

Nozzle by Adjuvant Interaction - Glyphosate plus Clethodim.

Trial ID: 11-HRC-WU12PreCLabs Location: Belleville Res. Center

Investigator: Bryan Young, Professor, Southern Illinois University, bgyoung@siu.edu
 City State Zip Country: Carbondale IL 62901 USA
 Trial Status: FINAL Initiation Date: 6-7-11

Objectives: Determine the influence and interaction of nozzle type and adjuvant on the efficacy of glyphosate plus clethodim on volunteer corn.

Crop 1: GLXMA Soybean Variety: AG 4005 Description: RR
 Planting Method: SEEDED Planting Date: 6-7-11
 Rate, Unit: 75 LB/A Depth, Unit: 1.0 IN
 Row Spacing, Unit: 30 IN

Pest 1 Type: W Code: ZEAMX Zea mays L. corn, volunteer
 Pest Description: Roundup Ready corn
 Pest 2 Type: W Code: IPOHE Ipomoea hederacea (L.) Jacq. morningglory, ivyleaf
 Pest 3 Type: W Code: BRAPP Brachiaria platyphylla (Griseb.) signalgrass, broadleaf

Plot Width, Unit: 10 FT Site Type: FIELD
 Plot Length, Unit: 30 FT Tillage Type: REDUCED-TILL
 Replications: 3 Study Design: Randomized Complete Block

Prior Crops, Year
 1. NONE 2010

Field Prep./Maintenance: N 54 LB/A, P205 138 LB/A, K20 325 LB/A

% OM: 2.8 Texture: SILT LOAM
 pH: 6.7
 CEC: 10 Fert. Level: P1: 92 LB/A, K: 334 LB/A

Application Description

A
 Application Date: 7-1-11
 Time of Day: 14:00
 Application Method: Spray
 Application Timing: 12"CN
 Application Placement: BROFOL
 Applied By: JRK
 Air Temperature, Unit: 95 F
 % Relative Humidity: 40
 Wind Velocity, Unit: 2 MPH
 Wind Direction: S
 Dew Presence (Y/N): N
 Soil Temperature, Unit: 76 F
 Soil Moisture: NORMAL
 % Cloud Cover: 5

1-7-11
 Crop stage at application: V3
 Height Min, Max (inch): 12 14

Pest Stage At Each Application

Application Date: 7-1-11
 Weed Code: ZEAMX
 Stage Majority (leaves): V4
 Stage Min, Max: V4 V4
 Height Majority: 24 IN
 Height Min, Max: 20 28
 Density, Unit: 1 FT2
 Weed Code: IPOHE
 Stage Majority (leaves): 4
 Stage Min, Max: 2 4
 Height Majority: 10 IN
 Height Min, Max: 6 10
 Density, Unit: 0.25 FT2
 Weed Code: BRAPP
 Stage Majority (leaves): 4
 Stage Min, Max: 4 5
 Height Majority: 8 IN
 Height Min, Max: 8 12
 Density, Unit: 0.02 FT2

Application Equipment

Appl. Equipment: CO2 sprayer
 Nozzle Type: See
 Nozzle Size: comment
 Boom Length, Unit: 6.67 FT
 Spray Volume, Unit: 10 GPA

