

Experimental Premixes Applied Preemergence in Corn.

02-19B

OBJECTIVE: Evaluate experimental and commercial premix herbicides for corn response and weed control.

SUMMARY: Little to no corn injury was observed from all herbicide treatments except Outlook followed by Marksman which caused 10% injury at 14 days after emergence (DAE). All herbicide treatments applied at spike to 2 leaf controlled 97 to 99% of giant foxtail at 14 days after treatment. By 56 DAE, only herbicide treatments applied at spike to 2 leaf, Harness Xtra, and Acetochlor 75 provided at least 90% control of giant foxtail. Limited rainfall for 13 days following the preemergence herbicide applications most likely reduced giant foxtail control from many herbicide treatments. Common cocklebur control was 95 to 98% from spike to 2 leaf treatments at 14 days after treatment. By 56 DAE, only spike to leaf treatments (except A12909 at 2 qt plus Accent) and Outlook followed by Marksman controlled at least 90% of common cocklebur. A12854 and A12909 alone controlled less than 55% of common cocklebur at 56 DAE. All herbicide treatments provided good control of giant ragweed and ivyleaf morningglory at 28 DAE. Due to heavy giant foxtail and common cocklebur infestations these weeds could not be rated at 42 DAE. All spike to 2 leaf applications provided complete control of velvetleaf at all evaluation timings. A12854 alone (preemergence) at either rate tended to provide greater velvetleaf control than A12909 at 2 qt/A. Velvetleaf control 56 DAE was greatest from treatments that included Aatrex preemergence or Marksman postemergence. Corn yield tended to be greatest in plots that received a herbicide treatment at the spike to 2 leaf stage.

HERBICIDES	WEEDS	CROP
A12854 3.93 SE	cocklebur, common	corn, field
A12909 3.67 SE	foxtail, giant	
AATREX 90 WG	morningglory, ivyleaf	
ACCENT 75 WG	nutsedge, yellow	
ACETOCHLOR 150 5.1 SE	ragweed, giant	
ACETOCHLOR 75 5.5 SE	velvetleaf	
AXIOM 68 WG		
BALANCE PRO 4 SC		
BICEP II MAGNUM 5.5 L		
EPIC 58 WG		
FULTIME 4 SC		
HARNESS XTRA 6 L		
HORNET 68.5 WG		
MARKSMAN 3.2 L		
OPTION 35 WG		
OUTLOOK 6 EC		
TOPNOTCH 3.2 ME		
USA 2001 71.5 WG		

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Experimental Premixes Applied Preemergence in Corn.

Project Code: 02-19B Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
 Trial Status: Final Updated: 10-24-02

Objective:

Evaluate experimental and commercial premix herbicides for corn response and weed control.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. CYPES	nutsedge, yellow	Cyperus esculentus L.
3. XANST	cocklebur, common	Xanthium strumarium L.
4. AMBTR	ragweed, giant	Ambrosia trifida L.
5. IPOHE	morningglory, ivyleaf	Ipomoea hederacea (L.) Jacq.
6. ABUTH	velvetleaf	Abutilon theophrasti Medicus

Crop 1: ZEAMX corn, field Variety: Pioneer 33P69LL
 Planting Method: Seeded Planting Date: 5-27-02
 Rate: 28000 S/A Depth: 1.5 IN
 Row Spacing: 30 IN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 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: Ebbert % OM: 1.4 pH: 5.7 CEC: 14
 Texture: Silt loam Fert. Level: P1: 54 LB/A, K: 280 LB/A

APPLICATION DESCRIPTION

	A	B	C
Application Date:	5-28-02	6-3-02	6-14-02
Time of Day:	17:30	8:30	9:00
Application Method:	Spray	Spray	Spray
Application Timing:	PRE	SPIKE-2L	3-4"W
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	68 F	80 F	70 F
% Relative Humidity:	98	76	50
Wind Velocity, Unit:	3-5 MPH	3-7 MPH	5-10 MPH
Soil Moisture:	NORMAL	NORMAL	ABONOR
% Cloud Cover:	95	0	0

