

## Evaluation of AE F130360 and Broadleaf Tankmix Partners.

01-10B-MW90

**OBJECTIVE:** Evaluate AE F130360 for crop tolerance and weed control applied alone and in combination with broadleaf tankmix partners.

**SUMMARY:** Corn injury was observed from all herbicide treatments at 7 and 14 days after treatment (DAT). Injury ranged from 17 to 20% at 7 DAT when AE F130360 was applied with Adjuvant Liquid 1. Changing the adjuvant to Destiny MSO increased corn injury from AE F130360 to 27 to 32%. Tank mixing Callisto with AE F130360 and either adjuvant increased corn injury by 5 to 20%. No corn injury was observed by 28 DAT.

Giant foxtail control 56 DAT was 92 to 96% from AE F130360 with no significant differences between adjuvants. However, tank mixing Callisto with AE F130360 reduced giant foxtail control by 1 to 10%. Steadfast controlled 94% of giant foxtail at 56 DAT when applied alone or in combination with Callisto. Similarly, tank mixing Callisto with AE F130360 reduced yellow nutsedge control by up to 42%. Waterhemp control 56 DAT was 0% from AE F130360 but increased to 92 to 96% with the addition of Callisto. All treatments controlled at least 92% of common ragweed and common cocklebur with no significant differences between treatments. Ivyleaf morningglory control was at least 90% from AE F130360. Tank mixing Callisto with AE F130360 did not increase or decrease ivyleaf morningglory control.

Corn yield ranged from 194 bu/A in nontreated plots to 232 bu/A. Corn yield was greatest in plots where common waterhemp control was at least 90%.

### HERBICIDES / ADJUVANTS

AE F130360 35 WG  
CALLISTO 4 SC  
STEADFAST 75 WG  
28% UAN 100 LIQ  
ADJUVANT LIQUID 1 100 LIQ  
DESTINY MSO 100 LIQ  
PRIME OIL COC 100 LIQ

### WEEDS

cocklebur, common  
foxtail, giant  
morningglory, ivyleaf  
nutsedge, yellow  
ragweed, common  
waterhemp, common

### CROP

corn, field

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

## Evaluation of AE F130360 and Broadleaf Tankmix Partners.

Project Code: 01-10B-MW90      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: 4-19-01

**Objective:**

Evaluate AE F130360 for crop tolerance and weed control applied alone and in combination with broadleaf tankmix partners.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. CYPES	nutsedge, yellow	Cyperus esculentus L.
3. AMATA	waterhemp, common	Amaranthus rudis Sauer
4. AMBEL	ragweed, common	Ambrosia artemisiifolia L.
5. IPOHE	morningglory, ivyleaf	Ipomoea hederacea (L.) Jacq.
6. XANST	cocklebur, common	Xanthium strumarium L.

Crop 1:	ZEAMX corn, field	Variety:	P33G28 LL
Planting Method:	Seeded	Planting Date:	5-8-01
Rate:	28000 S/A	Depth:	1.5 IN
Row Spacing:	30 IN		

Plot Width, Unit:	10 FT	Plot Length, Unit:	24 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:	Weir	% OM:	1.6	pH:	6.3	CEC:	12
Texture:	Silt loam	Fert. Level:	P1: 82 LB/A, K: 274 LB/A				

**APPLICATION DESCRIPTION**

**A**

Application Date: 6-1-01  
 Time of Day: 16:00  
 Application Method: Spray  
 Application Timing: 2-3"W  
 Applic. Placement: BROFOL  
 Air Temp., Unit: 72 F  
 % Relative Humidity: 50  
 Wind Velocity, Unit: 10 MPH  
 Soil Moisture: ABONOR  
 % Cloud Cover: 10

**CROP STAGE AT EACH APPLICATION**

**A**

Crop 1 Code, Stage: ZEAMX V4  
 Height, Unit: 8-10 IN

**WEED STAGE AT EACH APPLICATION**

**A**

Weed 1 Code: SETFA  
 Stage(leaves): 2-4  
 Height(inches): 1-4  
 Density: High

Weed 2 Code: CYPES  
 Stage(leaves): 5-7  
 Height(inches): 3-5  
 Density: High

Weed 3 Code: AMATA  
 Stage(leaves): COT-4  
 Height(inches): 0-1  
 Density: Medium

Weed 4 Code: AMBEL  
Stage(leaves): 2-4  
Height(inches): 2-3  
Density: Low

Weed 5 Code: IPOHE  
Stage(leaves): 2-4  
Height(inches): 2  
Density: Low

Weed 6 Code: XANST  
Stage(leaves): 3-5  
Height(inches): 2-4  
Density: Medium

#### APPLICATION EQUIPMENT

**A**

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

NOTES: HARVESTED 10-2-01, 2 ROWS X 21 FT.