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Pest Code				ZEAMX		ZEAMX		IPOHE		IPOHE		BRAPP		BRAPP			
Crop Code				GLXMA		GLXMA		7-15-11		7-29-11		7-15-11		7-29-11			
Rating Date				Injury		Injury		Control		Control		Control		Control			
Rating Data Type				Percent		Percent		Percent		Percent		Percent		Percent			
Rating Unit				14 DA-A		28 DA-A		14 DA-A		28 DA-A		14 DA-A		28 DA-A			
Rating Timing																	
Trt-Eval Interval																	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code								
1	TT 11004 at 40 PSI									0 a	0 a	88 bcd	97 abc	57 ab	71 ab	93 abc	83 a-d
1	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	12"CN	A								
1	SELECT MAX	0.97	EC	0.0455	lb ai/a	6	fl oz/a	12"CN	A								
1	PX 331	100	SL	2.5	% v/v	2.5	% v/v	12"CN	A								
2	AIXR 11003 at 70 PSI									0 a	0 a	88 bcd	96 bc	60 a	73 a	92 abc	83 a-d
2	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	12"CN	A								
2	SELECT MAX	0.97	EC	0.0455	lb ai/a	6	fl oz/a	12"CN	A								
2	PX 331	100	SL	2.5	% v/v	2.5	% v/v	12"CN	A								
3	XR 11004 at 40 PSI									0 a	0 a	87 cd	95 c	58 a	70 abc	92 abc	80 a-d
3	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	12"CN	A								
3	SELECT MAX	0.97	EC	0.0455	lb ai/a	6	fl oz/a	12"CN	A								
3	PX 331	100	SL	2.5	% v/v	2.5	% v/v	12"CN	A								
4	TTI 11004 at 40 PSI									0 a	0 a	90 a-d	97 ab	58 a	70 abc	87 cde	68 ef
4	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	12"CN	A								
4	SELECT MAX	0.97	EC	0.0455	lb ai/a	6	fl oz/a	12"CN	A								
4	PX 331	100	SL	2.5	% v/v	2.5	% v/v	12"CN	A								
5	TT 11004 at 40 PSI									0 a	0 a	91 abc	96 abc	50 abc	68 a-e	94 abc	83 a-d
5	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	12"CN	A								
5	SELECT MAX	0.97	EC	0.0455	lb ai/a	6	fl oz/a	12"CN	A								
5	PX 336	100	SL	1.25	% v/v	1.25	% v/v	12"CN	A								
6	AIXR 11003 at 70 PSI									0 a	0 a	90 a-d	97 abc	50 abc	65 b-f	90 a-d	73 def
6	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	12"CN	A								
6	SELECT MAX	0.97	EC	0.0455	lb ai/a	6	fl oz/a	12"CN	A								
6	PX 336	100	SL	1.25	% v/v	1.25	% v/v	12"CN	A								
7	XR 11004 at 40 PSI									0 a	0 a	88 cd	96 bc	52 ab	71 ab	89 bcd	75 c-f
7	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	12"CN	A								
7	SELECT MAX	0.97	EC	0.0455	lb ai/a	6	fl oz/a	12"CN	A								
7	PX 336	100	SL	1.25	% v/v	1.25	% v/v	12"CN	A								
8	TTI 11004 at 40 PSI									0 a	0 a	89 bcd	97 a	55 ab	62 def	87 cde	65 ef
8	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	12"CN	A								
8	SELECT MAX	0.97	EC	0.0455	lb ai/a	6	fl oz/a	12"CN	A								
8	PX 336	100	SL	1.25	% v/v	1.25	% v/v	12"CN	A								
9	TT 11004 at 40 PSI									0 a	0 a	88 bcd	97 a	52 ab	67 a-e	96 a	91 a
9	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	12"CN	A								
9	SELECT MAX	0.97	EC	0.0455	lb ai/a	6	fl oz/a	12"CN	A								
9	PX 711	100	SL	0.375	% v/v	0.375	% v/v	12"CN	A								
10	AIXR 11003 at 70 PSI									0 a	0 a	87 cd	96 abc	52 ab	67 a-e	96 ab	91 a
10	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	12"CN	A								
10	SELECT MAX	0.97	EC	0.0455	lb ai/a	6	fl oz/a	12"CN	A								
10	PX 711	100	SL	0.375	% v/v	0.375	% v/v	12"CN	A								
11	XR 11004 at 40 PSI									0 a	0 a	92 ab	97 a	52 ab	62 c-f	95 ab	88 ab
11	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	12"CN	A								
11	SELECT MAX	0.97	EC	0.0455	lb ai/a	6	fl oz/a	12"CN	A								
11	PX 711	100	SL	0.375	% v/v	0.375	% v/v	12"CN	A								
12	TTI 11004 at 40 PSI									0 a	0 a	90 a-d	97 abc	55 ab	69 a-d	88 bcd	73 c-f
12	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	12"CN	A								
12	SELECT MAX	0.97	EC	0.0455	lb ai/a	6	fl oz/a	12"CN	A								
12	PX 711	100	SL	0.375	% v/v	0.375	% v/v	12"CN	A								
13	TT 11004 at 40 PSI									0 a	0 a	87 d	97 ab	38 c-f	62 def	82 def	75 c-f
13	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	12"CN	A								
13	SELECT MAX	0.97	EC	0.0455	lb ai/a	6	fl oz/a	12"CN	A								
13	AMS	100	SG	1	% w/w	1	% w/w	12"CN	A								
14	AIXR 11003 at 70 PSI									0 a	0 a	88 bcd	96 abc	33 f	58 f	80 ef	68 ef
14	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	12"CN	A								
14	SELECT MAX	0.97	EC	0.0455	lb ai/a	6	fl oz/a	12"CN	A								
14	AMS	100	SG	1	% w/w	1	% w/w	12"CN	A								