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMX NA	ZEAMX V1	ZEAMX V3
Height, Unit:	NA NA	3 IN	6 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code:			SETFA
Stage(leaves):			3-4
Height(inches):			3-4
Density:			Medium
Weed 2 Code:		CYPES	CYPES
Stage(leaves):		0-4	3-5
Height(inches):		0-3	3-5
Density:		Medium	Low
Weed 3 Code:		XANST	XANST
Stage(leaves):		0-2	3-4
Height(inches):		0-1	3-4
Density:		High	Low

Weed 4 Code:	AMBTR	AMBTR
Stage(leaves):	0-2	4-8
Height(inches):	0-1	3-4
Density:	High	High

Weed 5 Code:	IPOHE
Stage(leaves):	0-2
Height(inches):	0-1
Density:	Medium

Weed 6 Code:	ABUTH	ABUTH
Stage(leaves):	0-2	3-4
Height(inches):	0-1	3-4
Density:	High	Medium

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 Oct-11-02, (2) 30 inch rows by 22 ft.

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Weed Code							SETFA	SETFA	SETFA	SETFA	CYPES	CYPES
Crop Code												
Rating Data Type							ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Rating Unit							Yield	Injury	Injury	Injury	Injury	Injury
Rating Date							bu/A	Percent	Percent	Percent	Percent	Percent
Trt-Eval Interval							10-11-02	6-9-02	6-16-02	6-17-02	6-30-02	7-15-02
							7 DAE	14 DAE	14 DA-B	28 DAE	42 DA-B	14 DA-B
							28 DAE	42 DA-B	56 DAE	14 DA-B	28 DAE	

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	Yield	Injury	Injury	Injury	Injury	Injury	Control	Control	Control	Control	Control	Control
1	NONTREATED									36	0	0	0	0	0	0	0	0	0	0	0
2	A12854	3.93	SE	2.46	LB A/A	2.5	QT/A	PRE	A	127	0	0		0	0	68	47	50			81
3	A12854	3.93	SE	2.95	LB A/A	3	QT/A	PRE	A	166	0	0		0	0	80	53	63			97
4	A12909	3.67	SE	1.84	LB A/A	2	QT/A	PRE	A	131	1	0		0	0	60	30	48			95
5	A12909	3.67	SE	2.21	LB A/A	2.4	QT/A	PRE	A	161	0	0		0	0	72	47	53			95
6	BICEP II MAGNUM	5.5	L	2.89	LB A/A	2.1	QT/A	PRE	A	141	0	0		0	0	83	73	75			91
7	BALANCE PRO	4	SC	0.094	LB A/A	3	OZ/A	PRE	A	162	0	0		0	0	77	50	58			87
7	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	PRE	A												
8	HARNESX XTRA	6	L	3.0	LB A/A	2	QT/A	PRE	A	160	0	0		0	0	95	90	94			97
9	TOPNOTCH	3.2	ME	2.0	LB A/A	2.5	QT/A	PRE	A	143	0	0		0	0	82	65	68			95
9	HORNET	68.5	WG	0.128	LB A/A	3	OZ/A	PRE	A												
10	OUTLOOK	6	EC	0.846	LB A/A	0.56	QT/A	PRE	A	166	0	10		0	0	87	68	67			96
10	MARKSMAN	3.2	L	1.2	LB A/A	1.5	QT/A	3-4"W	C												
10	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	3-4"W	C												
11	A12854	3.93	SE	2.46	LB A/A	2.5	QT/A	SPIKE-2L	B	171			0	0	0	97	97	93	91	95	99
11	ACCENT	75	WG	0.0154	LB A/A	0.33	OZ/A	SPIKE-2L	B												
12	A12854	3.93	SE	2.95	LB A/A	3	QT/A	SPIKE-2L	B	184			0	0	0	99	98	97	95	96	97
12	ACCENT	75	WG	0.0154	LB A/A	0.33	OZ/A	SPIKE-2L	B												
13	A12909	3.67	SE	1.84	LB A/A	2	QT/A	SPIKE-2L	B	173			0	0	0	99	96	93	93	95	96
13	ACCENT	75	WG	0.0154	LB A/A	0.33	OZ/A	SPIKE-2L	B												
14	A12909	3.67	SE	2.21	LB A/A	2.4	QT/A	SPIKE-2L	B	187			0	0	0	98	95	94	92	98	96
14	ACCENT	75	WG	0.0154	LB A/A	0.33	OZ/A	SPIKE-2L	B												
15	A12854	3.93	SE	2.95	LB A/A	3	QT/A	SPIKE-2L	B	176		2	0	0	0	99	98	98	98	99	99
15	OPTION	35	WG	0.0164	LB A/A	0.75	OZ/A	SPIKE-2L	B												
16	A12909	3.67	SE	2.21	LB A/A	2.4	QT/A	SPIKE-2L	B	186			0	0	0	98	96	94	93	98	99
16	OPTION	35	WG	0.0164	LB A/A	0.75	OZ/A	SPIKE-2L	B												
17	ACETOCHLOR 75	5.5	SE	2.75	LB A/A	2	QT/A	PRE	A	134	0	0		0	0	90	77	90			99

