

Raptor Oil:Surfactant Blend Adjuvant Study.

01-10C-E120

OBJECTIVE: Evaluate the performance of adjuvants with different ratios of oil:surfactant with Raptor compared to standards.

SUMMARY: No soybean injury was observed in this study. At 28 days after treatment (DAT), Raptor alone controlled 40, 60, and 33% of giant foxtail, common cocklebur, and common ragweed, respectively. Giant foxtail control was increased with the addition of Prime Oil, Destiny MSO plus Preference, Between, Exchange, COC-PL, PX403, Exchange plus AMS, PL335, and PX138 plus AMS to Raptor. The addition of any adjuvant to Raptor increased common cocklebur control. The combination of Raptor plus PX403 plus AMS provided the greatest control of common cocklebur and common ragweed. Overall, weed control was greatest when Raptor was combined with either PX403 plus AMS or PX138 plus AMS.

HERBICIDE / ADJUVANTS

RAPTOR 1 AS
 AG 01012 100 LIQ
 AG 01017 100 LIQ
 AG 01018 100 LIQ
 AG 01019 100 LIQ
 AMS 100 DRY
 BETWEEN 100 LIQ
 COC-PL 100 LIQ
 DESTINY MSO 100 LIQ
 EXCHANGE 100 LIQ
 HI-PER-OIL 100 LIQ
 PL335 100 DRY
 PREFERENCE 100 LIQ
 PRIME OIL COC 100 LIQ
 PX138 100 LIQ
 PX403 100 LIQ

WEEDS

cocklebur, common
 foxtail, giant
 ragweed, common

CROP

soybean

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Raptor Oil:Surfactant Blend Adjuvant Study.

Project Code: 01-10C-E120 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: 5-11-01**Objective:**

Evaluate the performance of adjuvants with different ratios of oil:surfactant with Raptor compared to standards.

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.

Crop 1:	GLXMA soybean	Variety:	B-T 371CR
Planting Method:	Seeded	Planting Date:	5-16-01
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 50 LB/A, K20 150 LB/A				

Soil Name:	Weir	% OM:	2.0	pH:	6.1	CEC:	11
Texture:	Silt loam	Fert. Level:	P1: 65 LB/A, K: 240 LB/A				

APPLICATION DESCRIPTION

	A
Application Date:	6-18-01
Time of Day:	10:00
Application Method:	Spray
Application Timing:	4-6"W
Applic. Placement:	BROFOL
Air Temp., Unit:	88 F
% Relative Humidity:	46
Wind Velocity, Unit:	0-5 MPH
Soil Moisture:	BELNOR
% Cloud Cover:	5-10

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	GLXMA V3
Height, Unit:	4-6 IN

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	SETFA
Stage(leaves):	4-6
Height(inches):	4-8
Density:	High
Weed 2 Code:	XANST
Stage(leaves):	6-8
Height(inches):	4-6
Density:	Low
Weed 3 Code:	AMBEL
Stage(leaves):	4-6
Height(inches):	4-6
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: NOT HARVESTED.

Raptor Oil:Surfactant Blend Adjuvant Study.

