

Evaluation of Landoil as a Postemergence Soybean Herbicide Adjuvant.

01-6C

OBJECTIVE: Evaluate the efficacy of postemergence herbicide combinations with Landoil compared to standard adjuvants.

SUMMARY: Soybean injury at 7 days after treatment (DAT) was reduced for Raptor at 5 and 3.33 oz/A applied with Landoil compared to MSO. No differences were observed for soybean injury at 14 and 28 DAT.

Giant foxtail control at 28 DAT was reduced with Raptor + Landoil compared to Raptor + MSO (Raptor at 1.67 oz/A). The same was true for Flexstar plus Fusion at the high and low rates.

Control of common cocklebur at 28 DAT was reduced for Raptor + UAN + Landoil compared to Raptor + UAN (1.67oz/A). Cocklebur control at 28 DAT with Flexstar + Fusion (high and low rates) was less for Landoil than Prime Oil COC. Control of ivyleaf morningglory at 28 DAT was less for the Landoil combination than COC for Flexstar + Fusion (low rate). Roundup performance was the same for all treatments.

Using Landoil as a postemergence adjuvant did not improve weed control or soybean yield over traditional adjuvants.

HERBICIDES / ADJUVANTS

FLEXSTAR 1.88 EC
 FUSION 2.66 EC
 RAPTOR 1 AS
 ROUNDUP ORIGINAL 3 SL
 28% UAN 100 LIQ
 ACTIVATOR 90 100 LIQ
 AMS 100 DRY
 DESTINY MSO 100 LIQ
 LANDOIL 100 LIQ
 PRIME OIL COC 100 LIQ

WEEDS

cocklebur, common
 foxtail, giant
 morningglory, ivyleaf
 ragweed, common

CROP

soybean

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Evaluation of Landoil as a Postemergence Soybean Herbicide Adjuvant.

Project Code: 01-6C 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: 5-8-01**Objective:**

Evaluate the efficacy of postemergence herbicide combinations with Landoil compared to standard adjuvants.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. XANST	cocklebur, common	Xanthium strumarium L.
3. AMBEL	ragweed, common	Ambrosia artemisiifolia L.
4. IPOHE	morningglory, ivyleaf	Ipomoea hederacea (L.) Jacq.

Crop 1:	GLXMA soybean	Variety:	B-T 371CR
Planting Method:	Seeded	Planting Date:	5-11-01
Rate:	75 lb/A	Depth:	1.0 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:	ZEAMX, 2000				
Field Prep./Maintenance:	N 0 LB/A, P205 0 LB/A, K20 90 LB/A				

Soil Name:	Stoy	% OM:	1.6	pH:	6.6	CEC:	8
Texture:	Silt loam	Fert. Level:	P1: 91 LB/A, K: 296 LB/A				

APPLICATION DESCRIPTION

A	
Application Date:	6-13-01
Time of Day:	19:00
Application Method:	Spray
Application Timing:	4-6"W
Applic. Placement:	BROFOL
Air Temp., Unit:	90 F
% Relative Humidity:	46
Wind Velocity, Unit:	5-7 MPH
Dew Presence (Y/N):	N
Soil Moisture:	BELNOR
% Cloud Cover:	0

CROP STAGE AT EACH APPLICATION

A	
Crop 1 Code, Stage:	GLXMA V2-V3
Height, Unit:	4-5 IN

WEED STAGE AT EACH APPLICATION

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

Weed 4 Code: IPOHE
Stage(leaves): 4-6
Height(inches): 3-5
Density: Low

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 10-31-01, 2 ROWS X 21 FT.

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Special mixing instructions, see comments.

