

## Lightning Adjuvant Study.

01-5A

**OBJECTIVE:** Compare various adjuvants for use with Lightning.

**SUMMARY:** No corn injury was observed from any treatment. All herbicide treatments controlled at least 92% of giant foxtail and 95% of common cocklebur by 28 days after treatment (DAT). Lightning controlled 78 to 80% of giant ragweed control with no significant difference between adjuvant treatments. None of the Lightning treatments controlled common waterhemp. Adjuvant selection did not affect weed control with Lightning in this study.

### HERBICIDE / ADJUVANTS

LIGHTNING 70 WG  
 28% UAN 100 LIQ  
 ACTIVATOR 90 100 LIQ  
 BETWEEN 100 LIQ  
 BOLT 100 DRY  
 CLASS ACT NG 100 LIQ  
 DESTINY MSO 100 LIQ  
 EX 105 100 LIQ  
 EXCHANGE 100 LIQ  
 HI-PER-OIL 100 LIQ  
 NEWTONE 100 LIQ  
 PRIME OIL COC 100 LIQ  
 PX403 100 LIQ

### WEEDS

cocklebur, common  
 foxtail, giant  
 ragweed, common  
 waterhemp, common

### CROP

corn, field

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

## Lightning Adjuvant Study.

Project Code: 01-5A                      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: 5-9-01**Objective:**

Compare various adjuvants for use with Lightning.

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

Crop 1:	ZEAMX corn, field	Variety:	P33P71 CL
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, P205 0 LB/A, K20 150 LB/A				

Soil Name:	Stoy	% OM:	1.6	pH:	6.1	CEC:	8
Texture:	Silt loam	Fert. Level:	P1: 77 LB/A, K: 286 LB/A				

**APPLICATION DESCRIPTION**

APPLICATION DESCRIPTION		A
Application Date:	6-6-01	
Time of Day:	16:00	
Application Method:	Spray	
Application Timing:	2-4"W	
Applic. Placement:	BROFOL	
Air Temp., Unit:	84 F	
% Relative Humidity:	58	
Wind Velocity, Unit:	3-5 MPH	
Dew Presence (Y/N):	N	
Soil Moisture:	NORMAL	
% Cloud Cover:	10	

**CROP STAGE AT EACH APPLICATION**

CROP STAGE AT EACH APPLICATION		A
Crop 1 Code, Stage:	ZEAMX V4	
Height, Unit:	8-10 IN	

**WEED STAGE AT EACH APPLICATION**

WEED STAGE AT EACH APPLICATION		A
Weed 1 Code:	SETFA	
Stage(leaves):	2-3	
Height(inches):	3-4	
Density:	High	
Weed 2 Code:	AMATA	
Weed 3 Code:	AMBEL	
Stage(leaves):	3-4	
Height(inches):	3-4	
Density:	Medium	
Weed 4 Code:	XANST	
Stage(leaves):	4-5	
Height(inches):	3-5	
Density:	High	

## APPLICATION EQUIPMENT

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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: NOT HARVESTED.

