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

02-21M-MME60

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

SUMMARY: Giant foxtail control 14 DAT was increased slightly with the addition of AMS to all glyphosate products except Roundup Ultra and SIU 2002 H-1. SIU 2002 H-1 provided the greatest control of velvetleaf, ivyleaf morningglory, and giant foxtail at 14 DAT. Velvetleaf control from Roundup UltraMax, Glyphomax Plus, and Touchdown was increased with the addition of AMS. However, AMS did not increase ivyleaf morningglory control from any of the glyphosate formulations. Glyphomax Plus controlled 98% of common cocklebur at 14 DAT with similar control from all glyphosate formulations except Roundup Ultra Dry (92%) and Clearout 41 Plus (90%) whigh controlled significantly less common cocklebur than Glyphomax Plus. Common cocklebur control was not increased by the addition of AMS to any glyphosate product except Roundup Ultra Dry. In general, differences in weed control between glyphosate formulations were less than 10%. No one formulation consistently provided the greatest control of all the weed species evaluated. Adding AMS to full load glyphosate formulations was most beneficial for increasing control of velvetleaf.

HERBICIDES/ADJUVANTS	WEEDS	CROP
CLEAROUT 41 PLUS 3 L	cocklebur, common	soybean
GLYPHOMAX PLUS 3 SL	foxtail, giant	
MON 78270 4.5 SL	morningglory, ivyleaf	
ROUNDUP ULTRA 3 SL	velvetleaf	
ROUNDUP ULTRA DRY 65 WG		
ROUNDUP ULTRA MAX 3.7 SL		
SIU 2002-H1 4.17 SL		
TOUCHDOWN 3 SL		
AMS 100 DRY		

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

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

Project Code: 02-21M-MME60 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:
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. XANST	cocklebur, common	Xanthium strumarium L.
2. ABUTH	velvetleaf	Abutilon theophrasti Medicus
3. IPOHE	morningglory, ivyleaf	Ipomoea hederacea (L.) Jacq.
4. SETFA	foxtail, giant	Setaria faberi Herrm.

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:** 30 FT **Reps:** 3
Tillage Type: Reduced-Till **Study Design:** Randomized complete block
Previous Crop, Year: ZEAMX, 2001

Field Prep./Maintenance: N 0 LB/A, P2O5 50 LB/A, K2O 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:	7-2-02
Time of Day:	11:00
Application Method:	Spray
Application Timing:	6"W
Applic. Placement:	BROFOL
Air Temp., Unit:	94 F
% Relative Humidity:	40
Wind Velocity, Unit:	0-5 MPH
Soil Moisture:	BELNOR
% Cloud Cover:	15

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	GLXMA V3
Height, Unit:	6-7 IN

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	XANST
Stage(leaves):	4-7
Height(inches):	4-8
Density:	High
Weed 2 Code:	ABUTH
Stage(leaves):	4-6
Height(inches):	4-6
Density:	Low
Weed 3 Code:	IPOHE
Stage(leaves):	3-4
Height(inches):	2-4
Density:	Medium
Weed 4 Code:	SETFA
Stage(leaves):	4-5
Height(inches):	6-16
Density:	High

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:

This study was not harvested.