Weed Code						SETFA	SETFA	XANST	XANST	AMBEL	AMBEL	IPOHE								
Crop Code						GLXMA	GLXMA	GLXMA	GLXMA											
Rating Data Type						Yield	Injury	Injury	Injury	Control	Control	Control								
Rating Unit						bu/A	Percent	Percent	Percent	Percent	Percent	Percent								
Rating Date						10-31-01	6-20-01	6-27-01	7-11-01	6-27-01	7-11-01	6-27-01								
Trt-Eval Interval						7 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											
1	NONTREATED									1	0	0	0	0	0	0	0			
2	RAPTOR	1 AS		0.039 LB A/A		5 OZ/A		4-6"W A		23	5	5	2	68	67	73	92	63	55	52
2	28% UAN	100 LIQ		2.5 % V/V		2.5 %V/V		4-6"W A												
3	RAPTOR	1 AS		0.039 LB A/A		5 OZ/A		4-6"W A		24	11	7	2	70	78	73	91	67	75	52
3	DESTINY MSO	100 LIQ		1.0 % V/V		1 %V/V		4-6"W A												
3	28% UAN	100 LIQ		2.5 % V/V		2.5 %V/V		4-6"W A												
4	RAPTOR	1 AS		0.039 LB A/A		5 OZ/A		4-6"W A		21	6	5	3	68	72	73	90	68	69	43
4	LANDOIL	100 LIQ		1.0 PT/A		1 PT/A		4-6"W A												
4	28% UAN	100 LIQ		2.5 % V/V		2.5 %V/V		4-6"W A												
5	RAPTOR	1 AS		0.026 LB A/A		3.33 OZ/A		4-6"W A		21	0	2	0	60	58	70	90	62	52	50
5	28% UAN	100 LIQ		2.5 % V/V		2.5 %V/V		4-6"W A												
6	RAPTOR	1 AS		0.026 LB A/A		3.33 OZ/A		4-6"W A		22	14	5	3	68	73	72	83	67	60	60
6	DESTINY MSO	100 LIQ		1.0 % V/V		1 %V/V		4-6"W A												
6	28% UAN	100 LIQ		2.5 % V/V		2.5 %V/V		4-6"W A												
7	RAPTOR	1 AS		0.026 LB A/A		3.33 OZ/A		4-6"W A		19	8	3	2	60	65	68	85	63	65	47
7	LANDOIL	100 LIQ		1.0 PT/A		1 PT/A		4-6"W A												
7	28% UAN	100 LIQ		2.5 % V/V		2.5 %V/V		4-6"W A												
8	RAPTOR	1 AS		0.013 LB A/A		1.67 OZ/A		4-6"W A		12	4	3	0	67	57	62	87	52	52	43
8	28% UAN	100 LIQ		2.5 % V/V		2.5 %V/V		4-6"W A												
9	RAPTOR	1 AS		0.013 LB A/A		1.67 OZ/A		4-6"W A		13	2	2	0	63	72	63	79	62	50	37
9	DESTINY MSO	100 LIQ		1.0 % V/V		1 %V/V		4-6"W A												
9	28% UAN	100 LIQ		2.5 % V/V		2.5 %V/V		4-6"W A												
10	RAPTOR	1 AS		0.013 LB A/A		1.67 OZ/A		4-6"W A		10	1	2	0	60	57	60	68	53	43	32
10	LANDOIL	100 LIQ		1.0 PT/A		1 PT/A		4-6"W A												
10	28% UAN	100 LIQ		2.5 % V/V		2.5 %V/V		4-6"W A												
11	FLEXSTAR	1.88 EC		0.294 LB A/A		20 OZ/A		4-6"W A		24	15	7	0	93	73	90	77	97	96	86
11	FUSION	2.66 EC		0.208 LB A/A		10 OZ/A		4-6"W A												
11	28% UAN	100 LIQ		2.5 % V/V		2.5 %V/V		4-6"W A												
12	FLEXSTAR	1.88 EC		0.294 LB A/A		20 OZ/A		4-6"W A		32	14	7	0	96	88	98	96	99	99	95
12	FUSION	2.66 EC		0.208 LB A/A		10 OZ/A		4-6"W A												
12	PRIME OIL COC	100 LIQ		1.0 % V/V		1 %V/V		4-6"W A												
12	28% UAN	100 LIQ		2.5 % V/V		2.5 %V/V		4-6"W A												
13	FLEXSTAR	1.88 EC		0.294 LB A/A		20 OZ/A		4-6"W A		20	15	5	0	90	70	93	82	97	94	83
13	FUSION	2.66 EC		0.208 LB A/A		10 OZ/A		4-6"W A												
13	LANDOIL	100 LIQ		30 FL OZ/A		30 OZ/A		4-6"W A												
13	28% UAN	100 LIQ		2.5 % V/V		2.5 %V/V		4-6"W A												

