

Postemergence Broadleaf Herbicides in Corn.

01-21N-E250

OBJECTIVE: Compare various postemergence broadleaf herbicides, Aim tank-mix partners, and adjuvants in corn.

SUMMARY: Corn injury was 5% or less from all treatments at 14 days after treatment (DAT). All preemergence (PRE) followed by postemergence (POST) treatments controlled at least 94% of giant foxtail and 84% of common ragweed. Common cocklebur control with Topnotch PRE followed by Teamwork plus Aatrex POST was increased by 32% when Sterling was added POST. Giant foxtail, common ragweed, and common cocklebur control was 80% or less from all treatments with only a POST application except Define plus Aatrex and Fultime plus Hornet.

Corn yield ranged from 102 bu/A in nontreated plots to 196 bu/A. Corn yield tended to be greater in plots where a PRE herbicide was applied.

HERBICIDES	ADJUVANTS	WEEDS	CROP
AATREX 90 WG	28% UAN 100 LIQ	cocklebur, common	corn, field
ACCENT 75 WG	ACTIVATOR 90 100 LIQ	foxtail, giant	
AIM 40 WG	AMS 100 DRY	ragweed, common	
BASIS GOLD 90 WG	AR 200-TM		
CLARITY 4 EC	AR 581-1P 100 DRY		
DEFINE 60 WG	AR-A 100 LIQ		
DEGREE 3.8 ME	AR-B 100 DRY		
DISTINCT 70 WG	CLASS ACT NG 100 LIQ		
FULTIME 4 SC	DE 500-TM		
HORNET 68.5 WG	DE-A 100 DRY		
NORTHSTAR 47.4 WG	DE-B 100 DRY		
PERMIT 75 WG	DESTINY MSO 100 LIQ		
STARANE 1.5 EC	LI 700 100 LIQ		
STERLING 4 EC	N-PAK AMS 100 LIQ		
TEAMWORK + ATRAZINE 90 WG	PREFERENCE 100 LIQ		
TEAMWORK 40 WG	PRIME OIL COC 100 LIQ		
TOPNOTCH 3.2 ME	SE 581-1P 100 DRY		

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Postemergence Broadleaf Herbicides in Corn.

Project Code: 01-21N-E250 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: 5-10-01

Objective:

Compare various postemergence broadleaf herbicides, Aim tank-mix partners, and adjuvants in corn.

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

Crop 1:	ZEAMX corn, field	Variety:	P33G28 LL
Planting Method:	Seeded	Planting Date:	5-10-01
Rate:	28000 S/A	Depth:	1.5 IN
Row Spacing:	30 IN		

Plot Width, Unit:	10 FT	Plot Length, Unit:	30 FT	Reps:	3
Tillage Type:	Reduced-Till	Study Design:	Randomized complete block		
Previous Crop, Year:	GLXMA, 2000				
Field Prep./Maintenance:	N 150 LB/A, P205 0 LB/A, K20 150 LB/A				

Soil Name:	Ebbert	% OM:	1.4	pH:	5.7	CEC:	14
Texture:	Silt loam	Fert. Level:	P1: 97 LB/A, K: 291 LB/A				

APPLICATION DESCRIPTION

	A	B	C
Application Date:	5-14-01	6-7-01	6-12-01
Time of Day:	11:00	20:00	13:30
Application Method:	Spray	Spray	Spray
Application Timing:	PRE	4"CN	1-4"W
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	82 F	80 F	92 F
% Relative Humidity:	50	56	50
Wind Velocity, Unit:	4-5 MPH	5 MPH	2-5 MPH
Dew Presence (Y/N):	N		
Soil Moisture:	BELNOR	NORMAL	NORMAL
% Cloud Cover:	10		10

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMX NA	ZEAMX V4	ZEAMX V5
Height, Unit:	NA NA	8-10 IN	12-16 IN

WEED STAGE AT EACH APPLICATION

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

APPLICATION EQUIPMENT

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

NOTES: HARVESTED 10-10-01, 2 ROWS X 22 FT.

Postemergence Broadleaf Herbicides in Corn.

