

## Postemergence Broadleaf Herbicide Comparisons in Corn.

02-5B

**OBJECTIVE:** Evaluate crop response and weed control from various postemergence broadleaf herbicides following a preemergence application of Define.

**SUMMARY:** The objective of this study was to evaluate several broadleaf herbicides for crop response and weed control. All treatments that included Aim had 11 to 19% crop injury 3 days after treatment (DAT). By 14 DAT, corn injury was less than 1% from any treatment. All herbicide treatments except Hornet alone controlled at least 94% of common ragweed at 14 DAT. Tank mixing Aim with Hornet increased common ragweed control by 17% at 14 DAT. Common cocklebur and ivyleaf morningglory control 14 DAT was at least 95% from all herbicide treatments except AGH2002 which controlled 92% of common cocklebur and 94% of ivyleaf morningglory. Velvetleaf control 14 DAT was at least 94% from all treatments except Distinct alone (89%). Tank mixing Aatrex with Distinct increased velvetleaf control to 99%. All treatments provided greater than 92% control of common ragweed, common cocklebur, and velvetleaf at the end of season rating (56 DAT). Ivyleaf morningglory control was greater than 94% with all treatments 14 DAT and maintained at least 84% through 56 DAT.

### HERBICIDES

AATREX 90 WG  
 AGH 02002 97 WG  
 AIM 2 EW  
 CALLISTO 4 SC  
 CLARITY 4 EC  
 DISTINCT 70 WG  
 HORNET 68.5 WG  
 MARKSMAN 3.2 L  
 NORTHSTAR 47.4 WG  
 STEADFAST 75 WG  
 YUKON 67.5 WG

### WEEDS

cocklebur, common  
 morningglory, ivyleaf  
 ragweed, common  
 velvetleaf

### CROP

corn, field

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

## Postemergence Broadleaf Herbicide Comparisons in Corn.

Project Code: 02-5B

Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA  
 Trial Status: Final Updated: 10-31-02

**Objective:**

Evaluate crop response and weed control from various postemergence broadleaf herbicides following a preemergence application of Define.

Weed Code	Common Name	Scientific Name
1. AMBEL	ragweed, common	Ambrosia artemisiifolia L.
2. XANST	cocklebur, common	Xanthium strumarium L.
3. ABUTH	velvetleaf	Abutilon theophrasti Medicus
4. IPOHE	morningglory, ivyleaf	Ipomoea hederacea (L.) Jacq.

Crop 1:	ZEAMX corn, field	Variety:	Pioneer 33P69LL
Planting Method:	Seeded	Planting Date:	5-30-02
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, 2001				

Field Prep./Maintenance: N 150 LB/A, P205 50 LB/A, K20 150 LB/A

Soil Name:	Stoy	% OM:	1.4	pH:	6.4	CEC:	8
Texture:	Silt loam	Fert. Level:	P1: 78 LB/A, K: 244 LB/A				

**APPLICATION DESCRIPTION**

	A	B
Application Date:	6-6-02	6-18-02
Time of Day:	16:20	9:30
Application Method:	Spray	Spray
Application Timing:	3"CN	12"CN
Applic. Placement:	BROFOL	BROFOL
Air Temp., Unit:	77 F	70 F
% Relative Humidity:	46	58
Wind Velocity, Unit:	3-5 MPH	3-5 MPH
Soil Moisture:	NORMAL	NORMAL
% Cloud Cover:	15	10

**CROP STAGE AT EACH APPLICATION**

	A	B
Crop 1 Code, Stage:	ZEAMX V1	ZEAMX V5
Height, Unit:	3 IN	8-10 IN

**WEED STAGE AT EACH APPLICATION**

	A	B
Weed 1 Code:	AMBEL	AMBEL
Stage(leaves):	0-1	2-4
Height(inches):	0-1	1-3
Density:	Low	Low
Weed 2 Code:	XANST	XANST
Stage(leaves):	0-2	2-4
Height(inches):	0-2	2-4
Density:	Low	Low
Weed 3 Code:	ABUTH	ABUTH
Stage(leaves):	0-1	0-4
Height(inches):	0-1	1-3
Density:	Low	Low
Weed 4 Code:	IPOHE	IPOHE
Stage(leaves):	0	0-2
Height(inches):	1-2	1-3
Density:	Low	Low

## APPLICATION EQUIPMENT

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

## NOTES:

This study was not harvested.