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

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	GLXMA Injury	GLXMA Injury	XANST Control	XANST Control	ABUTH Control	ABUTH Control	IPOHE Control	IPOHE Control	SETFA Control	SETFA Control	AMATA Control	AMATA Control	TTTTT Control	TTTTT Control
	Weed Code																						
	Crop Code																						
	Rating Data Type																						
	Rating Unit									Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
	Rating Date									7-16-02	7-30-02	7-16-02	7-30-02	7-16-02	7-30-02	7-16-02	7-30-02						
	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	14 DA-A	28 DA-A
1	NONTREATED									0	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"W	A	0	0	95	96	43	50	50	47	93	84	70	67	70	69
3	ROUNDUP ULTRA	3	SL	0.188	LB AE/A	8	OZ/A	6"W	A	0	0	96	96	47	47	47	43	93	84	70	65	71	67
4	ROUNDUP ULTRA DRY	65	WG	0.188	LB AE/A	4.63	OZ/A	6"W	A	0	0	92	94	48	55	52	45						
5	GLYPHOMAX PLUS	3	SL	0.188	LB AE/A	8	OZ/A	6"W	A	0	0	98	98	43	47	43	43	93	84	68	62	69	67
6	TOUCHDOWN	3	SL	0.188	LB AE/A	8	OZ/A	6"W	A	0	0	96	96	40	42	45	38	92	86	74	68	70	66
7	SIU 2002-H1	4.17	SL	0.188	LB AE/A	5.77	OZ/A	6"W	A	0	0	96	96	50	45	58	50	93	86	72	65	74	68
8	MON 78270	4.5	SL	0.188	LB AE/A	5.35	OZ/A	6"W	A	0	0	95	95	48	43	48	37	92	82	66	55	70	62
9	CLEAROUT 41 PLUS	3	L	0.188	LB AE/A	8	OZ/A	6"W	A	0	0	90	94	47	53	47	48	92	84	69	63	69	69
10	ROUNDUP ULTRA MAX	3.7	SL	0.188	LB AE/A	6.5	OZ/A	6"W	A	0	0	93	94	55	58	55	55	95	85	73	67	74	72
10	AMS	100	DRY	2.0	% W/W	2	% W/W	6"W	A														
11	ROUNDUP ULTRA	3	SL	0.188	LB AE/A	8	OZ/A	6"W	A	0	0	99	98	50	55	35	33	93	88	75	70	70	69
11	AMS	100	DRY	2.0	% W/W	2	% W/W	6"W	A														
12	ROUNDUP ULTRA DRY	65	WG	0.188	LB AE/A	4.63	OZ/A	6"W	A	0	0	99	98	50	62	48	43						
12	AMS	100	DRY	2.0	% W/W	2	% W/W	6"W	A														
13	GLYPHOMAX PLUS	3	SL	0.188	LB AE/A	8	OZ/A	6"W	A	0	0	99	97	53	60	42	48	94	86	77	67	73	72
13	AMS	100	DRY	2.0	% W/W	2	% W/W	6"W	A														
14	TOUCHDOWN	3	SL	0.188	LB AE/A	8	OZ/A	6"W	A	0	0	93	96	52	55	40	37	95	85	72	63	70	67
14	AMS	100	DRY	2.0	% W/W	2	% W/W	6"W	A														
15	SIU 2002-H1	4.17	SL	0.188	LB AE/A	5.77	OZ/A	6"W	A	0	0	90	93	50	52	38	38	97	87	77	68	70	68
15	AMS	100	DRY	2.0	% W/W	2	%W/W	6"W	A														
16	MON 78270	4.5	SL	0.188	LB AE/A	5.35	OZ/A	6"W	A	0	0	87	91	53	55	45	45	94	85	73	65	71	68
16	AMS	100	DRY	2.0	% W/W	2	%W/W	6"W	A														
17	CLEAROUT 41 PLUS	3	L	0.188	LB AE/A	8	OZ/A	6"W	A	0	0	88	93	50	60	37	43	95	86	73	68	69	70
17	AMS	100	DRY	2.0	% W/W	2	%W/W	6"W	A														
18	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	6"W	A	0	0	99	99	98	99	85	82	99	97	95	91	95	94

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code														
Weed Code										GLXMA	GLXMA	XANST	XANST	ABUTH	ABUTH	IPOHE	IPOHE	SETFA	SETFA	AMATA	AMATA	TTTTT	TTTTT
Crop Code																							
Rating Data Type										Injury	Injury	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
Rating Unit										Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date										7-16-02	7-30-02	7-16-02	7-30-02	7-16-02	7-30-02	7-16-02	7-30-02						
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	14 DA-A	28 DA-A
LSD (P=.05)										0.0	0.0	4.1	3.1	5.5	9.0	7.1	14.9	2.4	2.7	4.4	4.9	2.7	4.2
Replicate F										0.000	0.000	0.402	0.776	3.973	6.803	5.615	18.951	2.265	4.349	3.844	1.924	2.105	8.191
Replicate Prob(F)										1.0000	1.0000	0.6722	0.4681	0.0282	0.0033	0.0078	0.0001	0.1213	0.0220	0.0326	0.1636	0.1395	0.0015
Treatment F										0.000	0.000	249.851	438.042	80.519	33.427	41.552	8.433	831.765	544.879	165.279	115.010	404.668	167.910
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	0.0001	0.0001

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Project Code: 02-21M-MME60 Location: Belleville Research Center

Trial Comments

1. Protocol: SIU (BGY).
2. DA-A = days after 6"W application.
3. TTTTT = weeds generally, which included XANST, ABUTH, IPOHE, SETFA and AMATA.
   For TTTTT, percent control values were average of five weeds at two locations in 2002.
   Roundup Ultra Dry was not tested at location #2 in 2002.