

Liberty Adjuvant Study.

Project Code: 04-51E-N60 Location: Belleville Research Center
 Investigator: Bryan Young

Investigator: Bryan Young, Associate Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
 Trial Status: Final Updated: 8-23-04

Objective:

Evaluate Agrilience and So-il Service Inc. adjuvants for use with Liberty and atrazine combinations.

Weed Code	Common Name	Scientific Name
1. GGGAN	grasses, annual	
2. AMBTR	ragweed, giant	Ambrosia trifida L.
3. XANST	cocklebur, common	Xanthium strumarium L.
4. AMATA	waterhemp, common	Amaranthus rudis Sauer
5. AMBEL	ragweed, common	Ambrosia artemisiifolia L.
6. SETFA	foxtail, giant	Setaria faberi Herrm.
7. PANDI	panicum, fall	Panicum dichotomiflorum Michx.

Crop 1: ZEAMX corn, field Variety: P33P69 LL
 Planting Method: Seeded Planting Date: 5-11-04
 Rate: 28000 S/A Depth: 1.5 IN
 Row Spacing: 30 IN

Plot Width, Unit: 10 FT Plot Length, Unit: 27 FT Reps: 3
 Tillage Type: Reduced-Till Study Design: Randomized complete block
 Previous Crop, Year: GLXMA, 2003

Field Prep./Maintenance: N 150 LB/A, P205 50 LB/A, K20 100 LB/A

Soil Name: Weir % OM: 2.2 pH: 6.7 CEC: 11
 Texture: Silt loam Fert. Level: P1: 90 LB/A, K: 409 LB/A

APPLICATION DESCRIPTION

A
 Application Date: 6-5-04
 Time of Day: 11:00
 Application Method: Spray
 Application Timing: 8-12"CN
 Applic. Placement: BROFOL
 Air Temp., Unit: 78 F
 % Relative Humidity: 50
 Wind Velocity, Unit: 3 MPH
 Soil Moisture: NORMAL

CROP STAGE AT EACH APPLICATION

A
 Crop 1 Code, Stage: ZEAMX V4
 Height, Unit: 6-8 IN

WEED STAGE AT EACH APPLICATION

A
 Weed 1 Code: GGGAN
 Stage(leaves): 3-4
 Height(inches): 4-5
 Density: Low
 Weed 2 Code: AMBTR
 Stage(leaves): 6-8
 Height(inches): 4-6
 Density: Low
 Weed 3 Code: XANST
 Stage(leaves): 3-6
 Height(inches): 2-4
 Density: Low

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Weed 4 Code: AMATA
 Stage(leaves): 4-6
 Height(inches): 1-2
 Density: High

Weed 5 Code: AMBEL
 Stage(leaves): 6-8
 Height(inches): 1-2
 Density: Low

APPLICATION EQUIPMENT

	A
Appl. Equipment:	CO2 sprayer
Operating Pressure:	40 PSI
Nozzle Type:	Flat fan
Nozzle Size:	8002
Boom Length, Unit:	7.5 FT
Spray Volume, Unit:	20 GPA

NOTES:

