

Precision Labs Glyphosate Adjuvant Study.

02-50E-N90

OBJECTIVE: Determine adjuvant efficacy with Roundup UltraMax and Roundup Original.

SUMMARY: No soybean injury was observed from any treatment. Giant foxtail and common cocklebur were completely controlled by all herbicide treatments at 14 DAT (days after treatment). The addition of an adjuvant to Roundup UltraMax did not increase or decrease control of yellow nutsedge, common ragweed or waterhemp at 14 DAT. However, adding AMS at 2% w/w or PX330 to Roundup UltraMax increased control of giant ragweed by 7 to 15%. The addition of an adjuvant to Roundup Original did not increase or decrease control of yellow nutsedge, common ragweed, giant ragweed or waterhemp at 14 DAT. However giant ragweed control 28 DAT was significantly greater when Roundup Original was applied with AMS at 1% plus PX300 (42%), PX331 (52%), or PX330 (60%) compared to Roundup Original alone (28%).

HERBICIDES/ADJUVANTS

ROUNDUP ORIGINAL 3 SL
 ROUNDUP ULTRA MAX 3.7 SL
 ACTIVATOR 90 100 LIQ
 AMS 100 DRY
 BORDER XTRA DF 100 DRY
 PL332 100 DRY
 PX300 100 DRY
 PX330 100 LIQ
 PX331 100 LIQ
 PX335 100 DRY

WEEDS

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

CROP

soybean

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Precision Labs Glyphosate Adjuvant Study.

Project Code: 02-50E-N90 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
 Trial Status: Final Updated: 10-31-02

Objective:

Determine adjuvant efficacy with Roundup Ultra Max and Roundup Original.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. CYPES	nutsedge, yellow	Cyperus esculentus L.
3. AMBTR	ragweed, giant	Ambrosia trifida L.
4. XANST	cocklebur, common	Xanthium strumarium L.
5. AMBEL	ragweed, common	Ambrosia artemisiifolia L.
6. AMATA	waterhemp, common	Amaranthus rudis Sauer

Crop 1:	GLXMA soybean	Variety:	Asgrow 4602 RR
Planting Method:	Seeded	Planting Date:	6-3-02
Rate:	75 lb/A	Depth:	1.0 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:	ZEAMX, 2001				

Field Prep./Maintenance: N 0 LB/A, P205 50 LB/A, K20 200 LB/A

Soil Name:	Weir	% OM:	1.4	pH:	6.9	CEC:	12
Texture:	Silt loam	Fert. Level:	P1: 83 LB/A, K: 181 LB/A				

APPLICATION DESCRIPTION

A

Application Date:	6-28-02
Time of Day:	9:00
Application Method:	Spray
Application Timing:	6-8"W
Applic. Placement:	BROFOL
Air Temp., Unit:	74 F
% Relative Humidity:	70
Wind Velocity, Unit:	0-2 MPH
Dew Presence (Y/N):	Y
Soil Moisture:	NORMAL
% Cloud Cover:	5

CROP STAGE AT EACH APPLICATION

A

Crop 1 Code, Stage:	GLXMA V2
Height, Unit:	7 IN

WEED STAGE AT EACH APPLICATION

A

Weed 1 Code:	SETFA
Stage(leaves):	4-6
Height(inches):	4-8
Density:	High
Weed 2 Code:	CYPES
Stage(leaves):	4-7
Height(inches):	5-8
Density:	Low
Weed 3 Code:	AMBTR
Stage(leaves):	2-8
Height(inches):	4-10
Density:	High

Weed 4 Code: XANST
Stage(leaves): 3-5
Height(inches): 4-8
Density: Low

Weed 5 Code: AMBEL
Stage(leaves): 2-6
Height(inches): 2-6
Density: Low

Weed 6 Code: AMATA
Stage(leaves): 2-4
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: 15 GPA

NOTES:

This study was not harvested.

Precision Labs Glyphosate Adjuvant Study.

