

Comparison of Drift Control Nozzles.

Project Code: 03-21S-W30 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
 Trial Status: Final Updated: 9-3-03

Objective:

Evaluate the performance of various nozzles used for managing herbicide spray drift.

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

Crop 1:	GLXMA soybean	Variety:	Asgrow 4403 RR
Planting Method:	Seeded	Planting Date:	6-5-03
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, 2002				

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

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Application Date:	7-17-03
Time of Day:	9:30
Application Method:	Spray
Application Timing:	8"W
Applic. Placement:	BROFOL
Air Temp., Unit:	69 F
% Relative Humidity:	90
Wind Velocity, Unit:	0 MPH
Soil Moisture:	BELNOR
% Cloud Cover:	10

CROP STAGE AT EACH APPLICATION

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Crop 1 Code, Stage:	GLXMA V5
Height, Unit:	8 IN

WEED STAGE AT EACH APPLICATION

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Weed 1 Code:	SETFA
Stage(leaves):	10-15
Height(inches):	8-12
Density:	High
Weed 2 Code:	XANST
Stage(leaves):	12-24
Height(inches):	12-24
Density:	High
Weed 3 Code:	AMBEL
Stage(leaves):	6-12
Height(inches):	6-12
Density:	Low

Weed 4 Code: ABUTH
Stage(leaves): 4-8
Height(inches): 6-10
Density: Low

Weed 5 Code: IPOHE
Stage(leaves): 4-9
Height(inches): 8-10
Density: Low

APPLICATION EQUIPMENT

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Appl. Equipment: CO2 sprayer
Operating Pressure: see note
Nozzle Type: see note
Nozzle Size: see note
Boom Length, Unit: 7.5 FT
Spray Volume, Unit: 10 GPA

NOTES:
Operating pressure, nozzle type and size are listed in the treatment list.
Not harvested.

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Weed Code								SETFA	SETFA	XANST	XANST	AMBEL	AMBEL	ABUTH	ABUTH	IPOHE	IPOHE
Crop Code								GLXMA	GLXMA								
Rating Data Type								Injury	Injury	Control	Control	Control	Control	Control	Control	Control	Control
Rating Unit								Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date								7-31-03	8-14-03	7-31-03	8-14-03	7-31-03	8-14-03	7-31-03	8-14-03	7-31-03	8-14-03
Trt-Eval Interval								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

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	GLXMA Injury Percent	GLXMA Injury Percent	SETFA Control Percent	SETFA Control Percent	XANST Control Percent	XANST Control Percent	AMBEL Control Percent	AMBEL Control Percent	ABUTH Control Percent	ABUTH Control Percent	IPOHE Control Percent	IPOHE Control Percent
1	NONTREATED									0	0	0	0	0	0	0	0	0	0	0	0
2	XR110015									0	0	99	99	92	92	80	75	53	45	53	48
2	30 PSI																				
2	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8"	W A												
2	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8"	W A												
2	AMS	100	DRY	1.0	% W/W	1	% W/W	8"	W A												
3	XR110015									0	0	99	99	93	95	78	72	50	37	50	53
3	30 PSI																				
3	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8"	W A												
3	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8"	W A												
3	ARRAY	100	DRY	9.0	LB/100 GAL	9	LB/100 GAL	8"	W A												
4	TT110015									0	0	99	99	90	92	70	55	43	37	47	40
4	30 PSI																				
4	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8"	W A												
4	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8"	W A												
4	ARRAY	100	DRY	9.0	LB/100 GAL	9	LB/100 GAL	8"	W A												
5	AI110015									0	0	99	98	93	96	80	70	60	57	58	48
5	60 PSI																				
5	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8"	W A												
5	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8"	W A												
5	ARRAY	100	DRY	9.0	LB/100 GAL	9	LB/100 GAL	8"	W A												
6	LD015F110 (HYPRO)									0	0	99	99	96	95	73	60	55	45	52	47
6	30 PSI																				
6	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8"	W A												
6	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8"	W A												
6	ARRAY	100	DRY	9.0	LB/100 GAL	9	LB/100 GAL	8"	W A												
7	ULD120-015 (HYPRO)									0	0	97	97	91	91	72	57	47	37	45	40
7	30 PSI																				
7	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8"	W A												
7	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8"	W A												
7	ARRAY	100	DRY	9.0	LB/100 GAL	9	LB/100 GAL	8"	W A												
8	NONTREATED									0	0	0	0	0	0	0	0	0	0	0	0
LSD (P=.05)										0.0	0.0	1.3	1.5	3.4	4.8	5.8	9.2	8.7	10.8	6.8	8.8

Weed Code						SETFA	SETFA	XANST	XANST	AMBEL	AMBEL	ABUTH	ABUTH	IPOHE	IPOHE
Crop Code						GLXMA	GLXMA								
Rating Data Type						Injury	Injury	Control	Control	Control	Control	Control	Control	Control	Control
Rating Unit						Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date						7-31-03	8-14-03	7-31-03	8-14-03	7-31-03	8-14-03	7-31-03	8-14-03	7-31-03	8-14-03
Trt-Eval Interval						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

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code											
	Replicate F			0.000	0.000					1.000	0.740	4.110	5.812	2.676	2.319	2.054	0.438	1.871	3.272	
	Replicate Prob(F)			1.0000	1.0000	0.3927	0.4950	0.0394	0.0145	0.1063	0.1377	0.1651	0.6542	0.1904	0.0682					
	Treatment F			0.000	0.000	11543.286	8510.439	1494.884	762.573	340.622	103.951	71.419	34.422	113.812	56.686					
	Treatment Prob(F)			1.0000	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: SIU.
2. Ratings: CI and WC 14 and 28 DAT.
3. This study was originally planned as 03-52-W30.
4. DA-A = days after 8"W application.