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Weed Code										AMBEL	AMBEL	AMBEL	XANST	XANST	XANST	ABUTH	ABUTH	ABUTH	
Crop Code										ZEAMX	ZEAMX	ZEAMX	ZEAMX						
Rating Data Type										Injury	Injury	Injury	Injury	Control	Control	Control	Control	Control	
Rating Unit										Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
Rating Date																			
Trt-Eval Interval										3 DAT	14 DAT	28 DAT	56 DAT	14 DAT	28 DAT	56 DAT	14 DAT	28 DAT	56 DAT

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code										
1	NONTREATED									0	0	0	0	0	0	0	0	0	0
2	MARKSMAN	3.2 L		1.4 LB A/A		3.5 PT/A		3"CN	A	0	0	0	0	99	99	99	99	99	95
2	ACTIVATOR 90	100 LIQ		0.25 % V/V		0.25 %V/V		3"CN	A										
2	AMS	100 DRY		2.5 LB/A		2.5 LB/A		3"CN	A										
3	CALLISTO	4 SC		0.094 LB A/A		3 OZ/A		3"CN	A	0	0	0	0	99	99	99	99	99	98
3	AATREX	90 WG		1.0 LB A/A		17.8 OZ/A		3"CN	A										
3	PRIME OIL COC	100 LIQ		1.0 % V/V		1 %V/V		3"CN	A										
3	AMS	100 DRY		2.5 LB/A		2.5 LB/A		3"CN	A										
4	DISTINCT	70 WG		0.175 LB A/A		4 OZ/A		12"CN	B	6	0	0	0	99	99	99	99	99	98
4	AATREX	90 WG		0.5 LB A/A		8.9 OZ/A		12"CN	B										
4	ACTIVATOR 90	100 LIQ		0.25 % V/V		0.25 %V/V		12"CN	B										
4	AMS	100 DRY		2.5 LB/A		2.5 LB/A		12"CN	B										
5	CALLISTO	4 SC		0.094 LB A/A		3 OZ/A		12"CN	B	0	0	0	0	99	99	99	99	99	98
5	AATREX	90 WG		0.5 LB A/A		8.9 OZ/A		12"CN	B										
5	PRIME OIL COC	100 LIQ		1.0 % V/V		1 %V/V		12"CN	B										
5	AMS	100 DRY		2.5 LB/A		2.5 LB/A		12"CN	B										
6	DISTINCT	70 WG		0.175 LB A/A		4 OZ/A		12"CN	B	5	0	0	0	99	99	99	99	99	89
6	ACTIVATOR 90	100 LIQ		0.25 % V/V		0.25 %V/V		12"CN	B										
6	AMS	100 DRY		2.5 LB/A		2.5 LB/A		12"CN	B										
7	CALLISTO	4 SC		0.094 LB A/A		3 OZ/A		12"CN	B	0	0	0	0	99	99	99	99	99	99
7	PRIME OIL COC	100 LIQ		1.0 % V/V		1 %V/V		12"CN	B										
7	AMS	100 DRY		2.5 LB/A		2.5 LB/A		12"CN	B										
8	HORNET	68.5 WG		0.171 LB A/A		4 OZ/A		12"CN	B	1	0	0	0	77	87	93	99	99	94
8	ACTIVATOR 90	100 LIQ		0.25 % V/V		0.25 %V/V		12"CN	B										
8	AMS	100 DRY		2.5 LB/A		2.5 LB/A		12"CN	B										
9	NORTHSTAR	47.4 WG		0.148 LB A/A		5 OZ/A		12"CN	B	4	0	0	0	99	99	99	99	99	95
9	ACTIVATOR 90	100 LIQ		0.25 % V/V		0.25 %V/V		12"CN	B										
9	AMS	100 DRY		2.5 LB/A		2.5 LB/A		12"CN	B										
10	YUKON	67.5 WG		0.169 LB A/A		4 OZ/A		12"CN	B	3	0	0	0	99	99	99	99	99	98
10	ACTIVATOR 90	100 LIQ		0.25 % V/V		0.25 %V/V		12"CN	B										
10	AMS	100 DRY		2.5 LB/A		2.5 LB/A		12"CN	B										

Weed Code									AMBEL	AMBEL	AMBEL	XANST	XANST	XANST	ABUTH	ABUTH	ABUTH	
Crop Code									ZEAMX	ZEAMX	ZEAMX	ZEAMX						
Rating Data Type									Injury	Injury	Injury	Injury	Control	Control	Control	Control	Control	
Rating Unit									Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
Rating Date																		
Trt-Eval Interval									3 DAT	14 DAT	28 DAT	56 DAT	14 DAT	28 DAT	56 DAT	14 DAT	28 DAT	56 DAT

