

Southern Illinois University

Nozzle by Adjuvant Interaction - Glyphosate plus Dicamba Burndown.

Trial ID: 12-YRC-PrecLabsBD
 Location: Young Res. Center

Investigator: Bryan Young

General Trial Information	
Study Director: Bryan Young	Investigator: Bryan Young Title: Professor
Trial Status: F one-year/final	
Initiation Date: 4-19-12	
Trial Location	
City: Murphysboro	
State/Prov.: IL	
Postal Code: 62966	
Country: USA	

Objectives:
 Determine the influence and interaction of nozzle type and adjuvant on efficacy of glyphosate plus dicamba for burndown.

Personnel	
Study Director: Bryan Young	Title: Professor
Investigator: Bryan Young	
Affiliation: Southern Illinois University	
Address: 1205 Lincoln Drive - AG 176 - MC 4415	
Location: Carbondale IL	
Postal Code: 62901	E-mail: bgyoung@siu.edu
Phone No.: 618-453-7679	Mobile No.: 618-713-6471

Crop Description
Crop 1: NONE - Non-crop

Pest Description	
Pest 1 Type: W Code: ERICA - Conyza canadensis (L.) Crong. Common Name: horseweed Description: glyphosate-resistant marestail	
Pest 2 Type: W Code: VERPG - Veronica peregrina L. Common Name: speedwell, purslane	
Pest 3 Type: W Code: CHEAL - Chenopodium album L. Common Name: lambsquarters, common	
Pest 4 Type: W Code: AMBTR - Ambrosia trifida L. Common Name: ragweed, giant	

Site and Design	
Plot Width, Unit: 10 FT	Site Type: FIELD field
Plot Length, Unit: 40 FT	
Plot Area, Unit: 400 FT2	Tillage Type: NOTILL no-till
Replications: 3	Study Design: RACOB L Randomized Complete Block (RCB)

No.	Previous Crop	Year
1.	ZEAMD	2011

Maintenance	
No.	Maintenance Treatment Name
1.	N 27 LB/A, P205 69 LB/A, K20 90 LB/A

Soil Description	
% OM: 1.82	Texture: SIL SILT LOAM
pH: 6.2	Soil Name: ALVIN
CEC: 6.16	
Additional Measured Elements	
Element	Quantity Unit
P1	154 LB/A
K	264 LB/A

Moisture and Weather Conditions	
Overall Moisture Conditions:	BELNOR below normal
Closest Weather Station: SOUTHERN IL AIRPORT (93810)	Distance, Unit: 3.5 MI

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Application Description

	A
Application Date:	4-19-12
Time of Day:	15:15
Application Method:	Spray
Application Timing:	BURNDN
Application Placement:	BROFOL
Applied By:	JRK
Air Temperature, Unit:	78 F
% Relative Humidity:	28
Wind Velocity, Unit:	4 MPH
Wind Direction:	SSE
Dew Presence (Y/N):	N no
Soil Temperature, Unit:	63 F
Soil Moisture:	NORMAL
% Cloud Cover:	5
Next Rain Occurred On:	4-20-12

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	NONE
Stage Scale Used:	DESC
Stage Majority, Percent:	NA

Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale:	ERICA W DESC
Stage Majority, Percent:	20
Stage Minimum, Percent:	4
Stage Maximum, Percent:	40
Height, Unit:	4 IN
Height Minimum, Maximum:	2 8
Density, Unit:	1 FT2
Pest 2 Code, Type, Scale:	VERPG W DESC
Stage Majority, Percent:	50+
Stage Minimum, Percent:	30
Stage Maximum, Percent:	50
Height, Unit:	9 IN
Height Minimum, Maximum:	8 10
Density, Unit:	20 FT2
Pest 3 Code, Type, Scale:	CHEAL W DESC
Stage Majority, Percent:	40
Stage Minimum, Percent:	8
Stage Maximum, Percent:	70+
Height, Unit:	9 IN
Height Minimum, Maximum:	4.5 16
Density, Unit:	2 FT2
Pest 4 Code, Type, Scale:	AMBTR W DESC
Stage Majority, Percent:	6
Stage Minimum, Percent:	2
Stage Maximum, Percent:	9
Height, Unit:	5.5 IN
Height Minimum, Maximum:	1 16
Density, Unit:	0.3 FT2