Evaluation of AE F130360 and Broadleaf Tankmix Partners.

Project Code: 01-10B-MW90 Location: Belleville Research Center

Weed Code															SETFA	SETFA	SETFA	CYPES	CYPES	CYPES	AMATA	AMATA	AMATA					
Crop Code															Yield	Injury	Injury	Injury	Injury	Injury	Control	Control	Control	Control	Control	Control	Control	Control
Rating Data Type															bu/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit															10-2-01	6-8-01	6-15-01	6-29-01	7-27-01	6-15-01	6-29-01	7-27-01	6-15-01	6-29-01	7-27-01	6-15-01	6-29-01	7-27-01
Rating Date															7 DA-A	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A	
Trt-Eval Interval																												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code																			
1	NONTREATED									194	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2	AE F130360	35	WG	0.02734	LB A/A	1.25	OZ/A	2-3"W	A	198	27	7	0	0	94	98	93	70	94	90	0	0	0	0	0	0		
2	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-3"W	A																			
2	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-3"W	A																			
3	AE F130360	35	WG	0.03281	LB A/A	1.5	OZ/A	2-3"W	A	203	30	6	0	0	94	99	96	65	99	95	0	0	0	0	0	0		
3	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-3"W	A																			
3	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-3"W	A																			
4	AE F130360	35	WG	0.03828	LB A/A	1.75	OZ/A	2-3"W	A	199	32	6	0	0	95	96	92	68	99	95	17	0	0	0	0	0		
4	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-3"W	A																			
4	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-3"W	A																			
5	AE F130360	35	WG	0.02734	LB A/A	1.25	OZ/A	2-3"W	A	195	17	6	0	0	90	99	95	60	99	95	10	0	0	0	0	0		
5	ADJUVANT LIQUID 1	100	LIQ	1.0	% V/V	1	%V/V	2-3"W	A																			
6	AE F130360	35	WG	0.03281	LB A/A	1.5	OZ/A	2-3"W	A	192	20	6	0	0	93	99	95	68	93	88	0	0	0	0	0	0		
6	ADJUVANT LIQUID 1	100	LIQ	1.0	% V/V	1	%V/V	2-3"W	A																			
7	AE F130360	35	WG	0.03828	LB A/A	1.75	OZ/A	2-3"W	A	182	18	5	0	0	95	99	95	65	99	95	0	0	0	0	0	0		
7	ADJUVANT LIQUID 1	100	LIQ	1.0	% V/V	1	%V/V	2-3"W	A																			
8	AE F130360	35	WG	0.02734	LB A/A	1.25	OZ/A	2-3"W	A	215	43	7	0	0	96	93	88	60	62	57	99	97	93	93	93	93		
8	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	2-3"W	A																			
8	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-3"W	A																			
8	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-3"W	A																			
9	AE F130360	35	WG	0.03281	LB A/A	1.5	OZ/A	2-3"W	A	224	50	10	0	0	96	90	87	67	67	60	96	95	92	92	92	92		
9	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	2-3"W	A																			
9	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-3"W	A																			
9	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-3"W	A																			
10	AE F130360	35	WG	0.03828	LB A/A	1.75	OZ/A	2-3"W	A	229	50	10	0	0	96	96	91	57	60	53	96	99	96	96	96	96		
10	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	2-3"W	A																			
10	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-3"W	A																			
10	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-3"W	A																			
11	AE F130360	35	WG	0.02734	LB A/A	1.25	OZ/A	2-3"W	A	217	22	4	0	0	91	94	92	55	63	57	98	96	92	92	92	92		
11	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	2-3"W	A																			
11	ADJUVANT LIQUID 1	100	LIQ	1.5	PT/A	1.5	PT/A	2-3"W	A																			
12	AE F130360	35	WG	0.03281	LB A/A	1.5	OZ/A	2-3"W	A	232	33	7	0	0	90	88	85	62	72	67	99	99	96	96	96	96		
12	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	2-3"W	A																			
12	ADJUVANT LIQUID 1	100	LIQ	1.5	PT/A	1.5	PT/A	2-3"W	A																			
13	AE F130360	35	WG	0.03828	LB A/A	1.75	OZ/A	2-3"W	A	221	35	8	0	0	89	92	87	60	75	68	99	98	94	94	94	94		
13	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	2-3"W	A																			
13	ADJUVANT LIQUID 1	100	LIQ	1.5	PT/A	1.5	PT/A	2-3"W	A																			