Project Code: 01-21N-E250 Location: Belleville Research Center

Weed Code	ZEAMX				SETFA	SETFA	AMBEL	AMBEL	XANST	XANST
Crop Code	Yield	Injury	Injury	Injury	Control	Control	Control	Control	Control	Control
Rating Data Type	bu/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit	10-10-01	6-19-01	6-26-01	7-10-01	6-26-01	7-10-01	6-26-01	7-10-01	6-26-01	7-10-01
Rating Date	7 DA-C	14 DA-C	28 DA-C	14 DA-C	28 DA-C	14 DA-C	28 DA-C	14 DA-C	28 DA-C	14 DA-C
Trt-Eval Interval										

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	10-10-01	6-19-01	6-26-01	7-10-01	6-26-01	7-10-01	6-26-01	7-10-01		
1	NONTREATED									102	0	0	0	0	0	0	0		
2	TOPNOTCH	3.2	ME	2.0	LB A/A	5	PT/A	PRE	A	184	3	4	0	99	96	96	95	90	89
	2 AIM	40	WG	0.008	LB A/A	0.32	OZ/A	1-4"	W C										
	2 AATREX	90	WG	0.5	LB A/A	8.9	OZ/A	1-4"	W C										
	2 CLARITY	4	EC	0.125	LB A/A	4	OZ/A	1-4"	W C										
	2 ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	1-4"	W C										
3	TOPNOTCH	3.2	ME	2.0	LB A/A	5	PT/A	PRE	A	185	3	5	0	98	96	87	84	82	89
	3 AIM	40	WG	0.008	LB A/A	0.32	OZ/A	1-4"	W C										
	3 HORNET	68.5	WG	0.128	LB A/A	3	OZ/A	1-4"	W C										
	3 ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	1-4"	W C										
4	TOPNOTCH	3.2	ME	2.0	LB A/A	5	PT/A	PRE	A	190	4	4	0	99	96	97	95	92	87
	4 AIM	40	WG	0.008	LB A/A	0.32	OZ/A	1-4"	W C										
	4 AATREX	90	WG	1.0	LB A/A	17.8	OZ/A	1-4"	W C										
	4 PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	1-4"	W C										
5	TOPNOTCH	3.2	ME	2.0	LB A/A	5	PT/A	PRE	A	190	4	5	0	97	94	94	91	86	84
	5 AIM	40	WG	0.008	LB A/A	0.32	OZ/A	1-4"	W C										
	5 CLARITY	4	EC	0.125	LB A/A	4	OZ/A	1-4"	W C										
	5 ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	1-4"	W C										
6	AIM	40	WG	0.008	LB A/A	0.32	OZ/A	1-4"	W C	188	4	4	0	82	73	76	70	75	70
	6 BASIS GOLD	90	WG	0.788	LB A/A	14	OZ/A	1-4"	W C										
	6 PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	1-4"	W C										
	6 28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	1-4"	W C										
7	TOPNOTCH	3.2	ME	2.0	LB A/A	5	PT/A	PRE	A	178	4	5	0	98	97	97	95	87	87
	7 AIM	40	WG	0.008	LB A/A	0.32	OZ/A	1-4"	W C										
	7 NORTHSTAR	47.4	WG	0.15	LB A/A	5	OZ/A	1-4"	W C										
	7 ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	1-4"	W C										
8	TOPNOTCH	3.2	ME	2.0	LB A/A	5	PT/A	PRE	A	187	3	4	4	99	96	97	96	95	90
	8 AIM	40	WG	0.008	LB A/A	0.32	OZ/A	1-4"	W C										
	8 STARANE	1.5	EC	0.125	LB A/A	0.67	PT/A	1-4"	W C										
	8 AATREX	90	WG	0.5	LB A/A	8.9	OZ/A	1-4"	W C										
	8 LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	1-4"	W C										
9	TOPNOTCH	3.2	ME	2.0	LB A/A	5	PT/A	PRE	A	187	4	4	0	98	94	90	85	75	68
	9 TEAMWORK	40	WG	0.008	LB A/A	0.32	OZ/A	1-4"	W C										
	9 AATREX	90	WG	0.5	LB A/A	8.9	OZ/A	1-4"	W C										
	9 PREFERENCE	100	LIQ	0.25	% V/V	0.25	%V/V	1-4"	W C										
	9 N-PAK AMS	100	LIQ	2.4	QT/A	2.4	QT/A	1-4"	W C										
10	TOPNOTCH	3.2	ME	2.0	LB A/A	5	PT/A	PRE	A	175	2	4	0	99	97	96	91	80	70
	10 TEAMWORK + ATRAZINE	90	WG	0.506	LB A/A	9	OZ/A	1-4"	W C										
	10 PREFERENCE	100	LIQ	0.25	% V/V	0.25	%V/V	1-4"	W C										
	10 N-PAK AMS	100	LIQ	2.4	QT/A	2.4	QT/A	1-4"	W C										