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Weed Code	Rating Data Type	Rating Unit	Rating Date	Trt-Eval Interval	ZEAMX Injury Percent	ZEAMX Injury Percent	SETFA Control Percent	SETFA Control Percent	AMATA Control Percent	AMATA Control Percent	AMBEL Control Percent	AMBEL Control Percent	XANST Control Percent	XANST Control Percent
					6-20-01	7-4-01	6-20-01	7-4-01	6-20-01	7-4-01	6-20-01	7-4-01	6-20-01	7-4-01
					14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	ZEAMX 14 DA-A	ZEAMX 28 DA-A	SETFA 14 DA-A	SETFA 28 DA-A	AMATA 14 DA-A	AMATA 28 DA-A	AMBEL 14 DA-A	AMBEL 28 DA-A	XANST 14 DA-A	XANST 28 DA-A
1	NONTREATED									0	0	0	0	0	0	0	0	0	0
2	LIGHTNING	70	WG	0.056	LB A/A	1.28	OZ/A	2-4"	W A	0	0	90	94	0	0	82	80	90	95
2	PRIME OIL COC	100	LIQ	1.0	% V/V		1 %V/V		2-4"	W A									
2	28% UAN	100	LIQ	2.5	% V/V		2.5 %V/V		2-4"	W A									
3	LIGHTNING	70	WG	0.056	LB A/A	1.28	OZ/A	2-4"	W A	0	0	89	94	0	0	82	80	92	95
3	DESTINY MSO	100	LIQ	1.0	% V/V		1 %V/V		2-4"	W A									
3	28% UAN	100	LIQ	2.5	% V/V		2.5 %V/V		2-4"	W A									
4	LIGHTNING	70	WG	0.056	LB A/A	1.28	OZ/A	2-4"	W A	0	0	91	95	0	0	82	80	92	95
4	ACTIVATOR 90	100	LIQ	0.25	% V/V		0.25 %V/V		2-4"	W A									
4	28% UAN	100	LIQ	2.5	% V/V		2.5 %V/V		2-4"	W A									
5	LIGHTNING	70	WG	0.056	LB A/A	1.28	OZ/A	2-4"	W A	0	0	94	95	0	0	85	80	92	95
5	EXCHANGE	100	LIQ	0.375	% V/V		0.375 %V/V		2-4"	W A									
5	28% UAN	100	LIQ	2.5	% V/V		2.5 %V/V		2-4"	W A									
6	LIGHTNING	70	WG	0.056	LB A/A	1.28	OZ/A	2-4"	W A	0	0	91	94	0	0	88	78	94	95
6	EX 105	100	LIQ	0.5	% V/V		0.5 %V/V		2-4"	W A									
6	28% UAN	100	LIQ	2.5	% V/V		2.5 %V/V		2-4"	W A									
7	LIGHTNING	70	WG	0.056	LB A/A	1.28	OZ/A	2-4"	W A	0	0	87	94	0	0	82	80	92	95
7	HI-PER-OIL	100	LIQ	0.5	% V/V		0.5 %V/V		2-4"	W A									
7	28% UAN	100	LIQ	2.5	% V/V		2.5 %V/V		2-4"	W A									
8	LIGHTNING	70	WG	0.056	LB A/A	1.28	OZ/A	2-4"	W A	0	0	91	95	0	0	80	80	92	95
8	BETWEEN	100	LIQ	0.5	% V/V		0.5 %V/V		2-4"	W A									
8	28% UAN	100	LIQ	2.5	% V/V		2.5 %V/V		2-4"	W A									
9	LIGHTNING	70	WG	0.056	LB A/A	1.28	OZ/A	2-4"	W A	0	0	92	95	0	0	88	78	91	95
9	BOLT	100	DRY	2.4	% W/W		20 LB/100 GAL		2-4"	W A									
10	LIGHTNING	70	WG	0.056	LB A/A	1.28	OZ/A	2-4"	W A	0	0	87	94	0	0	85	80	92	95
10	PX403	100	LIQ	0.375	% V/V		0.375 %V/V		2-4"	W A									
10	28% UAN	100	LIQ	2.5	% V/V		2.5 %V/V		2-4"	W A									
11	LIGHTNING	70	WG	0.056	LB A/A	1.28	OZ/A	2-4"	W A	0	0	83	93	0	0	85	80	92	95
11	CLASS ACT NG	100	LIQ	2.5	% V/V		2.5 %V/V		2-4"	W A									
12	LIGHTNING	70	WG	0.056	LB A/A	1.28	OZ/A	2-4"	W A	0	0	83	92	0	0	82	80	90	95
12	NEWTONE	100	LIQ	1.0	% V/V		1 %V/V		2-4"	W A									
LSD (P=.05)										0.0	0.0	6.2	3.6	0.0	0.0	6.7	3.1	3.7	0.0
Replicate F										0.000	0.000	6.534	3.451	0.000	0.000	0.427	1.453	4.069	0.000
Replicate Prob(F)										1.0000	1.0000	0.0059	0.0497	1.0000	1.0000	0.6577	0.2555	0.0314	1.0000
Treatment F										0.000	0.000	149.906	494.661	0.000	0.000	111.738	474.943	447.498	0.000
Treatment Prob(F)										1.0000	1.0000	0.0001	0.0001	1.0000	1.0000	0.0001	0.0001	0.0001	1.0000

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Trial Comments

1. Protocol: SIU - BGY; Miles (trt 9).
2. DA-A = days after 2-4"W application.