

Comparison of "Full Load" Glyphosate Formulations in Roundup Ready Soybean.

01-21S-MMW40

OBJECTIVE: Compare the performance of glyphosate formulations that do not require additional surfactant (full load) in Roundup Ready soybean.

SUMMARY: No soybean injury was observed in this study. All treatments controlled 99% of giant foxtail at 14 days after treatment (DAT). However, at 21 DAT, giant foxtail control was slightly greater with Roundup Ultra Max plus AMS compared to other glyphosate treatments. Yellow nutsedge control was generally increased when glyphosate formulations were applied with AMS, however no treatment controlled greater than 73% of yellow nutsedge at 28 DAT. Similarly, velvetleaf and common ragweed control was usually greater when glyphosate formulations were applied with AMS. Roundup Ultra Dry plus AMS tended to provide the greatest control of common ragweed and velvetleaf. However, Glyphomax Plus plus AMS and Touchdown plus AMS tended to provide the greatest control of common cocklebur. No single glyphosate formulation provided the greatest control of all the weed species in the study.

HERBICIDES

GLYPHOMAX PLUS 3 SL
 ROUNDUP ULTRA 3 SL
 ROUNDUP ULTRA DRY 65 WG
 ROUNDUP ULTRA MAX 3.7 SL
 TOUCHDOWN 3 SL

WEEDS

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

CROP

soybean

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

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Project Code: 01-21S-MMW40 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: 4-25-01**Objective:**

Compare the performance of glyphosate formulations that do not require additional surfactant (full load) in Roundup Ready soybean.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. CYPES	nutsedge, yellow	Cyperus esculentus L.
3. XANST	cocklebur, common	Xanthium strumarium L.
4. AMBEL	ragweed, common	Ambrosia artemisiifolia L.
5. ABUTH	velvetleaf	Abutilon theophrasti Medicus

Crop 1:	GLXMA soybean	Variety:	B-T 371CR
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:	6-22-01
Time of Day:	10:00
Application Method:	Spray
Application Timing:	6"W
Applic. Placement:	BROFOL
Air Temp., Unit:	74 F
% Relative Humidity:	61
Wind Velocity, Unit:	0-3 MPH
Soil Moisture:	ABONOR
% Cloud Cover:	5

CROP STAGE AT EACH APPLICATION

A	
Crop 1 Code, Stage:	GLXMA V2-V3
Height, Unit:	3-5 IN

WEED STAGE AT EACH APPLICATION

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

Weed 4 Code: AMBEL
Stage(leaves): 4-6
Height(inches): 2-6
Density: Low

Weed 5 Code: ABUTH
Stage(leaves): 4-7
Height(inches): 4-8
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 10-20-01, 2 ROWS X 27 FT.

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Weed Code		GLXMA		SETFA		CYPES		XANST		AMBEL		ABUTH								
Crop Code	Rating Data Type	Injury Percent	Injury Percent	Control Percent	Control Percent	Control Percent	Control Percent	Control Percent	Control Percent	Control Percent	Control Percent	Control Percent	Control Percent							
Rating Unit	Rating Date	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	7-6-01	7-20-01							
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	14 DA-A	28 DA-A	14 DA-A	28 DA-A							
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Prod Rate	Prod Unit	Grow Stg	Appl Code												
1	NONTREATED								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"W	A	0	0	99	80	53	43	83	77	57	52	53	43
3	ROUNDUP ULTRA	3	SL	0.188	LB AE/A	8 OZ/A	6"W	A	0	0	99	81	57	47	88	82	65	58	47	40
4	ROUNDUP ULTRA DRY	65	WG	0.188	LB AE/A	4.63 OZ/A	6"W	A	0	0	99	80	53	42	87	82	72	65	47	37
5	GLYPHOMAX PLUS	3	SL	0.188	LB AE/A	8 OZ/A	6"W	A	0	0	99	82	67	57	90	85	70	63	53	43
6	TOUCHDOWN	3	SL	0.188	LB AE/A	8 OZ/A	6"W	A	0	0	99	85	60	53	88	83	57	48	47	37
7	ROUNDUP ULTRA MAX	3.7	SL	0.188	LB AE/A	6.5 OZ/A	6"W	A	0	0	99	91	77	70	92	87	82	75	65	58
7	AMS	100	DRY	2.0	% W/W	17 LB/100 GAL	6"W	A												
8	ROUNDUP ULTRA	3	SL	0.188	LB AE/A	8 OZ/A	6"W	A	0	0	99	88	77	67	93	87	80	72	65	58
8	AMS	100	DRY	2.0	% W/W	17 LB/100 GAL	6"W	A												
9	ROUNDUP ULTRA DRY	65	WG	0.188	LB AE/A	4.63 OZ/A	6"W	A	0	0	99	88	72	67	93	88	88	81	85	77
9	AMS	100	DRY	2.0	% W/W	17 LB/100 GAL	6"W	A												
10	GLYPHOMAX PLUS	3	SL	0.188	LB AE/A	8 OZ/A	6"W	A	0	0	99	88	73	65	95	90	80	75	83	75
10	AMS	100	DRY	2.0	% W/W	17 LB/100 GAL	6"W	A												
11	TOUCHDOWN	3	SL	0.188	LB AE/A	8 OZ/A	6"W	A	0	0	99	88	70	63	95	90	80	73	75	68
11	AMS	100	DRY	2.0	% W/W	17 LB/100 GAL	6"W	A												
12	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26 OZ/A	6"W	A	0	0	99	95	80	73	98	95	99	96	86	81
LSD (P=.05)									0.0	0.0	0.3	3.1	11.5	11.4	3.7	4.4	12.9	14.9	14.6	14.9
Replicate F									0.000	0.000	1.000	1.927	5.071	3.996	1.710	3.650	0.466	0.381	0.598	0.758
Replicate Prob(F)									1.0000	1.0000	0.3840	0.1693	0.0154	0.0331	0.2040	0.0428	0.6337	0.6878	0.5591	0.4804
Treatment F									0.000	0.000	88156.000	577.264	30.056	26.670	451.860	278.708	32.301	22.036	23.409	20.269
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

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Trial Comments

- 1. Protocol: SIU-BGY.
- 2. DA-A = days after 6"W application.