

Miller Glyphosate Adjuvant Study.

02-10B-MW50

OBJECTIVE: Evaluate crop response and weed control from applications of Roundup UltraMax plus MCFC OS at two different application rates and timings.

SUMMARY: The purpose of this study was to determine if adding MCFC OS to Roundup UltraMax affected crop response or weed control. No crop response was observed from any treatment in this study. Roundup UltraMax provided 99% control of giant foxtail, common cocklebur, and common ragweed at 14 DAT (days after treatment) regardless of application timing or addition of MCFC OS. Adding MCFC OS to Roundup UltraMax did not increase or decrease control of yellow nutsedge, ivyleaf morningglory, or common waterhemp at 14 DAT. There was a slight increase in velvetleaf control 14 DAT (5 to 6%) when MCFC OS was added to Roundup UltraMax, however, this increase was not observed at any of the other evaluation timings. Soybean yield ranged from 5 bu/A in nontreated plots to 51 bu/A. There were no significant differences in soybean yield among herbicide treated plots.

HERBICIDES/ADJUVANTS

ROUNDUP ULTRA MAX 3.7 SL
AMS 100 DRY
MCFC OS 100 DRY

WEEDS

cocklebur, common
foxtail, giant
morningglory, ivyleaf
nutsedge, yellow
ragweed, common
velvetleaf
waterhemp, common

CROP

soybean

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Miller Glyphosate Adjuvant Study.

Project Code: 02-10B-MW50 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
 Trial Status: Final Updated: 10-29-02

Objective:

Evaluate crop response and weed control from applications of Roundup Ultra Max plus MCFC OS at two different application rates and timings.

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. IPOHE	morningglory, ivyleaf	Ipomoea hederacea (L.) Jacq.
6. ABUTH	velvetleaf	Abutilon theophrasti Medicus
7. AMATA	waterhemp, common	Amaranthus rudis Sauer

Crop 1:	GLXMA soybean	Variety:	Asgrow 4602 RR
Planting Method:	Seeded	Planting Date:	6-4-02
Rate:	75 lb/A	Depth:	1.0 IN
Row Spacing:	30 IN		

Plot Width, Unit:	10 FT	Plot Length, Unit:	24 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 150 LB/A

Soil Name:	Weir	% OM:	1.6	pH:	6.3	CEC:	12
Texture:	Silt loam	Fert. Level:	P1: 82 LB/A, K: 274 LB/A				

APPLICATION DESCRIPTION

	A	B
Application Date:	6-28-02	7-22-02
Time of Day:	9:00	9:00
Application Method:	Spray	Spray
Application Timing:	4-8"W	R1
Applic. Placement:	BROFOL	BROFOL
Air Temp., Unit:	74 F	82 F
% Relative Humidity:	70	74
Wind Velocity, Unit:	0-3 MPH	0 MPH
Dew Presence (Y/N):	Y	
Soil Moisture:	BELNOR	NORMAL
% Cloud Cover:	5	

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	GLXMA V2	GLXMA R1
Height, Unit:	4-6 IN	18 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:	SETFA	
Stage(leaves):	3-7	
Height(inches):	3-7	
Density:	High	
Weed 2 Code:	CYPES	CYPES
Stage(leaves):	4-12	5-12
Height(inches):	2-5	5-10
Density:	Low	Low
Weed 3 Code:	XANST	XANST
Stage(leaves):	4-6	5-10
Height(inches):	3-6	4-8
Density:	Low	Low

Weed 4 Code:	AMBEL	
Stage(leaves):	4-8	
Height(inches):	2-5	
Density:	Low	
Weed 5 Code:	IPOHE	IPOHE
Stage(leaves):	2-8	0-20
Height(inches):	2-6	0-18
Density:	Medium	Low
Weed 6 Code:	ABUTH	ABUTH
Stage(leaves):	2-6	5-10
Height(inches):	2-6	5-10
Density:	Low	Low
Weed 7 Code:	AMATA	AMATA
Stage(leaves):	0-10	8-15
Height(inches):	1-6	5-10
Density:	Medium	Low

APPLICATION EQUIPMENT

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

NOTES:

Harvested Oct-23-02, (2) 30 inch rows by 21 ft.