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Weed Code	Crop Code	Rating Data Type	Rating Unit	Rating Date	Trt-Eval Interval	ZEAMX Injury Percent			GGGAN Control Percent			AMBTR Control Percent			XANST Control Percent						
						6-19-04	7-3-04	7-31-04	6-19-04	7-3-04	7-31-04	6-19-04	7-3-04	7-31-04	6-19-04	7-3-04	7-31-04				
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A			
1	LIBERTY	1.67	EC	0.287	LB A/A	22	FL OZ/A	8-12"CN	A	0	0	0	97	87	88	99	98	98	99		
1	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	8-12"CN	A												
2	LIBERTY	1.67	EC	0.287	LB A/A	22	FL OZ/A	8-12"CN	A	0	0	0	96	95	95	99	99	99	99		
2	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	8-12"CN	A												
2	N-PAK AMS	100	LIQ	3.5	QT/A	3.5	QT/A	8-12"CN	A												
3	LIBERTY	1.67	EC	0.287	LB A/A	22	FL OZ/A	8-12"CN	A	0	0	0	98	97	96	99	98	98	99		
3	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	8-12"CN	A												
3	CLASS ACT NG	100	LIQ	2.5	% V/V	2.5	% V/V	8-12"CN	A												
4	LIBERTY	1.67	EC	0.287	LB A/A	22	FL OZ/A	8-12"CN	A	0	0	0	98	96	96	99	99	98	99		
4	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	8-12"CN	A												
4	CLASS ACT NG	100	LIQ	2.5	% V/V	2.5	% V/V	8-12"CN	A												
4	INTERLOCK	100	LIQ	4.0	FL OZ/A	4.0	FL OZ/A	8-12"CN	A												
5	LIBERTY	1.67	EC	0.287	LB A/A	22	FL OZ/A	8-12"CN	A	0	0	0	98	98	92	99	98	98	99		
5	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	8-12"CN	A												
5	CLASS ACT NG	100	LIQ	2.5	% V/V	2.5	% V/V	8-12"CN	A												
5	PLACEMENT	100	LIQ	5.0	FL OZ/A	5.0	FL OZ/A	8-12"CN	A												
6	NONTREATED									0	0	0	0	0	0	0	0	0	0		
7	LIBERTY	1.67	EC	0.287	LB A/A	22	FL OZ/A	8-12"CN	A	0	0	0	97	96	86	99	98	98	99		
7	AATREX	90	WG	1	LB A/A	1.11	LB/A	8-12"CN	A												
7	SOIL BOOST PLUS	100	LIQ	2.5	% V/V	2.5	GAL/100 GAL	8-12"CN	A												
8	LIBERTY	1.67	EC	0.144	LB A/A	11	FL OZ/A	8-12"CN	A	0	0	0	83	73	74	99	95	96	99		
8	AATREX	90	WG	0.504	LB A/A	0.56	LB/A	8-12"CN	A												
8	SOIL BOOST PLUS	100	LIQ	2.5	% V/V	2.5	GAL/100 GAL	8-12"CN	A												
9	LIBERTY	1.67	EC	0.072	LB A/A	5.5	FL OZ/A	8-12"CN	A	0	0	0	70	63	58	87	91	87	91		
9	AATREX	90	WG	0.252	LB A/A	0.28	LB/A	8-12"CN	A												
9	SOIL BOOST PLUS	100	LIQ	2.5	% V/V	2.5	GAL/100 GAL	8-12"CN	A												
10	LIBERTY	1.67	EC	0.287	LB A/A	22	FL OZ/A	8-12"CN	A	0	0	0	94	91	87	99	98	98	99		
10	AATREX	90	WG	1	LB A/A	1.11	LB/A	8-12"CN	A												
10	SOIL BOOST PLUS	100	LIQ	2.5	% V/V	2.5	GAL/100 GAL	8-12"CN	A												
10	LANDOIL	100	LIQ	22	FL OZ/A	22	FL OZ/A	8-12"CN	A												
11	LIBERTY	1.67	EC	0.144	LB A/A	11	FL OZ/A	8-12"CN	A	0	0	0	80	77	65	99	96	95	99		
11	AATREX	90	WG	0.504	LB A/A	0.56	LB/A	8-12"CN	A												
11	SOIL BOOST PLUS	100	LIQ	2.5	% V/V	2.5	GAL/100 GAL	8-12"CN	A												
11	LANDOIL	100	LIQ	16	FL OZ/A	16	FL OZ/A	8-12"CN	A												
12	LIBERTY	1.67	EC	0.072	LB A/A	5.5	FL OZ/A	8-12"CN	A	0	0	0	60	55	47	77	78	76	85		
12	AATREX	90	WG	0.252	LB A/A	0.28	LB/A	8-12"CN	A												
12	SOIL BOOST PLUS	100	LIQ	2.5	% V/V	2.5	GAL/100 GAL	8-12"CN	A												
12	LANDOIL	100	LIQ	16	FL OZ/A	16	FL OZ/A	8-12"CN	A												
LSD (P=.05)										0.0	0.0	0.0	8.2	10.5	17.0	2.9	4.6	6.5	4.2	2.3	2.5
Replicate F										0.000	0.000	0.000	0.362	1.435	1.534	1.233	1.117	2.015	1.612	0.853	1.000
Replicate Prob(F)										1.0000	1.0000	1.0000	0.7004	0.2595	0.2378	0.3109	0.3450	0.1572	0.2232	0.4397	0.3840
Treatment F										0.000	0.000	0.000	103.163	62.752	23.718	813.500	317.174	163.303	387.738	1308.869	1084.000
Treatment Prob(F)										1.0000	1.0000	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