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Pest Code	GLXMA		ZEAMX		IPOHE		BRAPP										
Crop Code	GLXMA	GLXMA	ZEAMX	ZEAMX	IPOHE	IPOHE	BRAPP	BRAPP									
Rating Date	7-15-11	7-29-11	7-15-11	7-29-11	7-15-11	7-29-11	7-15-11	7-29-11									
Rating Data Type	Injury	Injury	Control	Control	Control	Control	Control	Control									
Rating Unit	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent									
Rating Timing	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-Eval Interval																	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A
15	XR 11004 at 40 PSI									0 a	0 a	88 cd	97 ab	35 ef	62 def	87 cde	80 a-d
15	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	12"CN	A								
15	SELECT MAX	0.97	EC	0.0455	lb ai/a	6	fl oz/a	12"CN	A								
15	AMS	100	SG	1	% w/w	1	% w/w	12"CN	A								
16	TTI 11004 at 40 PSI									0 a	0 a	90 a-d	97 a	35 ef	61 ef	77 f	63 f
16	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	12"CN	A								
16	SELECT MAX	0.97	EC	0.0455	lb ai/a	6	fl oz/a	12"CN	A								
16	AMS	100	SG	1	% w/w	1	% w/w	12"CN	A								
17	TT 11004 at 40 PSI									0 a	0 a	89 bcd	97 abc	53 ab	66 a-f	92 abc	83 a-d
17	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	12"CN	A								
17	SELECT MAX	0.97	EC	0.0455	lb ai/a	6	fl oz/a	12"CN	A								
17	PX 713	100	SL	0.5	% v/v	0.5	% v/v	12"CN	A								
18	AIXR 11003 at 70 PSI									0 a	0 a	93 a	97 abc	48 a-d	66 a-f	91 abc	84 abc
18	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	12"CN	A								
18	SELECT MAX	0.97	EC	0.0455	lb ai/a	6	fl oz/a	12"CN	A								
18	PX 713	100	SL	0.5	% v/v	0.5	% v/v	12"CN	A								
19	XR 11004 at 40 PSI									0 a	0 a	90 a-d	97 abc	46 b-e	63 b-f	88 bcd	76 b-e
19	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	12"CN	A								
19	SELECT MAX	0.97	EC	0.0455	lb ai/a	6	fl oz/a	12"CN	A								
19	PX 713	100	SL	0.5	% v/v	0.5	% v/v	12"CN	A								
20	TTI 11004 at 40 PSI									0 a	0 a	91 a-d	97 ab	37 def	65 b-f	80 ef	63 f
20	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	12"CN	A								
20	SELECT MAX	0.97	EC	0.0455	lb ai/a	6	fl oz/a	12"CN	A								
20	PX 713	100	SL	0.5	% v/v	0.5	% v/v	12"CN	A								
LSD (P=.05)										0.0	0.0	4.1	1.6	11.9	7.9	7.8	11.8
Replicate F										0.000	0.000	3.503	4.729	1.821	0.224	4.269	6.837
Replicate Prob(F)										1.0000	1.0000	0.0402	0.0147	0.1757	0.8002	0.0234	0.0036
Treatment F										0.000	0.000	1.423	1.016	4.205	2.140	4.172	4.467
Treatment Prob(F)										1.0000	1.0000	0.1738	0.4665	0.0001	0.0227	0.0002	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Trial Comments

1. Protocol: Precision Labs.
2. Ratings: CI/WC at 14 and 28 DAT.
3. Nozzle size and type and spray pressure are per treatment, see treatment list. All applications made at 12 MPH.
4. Mixing instructions: see attached bulk mixing instructions, requires 2.5 gallon containers.
5. Plant volunteer corn (DKC 61-21 RR2) split rows on planter.
6. Missing weed control data due to low density of some weeds in some plots.