

Evaluation of the Adjuvant LI 143 with Glyphosate.

01-2A-E75

OBJECTIVE: Evaluation of weed control and yield response of Roundup Ready soybeans to various adjuvants and fertilizer additives.

SUMMARY: No soybean injury or growth enhancement was observed in this study. All Roundup Ultra Max treatments controlled 99% of fall panicum and common cocklebur at 14 days after treatment (DAT). However, by 28 DAT, fall panicum control was significantly less from Roundup Ultra Max at 13 oz/A plus LI 143 compared to other treatments. Adding LI 143 to Roundup Ultra Max at 26 oz slightly reduced fall panicum control compared to other treatments with Roundup Ultra Max at 26 oz/A. Similarly, Roundup Ultra Max at 13 oz/A plus LI 143 controlled significantly less common ragweed and Pennsylvania smartweed at 28 DAT compared to other treatments.

Soybean yield ranged from 44 to 50 bu/A in herbicide treated plots. Some treatments yielded higher than plots treated with Roundup Ultra Max plus LI 143.

HERBICIDE / ADJUVANTS

ROUNDUP ULTRA MAX 3.7 SL
AMS 100 DRY
AWAKEN 100 LIQ
CHOICE 100 LIQ
LI 143 100 LIQ
LI 700 100 LIQ
ROUTE 100 LIQ
THRUST 100 DRY

WEEDS

cocklebur, common
panicum, fall
ragweed, common
smartweed, Pennsylvania

CROP

soybean

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PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

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Project Code: 01-2A-E75 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: 5-1-01**Objective:**

Evaluation of weed control and yield response of Roundup Ready soybeans to various adjuvants and fertilizer additives.

Weed Code	Common Name	Scientific Name
1.	PANDI panicum, fall	Panicum dichotomiflorum Michx.
2.	AMBEL ragweed, common	Ambrosia artemisiifolia L.
3.	POLPY smartweed, Pennsylvania	Polygonum pennsylvanicum L.
4.	XANST cocklebur, common	Xanthium strumarium L.

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:	28 FT	Reps:	4
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:	Weir	% OM:	1.5	pH:	6.4	CEC:	10
Texture:	Silt loam	Fert. Level:	P1: 81 LB/A, K: 274 LB/A				

APPLICATION DESCRIPTION

A	
Application Date:	6-22-01
Time of Day:	10:30
Application Method:	Spray
Application Timing:	V4
Applic. Placement:	BROFOL
Air Temp., Unit:	75 F
% Relative Humidity:	61
Wind Velocity, Unit:	2-5 MPH
Soil Moisture:	ABONOR
% Cloud Cover:	5

CROP STAGE AT EACH APPLICATION

A	
Crop 1 Code, Stage:	GLXMA V4
Height, Unit:	3-6 IN

WEED STAGE AT EACH APPLICATION

A	
Weed 1 Code:	PANDI
Stage(leaves):	2-8
Height(inches):	1-7
Density:	High
Weed 2 Code:	AMBEL
Stage(leaves):	4-10
Height(inches):	6-10
Density:	High
Weed 3 Code:	POLPY
Stage(leaves):	3-8
Height(inches):	10+
Density:	Medium

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

APPLICATION EQUIPMENT

A

Appl. Equipment: CO2 sprayer
Operating Pressure: 40 PSI
Nozzle Type: Flat fan
Nozzle Size: DG 110015
Boom Length, Unit: 7.5 FT
Spray Volume, Unit: 10 GPA

NOTES: HARVESTED 10-27-01, 2 ROWS X 25 FT.

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Weed Code	GLXMA	GLXMA	GLXMA	GLXMA	PANDI	PANDI	AMBEL	AMBEL	POLPY	POLPY	XANST	XANST
Crop Code	Yield	Injury	Injury	Injury	Control	Control	Control	Control	Control	Control	Control	Control
Rating Data Type	bu/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit	10-27-01	6-29-01	7-6-01	7-20-01	7-6-01	7-20-01	7-6-01	7-20-01	7-6-01	7-20-01	7-6-01	7-20-01
Rating Date	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	28 DA-A	14 DA-A
Trt-Eval Interval												

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	Yield	Injury	Injury	Injury	Control	Control	Control	Control	Control	Control	Control	Control
1	ROUNDUP ULTRA MAX	3.7	SL	0.375	LB AE/A	13	OZ/A	V4	A	48	0	0	0	99	91	92	86	66	83	99	99
1	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	V4	A												
1	CHOICE	100	LIQ	0.5	% V/V	0.5	%V/V	V4	A												
2	ROUNDUP ULTRA MAX	3.7	SL	0.375	LB AE/A	13	OZ/A	V4	A	50	0	0	0	99	93	94	91	69	89	99	99
2	CHOICE	100	LIQ	0.5	% V/V	0.5	%V/V	V4	A												
3	ROUNDUP ULTRA MAX	3.7	SL	0.375	LB AE/A	13	OZ/A	V4	A	50	0	0	0	99	93	97	92	70	93	99	99
3	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	V4	A												
4	ROUNDUP ULTRA MAX	3.7	SL	0.375	LB AE/A	13	OZ/A	V4	A	49	0	0	0	99	90	95	92	73	94	99	99
4	THRUST	100	DRY	1.08	% W/W	9	LB/100 GAL	V4	A												
5	ROUNDUP ULTRA MAX	3.7	SL	0.375	LB AE/A	13	OZ/A	V4	A	47	0	0	0	99	64	83	65	60	79	99	98
5	LI 143	100	LIQ	2.0	QT/A	2	QT/A	V4	A												
6	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	V4	A	44	0	0	0	99	88	95	90	69	89	99	99
6	LI 143	100	LIQ	2.0	QT/A	2	QT/A	V4	A												
7	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	V4	A	48	0	0	0	99	95	90	88	69	94	99	99
7	CHOICE	100	LIQ	0.5	% V/V	0.5	%V/V	V4	A												
7	AWAKEN	100	LIQ	2.0	QT/A	2	QT/A	V4	A												
8	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	V4	A	49	0	0	0	99	96	95	93	65	89	99	99
8	CHOICE	100	LIQ	0.5	% V/V	0.5	%V/V	V4	A												
8	ROUTE	100	LIQ	1.5	PT/A	1.5	PT/A	V4	A												
9	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	V4	A	49	0	0	0	99	97	99	98	83	97	99	99
9	CHOICE	100	LIQ	0.5	% V/V	0.5	%V/V	V4	A												
10	NONTREATED									1	0	0	0	0	0	0	0	0	0	0	0
LSD (P=.05)										4.8	0.0	0.0	0.0	0.0	6.2	2.6	7.4	7.7	6.5	0.0	0.9
Replicate F										2.569	0.000	0.000	0.000	0.000	2.566	1.200	0.662	0.802	0.690	0.000	1.552
Replicate Prob(F)										0.0752	1.0000	1.0000	1.0000	1.0000	0.0754	0.3286	0.5824	0.5037	0.5658	1.0000	0.2240
Treatment F										83.985	0.000	0.000	0.000	0.000	194.370	1091.466	130.577	72.960	164.466	0.000	9707.097
Treatment Prob(F)										0.0001	1.0000	1.0000	1.0000	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	1.0000	0.0001

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Trial Comments

1. Protocol: Loveland.
2. No increase in growth observed for foliar nutrient treatments.
3. DA-A = day after V4 application.