Weed Code												SETFA	SETFA	AMBEL	AMBEL	XANST	XANST				
Crop Code												ZEAMX	ZEAMX	ZEAMX	ZEAMX						
Rating Data Type												Yield	Injury	Injury	Injury	Control	Control	Control	Control	Control	Control
Rating Unit												bu/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date												10-10-01	6-19-01	6-26-01	7-10-01	6-26-01	7-10-01	6-26-01	7-10-01	6-26-01	7-10-01
Trt-Eval Interval												7 DA-C	14 DA-C	28 DA-C	14 DA-C	28 DA-C	14 DA-C	28 DA-C	14 DA-C	28 DA-C	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code												
11	TOPNOTCH	3.2	ME	2.0	LB A/A	5	PT/A	PRE	A	181	3	5	0	99	97	98	95	92	90		
11	TEAMWORK	40	WG	0.008	LB A/A	0.32	OZ/A	1-4"	W C												
11	AATREX	90	WG	0.5	LB A/A	8.9	OZ/A	1-4"	W C												
11	STERLING	4	EC	0.125	LB A/A	4	OZ/A	1-4"	W C												
11	PREFERENCE	100	LIQ	0.25	% V/V	0.25	%V/V	1-4"	W C												
11	N-PAK AMS	100	LIQ	2.4	QT/A	2.4	QT/A	1-4"	W C												
12	TOPNOTCH	3.2	ME	2.0	LB A/A	5	PT/A	PRE	A	196	4	4	1	99	98	95	94	95	92		
12	TEAMWORK + ATRAZINE	90	WG	0.506	LB A/A	9	OZ/A	1-4"	W C												
12	STERLING	4	EC	0.125	LB A/A	4	OZ/A	1-4"	W C												
12	PREFERENCE	100	LIQ	0.25	% V/V	0.25	%V/V	1-4"	W C												
12	N-PAK AMS	100	LIQ	2.4	QT/A	2.4	QT/A	1-4"	W C												
13	TEAMWORK	40	WG	0.008	LB A/A	0.32	OZ/A	1-4"	W C	170	2	8	3	73	72	68	58	65	57		
13	AATREX	90	WG	0.5	LB A/A	8.9	OZ/A	1-4"	W C												
13	ACCENT	75	WG	0.031	LB A/A	0.66	OZ/A	1-4"	W C												
13	PREFERENCE	100	LIQ	0.25	% V/V	0.25	%V/V	1-4"	W C												
13	N-PAK AMS	100	LIQ	2.4	QT/A	2.4	QT/A	1-4"	W C												
14	TEAMWORK + ATRAZINE	90	WG	0.506	LB A/A	9	OZ/A	1-4"	W C	152	3	4	0	75	68	70	62	63	53		
14	ACCENT	75	WG	0.031	LB A/A	0.66	OZ/A	1-4"	W C												
14	PREFERENCE	100	LIQ	0.25	% V/V	0.25	%V/V	1-4"	W C												
14	N-PAK AMS	100	LIQ	2.4	QT/A	2.4	QT/A	1-4"	W C												
15	TEAMWORK + ATRAZINE	90	WG	0.506	LB A/A	9	OZ/A	1-4"	W C	156	4	4	0	78	72	62	53	50	40		
15	ACCENT	75	WG	0.031	LB A/A	0.66	OZ/A	1-4"	W C												
15	CLASS ACT NG	100	LIQ	2.5	% V/V	2.5	%V/V	1-4"	W C												
16	TEAMWORK + ATRAZINE	90	WG	0.506	LB A/A	9	OZ/A	1-4"	W C	169	4	4	0	87	80	63	47	70	55		
16	ACCENT	75	WG	0.031	LB A/A	0.66	OZ/A	1-4"	W C												
16	DESTINY MSO	100	LIQ	1.0	% V/V	1	%V/V	1-4"	W C												
16	N-PAK AMS	100	LIQ	2.4	QT/A	2.4	QT/A	1-4"	W C												
17	DEGREE	3.8	ME	1.43	LB A/A	3	PT/A	PRE	A	184	0	4	0	96	94	96	94	88	87		
17	PERMIT	75	WG	0.0313	LB A/A	0.67	OZ/A	1-4"	W C												
17	CLARITY	4	EC	0.125	LB A/A	4	OZ/A	1-4"	W C												
17	PREFERENCE	100	LIQ	0.25	% V/V	0.25	%V/V	1-4"	W C												
18	DEFINE	60	WG	0.6	LB A/A	16	OZ/A	4"CN	B	179	2	4	1	91	85	99	97	97	95		
18	AATREX	90	WG	2.0	LB A/A	2.2	LB/A	4"CN	B												
18	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4"CN	B												
19	FULTIME	4	SC	3.25	LB A/A	3.25	QT/A	4"CN	B	179	4	3	0	88	79	99	98	96	94		
19	HORNET	68.5	WG	0.128	LB A/A	3	OZ/A	4"CN	B												
19	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4"CN	B												
20	TOPNOTCH	3.2	ME	2.0	LB A/A	5	PT/A	PRE	A	195	4	3	0	98	96	99	98	93	93		
20	HORNET	68.5	WG	0.128	LB A/A	3	OZ/A	1-4"	W C												
20	AATREX	90	WG	1.0	LB A/A	1.1	LB/A	1-4"	W C												
20	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	1-4"	W C												
20	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	1-4"	W C												
21	TOPNOTCH	3.2	ME	2.0	LB A/A	5	PT/A	PRE	A	188	1	3	0	99	96	97	96	92	91		
21	HORNET	68.5	WG	0.128	LB A/A	3	OZ/A	1-4"	W C												
21	DISTINCT	70	WG	0.088	LB A/A	2	OZ/A	1-4"	W C												
21	PREFERENCE	100	LIQ	0.25	% V/V	0.25	%V/V	1-4"	W C												
21	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	1-4"	W C												