Weed Code	CYPES	CYPES	CYPES	CYPES	XANST	XANST	XANST	XANST	XANST	XANST
Crop Code	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
Rating Data Type	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit	7-5-02	7-12-02	7-19-02	7-29-02	7-5-02	7-12-02	7-19-02	7-29-02	8-5-02	8-12-02
Rating Date	7 DA-A	14 DA-A	21 DA-A	7 DA-B	7 DA-A	14 DA-A	21 DA-A	7 DA-B	14 DA-B	21 DA-B
Trt-Eval Interval										

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	0	0		
2	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	4-8"	W A	30	50	60	62	99	99	99	99		
2	AMS	100	DRY	2.0	% W/W	2	%W/W	4-8"	W A										
3	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	4-8"	W A	27	53	63	62	99	99	99	99		
3	MCFC OS	100	DRY	3.0	LB/A	3	LB/A	4-8"	W A										
4	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	4-8"	W A	27	53	67	63	99	99	99	99		
4	MCFC OS	100	DRY	5.0	LB/A	5	LB/A	4-8"	W A										
5	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	4-8"	W A	30	62	70	67	99	99	99	99		
5	AMS	100	DRY	2.0	% W/W	2	%W/W	4-8"	W A										
5	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	R1	B										
5	AMS	100	DRY	2.0	% W/W	2	%W/W	R1	B										
6	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	4-8"	W A	23	53	63	63	99	99	99	99		
6	MCFC OS	100	DRY	3.0	LB/A	3	LB/A	4-8"	W A										
6	MCFC OS	100	DRY	3.0	LB/A	3	LB/A	R1	B										
7	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	4-8"	W A	30	50	68	68	99	99	99	99		
7	MCFC OS	100	DRY	5.0	LB/A	5	LB/A	4-8"	W A										
7	MCFC OS	100	DRY	5.0	LB/A	5	LB/A	R1	B										
8	NONTREATED									0	0	0	0	0	0	0	0		
LSD (P=.05)										5.6	5.0	6.9	9.0	0.0	0.0	0.0	0.0	0.0	
Replicate F										2.882	6.236	4.961	1.542	0.000	0.000	0.000	0.000	0.000	0.000
Replicate Prob(F)										0.0895	0.0116	0.0235	0.2481	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Treatment F										50.588	230.527	180.650	101.102	0.000	0.000	0.000	0.000	0.000	0.000
Treatment Prob(F)										0.0001	0.0001	0.0001	0.0001	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Weed Code	AMBEL	AMBEL	AMBEL	AMBEL	AMBEL	AMBEL	AMBEL	IPOHE	IPOHE	IPOHE	IPOHE	IPOHE	IPOHE
Crop Code													
Rating Data Type	Control	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
Rating Date	7-5-02	7-12-02	7-19-02	7-29-02	8-5-02	8-12-02	7-5-02	7-12-02	7-19-02	7-29-02	8-5-02	8-12-02	
Trt-Eval Interval	7 DA-A	14 DA-A	21 DA-A	7 DA-B	14 DA-B	21 DA-B	7 DA-A	14 DA-A	21 DA-A	7 DA-B	14 DA-B	21 DA-B	

