

Raptor "Complete" Adjuvant Study.

01-21S-W60

OBJECTIVE: Evaluate experimental adjuvants that provide complete adjuvant requirements for applications with Raptor.

SUMMARY: No soybean injury was observed in this study. Raptor at 2.5 oz/A alone controlled 23% of giant foxtail and 35% of common cocklebur and common ragweed at 28 days after treatment (DAT). The addition of any adjuvant to Raptor increased control of giant foxtail, common cocklebur, and common ragweed. The combination of Raptor plus Destiny MSO plus AMS provided the greatest giant foxtail and common cocklebur control at 14 and 28 DAT. However, common ragweed control was greatest when AR 200-TM at the high rate was combined with Raptor. In general, weed control tended to be lower when DE 500-TM was added to Raptor compared to the other adjuvants.

HERBICIDE / ADJUVANTS

RAPTOR 1 AS
AMS 100 DRY
AR 200-TM
AR 581-1P 100 DRY
AR-A 100 LIQ
AR-B 100 DRY
DE 500-TM
DE-A 100 DRY
DE-B 100 DRY
DESTINY MSO 100 LIQ
PL335 100 DRY
SE 581-1P 100 DRY

WEEDS

cocklebur, common
foxtail, giant
ragweed, common

CROP

soybean

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Raptor "Complete" Adjuvant Study.

Project Code: 01-21S-W60 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 experimental adjuvants that provide complete adjuvant requirements for applications with Raptor.

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 398CR
Planting Method:	Seeded	Planting Date:	5-14-01
Rate:	75 lb/A	Depth:	1.0 IN
Row Spacing:	30 IN		

Plot Width, Unit:	10 FT	Plot Length, Unit:	30 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 150 LB/A				

Soil Name:	Ebbert	% OM:	1.4	pH:	5.7	CEC:	14
Texture:	Silt loam	Fert. Level:	P1: 97 LB/A, K: 291 LB/A				

APPLICATION DESCRIPTION

A

Application Date: 6-18-01
 Time of Day: 9:00
 Application Method: Spray
 Application Timing: 4-6"W
 Applic. Placement: BROFOL
 Air Temp., Unit: 84 F
 % Relative Humidity: 50
 Wind Velocity, Unit: 0-2 MPH
 Dew Presence (Y/N): N
 Soil Moisture: BELNOR
 % Cloud Cover: 5-10

CROP STAGE AT EACH APPLICATION

A

Crop 1 Code, Stage: GLXMA V2-V3
 Height, Unit: 4-6 IN

WEED STAGE AT EACH APPLICATION

A

Weed 1 Code: SETFA
 Stage(leaves): 2-4
 Height(inches): 4-6
 Density: High

Weed 2 Code: XANST
 Stage(leaves): 4-6
 Height(inches): 4-6
 Density: High

Weed 3 Code: AMBEL
 Stage(leaves): 3-4
 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.

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Weed Code						SETFA	SETFA	XANST	XANST	AMBEL	AMBEL				
Crop Code						GLXMA	GLXMA								
Rating Data Type						Injury	Injury	Control	Control	Control	Control	Control	Control		
Rating Unit						Percent	Percent	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	7-2-01	7-16-01		
Tri-Eval Interval						14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A		
Tri 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	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	30	23	40	35
3	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	67	48	70	70
3	AR 581-1P	100 DRY		0.912	% W/W	7.6	LB/100 GAL	4-6"	W A						
4	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	65	50	67	68
4	AR 581-1P	100 DRY		1.14	% W/W	9.5	LB/100 GAL	4-6"	W A						
5	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	67	60	67	67
5	AR 581-1P	100 DRY		1.5	% W/W	12.5	LB/100 GAL	4-6"	W A						
6	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	50	35	62	66
6	SE 581-1P	100 DRY		1.06	LB A/A	1.06	LB/A	4-6"	W A						
7	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	57	47	63	63
7	SE 581-1P	100 DRY		1.33	LB A/A	1.33	LB/A	4-6"	W A						
8	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	55	35	62	62
8	SE 581-1P	100 DRY		1.77	LB A/A	1.77	LB/A	4-6"	W A						
9	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	65	52	68	72
9	AR 200-TM														
9	->AR-A	100 LIQ		0.125	% V/V	0.125	%V/V	4-6"	W A						
9	->AR-B	100 DRY		1.08	% W/W	9	LB/100 GAL	4-6"	W A						
10	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	68	57	65	72
10	AR 200-TM														
10	->AR-A	100 LIQ		0.25	% V/V	0.25	%V/V	4-6"	W A						
10	->AR-B	100 DRY		1.08	% W/W	9	LB/100 GAL	4-6"	W A						
11	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	52	37	53	60
11	DE 500-TM														
11	->DE-A	100 DRY		1.14	% W/W	9.5	LB/100 GAL	4-6"	W A						
11	->DE-B	100 DRY		0.45	LB A/A	0.45	LB/A	4-6"	W A						
12	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	57	40	58	62
12	DE 500-TM														
12	->DE-A	100 DRY		1.14	% W/W	9.5	LB/100 GAL	4-6"	W A						
12	->DE-B	100 DRY		0.9	LB A/A	0.9	LB/A	4-6"	W A						
13	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	58	53	62	64
13	PL335	100 DRY		1.92	% W/W	16	LB/100 GAL	4-6"	W A						
14	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	63	57	67	67
14	PL335	100 DRY		2.4	% W/W	20	LB/100 GAL	4-6"	W A						
15	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	70	68	70	74
15	DESTINY MSO	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						
LSD (P=.05)						0.0	0.0	10.4	7.7	6.8	8.4	7.6	14.6		