Weed Code										SETFA	SETFA	SETFA	SETFA	CYPES	CYPES
Crop Code										ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Rating Data Type										Yield	Injury	Injury	Injury	Injury	Injury
Rating Unit										bu/A	Percent	Percent	Percent	Percent	Percent
Rating Date										10-11-02	6-9-02	6-16-02	6-17-02	6-30-02	7-15-02
Trt-Eval Interval										7 DAE	14 DAE	14 DA-B	28 DAE	42 DA-B	
										Control	Control	Control	Control	Control	Control
										Percent	Percent	Percent	Percent	Percent	Percent
										6-17-02	6-30-02	7-15-02	7-28-02	6-17-02	6-30-02
										14 DA-B	28 DAE	42 DA-B	56 DAE	14 DA-B	28 DAE

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	Yield	Injury	Injury	Injury	Injury	Injury	Control	Control	Control	Control	Control	Control
18	ACETOCHLOR 150	5.1	SE	3.5	LB A/A	2.75	QT/A	PRE	A	172	0	0			0	0	87	77	75		98
19	FULTIME	4	SC	3.33	LB A/A	3.33	QT/A	PRE	A	157	0	0			0	0	85	77	77		96
20	AXIOM	68	WG	0.723	LB A/A	17	OZ/A	PRE	A	170	0	0			0	0	85	70	73		85
20	AATREX	90	WG	2.0	LB A/A	2.22	LB/A	PRE	A												
21	EPIC	58	WG	0.435	LB A/A	12	OZ/A	PRE	A	170	0	0			0	0	78	60	67		96
21	AATREX	90	WG	1.25	LB A/A	1.39	LB/A	PRE	A												
22	USA 2001	71.5	WG	0.536	LB A/A	12	OZ/A	PRE	A	176	0	0			0	0	85	63	67		95
22	AATREX	90	WG	1.5	LB A/A	1.67	LB/A	PRE	A												
23	USA 2001	71.5	WG	0.67	LB A/A	15	OZ/A	PRE	A	187	0	0			0	0	82	62	58		93
23	AATREX	90	WG	1.5	LB A/A	1.67	LB/A	PRE	A												
24	AXIOM	68	WG	0.383	LB A/A	9	OZ/A	PRE	A	174	0	0			0	0	83	67	68		88
24	EPIC	58	WG	0.254	LB A/A	7	OZ/A	PRE	A												
24	AATREX	90	WG	1.5	LB A/A	1.67	LB/A	PRE	A												
LSD (P=.05)										43.4	0.7	0.0	1.9	0.0	0.0	1.9	11.3	15.4	17.9	3.9	13.5
Replicate F										1.692	1.000	0.000	1.000	0.000	0.000	0.043	0.464	0.284	1.801	0.563	0.974
Replicate Prob(F)										0.1954	0.3784	1.0000	0.3966	1.0000	1.0000	0.9579	0.6318	0.7544	0.1766	0.5841	0.3852
Treatment F										4.280	1.000	0.000	1.000	0.000	0.000	3752.878	25.531	19.057	12.004	834.289	17.516
Treatment Prob(F)										0.0001	0.4813	1.0000	0.4682	1.0000	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Weed Code				XANST	XANST	XANST	XANST	AMBTR	AMBTR	IPOHE	IPOHE	ABUTH	ABUTH	ABUTH					
Crop Code																			
Rating Data Type				Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control					