Weed Code																								
Crop Code																								
Rating Data Type																								
Rating Unit																								
Rating Date																								
Trt-Eval Interval																								
		ZEAMX	ZEAMX	ZEAMX	ZEAMX	SETFA	SETFA	AMBEL	AMBEL	XANST	XANST													
		Yield	Injury	Injury	Injury	Control	Control	Control	Control	Control	Control													
		bu/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent													
		10-10-01	6-19-01	6-26-01	7-10-01	6-26-01	7-10-01	6-26-01	7-10-01	6-26-01	7-10-01													
		7 DA-C	14 DA-C	14 DA-C	28 DA-C	14 DA-C	28 DA-C	14 DA-C	28 DA-C	14 DA-C	28 DA-C													
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code															
22	TOPNOTCH	3.2	ME	2.0	LB A/A	5	PT/A	PRE	A	185	3	4	0	98	96	96	93	74	68					
22	AIM	40	WG	0.008	LB A/A	0.32	OZ/A	1-4"	W C															
22	AATREX	90	WG	1.0	LB A/A	1.1	LB/A	1-4"	W C															
22	AR 581-1P	100	DRY	1.14	% W/W	9.5	LB/100 GAL	1-4"	W C															
23	TOPNOTCH	3.2	ME	2.0	LB A/A	5	PT/A	PRE	A	187	3	4	0	99	98	99	98	75	70					
23	AIM	40	WG	0.008	LB A/A	0.32	OZ/A	1-4"	W C															
23	AATREX	90	WG	1.0	LB A/A	1.1	LB/A	1-4"	W C															
23	SE 581-1P	100	DRY	1.33	LB A/A	1.33	LB/A	1-4"	W C															
24	TOPNOTCH	3.2	ME	2.0	LB A/A	5	PT/A	PRE	A	191	3	4	0	99	97	99	97	78	77					
24	AIM	40	WG	0.008	LB A/A	0.32	OZ/A	1-4"	W C															
24	AATREX	90	WG	1.0	LB A/A	1.1	LB/A	1-4"	W C															
24	AR 200-TM							1-4"	W C															
24	->AR-A	100	LIQ	0.25	% V/V	0.25	%V/V	1-4"	W C															
24	->AR-B	100	DRY	1.08	% W/W	9	LB/100 GAL	1-4"	W C															
25	TOPNOTCH	3.2	ME	2.0	LB A/A	5	PT/A	PRE	A	185	4	4	0	99	97	99	97	87	85					
25	AIM	40	WG	0.008	LB A/A	0.32	OZ/A	1-4"	W C															
25	AATREX	90	WG	1.0	LB A/A	1.1	LB/A	1-4"	W C															
25	DE 500-TM							1-4"	W C															
25	->DE-A	100	DRY	1.14	% W/W	9.5	LB/100 GAL	1-4"	W C															
25	->DE-B	100	DRY	0.9	LB A/A	0.9	LB/A	1-4"	W C															
LSD (P=.05)				20.0		1.4		2.7		0.8				8.9		9.5		10.8		10.9		8.4		9.6
Replicate F				5.787		11.216		3.160		2.027				2.083		3.805		3.251		2.047		0.504		1.496
Replicate Prob(F)				0.0056		0.0001		0.0514		0.1428				0.1356		0.0292		0.0474		0.1403		0.6070		0.2342
Treatment F				7.489		5.576		1.789		11.644				43.138		38.198		33.421		37.389		47.466		42.021
Treatment Prob(F)				0.0001		0.0001		0.0431		0.0001				0.0001		0.0001		0.0001		0.0001		0.0001		0.0001

Postemergence Broadleaf Herbicides in Corn.

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Trial Comments

1. Protocol: FMC (trts 2-8); Agrilience (trts 9-16); Monsanto (trt 17); Dow (trts 19-21); Bayer (trt 18); and Rosens (trts 22-25).
2. DA-C = days after 1-4thW application.