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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								
1	NONTREATED									0	0	0	0	0	0		
2	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	30	23	40	35		
3	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	67	48	70	70		
3	AR 581-1P	100 DRY		0.912	% W/W	7.6	LB/100 GAL	4-6"	W A								
4	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	65	50	67	68		
4	AR 581-1P	100 DRY		1.14	% W/W	9.5	LB/100 GAL	4-6"	W A								
5	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	67	60	67	67		
5	AR 581-1P	100 DRY		1.5	% W/W	12.5	LB/100 GAL	4-6"	W A								
6	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	50	35	62	66		
6	SE 581-1P	100 DRY		1.06	LB A/A	1.06	LB/A	4-6"	W A								
7	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	57	47	63	63		
7	SE 581-1P	100 DRY		1.33	LB A/A	1.33	LB/A	4-6"	W A								
8	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	55	35	62	62		
8	SE 581-1P	100 DRY		1.77	LB A/A	1.77	LB/A	4-6"	W A								
9	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	65	52	68	72		
9	AR 200-TM							4-6"	W A								
9	->AR-A	100 LIQ		0.125	% V/V	0.125	%V/V	4-6"	W A								
9	->AR-B	100 DRY		1.08	% W/W	9	LB/100 GAL	4-6"	W A								
10	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	68	57	65	72		
10	AR 200-TM							4-6"	W A								
10	->AR-A	100 LIQ		0.25	% V/V	0.25	%V/V	4-6"	W A								
10	->AR-B	100 DRY		1.08	% W/W	9	LB/100 GAL	4-6"	W A								
11	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	52	37	53	60		
11	DE 500-TM							4-6"	W A								
11	->DE-A	100 DRY		1.14	% W/W	9.5	LB/100 GAL	4-6"	W A								
11	->DE-B	100 DRY		0.45	LB A/A	0.45	LB/A	4-6"	W A								
12	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	57	40	58	62		
12	DE 500-TM							4-6"	W A								
12	->DE-A	100 DRY		1.14	% W/W	9.5	LB/100 GAL	4-6"	W A								
12	->DE-B	100 DRY		0.9	LB A/A	0.9	LB/A	4-6"	W A								
13	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	58	53	62	64		
13	PL335	100 DRY		1.92	% W/W	16	LB/100 GAL	4-6"	W A								
14	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	63	57	67	67		
14	PL335	100 DRY		2.4	% W/W	20	LB/100 GAL	4-6"	W A								
15	RAPTOR	1 AS		0.0195	LB A/A	2.5	OZ/A	4-6"	W A	0	0	70	68	70	74		
15	DESTINY MSO	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								
LSD (P=.05)										0.0	0.0	10.4	7.7	6.8	8.4	7.6	14.6

Weed Code			SETFA	SETFA	XANST	XANST	AMBEL	AMBEL
Crop Code	GLXMA	GLXMA						
Rating Data Type	Injury	Injury	Control	Control	Control	Control	Control	Control
Rating Unit	Percent	Percent	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	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	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
Replicate F		0.000	0.000	1.906	0.184	0.237	0.065	0.244	2.129
Replicate Prob(F)		1.0000	1.0000	0.1675	0.8330	0.7903	0.9374	0.7850	0.1379
Treatment F		0.000	0.000	25.685	40.236	58.145	42.974	42.721	11.031
Treatment Prob(F)		1.0000	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: Rosens (trts 3-12); Precision Labs (trts 13+14); SIU - BGY (trts 1, 2 + 15).
2. DA-A = days after 4-6"W application.