Oil and Water Soluble Herbicide Adjuvant Evaluation.

00-6A-M110

OBJECTIVE: Determine the effectiveness of experimental adjuvants when applied with oil and water soluble herbicides alone and in combination.

SUMMARY: Soybean injury was 0 to 12% at 14 days after treatment (DAT). The greatest level of soybean injury was observed with Roundup Custom plus Activator 90. No soybean injury was observed from any treatment by 28 DAT. All Roundup Custom and Extreme treatments controlled at least 95% of giant foxtail at 28 DAT. Pursuit controlled only 28 to 35% of giant foxtail with no significant differences between adjuvants. Common cocklebur control was greatest with Roundup Custom plus EX 105 (80%) and least with Pursuit treatments (60 to 73%) with few differences between adjuvants. Common waterhemp control was 60 to 78% from Roundup Custom and Extreme with Roundup Custom plus Exchange providing the most control. Pursuit treatments did not control common waterhemp. Velvetleaf and morningglory species control was not significantly affected by the addition of an adjuvant. In general, applying herbicides with EX 105 tended to provide greater overall weed control compared to Miller EXP.

HERBICIDES/ADJUVANTS	WEEDS	CROP
EXTREME 2.17 SL	COCKLEBUR, COMMON	SOYBEAN
PURSUIT 70 WG	FOXTAIL, GIANT	
ROUNDUP CUSTOM 4 SL	MORNINGGLORY, SPECIES	
ACTIVATOR 90 100 LIQ	VELVETLEAF	
EX 105 100 LIQ	WATERHEMP, COMMON	
EXCHANGE 100 LIQ		
MILLER EXP 100 LIQ		
PRIME OIL COC 100 LIQ		

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Oil and Water Soluble Herbicide Adjuvant Evaluation.

Project Code: 00-6A-M110 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

Weed Code	Common Name	Scientific Name
1. SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2. AMATA	WATERHEMP, COMMON	AMARANTHUS RUDIS SAUER
3. ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
4. XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM
5. IPOSS	MORNINGGLORY, SPECIES	IPOMOEA SP.

Crop 1:	GLXMA SOYBEAN	Variety:	B-T 369CR		
Planting Method:	SEEDED	Planting Date:	May-11-00		
Rate:	75 LB/A	Depth:	1.0 IN		
Row Spacing:	30 IN				
Plot Width, Unit:	10 FT	Plot Length, Unit:	25 FT	Reps: 3	
Tillage Type:	REDUCED-TILL	Study Design:	RCB		
Previous Crop, Year:	ZEAMX, 1999	Fertilizer applied:	N 0 LB/A,	P_2O_5 0 LB/A,	K_2O 0 LB/A
Soil Name:	STOY	% OM: 2.2	pH: 5.8	CEC: 7	
Texture:	SILT LOAM	P_1: 82 LB/A,	K: 358 LB/A		

APPLICATION DESCRIPTION

	A
Application Date:	Jun-9-00
Time of Day:	9:30
Application Method:	SPRAY
Application Timing:	6"W
Applic. Placement:	BROFOL
Air Temp., Unit:	70 F
% Relative Humidity:	45
Wind Velocity, Unit:	2-4 MPH
Soil Moisture:	NORMAL
% Cloud Cover:	0

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	GLXMA V1
Height, Unit:	4-5 IN

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	SETFA
Stage(leaves):	3-5
Height(inches):	4-6
Density:	HIGH
Weed 2 Code:	AMATA
Stage(leaves):	2-5
Height(inches):	1-3
Density:	MEDIUM
Weed 3 Code:	ABUTH
Stage(leaves):	1-4
Height(inches):	3-6
Density:	MEDIUM
Weed 4 Code:	XANST
Stage(leaves):	4-6
Height(inches):	4-8
Density:	HIGH
Weed 5 Code:	IPOSS
Stage(leaves):	COTL-3
Height(inches):	1-3
Density:	MEDIUM

APPLICATION EQUIPMENT

	A
Appl. Equipment:	CO_2 SPRAY
Operating Pressure:	40 PSI
Nozzle Type:	FLAT FAN
Nozzle Size:	XR8002VS
Boom Length, Unit:	7.33 FT
Spray Volume, Unit:	15 GPA

NOTES

Not harvested.