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	0	0	0			
2	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	4-8"	W A	95	99	99	99	99	99	72	78	82	81	78	78
2	AMS	100	DRY	2.0	% W/W	2	%W/W	4-8"	W A												
3	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	4-8"	W A	93	99	99	99	99	99	73	81	87	86	85	85
3	MCFC OS	100	DRY	3.0	LB/A	3	LB/A	4-8"	W A												
4	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	4-8"	W A	95	99	99	99	99	99	70	83	87	85	86	87
4	MCFC OS	100	DRY	5.0	LB/A	5	LB/A	4-8"	W A												
5	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	4-8"	W A	96	99	99	99	99	99	72	82	88	94	96	96
5	AMS	100	DRY	2.0	% W/W	2	%W/W	4-8"	W A												
5	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	R1	B												
5	AMS	100	DRY	2.0	% W/W	2	%W/W	R1	B												
6	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	4-8"	W A	97	99	99	99	99	99	72	81	89	88	87	87
6	MCFC OS	100	DRY	3.0	LB/A	3	LB/A	4-8"	W A												
6	MCFC OS	100	DRY	3.0	LB/A	3	LB/A	R1	B												
7	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	4-8"	W A	98	99	99	99	99	99	73	80	87	88	90	90
7	MCFC OS	100	DRY	5.0	LB/A	5	LB/A	4-8"	W A												
7	MCFC OS	100	DRY	5.0	LB/A	5	LB/A	R1	B												
8	NONTREATED									0	0	0	0	0	0	0	0	0	0	0	0
LSD (P=.05)										4.8	0.0	0.0	0.0	0.0	0.0	5.4	7.3	8.2	8.5	5.9	6.3
Replicate F										3.478	0.000	0.000	0.000	0.000	0.000	0.111	4.434	3.089	2.119	2.041	2.666
Replicate Prob(F)										0.0594	1.0000	1.0000	1.0000	1.0000	1.0000	0.8956	0.0322	0.0774	0.1570	0.1668	0.1045
Treatment F										788.022	0.000	0.000	0.000	0.000	0.000	355.286	241.279	219.487	208.010	440.894	384.203
Treatment Prob(F)										0.0001	1.0000	1.0000	1.0000	1.0000	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Weed Code	Crop Code	Rating Data Type	Rating Unit	Rating Date	Trt-Eval Interval	ABUTH	ABUTH	ABUTH	ABUTH	ABUTH	AMATA	AMATA	AMATA	AMATA	AMATA	AMATA	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	Control Percent	Control Percent	Control Percent	Control Percent	Control Percent	Control Percent	Control Percent	
										7-5-02	7-12-02	7-29-02	8-5-02	8-12-02	7-5-02	7-12-02	
										7 DA-A	14 DA-A	7 DA-B	14 DA-B	21 DA-B	7 DA-A	14 DA-A	
1	NONTREATED									0	0	0	0	0	0	0	
2	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	4-8"W	A	72	87	90	90	90	99	99	
2	AMS	100	DRY	2.0	% W/W	2	%W/W	4-8"W	A								
3	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	4-8"W	A	73	92	89	90	90	99	98	
3	MCFC OS	100	DRY	3.0	LB/A	3	LB/A	4-8"W	A								
4	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	4-8"W	A	75	93	91	93	93	99	99	
4	MCFC OS	100	DRY	5.0	LB/A	5	LB/A	4-8"W	A								
5	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	4-8"W	A	72	93	97	99	99	99	96	
5	AMS	100	DRY	2.0	% W/W	2	%W/W	4-8"W	A								
5	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	R1	B								
5	AMS	100	DRY	2.0	% W/W	2	%W/W	R1	B								
6	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	4-8"W	A	72	93	93	93	93	99	99	
6	MCFC OS	100	DRY	3.0	LB/A	3	LB/A	4-8"W	A								
6	MCFC OS	100	DRY	3.0	LB/A	3	LB/A	R1	B								
7	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	4-8"W	A	73	88	96	95	95	99	98	
7	MCFC OS	100	DRY	5.0	LB/A	5	LB/A	4-8"W	A								
7	MCFC OS	100	DRY	5.0	LB/A	5	LB/A	R1	B								
8	NONTREATED									0	0	0	0	0	0	0	
LSD (P=.05)						5.2	4.7	4.2	4.1	4.1	0.0	2.4	3.7	4.9	4.9	4.8	
Replicate F						1.477	12.159	0.475	0.054	0.091	0.000	1.400	3.046	0.846	1.317	1.784	
Replicate Prob(F)						0.2669	0.0009	0.6318	0.9479	0.9136	1.0000	0.2791	0.0798	0.4499	0.2992	0.2040	
Treatment F						393.162	741.540	988.725	1037.209	1026.354	0.000	3250.038	1270.863	719.963	672.838	696.932	
Treatment Prob(F)						0.0001	0.0001	0.0001	0.0001	0.0001	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	

Miller Glyphosate Adjuvant Study.

Project Code: 02-10B-MW50 Location: Belleville Research Center

Trial Comments

1. Protocol: Miller Chemical.
2. DA-A = days after 4-8"W application. DA-B = days after R1 application.
3. Ratings at 7, 14, and 21 DA-B were also 31, 38, and 45 DA-A, respectively.