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code													
11	AIM	2	EW	0.0078	LB A/A	0.5	OZ/A	12"CN	B	11	1	0	0	99	99	99	99	99	99			
11	AATREX	90	WG	0.5	LB A/A	8.9	OZ/A	12"CN	B													
11	CLARITY	4	EC	0.125	LB A/A	4	OZ/A	12"CN	B													
11	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	12"CN	B													
12	AIM	2	EW	0.0078	LB A/A	0.5	OZ/A	12"CN	B	11	1	0	0	94	90	95	99	99	99			
12	HORNET	68.5	WG	0.128	LB A/A	3	OZ/A	12"CN	B													
12	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	12"CN	B													
13	AIM	2	EW	0.0078	LB A/A	0.5	OZ/A	12"CN	B	15	1	0	0	99	99	98	99	96	99			
13	AATREX	90	WG	0.25	LB A/A	4.44	OZ/A	12"CN	B													
13	HORNET	68.5	WG	0.128	LB A/A	3	OZ/A	12"CN	B													
13	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	12"CN	B													
14	AIM	2	EW	0.0078	LB A/A	0.5	OZ/A	12"CN	B	19	1	0	0	99	98	98	99	98	98			
14	AATREX	90	WG	0.75	LB A/A	13.3	OZ/A	12"CN	B													
14	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	12"CN	B													
15	AIM	2	EW	0.0078	LB A/A	0.5	OZ/A	12"CN	B	19	1	0	0	99	99	99	99	99	99			
15	AATREX	90	WG	1.0	LB A/A	17.8	OZ/A	12"CN	B													
15	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	12"CN	B													
16	AIM	2	EW	0.0078	LB A/A	0.5	OZ/A	12"CN	B	17	1	0	0	99	99	99	99	99	99			
16	STEADFAST	75	WG	0.0352	LB A/A	0.75	OZ/A	12"CN	B													
16	AATREX	90	WG	0.75	LB A/A	13.3	OZ/A	12"CN	B													
16	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	12"CN	B													
16	AMS	100	DRY	2.0	LB/A	2	LB/A	12"CN	B													
17	AIM	2	EW	0.0078	LB A/A	0.5	OZ/A	12"CN	B	19	1	0	0	99	99	99	99	99	99			
17	AATREX	90	WG	0.675	LB A/A	12	OZ/A	12"CN	B													
17	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	12"CN	B													
18	AGH 02002	97	WG	0.258	LB A/A	4.25	OZ/A	12"CN	B	13	1	0	0	99	91	95	92	87	93			
18	PREFERENCE	100	LIQ	0.25	% V/V	0.25	%V/V	12"CN	B													
LSD (P=.05)										2.4	0.0	0.0	0.0	3.3	7.7	3.2	1.2	3.2	2.3	4.4	2.6	3.3
Replicate F										0.114	0.000	0.000	0.000	1.342	1.804	3.741	1.206	0.694	0.085	0.170	1.031	0.356
Replicate Prob(F)										0.8922	1.0000	1.0000	1.0000	0.2749	0.1800	0.0340	0.3119	0.5067	0.9191	0.8447	0.3674	0.7029
Treatment F										81.487	0.000	0.000	0.000	414.757	76.819	426.436	3418.975	438.433	824.164	231.833	646.568	413.082
Treatment Prob(F)										0.0001	1.0000	1.0000	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Weed Code										IPOHE	IPOHE	IPOHE
Crop Code												
Rating Data Type										Control	Control	Control
Rating Unit										Percent	Percent	Percent
Rating Date												
Trt-Eval Interval										14 DAT	28 DAT	56 DAT