Project Code: 02-50E-N90 Location: Belleville Research Center

Weed Code	Crop Code	Rating Data Type	Rating Unit	Rating Date	Trt-Eval Interval	GLXMA Injury Percent 7-12-02 14 DA-A	GLXMA Injury Percent 7-26-02 28 DA-A	SETFA Control Percent 7-12-02 14 DA-A	SETFA Control Percent 7-26-02 28 DA-A	CYPES Control Percent 7-12-02 14 DA-A	CYPES Control Percent 7-26-02 28 DA-A	AMBTR Control Percent 7-12-02 14 DA-A	AMBTR Control Percent 7-26-02 28 DA-A	XANST Control Percent 7-12-02 14 DA-A	XANST Control Percent 7-26-02 28 DA-A	AMBEL Control Percent 7-12-02 14 DA-A	AMBEL Control Percent 7-26-02 28 DA-A
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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	GLXMA Injury Percent 7-12-02 14 DA-A	GLXMA Injury Percent 7-26-02 28 DA-A	SETFA Control Percent 7-12-02 14 DA-A	SETFA Control Percent 7-26-02 28 DA-A	CYPES Control Percent 7-12-02 14 DA-A	CYPES Control Percent 7-26-02 28 DA-A	AMBTR Control Percent 7-12-02 14 DA-A	AMBTR Control Percent 7-26-02 28 DA-A	XANST Control Percent 7-12-02 14 DA-A	XANST Control Percent 7-26-02 28 DA-A	AMBEL Control Percent 7-12-02 14 DA-A	AMBEL Control Percent 7-26-02 28 DA-A	
1	NONTREATED									0	0	0	0	0	0	0	0	0	0	0	0	0
2	ROUNDUP ULTRA MAX	3.7	SL	0.188	LB AE/A	6.5	OZ/A	6-8"	W A	0	0	99	94	37	43	60	45	99	96	87	73	
3	ROUNDUP ULTRA MAX	3.7	SL	0.188	LB AE/A	6.5	OZ/A	6-8"	W A	0	0	99	96	40	42	60	45	99	99	85	60	
3	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	6-8"	W A													
4	ROUNDUP ULTRA MAX	3.7	SL	0.188	LB AE/A	6.5	OZ/A	6-8"	W A	0	0	99	96	43	45	70	60	99	89	85	62	
4	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	6-8"	W A													
5	ROUNDUP ULTRA MAX	3.7	SL	0.188	LB AE/A	6.5	OZ/A	6-8"	W A	0	0	99	96	38	42	62	52	99	91	86	55	
5	BORDER XTRA DF	100	DRY	2.16	% W/W	18	LB/100 GAL	6-8"	W A													
6	ROUNDUP ULTRA MAX	3.7	SL	0.188	LB AE/A	6.5	OZ/A	6-8"	W A	0	0	99	95	35	45	63	50	99	96	88	62	
6	PX331	100	LIQ	2.5	% V/V	2.5	% V/V	6-8"	W A													
7	ROUNDUP ULTRA MAX	3.7	SL	0.188	LB AE/A	6.5	OZ/A	6-8"	W A	0	0	99	97	40	52	67	60	96	93	88	65	
7	PX330	100	LIQ	5.0	% V/V	5	% V/V	6-8"	W A													
8	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	OZ/A	6-8"	W A	0	0	99	95	37	45	60	28	99	99	94	68	
9	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	OZ/A	6-8"	W A	0	0	99	95	33	43	60	42	99	96	85	67	
9	PX300	100	DRY	0.12	% W/W	16	OZ/100 GAL	6-8"	W A													
9	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	6-8"	W A													
10	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	OZ/A	6-8"	W A	0	0	99	96	32	45	62	40	99	99	92	63	
10	PX300	100	DRY	0.12	% W/W	16	OZ/100 GAL	6-8"	W A													
10	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	6-8"	W A													
11	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	OZ/A	6-8"	W A	0	0	99	96	33	40	58	33	99	99	90	73	
11	PX335	100	DRY	2.4	% W/W	20	LB/100 GAL	6-8"	W A													
12	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	OZ/A	6-8"	W A	0	0	99	96	30	47	60	25	99	93	87	70	
12	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	6-8"	W A													
13	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	OZ/A	6-8"	W A	0	0	99	96	43	43	63	38	99	99	93	67	
13	PX335	100	DRY	2.4	% W/W	20	LB/100 GAL	6-8"	W A													
13	PL332	100	DRY	0.075	% W/W	10	OZ/100 GAL	6-8"	W A													
14	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	OZ/A	6-8"	W A	0	0	99	96	40	47	65	52	96	88	98	65	
14	PX331	100	LIQ	2.5	% V/V	2.5	% V/V	6-8"	W A													
15	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	OZ/A	6-8"	W A	0	0	99	96	42	53	65	60	99	96	92	80	
15	PX330	100	LIQ	5.0	% V/V	5	% V/V	6-8"	W A													