Weed Code												SETFA	SETFA	XANST	XANST	AMBEL	AMBEL	IPOHE			
Crop Code												GLXMA	GLXMA	GLXMA	GLXMA						
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												10-31-01	6-20-01	6-27-01	7-11-01	6-27-01	7-11-01	6-27-01	7-11-01	6-27-01	7-11-01
Trt-Eval Interval												7 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												
14	FLEXSTAR	1.88	EC	0.196	LB A/A	13.3	OZ/A	4-6"	W A	17	10	5	0	84	68	70	48	94	83	73	
14	FUSION	2.66	EC	0.1387	LB A/A	6.67	OZ/A	4-6"	W A												
14	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4-6"	W A												
15	FLEXSTAR	1.88	EC	0.196	LB A/A	13.3	OZ/A	4-6"	W A	19	12	5	0	88	63	91	83	98	99	83	
15	FUSION	2.66	EC	0.1387	LB A/A	6.67	OZ/A	4-6"	W A												
15	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4-6"	W A												
15	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4-6"	W A												
16	FLEXSTAR	1.88	EC	0.196	LB A/A	13.3	OZ/A	4-6"	W A	16	13	7	0	84	72	83	77	93	87	90	
16	FUSION	2.66	EC	0.1387	LB A/A	6.67	OZ/A	4-6"	W A												
16	LANDOIL	100	LIQ	20	FL OZ/A	20	OZ/A	4-6"	W A												
16	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4-6"	W A												
17	FLEXSTAR	1.88	EC	0.098	LB A/A	6.67	OZ/A	4-6"	W A	12	8	2	0	77	47	58	43	88	57	66	
17	FUSION	2.66	EC	0.0693	LB A/A	3.33	OZ/A	4-6"	W A												
17	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4-6"	W A												
18	FLEXSTAR	1.88	EC	0.098	LB A/A	6.67	OZ/A	4-6"	W A	23	10	3	0	80	72	80	80	98	88	88	
18	FUSION	2.66	EC	0.0693	LB A/A	3.33	OZ/A	4-6"	W A												
18	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4-6"	W A												
18	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4-6"	W A												
19	FLEXSTAR	1.88	EC	0.098	LB A/A	6.67	OZ/A	4-6"	W A	7	9	2	0	48	38	35	27	82	76	65	
19	FUSION	2.66	EC	0.0693	LB A/A	3.33	OZ/A	4-6"	W A												
19	LANDOIL	100	LIQ	16	FL OZ/A	16	OZ/A	4-6"	W A												
19	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4-6"	W A												
20	ROUNDUP ORIGINAL	3	SL	0.75	LB AE/A	2	PT/A	4-6"	W A	38	0	2	0	99	93	99	95	98	99	85	
20	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	4-6"	W A												
21	ROUNDUP ORIGINAL	3	SL	0.75	LB AE/A	2	PT/A	4-6"	W A	38	5	0	0	99	95	98	93	99	99	87	
21	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	4-6"	W A												
21	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	4-6"	W A												
22	ROUNDUP ORIGINAL	3	SL	0.75	LB AE/A	2	PT/A	4-6"	W A	31	7	2	0	99	93	99	91	97	98	82	
22	LANDOIL	100	LIQ	2.0	PT/A	2	PT/A	4-6"	W A												
22	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	4-6"	W A												
23	ROUNDUP ORIGINAL	3	SL	0.5	LB AE/A	1.33	PT/A	4-6"	W A	32	2	2	0	99	92	98	94	97	98	78	
23	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	4-6"	W A												
24	ROUNDUP ORIGINAL	3	SL	0.5	LB AE/A	1.33	PT/A	4-6"	W A	37	4	2	0	98	94	99	93	95	98	87	
24	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	4-6"	W A												
24	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	4-6"	W A												
25	ROUNDUP ORIGINAL	3	SL	0.5	LB AE/A	1.33	PT/A	4-6"	W A	33	3	0	0	99	95	99	95	95	96	78	
25	LANDOIL	100	LIQ	1.33	PT/A	1.33	PT/A	4-6"	W A												
25	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	4-6"	W A												
26	ROUNDUP ORIGINAL	3	SL	0.25	LB AE/A	0.67	PT/A	4-6"	W A	23	3	0	0	95	87	95	94	83	87	68	
26	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	4-6"	W A												
27	ROUNDUP ORIGINAL	3	SL	0.25	LB AE/A	0.67	PT/A	4-6"	W A	23	4	2	0	96	81	90	94	85	90	65	
27	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	4-6"	W A												
27	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	4-6"	W A												

Weed Code												SETFA	SETFA	XANST	XANST	AMBEL	AMBEL	IPOHE				
Crop Code												GLXMA	GLXMA	GLXMA	GLXMA	Control	Control	Control	Control	Control	Control	
Rating Data Type												Yield	Injury	Injury	Injury	Percent	Percent	Percent	Percent	Percent	Percent	
Rating Unit												bu/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
Rating Date												10-31-01	6-20-01	6-27-01	7-11-01	6-27-01	7-11-01	6-27-01	7-11-01	6-27-01	7-11-01	6-27-01
Trt-Eval Interval												7 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	14 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code													
28	ROUNDUP ORIGINAL	3	SL	0.25	LB AE/A	0.67	PT/A	4-6"	W A	20	2	0	0	94	92	95	96	87	91	65		
28	LANDOIL	100	LIQ	1.0	PT/A	1	PT/A	4-6"	W A													
28	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	4-6"	W A													
LSD (P=.05)										11.3	4.5	4.7	1.9	10.7	14.4	12.8	12.1	12.4	17.7	21.9		
Replicate F										6.722	3.560	13.083	4.240	2.489	1.158	2.630	6.313	2.873	0.648	10.273		
Replicate Prob(F)										0.0025	0.0353	0.0001	0.0195	0.0925	0.3219	0.0813	0.0034	0.0652	0.5271	0.0002		
Treatment F										5.275	9.822	1.850	2.140	33.519	16.536	24.826	29.013	25.889	14.643	8.183		
Treatment Prob(F)										0.0001	0.0001	0.0273	0.0087	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001		

Evaluation of Landoil as a Postemergence Soybean Herbicide Adjuvant.

Project Code: 01-6C Location: Belleville Research Center
Special mixing instructions, see comments.

Trial Comments

1. Protocol: SIU - BGY / WIU / U of I.
2. DA-A = days after 4-6"W application. At 28 DA-A, not able to rate IPOHE due to competition from other weeds.
3. Mixing order:
 - a.) Nitrogen source (water conditioner);
 - b.) Landoil;
 - c.) Herbicide(s) - Landoil label suggests to make a pre-slurry, then add to tank;
 - d.) Conventional adjuvant.