Weed Code										SETFA	SETFA	SETFA	CYPES	CYPES	CYPES	AMATA	AMATA	AMATA					
Crop Code										ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX									
Rating Data Type										Yield	Injury	Injury	Injury	Injury	Control	Control	Control	Control					
Rating Unit										bu/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent					
Rating Date										10-2-01	6-8-01	6-15-01	6-29-01	7-27-01	6-15-01	6-29-01	7-27-01	6-15-01					
Trt-Eval Interval										7 DA-A	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A				
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code														
14	STEADFAST	75	WG	0.035	LB A/A	0.75	OZ/A	2-3"W	A	219	30	7	0	0	97	97	94	63	93	88	99	99	96
14	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	2-3"W	A														
14	PRIME OIL COC	100	LIQ	2.0	PT/A	2	PT/A	2-3"W	A														
14	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-3"W	A														
15	STEADFAST	75	WG	0.035	LB A/A	0.75	OZ/A	2-3"W	A	208	25	6	0	0	96	97	94	72	90	85	47	13	7
15	PRIME OIL COC	100	LIQ	2.0	PT/A	2	PT/A	2-3"W	A														
15	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-3"W	A														
LSD (P=.05)										17.4	9.8	4.0	0.0	0.0	5.0	5.5	5.4	11.4	22.9	23.2	14.6	5.4	4.0
Replicate F										1.481	0.690	2.388	0.000	0.000	0.195	2.770	3.671	0.083	1.105	1.670	1.606	0.953	1.530
Replicate Prob(F)										0.2446	0.5097	0.1103	1.0000	1.0000	0.8242	0.0805	0.0389	0.9204	0.3462	0.2078	0.2187	0.3979	0.2341
Treatment F										6.380	14.947	2.941	0.000	0.000	196.881	171.668	167.528	18.862	11.163	10.398	88.745	699.077	1205.285
Treatment Prob(F)										0.0001	0.0001	0.0073	1.0000	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Evaluation of AE F130360 and Broadleaf Tankmix Partners.

