5	L	2.89	LB A/A	2.1	QT/A	PRE	A	207	0	0	99	97	91	72	87	67
15	DEGREE XTRA	4	L	3.0	LB A/A	3	QT/A	PRE	A	193	0	0	99	97	92	75	95	63
16	BALANCE PRO	4	SC	0.0703	LB A/A	2.25	OZ/A	PRE	A	202	0	0	99	97	93	87	91	85
16	DEFINE	60	WG	0.375	LB A/A	10	OZ/A	PRE	A									
16	AATREX	90	WG	1.0	LB A/A	1.1	LB/A	PRE	A									
LSD (P=.05)										32.8	0.0	0.0	0.0	1.3	6.5	9.2	6.5	11.9
Replicate F										6.325	0.000	0.000	0.000	1.771	0.312	0.282	5.759	2.122
Replicate Prob(F)										0.0054	1.0000	1.0000	1.0000	0.1875	0.7345	0.7562	0.0076	0.1374
Treatment F										6.634	0.000	0.000	0.000	3051.942	101.384	57.197	99.232	33.142
Treatment Prob(F)										0.0001	1.0000	1.0000	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: Dow (trts 2-6); Bayer (trts 7-12); BASF (trts 13 and 14); SIU (trts 15 and 16);
2. DA-A = days after PRE application.