

Evaluation of Various Adjuvants with Roundup Custom and Roundup Ultra.

00-52-M80

OBJECTIVE: Evaluate various adjuvants for use with Roundup Custom and Roundup Ultra.

SUMMARY: No corn injury was observed from any treatment. Roundup Custom and Roundup Ultra alone controlled 80 and 93% of giant foxtail at 14 days after treatment (DAT), respectively. Adding any adjuvant to Roundup Custom increased control of giant foxtail. Tank mixing adjuvants with Roundup Ultra did not increase or decrease giant foxtail control. By 28 DAT, giant foxtail was completely controlled by all herbicide treatments. Common waterhemp control 14 DAT was 77 and 92% from Roundup Custom and Roundup Ultra, respectively. Adding AMS or CL 9804 to Roundup Custom increased common waterhemp control to 88%. Common waterhemp control was decreased by 14 to 15% when Choice, AMS 2000 or Array was tank mixed with Roundup Ultra. Similar trends in common waterhemp control were observed at 28 DAT.

Corn yield ranged from 134 bu/A in nontreated plots to 191 bu/A. Corn yield was similar for all herbicide treatments.

HERBICIDES/ADJUVANTS

ROUNDUP CUSTOM 4 SL
 ROUNDUP ULTRA 3 SL
 ACTIVATOR 90 100 LIQ
 AMS 100 DRY
 AMS 20/10 100 DRY
 AMS 2000 100 DRY
 AMSOL PLUS 100 LIQ
 AMSURF 100 DRY
 ARRAY 100 DRY
 CHOICE 100 LIQ
 CL 9804 100 LIQ
 CLASS ACT 100 LIQ
 DOUBLE DOWN 100 LIQ
 EX 105 100 LIQ
 IMPRESSIVE DB 100 DRY
 MILLER EXP 100 LIQ
 ULTRA SURF AMS 100 LIQ

WEEDS

FOXTAIL, GIANT
 WATERHEMP, COMMON

CROP

CORN, FIELD

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PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Evaluation of Various Adjuvants with Roundup Custom and Roundup Ultra.

Project Code: 00-52-M80 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

Crop 1:	ZEAMX CORN, FIELD	Variety:	DK 626 RR
Planting Method:	SEEDED	Planting Date:	May-16-00
Rate:	28000 S/A	Depth:	1.5 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:	GLXMA, 1999	Fertilizer applied:	N 150 LB/A,	P ₂ O ₅ 0 LB/A,	K ₂ O 150 LB/A

Soil Name:	WEIR	% OM:	1.8	pH:	6.9	CEC:	12
Texture:	SILT LOAM	P ₁ :	83 LB/A,	K:	302 LB/A		

APPLICATION DESCRIPTION

A

Application Date:	Jun-14-00
Time of Day:	19:00
Application Method:	SPRAY
Application Timing:	6"W
Applic. Placement:	BROFOL
Air Temp., Unit:	76 F
% Relative Humidity:	70
Wind Velocity, Unit:	5-10 MPH
Soil Moisture:	WET
% Cloud Cover:	40

CROP STAGE AT EACH APPLICATION

A

Crop 1 Code, Stage:	ZEAMX V5
Height, Unit:	16-18 IN

WEED STAGE AT EACH APPLICATION

A

Weed 1 Code:	SETFA
Stage(leaves):	5-6
Height(inches):	6-7
Density:	MEDIUM

Weed 2 Code:	AMATA
Stage(leaves):	3-10+
Height(inches):	1-9
Density:	HIGH

APPLICATION EQUIPMENT

A

Appl. Equipment:	CO ₂ SPRAY
Operating Pressure:	40 PSI
Nozzle Type:	FLAT FAN
Nozzle Size:	DG110015VS
Boom Length, Unit:	7.33 FT
Spray Volume, Unit:	10 GPA

NOTES:

Harvested Oct-06-00, (2) 30 inch rows by 23 ft.