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code			
1	NONTREATED									0	0	0
2	MARKSMAN	3.2	L	1.4	LB A/A	3.5	PT/A	3"CN	A	99	99	93
2	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	3"CN	A			
2	AMS	100	DRY	2.5	LB/A	2.5	LB/A	3"CN	A			
3	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	3"CN	A	98	99	92
3	AATREX	90	WG	1.0	LB A/A	17.8	OZ/A	3"CN	A			
3	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	3"CN	A			
3	AMS	100	DRY	2.5	LB/A	2.5	LB/A	3"CN	A			
4	DISTINCT	70	WG	0.175	LB A/A	4	OZ/A	12"CN	B	99	99	87
4	AATREX	90	WG	0.5	LB A/A	8.9	OZ/A	12"CN	B			
4	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	12"CN	B			
4	AMS	100	DRY	2.5	LB/A	2.5	LB/A	12"CN	B			
5	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	12"CN	B	99	99	92
5	AATREX	90	WG	0.5	LB A/A	8.9	OZ/A	12"CN	B			
5	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	12"CN	B			
5	AMS	100	DRY	2.5	LB/A	2.5	LB/A	12"CN	B			
6	DISTINCT	70	WG	0.175	LB A/A	4	OZ/A	12"CN	B	99	99	88
6	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	12"CN	B			
6	AMS	100	DRY	2.5	LB/A	2.5	LB/A	12"CN	B			
7	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	12"CN	B	98	99	88
7	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	12"CN	B			
7	AMS	100	DRY	2.5	LB/A	2.5	LB/A	12"CN	B			
8	HORNET	68.5	WG	0.171	LB A/A	4	OZ/A	12"CN	B	98	99	90
8	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	12"CN	B			
8	AMS	100	DRY	2.5	LB/A	2.5	LB/A	12"CN	B			
9	NORTHSTAR	47.4	WG	0.148	LB A/A	5	OZ/A	12"CN	B	95	93	84
9	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	12"CN	B			
9	AMS	100	DRY	2.5	LB/A	2.5	LB/A	12"CN	B			
10	YUKON	67.5	WG	0.169	LB A/A	4	OZ/A	12"CN	B	96	98	88
10	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	12"CN	B			
10	AMS	100	DRY	2.5	LB/A	2.5	LB/A	12"CN	B			
11	AIM	2	EW	0.0078	LB A/A	0.5	OZ/A	12"CN	B	99	99	93
11	AATREX	90	WG	0.5	LB A/A	8.9	OZ/A	12"CN	B			
11	CLARITY	4	EC	0.125	LB A/A	4	OZ/A	12"CN	B			
11	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	12"CN	B			
12	AIM	2	EW	0.0078	LB A/A	0.5	OZ/A	12"CN	B	99	99	93
12	HORNET	68.5	WG	0.128	LB A/A	3	OZ/A	12"CN	B			
12	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	12"CN	B			

Weed Code	IPOHE	IPOHE	IPOHE
Crop Code			
Rating Data Type	Control	Control	Control
Rating Unit	Percent	Percent	Percent
Rating Date			
Trt-Eval Interval	14 DAT	28 DAT	56 DAT

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code			
13	AIM	2	EW	0.0078	LB A/A	0.5	OZ/A	12"	CN B	98	99	93
13	AATREX	90	WG	0.25	LB A/A	4.44	OZ/A	12"	CN B			
13	HORNET	68.5	WG	0.128	LB A/A	3	OZ/A	12"	CN B			
13	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	12"	CN B			
14	AIM	2	EW	0.0078	LB A/A	0.5	OZ/A	12"	CN B	99	99	87
14	AATREX	90	WG	0.75	LB A/A	13.3	OZ/A	12"	CN B			
14	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	12"	CN B			
15	AIM	2	EW	0.0078	LB A/A	0.5	OZ/A	12"	CN B	99	99	96
15	AATREX	90	WG	1.0	LB A/A	17.8	OZ/A	12"	CN B			
15	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	12"	CN B			
16	AIM	2	EW	0.0078	LB A/A	0.5	OZ/A	12"	CN B	99	99	89
16	STEADFAST	75	WG	0.0352	LB A/A	0.75	OZ/A	12"	CN B			
16	AATREX	90	WG	0.75	LB A/A	13.3	OZ/A	12"	CN B			
16	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	12"	CN B			
16	AMS	100	DRY	2.0	LB/A	2	LB/A	12"	CN B			
17	AIM	2	EW	0.0078	LB A/A	0.5	OZ/A	12"	CN B	99	99	93
17	AATREX	90	WG	0.675	LB A/A	12	OZ/A	12"	CN B			
17	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	12"	CN B			
18	AGH 02002	97	WG	0.258	LB A/A	4.25	OZ/A	12"	CN B	94	99	85
18	PREFERENCE	100	LIQ	0.25	% V/V	0.25	%V/V	12"	CN B			
LSD (P=.05)										4.1	2.2	6.8
Replicate F										1.158	1.454	4.933
Replicate Prob(F)										0.3263	0.2478	0.0132
Treatment F										269.619	917.846	82.917
Treatment Prob(F)										0.0001	0.0001	0.0001

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Project Code: 02-5B

Location: Belleville Research Center

Trial Comments

1. Protocol: BASF (2-10); FMC (11-16); Agrilience (17-18).
2. Blanket preemergence application of Define at 10 oz/A applied 10 ft wide to all plots including the nontreated on 5-30-02.
3. DAT = days after 3"CN or 12"CN applications.
4. Rating dates:
  - 3, 14, 28, and 56 days after 3"CN application was on 6-6-02, 6-20-02, 7-4-02, and 8-1-02, respectively.
  - 3, 14, 28, and 56 days after 12"CN application was on 6-21-02, 7-2-02, 7-16-02, and 8-13-02, respectively.