Rating Unit				Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent					
Rating Date				6-17-02	6-30-02	7-15-02	7-28-02	6-17-02	6-30-02	6-17-02	6-30-02	6-30-02	7-15-02	7-28-02					
Trt-Eval Interval				14 DA-B	28 DAE	42 DA-B	56 DAE	14 DA-B	28 DAE	14 DA-B	28 DAE	28 DAE	42 DA-B	56 DAE					
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				
2	A12854	3.93	SE	2.46	LB A/A	2.5	QT/A	PRE	A	72	40	50		95	95	93	94	75	
3	A12854	3.93	SE	2.95	LB A/A	3	QT/A	PRE	A	78	53	53		98	95	98	99	81	
4	A12909	3.67	SE	1.84	LB A/A	2	QT/A	PRE	A	57	23	30		96	90	86	53	40	
5	A12909	3.67	SE	2.21	LB A/A	2.4	QT/A	PRE	A	65	33	47		98	96	93	94	45	
6	BICEP II MAGNUM	5.5	L	2.89	LB A/A	2.1	QT/A	PRE	A	60	33	42		98	96	79	75	53	
7	BALANCE PRO	4	SC	0.094	LB A/A	3	OZ/A	PRE	A	72	70	65		96	95	98	99	99	
7	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	PRE	A										
8	HARNESX XTRA	6	L	3.0	LB A/A	2	QT/A	PRE	A	80	63	67		97	96	75	61	63	
9	TOPNOTCH	3.2	ME	2.0	LB A/A	2.5	QT/A	PRE	A	83	92	88		80	90	50	0	7	
9	HORNET	68.5	WG	0.128	LB A/A	3	OZ/A	PRE	A										
10	OUTLOOK	6	EC	0.846	LB A/A	0.56	QT/A	PRE	A	98	99	99		99	99	96	93	96	
10	MARKSMAN	3.2	L	1.2	LB A/A	1.5	QT/A	3-4"W	C										
10	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	3-4"W	C										
11	A12854	3.93	SE	2.46	LB A/A	2.5	QT/A	SPIKE-2L	B	96	95	92	90	99	99	94	99	99	99
11	ACCENT	75	WG	0.0154	LB A/A	0.33	OZ/A	SPIKE-2L	B										
12	A12854	3.93	SE	2.95	LB A/A	3	QT/A	SPIKE-2L	B	98	97	96	99	99	98	97	97	99	99
12	ACCENT	75	WG	0.0154	LB A/A	0.33	OZ/A	SPIKE-2L	B										
13	A12909	3.67	SE	1.84	LB A/A	2	QT/A	SPIKE-2L	B	95	90	83	63	99	98	96	96	99	99
13	ACCENT	75	WG	0.0154	LB A/A	0.33	OZ/A	SPIKE-2L	B										
14	A12909	3.67	SE	2.21	LB A/A	2.4	QT/A	SPIKE-2L	B	95	95	96	92	98	98	97	96	99	99
14	ACCENT	75	WG	0.0154	LB A/A	0.33	OZ/A	SPIKE-2L	B										
15	A12854	3.93	SE	2.95	LB A/A	3	QT/A	SPIKE-2L	B	96	97	96	97	99	99	96	97	99	99
15	OPTION	35	WG	0.0164	LB A/A	0.75	OZ/A	SPIKE-2L	B										
16	A12909	3.67	SE	2.21	LB A/A	2.4	QT/A	SPIKE-2L	B	97	95	93	92	99	99	97	98	99	99
16	OPTION	35	WG	0.0164	LB A/A	0.75	OZ/A	SPIKE-2L	B										
17	ACETOCHLOR 75	5.5	SE	2.75	LB A/A	2	QT/A	PRE	A	80	67	77		96	98	37	13	20	
18	ACETOCHLOR 150	5.1	SE	3.5	LB A/A	2.75	QT/A	PRE	A	77	57	48		99	98	82	20	47	
19	FULTIME	4	SC	3.33	LB A/A	3.33	QT/A	PRE	A	68	50	50		99	96	73	33	0	