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Weed Code	AMATA	AMATA	AMATA	AMBEL	AMBEL	AMBEL
Crop Code						
Rating Data Type	Control	Control	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date	6-19-04	7-3-04	7-31-04	6-19-04	7-3-04	7-31-04
Trt-Eval Interval	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code						
1	LIBERTY	1.67	EC	0.287	LB A/A	22	FL OZ/A	8-12"	CN A	99	99	99	99	99	99
1	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	8-12"	CN A						
2	LIBERTY	1.67	EC	0.287	LB A/A	22	FL OZ/A	8-12"	CN A	99	99	99	99	99	99
2	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	8-12"	CN A						
2	N-PAK AMS	100	LIQ	3.5	QT/A	3.5	QT/A	8-12"	CN A						
3	LIBERTY	1.67	EC	0.287	LB A/A	22	FL OZ/A	8-12"	CN A	99	99	99	99	99	99
3	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	8-12"	CN A						
3	CLASS ACT NG	100	LIQ	2.5	% V/V	2.5	% V/V	8-12"	CN A						
4	LIBERTY	1.67	EC	0.287	LB A/A	22	FL OZ/A	8-12"	CN A	99	99	99	99	99	99
4	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	8-12"	CN A						
4	CLASS ACT NG	100	LIQ	2.5	% V/V	2.5	% V/V	8-12"	CN A						
4	INTERLOCK	100	LIQ	4.0	FL OZ/A	4.0	FL OZ/A	8-12"	CN A						
5	LIBERTY	1.67	EC	0.287	LB A/A	22	FL OZ/A	8-12"	CN A	99	99	99	99	99	99
5	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	8-12"	CN A						
5	CLASS ACT NG	100	LIQ	2.5	% V/V	2.5	% V/V	8-12"	CN A						
5	PLACEMENT	100	LIQ	5.0	FL OZ/A	5.0	FL OZ/A	8-12"	CN A						
6	NONTREATED									0	0	0	0	0	0
7	LIBERTY	1.67	EC	0.287	LB A/A	22	FL OZ/A	8-12"	CN A	99	99	99	99	99	99
7	AATREX	90	WG	1	LB A/A	1.11	LB/A	8-12"	CN A						
7	SOIL BOOST PLUS	100	LIQ	2.5	% V/V	2.5	GAL/100 GAL	8-12"	CN A						
8	LIBERTY	1.67	EC	0.144	LB A/A	11	FL OZ/A	8-12"	CN A	95	93	96	99	99	99
8	AATREX	90	WG	0.504	LB A/A	0.56	LB/A	8-12"	CN A						
8	SOIL BOOST PLUS	100	LIQ	2.5	% V/V	2.5	GAL/100 GAL	8-12"	CN A						
9	LIBERTY	1.67	EC	0.072	LB A/A	5.5	FL OZ/A	8-12"	CN A	87	90	92	99	99	93
9	AATREX	90	WG	0.252	LB A/A	0.28	LB/A	8-12"	CN A						
9	SOIL BOOST PLUS	100	LIQ	2.5	% V/V	2.5	GAL/100 GAL	8-12"	CN A						
10	LIBERTY	1.67	EC	0.287	LB A/A	22	FL OZ/A	8-12"	CN A	98	98	98	99	99	99
10	AATREX	90	WG	1	LB A/A	1.11	LB/A	8-12"	CN A						
10	SOIL BOOST PLUS	100	LIQ	2.5	% V/V	2.5	GAL/100 GAL	8-12"	CN A						
10	LANDOIL	100	LIQ	22	FL OZ/A	22	FL OZ/A	8-12"	CN A						
11	LIBERTY	1.67	EC	0.144	LB A/A	11	FL OZ/A	8-12"	CN A	96	93	93	99	99	99
11	AATREX	90	WG	0.504	LB A/A	0.56	LB/A	8-12"	CN A						
11	SOIL BOOST PLUS	100	LIQ	2.5	% V/V	2.5	GAL/100 GAL	8-12"	CN A						
11	LANDOIL	100	LIQ	16	FL OZ/A	16	FL OZ/A	8-12"	CN A						
12	LIBERTY	1.67	EC	0.072	LB A/A	5.5	FL OZ/A	8-12"	CN A	77	60	57	70	93	98
12	AATREX	90	WG	0.252	LB A/A	0.28	LB/A	8-12"	CN A						
12	SOIL BOOST PLUS	100	LIQ	2.5	% V/V	2.5	GAL/100 GAL	8-12"	CN A						
12	LANDOIL	100	LIQ	16	FL OZ/A	16	FL OZ/A	8-12"	CN A						
LSD (P=.05)										5.8	13.4	11.9	0.0	2.5	3.7

Southern Illinois University

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Weed Code	AMATA	AMATA	AMATA	AMBEL	AMBEL	AMBEL
Crop Code						
Rating Data Type	Control	Control	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date	6-19-04	7-3-04	7-31-04	6-19-04	7-3-04	7-31-04
Trt-Eval Interval	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code
Replicate F		1.274		1.092		1.001		0.000	1.000 0.863
Replicate Prob(F)		0.2994		0.3530		0.3838		1.0000	0.3840 0.4357
Treatment F		207.039		40.656		52.581		0.000	1081.000 498.805
Treatment Prob(F)		0.0001		0.0001		0.0001		1.0000	0.0001 0.0001

Trial Comments

1. Protocol: Agrilience; So-il Service Inc.
2. Ratings: CI and WC 14 and 28 DAT.
3. DA-A = Days after 8-12"CN application.
4. GGGAN = Annual grasses including SETFA and PANDI.