TABLE. OIL AND WATER SOLUBLE HERBICIDE ADJUVANT EVALUATION. PROJECT CODE: 00-6A-M110

	TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME CODE	GLXMA INJURY DA 6"W		CONTROL, DAYS AFTER 6"W									
									SETFA		XANST		AMATA		ABUTH		IPOSS	
							14	28	14	28	14	28	14	28	14	28	14	28
							%	%	%	%	%	%	%	%	%	%	%	%
1	ROUNDUP CUSTOM	4 SL	0.28	LB AE/A	0.56	PT/A 6"W A	0	0	96	98	75	73	77	63	68	58	72	82
2	ROUNDUP CUSTOM	4 SL	0.28	LB AE/A	0.56	PT/A 6"W A	12	0	99	99	70	73	78	60	67	60	82	83
2	ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5	%V/V 6"W A												
3	ROUNDUP CUSTOM	4 SL	0.28	LB AE/A	0.56	PT/A 6"W A	3	0	99	99	83	80	83	72	70	70	82	83
3	EX 105	100 LIQ	0.5	% V/V	0.5	%V/V 6"W A												
4	ROUNDUP CUSTOM	4 SL	0.28	LB AE/A	0.56	PT/A 6"W A	3	0	96	96	77	75	73	62	67	67	82	83
4	MILLER EXP	100 LIQ	0.375	% V/V	0.375	%V/V 6"W A												
5	ROUNDUP CUSTOM	4 SL	0.28	LB AE/A	0.56	PT/A 6"W A	2	0	95	95	80	75	82	78	48	53	83	87
5	EXCHANGE	100 LIQ	0.375	% V/V	0.375	%V/V 6"W A												
6	PURSUIT	70 WG	0.031	LB A/A	0.71	OZ/A 6"W A	2	0	60	35	62	70	0	0	57	70	63	53
7	PURSUIT	70 WG	0.031	LB A/A	0.71	OZ/A 6"W A	6	0	57	28	60	60	0	0	63	67	55	62
7	PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V 6"W A												
8	PURSUIT	70 WG	0.031	LB A/A	0.71	OZ/A 6"W A	3	0	63	28	63	65	0	0	58	75	77	70
8	EX 105	100 LIQ	0.5	% V/V	0.5	%V/V 6"W A												
9	PURSUIT	70 WG	0.031	LB A/A	0.71	OZ/A 6"W A	5	0	65	30	57	62	0	0	60	78	60	68
9	MILLER EXP	100 LIQ	0.375	% V/V	0.375	%V/V 6"W A												
10	PURSUIT	70 WG	0.031	LB A/A	0.71	OZ/A 6"W A	2	0	60	30	68	73	0	0	68	78	65	68
10	EXCHANGE	100 LIQ	0.375	% V/V	0.375	%V/V 6"W A												
11	EXTREME	2.17 SL	0.41	LB A/A	24.2	OZ/A 6"W A	7	0	99	99	85	77	87	68	80	85	82	87
12	EXTREME	2.17 SL	0.41	LB A/A	24.2	OZ/A 6"W A	8	0	99	99	88	73	85	70	83	83	82	88
12	ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5	%V/V 6"W A												
13	EXTREME	2.17 SL	0.41	LB A/A	24.2	OZ/A 6"W A	8	0	99	99	88	75	87	75	80	73	85	88
13	PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V 6"W A												
14	EXTREME	2.17 SL	0.41	LB A/A	24.2	OZ/A 6"W A	5	0	99	99	85	75	87	68	80	75	85	85
14	EX 105	100 LIQ	0.5	% V/V	0.5	%V/V 6"W A												
15	EXTREME	2.17 SL	0.41	LB A/A	24.2	OZ/A 6"W A	5	0	99	99	83	68	85	72	75	75	85	88
15	MILLER EXP	100 LIQ	0.375	% V/V	0.375	%V/V 6"W A												
16	EXTREME	2.17 SL	0.41	LB A/A	24.2	OZ/A 6"W A	7	0	99	99	88	77	85	67	83	82	85	85
16	EXCHANGE	100 LIQ	0.375	% V/V	0.375	%V/V 6"W A												
17	NONTREATED						0	0	0	0	0	0	0	0	0	0	0	0
LSD							4	0	7	10	11	11	9	12	16	16	13	19
P							0.01	1.0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

1. PROTOCOL: MILLER CHEMICAL.
2. RATING DATES:
   14 DA 6"W, AND 28 DA 6"W ON JUN-23-00, AND JUL-7-00, RESPECTIVELY.