

Agrilience Cornerstone (glyphosate) Adjuvant Study.

02-21N-M120

OBJECTIVE: Evaluate various surfactants and surfactant/nitrogen combinations applied with a partially-loaded glyphosate (Cornerstone).

SUMMARY: No corn injury was observed from any treatment. Cornerstone alone controlled 70% of giant foxtail. Adding any adjuvant to Cornerstone significantly increased giant foxtail control, however, AG 02019 provided significantly less enhancement of giant foxtail control than most of the other adjuvants. All adjuvants increased control of common cocklebur by Cornerstone except Preference, Activate Plus, AG 02018, and AG 02019. None of the adjuvants tested increased velvetleaf control compared to Cornerstone alone. In contrast, all of the adjuvants except Preference increased ivyleaf morningglory control at 14 days after treatment.

HERBICIDES/ADJUVANTS

CORNERSTONE 3 SL
 ACTIVATE PLUS 100 LIQ
 AG 01010 100 LIQ
 AG 01040 100 DRY
 AG 02018 100 LIQ
 AG 02019 100 LIQ
 AG 02023 100 DRY
 CLASS ACT NG 100 LIQ
 PLACEMENT 100 LIQ
 PREFERENCE 100 LIQ

WEEDS

cocklebur, common
 foxtail, giant
 morningglory, ivyleaf
 velvetleaf

CROP

soybean

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Agrilience Cornerstone (glyphosate) Adjuvant Study.

Project Code: 02-21N-M120 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:

Evaluate various surfactants and surfactant/nitrogen combinations applied with a partially-loaded glyphosate (Cornerstone).

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. XANST	cocklebur, common	Xanthium strumarium L.
3. ABUTH	velvetleaf	Abutilon theophrasti Medicus
4. IPOHE	morningglory, ivyleaf	Ipomoea hederacea (L.) Jacq.

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, P205 50 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: 7-1-02
 Time of Day: 15:30
 Application Method: Spray
 Application Timing: 6-8"W
 Applic. Placement: BROFOL
 Air Temp., Unit: 96 F
 % Relative Humidity: 36
 Wind Velocity, Unit: 3-5 MPH
 Soil Moisture: BELNOR
 % Cloud Cover: 5

CROP STAGE AT EACH APPLICATION

A

Crop 1 Code, Stage: GLXMA V2-V3
 Height, Unit: 6-8 IN

WEED STAGE AT EACH APPLICATION

A

Weed 1 Code:	SETFA
Stage(leaves):	3-7
Height(inches):	6-12
Density:	High
Weed 2 Code:	XANST
Stage(leaves):	2-7
Height(inches):	3-10
Density:	Medium
Weed 3 Code:	ABUTH
Stage(leaves):	2-6
Height(inches):	2-12
Density:	Low
Weed 4 Code:	IPOHE
Stage(leaves):	2-6
Height(inches):	1-4
Density:	Low

APPLICATION EQUIPMENT

A

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

NOTES:

This study was not harvested.

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Weed Code																			
Crop Code																			
Rating Data Type																			
Rating Unit																			
Rating Date																			
Trt-Eval Interval																			

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	ZEAMX Injury Percent	ZEAMX Injury Percent	SETFA Control Percent	SETFA Control Percent	XANST Control Percent	XANST Control Percent	ABUTH Control Percent	ABUTH Control Percent	IPOHE Control Percent	IPOHE Control Percent
										7-15-02	7-29-02	7-15-02	7-29-02	7-15-02	7-29-02	7-15-02	7-29-02	7-15-02	7-29-02
										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
2	CORNERSTONE	3	SL	0.188	LB AE/A	8	OZ/A	6-8"W	A	0	0	70	68	67	68	47	38	35	28
3	CORNERSTONE	3	SL	0.188	LB AE/A	8	OZ/A	6-8"W	A	0	0	90	94	68	70	38	30	48	37
3	PREFERENCE	100	LIQ	0.25	% V/V	0.25	%V/V	6-8"W	A										
4	CORNERSTONE	3	SL	0.188	LB AE/A	8	OZ/A	6-8"W	A	0	0	91	93	73	77	45	37	53	42
4	ACTIVATE PLUS	100	LIQ	0.25	% V/V	0.25	%V/V	6-8"W	A										
5	CORNERSTONE	3	SL	0.188	LB AE/A	8	OZ/A	6-8"W	A	0	0	91	96	83	88	47	40	52	43
5	AG 01010	100	LIQ	0.25	% V/V	0.25	%V/V	6-8"W	A										
6	CORNERSTONE	3	SL	0.188	LB AE/A	8	OZ/A	6-8"W	A	0	0	87	89	72	77	38	35	53	43
6	AG 02018	100	LIQ	0.25	% V/V	0.25	%V/V	6-8"W	A										
7	CORNERSTONE	3	SL	0.188	LB AE/A	8	OZ/A	6-8"W	A	0	0	82	85	73	78	42	38	53	43
7	AG 02019	100	LIQ	0.25	% V/V	0.25	%V/V	6-8"W	A										
8	CORNERSTONE	3	SL	0.188	LB AE/A	8	OZ/A	6-8"W	A	0	0	96	99	84	88	45	37	52	42
8	CLASS ACT NG	100	LIQ	2.5	% V/V	2.5	%V/V	6-8"W	A										
9	CORNERSTONE	3	SL	0.188	LB AE/A	8	OZ/A	6-8"W	A	0	0	96	99	84	88	42	33	60	48
9	CLASS ACT NG	100	LIQ	2.5	% V/V	2.5	%V/V	6-8"W	A										
9	PLACEMENT	100	LIQ	2.0	FL OZ/A	2	OZ/A	6-8"W	A										
10	CORNERSTONE	3	SL	0.188	LB AE/A	8	OZ/A	6-8"W	A	0	0	95	99	84	85	55	48	60	48
10	AG 02023	100	DRY	1.32	% W/W	11	LB/100 GAL	6-8"W	A										
11	CORNERSTONE	3	SL	0.188	LB AE/A	8	OZ/A	6-8"W	A	0	0	94	99	88	91	37	30	57	47
11	AG 01040	100	DRY	1.32	% W/W	11	LB/100 GAL	6-8"W	A										
12	CORNERSTONE	3	SL	0.188	LB AE/A	8	OZ/A	6-8"W	A	0	0	94	98	84	88	47	43	52	40
12	AG 01040	100	DRY	2.16	% W/W	18	LB/100 GAL	6-8"W	A										
LSD (P=.05)										0.0	0.0	9.9	12.6	9.0	10.5	13.0	16.0	14.6	14.3
Replicate F										0.000	0.000	1.179	0.376	0.303	0.584	0.367	0.584	0.251	0.744
Replicate Prob(F)										1.0000	1.0000	0.3263	0.6907	0.7417	0.5661	0.6969	0.5661	0.7805	0.4869
Treatment F										0.000	0.000	63.505	43.034	59.663	48.263	9.441	4.798	10.797	7.462
Treatment Prob(F)										1.0000	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0009	0.0001	0.0001

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Trial Comments

1. Protocol: Agrilience.
2. DA-A = days after 6-8"W application.