Project Code: 01-10C-E120 Location: Belleville Research Center

Weed Code								SETFA	SETFA	XANST	XANST	AMBEL	AMBEL				
Crop Code	Rating Data Type	GLXMA	GLXMA	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control				
Rating Unit	Rating Date	Injury	Injury	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent				
Trt-Eval Interval		7-2-01	7-16-01	7-2-01	7-16-01	7-2-01	7-16-01	7-2-01	7-16-01	7-2-01	7-16-01	7-2-01	7-16-01				
		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	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	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"W	A	0	0	33	40	53	60	33	33
2	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"W	A	0	0	63	52	71	80	57	58
2	PRIME OIL COC	100 LIQ		1.0	% V/V	1	%V/V	4-6"W	A								
3	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"W	A	0	0	53	45	73	78	55	50
3	DESTINY MSO	100 LIQ		1.0	% V/V	1	%V/V	4-6"W	A								
4	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"W	A	0	0	50	35	65	78	50	45
4	HI-PER-OIL	100 LIQ		0.5	% V/V	0.5	%V/V	4-6"W	A								
5	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"W	A	0	0	65	42	73	76	53	43
5	AG 01012	100 LIQ		0.5	% V/V	0.5	%V/V	4-6"W	A								
6	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"W	A	0	0	65	45	77	78	57	48
6	AG 01017	100 LIQ		0.5	% V/V	0.5	%V/V	4-6"W	A								
7	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"W	A	0	0	77	57	80	80	68	45
7	AG 01018	100 LIQ		0.5	% V/V	0.5	%V/V	4-6"W	A								
8	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"W	A	0	0	67	45	73	73	52	40
8	AG 01019	100 LIQ		0.5	% V/V	0.5	%V/V	4-6"W	A								
9	NONTREATED									0	0	0	0	0	0	0	0
10	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"W	A	0	0	77	55	77	77	67	45
10	DESTINY MSO	100 LIQ		0.67	% V/V	0.67	%V/V	4-6"W	A								
10	PREFERENCE	100 LIQ		0.33	% V/V	0.33	%V/V	4-6"W	A								
11	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"W	A	0	0	67	48	77	76	58	47
11	DESTINY MSO	100 LIQ		0.5	% V/V	0.5	%V/V	4-6"W	A								
11	PREFERENCE	100 LIQ		0.25	% V/V	0.25	%V/V	4-6"W	A								
12	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"W	A	0	0	68	53	68	77	58	47
12	BETWEEN	100 LIQ		0.5	% V/V	0.5	%V/V	4-6"W	A								
13	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"W	A	0	0	53	42	72	73	52	42
13	PX403	100 LIQ		0.375	% V/V	0.375	%V/V	4-6"W	A								
14	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"W	A	0	0	62	53	68	78	57	52
14	EXCHANGE	100 LIQ		0.375	% V/V	0.375	%V/V	4-6"W	A								
15	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"W	A	0	0	71	60	80	83	63	58
15	COC-PL	100 LIQ		1.0	% V/V	1	%V/V	4-6"W	A								
15	AMS	100 DRY		2.5	LB A/A	2.5	LB/A	4-6"W	A								
16	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"W	A	0	0	70	60	82	86	70	67
16	PX403	100 LIQ		0.375	% V/V	0.375	%V/V	4-6"W	A								
16	AMS	100 DRY		2.5	LB A/A	2.5	LB/A	4-6"W	A								
17	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"W	A	0	0	77	62	81	84	72	62
17	EXCHANGE	100 LIQ		0.375	% V/V	0.375	%V/V	4-6"W	A								
17	AMS	100 DRY		2.5	LB A/A	2.5	LB/A	4-6"W	A								

Weed Code									SETFA	SETFA	XANST	XANST	AMBEL	AMBEL
Crop Code									GLXMA	GLXMA				
Rating Data Type									Injury	Injury	Control	Control	Control	Control
Rating Unit									Percent	Percent	Percent	Percent	Percent	Percent
Rating Date									7-2-01	7-16-01	7-2-01	7-16-01	7-2-01	7-16-01
Trt-Eval Interval									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								
18	RAPTOR	1	AS	0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	67	53	75	77	65	58
18	PL335	100	DRY	1.92	% W/W	16	LB/100 GAL	4-6"	W A								
19	RAPTOR	1	AS	0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	67	47	77	80	60	47
19	PL335	100	DRY	2.4	% W/W	20	LB/100 GAL	4-6"	W A								
20	RAPTOR	1	AS	0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	71	68	80	85	67	62
20	PX138	100	LIQ	1	% V/V	1	%V/V	4-6"	W A								
20	AMS	100	DRY	2.5	LB A/A	2.5	LB/A	4-6"	W A								
LSD (P=.05)										0.0	0.0	12.3	13.6	8.6	10.2	11.8	13.4
Replicate F										0.000	0.000	8.036	3.056	4.792	6.178	16.715	8.047
Replicate Prob(F)										1.0000	1.0000	0.0013	0.0591	0.0141	0.0048	0.0001	0.0013
Treatment F										0.000	0.000	17.065	8.719	34.866	26.199	14.627	8.978
Treatment Prob(F)										1.0000	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Raptor Oil:Surfactant Blend Adjuvant Study.

Project Code: 01-10C-E120 Location: Belleville Research Center

Trial Comments

1. Protocol: Agrilliance (trts 1-8); Precision Labs (trts 13-20); SIU - BGY (trts 10+11); and United Suppliers (trf 12).
2. DA-A = days after 4-6"W application.