TABLE. EVALUATION OF VARIOUS ADJUVANTS WITH ROUNDUP CUSTOM AND ROUNDUP ULTRA. PROJECT CODE:00-52-M80

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD	ZEAMX INJURY		CONTROL DAYS AFTER 6"W			
								DAT		SETFA		AMATA	
								14	28	14	28	14	28
							BU/A	%	%	%	%	%	%
1 NONTREATED							134	0	0	0	0	0	0
2 ROUNDUP CUSTOM	4 SL	0.375 LB AE/A		0.75 PT/A	6"W	A	181	0	0	80	99	77	83
3 ROUNDUP CUSTOM	4 SL	0.375 LB AE/A		0.75 PT/A	6"W	A	165	0	0	90	99	72	79
3 ACTIVATOR 90	100 LIQ	0.5 % V/V		0.5 %V/V	6"W	A							
4 ROUNDUP CUSTOM	4 SL	0.375 LB AE/A		0.75 PT/A	6"W	A	177	0	0	88	99	88	93
4 AMS	100 DRY	2.0 % W/W		2.0 %W/W	6"W	A							
5 ROUNDUP CUSTOM	4 SL	0.375 LB AE/A		0.75 PT/A	6"W	A	178	0	0	93	99	75	79
5 ACTIVATOR 90	100 LIQ	0.5 % V/V		0.5 %V/V	6"W	A							
5 AMS	100 DRY	2.0 % W/W		2.0 %W/W	6"W	A							
6 ROUNDUP CUSTOM	4 SL	0.375 LB AE/A		0.75 PT/A	6"W	A	172	0	0	93	99	83	86
6 ULTRA SURF AMS	100 LIQ	2.5 % V/V		2.5 %V/V	6"W	A							
7 ROUNDUP CUSTOM	4 SL	0.375 LB AE/A		0.75 PT/A	6"W	A	186	0	0	92	99	85	91
7 AMSURF	100 DRY	2.4 % W/W		20.0 LB/100 GAL	6"W	A							
8 ROUNDUP CUSTOM	4 SL	0.375 LB AE/A		0.75 PT/A	6"W	A	173	0	0	93	99	85	89
8 IMPRESSIVE DB	100 DRY	2.25 LB/A		2.25 LB/A	6"W	A							
9 ROUNDUP CUSTOM	4 SL	0.375 LB AE/A		0.75 PT/A	6"W	A	178	0	0	92	99	80	82
9 CLASS ACT	100 LIQ	2.5 % V/V		2.5 %V/V	6"W	A							
10 ROUNDUP CUSTOM	4 SL	0.375 LB AE/A		0.75 PT/A	6"W	A	177	0	0	93	99	88	87
10 CL 9804	100 LIQ	2.5 % V/V		2.5 %V/V	6"W	A							
11 ROUNDUP CUSTOM	4 SL	0.375 LB AE/A		0.75 PT/A	6"W	A	171	0	0	92	99	78	84
11 EX 105	100 LIQ	0.5 % V/V		0.5 %V/V	6"W	A							
11 AMS	100 DRY	2.0 % W/W		2.0 %W/W	6"W	A							
12 ROUNDUP CUSTOM	4 SL	0.375 LB AE/A		0.75 PT/A	6"W	A	172	0	0	92	99	85	88
12 MILLER EXP	100 LIQ	0.375 % V/V		0.375 %V/V	6"W	A							
12 AMS	100 DRY	2.0 % W/W		2.0 %W/W	6"W	A							
13 ROUNDUP ULTRA	3 SL	0.375 LB AE/A		1.0 PT/A	6"W	A	188	0	0	93	99	92	92
14 ROUNDUP ULTRA	3 SL	0.375 LB AE/A		1.0 PT/A	6"W	A	187	0	0	93	99	92	94
14 AMS	100 DRY	2.0 % W/W		2.0 %W/W	6"W	A							
15 ROUNDUP ULTRA	3 SL	0.375 LB AE/A		1.0 PT/A	6"W	A	191	0	0	90	99	78	85
15 CHOICE	100 LIQ	0.5 % V/V		0.5 %V/V	6"W	A							
16 ROUNDUP ULTRA	3 SL	0.375 LB AE/A		1.0 PT/A	6"W	A	171	0	0	93	99	86	87
16 DOUBLE DOWN	100 LIQ	2.5 % V/V		2.5 %V/V	6"W	A							
17 ROUNDUP ULTRA	3 SL	0.375 LB AE/A		1.0 PT/A	6"W	A	183	0	0	93	99	91	93
17 AMSOL PLUS	100 LIQ	5.0 % V/V		5.0 %V/V	6"W	A							
18 ROUNDUP ULTRA	3 SL	0.375 LB AE/A		1.0 PT/A	6"W	A	177	0	0	92	99	87	88
18 AMS 20/10	100 DRY	1.02 % W/W		8.5 LB/100 GAL	6"W	A							
19 ROUNDUP ULTRA	3 SL	0.375 LB AE/A		1.0 PT/A	6"W	A	186	0	0	90	99	78	79
19 AMS 2000	100 DRY	2.04 % W/W		17.0 LB/100 GAL	6"W	A							
20 ROUNDUP ULTRA	3 SL	0.375 LB AE/A		1.0 PT/A	6"W	A	177	0	0	92	99	78	80
20 ARRAY	100 DRY	1.08 % W/W		9.0 LB/100 GAL	6"W	A							
21 ROUNDUP ULTRA	3 SL	0.375 LB AE/A		1.0 PT/A	6"W	A	183	0	0	88	99	77	79
21 ARRAY	100 DRY	1.68 % W/W		14.0 LB/100 GAL	6"W	A							
LSD							21	0	0	6	0	11	10
P							0.01	1.0	1.0	0.01	1.0	0.01	0.01

1. PROTOCOL: MILLER CHEMICAL, UNITED SUPPLIERS, ROSENS, LOVELAND, AND AGRILIANCE.

2. RATING DATES:

14 DAYS AFTER 6"W, AND 28 DAYS AFTER 6"W ON JUN-28-00, AND JUL-12-00, RESPECTIVELY.