Project Code: 01-10B-MW90 Location: Belleville Research Center

Weed Code	AMBEL	AMBEL	AMBEL	IPOHE	IPOHE	IPOHE	XANST	XANST	XANST
Crop Code									
Rating Data Type	Control	Control	Control	Control	Control	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date	6-15-01	6-29-01	7-27-01	6-15-01	6-29-01	7-27-01	6-15-01	6-29-01	7-27-01
Trt-Eval Interval	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	AMBEL	AMBEL	AMBEL	IPOHE	IPOHE	IPOHE	XANST	XANST	XANST
1	NONTREATED									0	0	0	0	0	0	0	0	0
2	AE F130360	35	WG	0.02734	LB A/A	1.25	OZ/A	2-3"	W A	80	97	93	70	95	90	83	99	95
2	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-3"	W A									
2	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-3"	W A									
3	AE F130360	35	WG	0.03281	LB A/A	1.5	OZ/A	2-3"	W A	83	99	96	77	99	96	83	99	96
3	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-3"	W A									
3	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-3"	W A									
4	AE F130360	35	WG	0.03828	LB A/A	1.75	OZ/A	2-3"	W A	80	98	93	70	99	95	82	99	95
4	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-3"	W A									
4	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-3"	W A									
5	AE F130360	35	WG	0.02734	LB A/A	1.25	OZ/A	2-3"	W A	80	99	95	70	99	96	85	99	95
5	ADJUVANT LIQUID 1	100	LIQ	1.0	% V/V	1	%V/V	2-3"	W A									
6	AE F130360	35	WG	0.03281	LB A/A	1.5	OZ/A	2-3"	W A	83	99	95	70	99	95	77	99	95
6	ADJUVANT LIQUID 1	100	LIQ	1.0	% V/V	1	%V/V	2-3"	W A									
7	AE F130360	35	WG	0.03828	LB A/A	1.75	OZ/A	2-3"	W A	87	98	93	78	99	95	77	99	95
7	ADJUVANT LIQUID 1	100	LIQ	1.0	% V/V	1	%V/V	2-3"	W A									
8	AE F130360	35	WG	0.02734	LB A/A	1.25	OZ/A	2-3"	W A	92	99	96	95	94	90	93	96	92
8	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	2-3"	W A									
8	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-3"	W A									
8	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-3"	W A									
9	AE F130360	35	WG	0.03281	LB A/A	1.5	OZ/A	2-3"	W A	93	98	94	90	96	92	92	96	92
9	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	2-3"	W A									
9	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-3"	W A									
9	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-3"	W A									
10	AE F130360	35	WG	0.03828	LB A/A	1.75	OZ/A	2-3"	W A	93	97	94	92	95	92	87	96	93
10	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	2-3"	W A									
10	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-3"	W A									
10	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-3"	W A									
11	AE F130360	35	WG	0.02734	LB A/A	1.25	OZ/A	2-3"	W A	92	98	94	95	98	94	88	96	93
11	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	2-3"	W A									
11	ADJUVANT LIQUID 1	100	LIQ	1.5	PT/A	1.5	PT/A	2-3"	W A									
12	AE F130360	35	WG	0.03281	LB A/A	1.5	OZ/A	2-3"	W A	90	99	96	87	97	94	88	97	94
12	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	2-3"	W A									
12	ADJUVANT LIQUID 1	100	LIQ	1.5	PT/A	1.5	PT/A	2-3"	W A									
13	AE F130360	35	WG	0.03828	LB A/A	1.75	OZ/A	2-3"	W A	87	99	96	96	99	96	86	96	93
13	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	2-3"	W A									
13	ADJUVANT LIQUID 1	100	LIQ	1.5	PT/A	1.5	PT/A	2-3"	W A									

Weed Code	AMBEL	AMBEL	AMBEL	IPOHE	IPOHE	IPOHE	XANST	XANST	XANST
Crop Code									
Rating Data Type	Control	Control	Control	Control	Control	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date	6-15-01	6-29-01	7-27-01	6-15-01	6-29-01	7-27-01	6-15-01	6-29-01	7-27-01
Trt-Eval Interval	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code									
14	STEADFAST	75	WG	0.035	LB A/A	0.75	OZ/A	2-3"W	A	96	99	96	97	97	94	93	96	93
14	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	2-3"W	A									
14	PRIME OIL COC	100	LIQ	2.0	PT/A	2	PT/A	2-3"W	A									
14	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-3"W	A									
15	STEADFAST	75	WG	0.035	LB A/A	0.75	OZ/A	2-3"W	A	70			78			83		
15	PRIME OIL COC	100	LIQ	2.0	PT/A	2	PT/A	2-3"W	A									
15	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-3"W	A									
LSD (P=.05)										6.7	2.4	3.6	9.6	3.6	4.8	7.2	3.1	4.4
Replicate F										0.260	2.689	0.024	0.024	2.301	1.860	6.358	3.446	6.527
Replicate Prob(F)										0.7726	0.0876	0.9761	0.9760	0.1210	0.1766	0.0053	0.0477	0.0052
Treatment F										100.854	1024.845	411.030	52.066	440.485	235.075	83.108	615.376	273.772
Treatment Prob(F)										0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

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Project Code: 01-10B-MW90      Location: Belleville Research Center

#### Trial Comments

1. Protocol: Aventis.
2. DA-A = days after 2-3"W application.
3. Crop injury was stunting.
4. Treatments 2-7 and 15 had high populations of AMATA, which may have reduced populations of other weeds at 28 and 56 DA-A.