Weed Code															
Crop Code															
Rating Data Type															
Rating Unit															
Rating Date															
Trt-Eval Interval															

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	GLXMA Injury Percent	GLXMA Injury Percent	SETFA Control Percent	SETFA Control Percent	CYPES Control Percent	CYPES Control Percent	AMBTR Control Percent	AMBTR Control Percent	XANST Control Percent	XANST Control Percent	AMBEL Control Percent	AMBEL Control Percent							
	LSD (P=.05)			0.0		0.0				0.2		1.6		7.3		11.9		6.9		13.5		3.2		11.2		10.3		13.6
	Replicate F			0.000		0.000				1.000		0.094		2.992		3.349		3.622		0.642		0.483		4.313		7.273		0.160
	Replicate Prob(F)			1.0000		1.0000				0.3806		0.9106		0.0664		0.0497		0.0399		0.5337		0.6221		0.0233		0.0029		0.8530
	Treatment F			0.000		0.000				88167.570		1940.279		17.270		8.815		47.622		11.802		522.069		41.078		42.878		15.326
	Treatment Prob(F)			1.0000		1.0000				0.0001		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001

Weed Code AMATA AMATA
 Crop Code
 Rating Data Type Control Control
 Rating Unit Percent Percent
 Rating Date 7-12-02 7-26-02
 Trt-Eval Interval 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
2	ROUNDUP ULTRA MAX	3.7	SL	0.188	LB AE/A	6.5	OZ/A	6-8"	W A	93	72
3	ROUNDUP ULTRA MAX	3.7	SL	0.188	LB AE/A	6.5	OZ/A	6-8"	W A	91	70
3	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	6-8"	W A		
4	ROUNDUP ULTRA MAX	3.7	SL	0.188	LB AE/A	6.5	OZ/A	6-8"	W A	92	70
4	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	6-8"	W A		
5	ROUNDUP ULTRA MAX	3.7	SL	0.188	LB AE/A	6.5	OZ/A	6-8"	W A	93	68
5	BORDER XTRA DF	100	DRY	2.16	% W/W	18	LB/100 GAL	6-8"	W A		
6	ROUNDUP ULTRA MAX	3.7	SL	0.188	LB AE/A	6.5	OZ/A	6-8"	W A	96	70
6	PX331	100	LIQ	2.5	% V/V	2.5	%V/V	6-8"	W A		
7	ROUNDUP ULTRA MAX	3.7	SL	0.188	LB AE/A	6.5	OZ/A	6-8"	W A	99	72
7	PX330	100	LIQ	5.0	% V/V	5	%V/V	6-8"	W A		
8	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	OZ/A	6-8"	W A	95	68
9	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	OZ/A	6-8"	W A	90	75
9	PX300	100	DRY	0.12	% W/W	16	OZ/100 GAL	6-8"	W A		
9	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	6-8"	W A		
10	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	OZ/A	6-8"	W A	95	67
10	PX300	100	DRY	0.12	% W/W	16	OZ/100 GAL	6-8"	W A		
10	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	6-8"	W A		
11	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	OZ/A	6-8"	W A	90	70
11	PX335	100	DRY	2.4	% W/W	20	LB/100 GAL	6-8"	W A		
12	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	OZ/A	6-8"	W A	91	63
12	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	6-8"	W A		
13	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	OZ/A	6-8"	W A	88	63
13	PX335	100	DRY	2.4	% W/W	20	LB/100 GAL	6-8"	W A		
13	PL332	100	DRY	0.075	% W/W	10	OZ/100 GAL	6-8"	W A		
14	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	OZ/A	6-8"	W A	91	63
14	PX331	100	LIQ	2.5	% V/V	2.5	%V/V	6-8"	W A		
15	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	OZ/A	6-8"	W A	92	72
15	PX330	100	LIQ	5.0	% V/V	5	%V/V	6-8"	W A		
LSD (P=.05)										10.1	11.4

Weed Code	AMATA	AMATA
Crop Code		
Rating Data Type	Control	Control
Rating Unit	Percent	Percent
Rating Date	7-12-02	7-26-02
Trt-Eval Interval	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				2.701		0.085			
Replicate Prob(F)				0.0846		0.9192			
Treatment F				47.833		21.344			
Treatment Prob(F)				0.0001		0.0001			

Precision Labs Glyphosate Adjuvant Study.

Project Code: 02-50E-N90

Location: Belleville Research Center

Trial Comments

1. Protocol: Precision Labs.
2. DA-A = days after 6-8"W application.