Weed Code	Crop Code	Rating Data Type	Rating Unit	Rating Date	Trt-Eval Interval	XANST	XANST	XANST	XANST	AMBTR	AMBTR	IPOHE	IPOHE	ABUTH	ABUTH	ABUTH						
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	Control Percent	Control Percent	Control Percent	Control Percent	Control Percent	Control Percent	Control Percent						
										6-17-02	6-30-02	7-15-02	7-28-02	6-17-02	6-30-02	6-30-02	7-15-02	7-28-02				
										14 DA-B	28 DAE	42 DA-B	56 DAE	14 DA-B	28 DAE	28 DAE	42 DA-B	56 DAE				
20	AXIOM	68	WG	0.723	LB A/A	17	OZ/A	PRE	A			84	70	70		99		99	99	86	96	
20	AATREX	90	WG	2.0	LB A/A	2.22	LB/A	PRE	A													
21	EPIC	58	WG	0.435	LB A/A	12	OZ/A	PRE	A			88	76	73		96		95	88	70	82	
21	AATREX	90	WG	1.25	LB A/A	1.39	LB/A	PRE	A													
22	USA 2001	71.5	WG	0.536	LB A/A	12	OZ/A	PRE	A			86	77	77		99		97	94	66	83	
22	AATREX	90	WG	1.5	LB A/A	1.67	LB/A	PRE	A													
23	USA 2001	71.5	WG	0.67	LB A/A	15	OZ/A	PRE	A			87	78	85		95		96	95	57	88	
23	AATREX	90	WG	1.5	LB A/A	1.67	LB/A	PRE	A													
24	AXIOM	68	WG	0.383	LB A/A	9	OZ/A	PRE	A			82	76	79		96		97	98	96	95	
24	EPIC	58	WG	0.254	LB A/A	7	OZ/A	PRE	A													
24	AATREX	90	WG	1.5	LB A/A	1.67	LB/A	PRE	A													
LSD (P=.05)						3.2	19.8	29.1	27.7	1.7	10.0	2.8	4.0	26.9	36.9	30.8						
Replicate F						0.531	1.651	2.229	2.388	0.632	0.370	1.200	0.031	1.535	2.871	0.655						
Replicate Prob(F)						0.6012	0.2031	0.1191	0.1031	0.5485	0.6928	0.3349	0.9692	0.2262	0.0668	0.5250						
Treatment F						1193.249	8.772	6.757	6.433	4612.105	33.155	1586.743	203.532	6.552	6.985	10.260						
Treatment Prob(F)						0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001						

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Project Code: 02-19B

Location: Belleville Research Center

Trial Comments

1. Protocol: Sygenta (1-16); DowAgroSciences (17-19); Bayer (20-24).
2. DAE = days after emergence. DA-B = days after SPIKE-2L application.
3. Ratings on 6-30-02 at 28 DAE were also 27 days after SPIKE-2L application.
Ratings on 7-28-02 at 56 DAE were also 55 days after SPIKE-2L application.