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Application Equipment

	A
Appl. Equipment:	CO2 sprayer
Equipment Type:	ALTEVE
Operation Pressure, Unit:	40 PSI
Nozzle Type:	See
Nozzle Size:	comment
Boom Length, Unit:	6.67 FT
Spray Volume, Unit:	10 GPA

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Pest Code									ERICA-HR	ERICA-HR	VERAR	CHEAL	CHEAL	AMBTR	AMBTR	
Crop Code									5-3-12	5-17-12	5-3-12	5-3-12	5-17-12	5-3-12	5-17-12	
Rating Date									Control	Control	Control	Control	Control	Control	Control	
Rating Type									Percent	Percent	Percent	Percent	Percent	Percent	Percent	
Rating Unit									14 DA-A	28 DA-A	14 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	Unit	Other Rate	Other Rate	Growth Unit Stage	Appl Code							
1	TT 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PL 337	4.5 SL		1.0 lb ae/a		28.4 fl oz/a		BURNDN A		75 abc	98 abc	83 def	92 a	96 a	73 b-e	96 a
		4 SL		0.5 lb ae/a		16 fl oz/a		BURNDN A								
		100 SL		1.25 % v/v		1.25 % v/v		BURNDN A								
2	AIXR 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PL 337	4.5 SL		1.0 lb ae/a		28.4 fl oz/a		BURNDN A		76 ab	99 ab	87 bcd	94 a	97 a	71 e	97 a
		4 SL		0.5 lb ae/a		16 fl oz/a		BURNDN A								
		100 SL		1.25 % v/v		1.25 % v/v		BURNDN A								
3	XR 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PL 337	4.5 SL		1.0 lb ae/a		28.4 fl oz/a		BURNDN A		73 a-f	97 abc	91 ab	95 a	98 a	72 de	98 a
		4 SL		0.5 lb ae/a		16 fl oz/a		BURNDN A								
		100 SL		1.25 % v/v		1.25 % v/v		BURNDN A								
4	TTI 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PL 337	4.5 SL		1.0 lb ae/a		28.4 fl oz/a		BURNDN A		74 a-f	98 abc	87 bcd	90 a	95 a	76 abc	90 ab
		4 SL		0.5 lb ae/a		16 fl oz/a		BURNDN A								
		100 SL		1.25 % v/v		1.25 % v/v		BURNDN A								
5	TT 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PL 337	4.5 SL		1.0 lb ae/a		28.4 fl oz/a		BURNDN A		73 a-f	98 abc	87 a-d	96 a	98 a	75 a-d	96 a
		4 SL		0.5 lb ae/a		16 fl oz/a		BURNDN A								
		100 SL		2.5 % v/v		2.5 % v/v		BURNDN A								
6	AIXR 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PL 337	4.5 SL		1.0 lb ae/a		28.4 fl oz/a		BURNDN A		74 a-f	98 abc	87 bcd	94 a	98 a	78 a	97 a
		4 SL		0.5 lb ae/a		16 fl oz/a		BURNDN A								
		100 SL		2.5 % v/v		2.5 % v/v		BURNDN A								
7	XR 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PL 337	4.5 SL		1.0 lb ae/a		28.4 fl oz/a		BURNDN A		73 b-f	96 abc	87 bcd	96 a	98 a	75 a-d	98 a
		4 SL		0.5 lb ae/a		16 fl oz/a		BURNDN A								
		100 SL		2.5 % v/v		2.5 % v/v		BURNDN A								
8	TTI 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PL 337	4.5 SL		1.0 lb ae/a		28.4 fl oz/a		BURNDN A		74 a-f	99 a	80 f	92 a	96 a	77 ab	96 a
		4 SL		0.5 lb ae/a		16 fl oz/a		BURNDN A								
		100 SL		2.5 % v/v		2.5 % v/v		BURNDN A								
9	TT 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PX 21D42 AMS	4.5 SL		1.0 lb ae/a		28.4 fl oz/a		BURNDN A		73 b-f	97 abc	85 cde	96 a	98 a	78 a	99 a
		4 SL		0.5 lb ae/a		16 fl oz/a		BURNDN A								
		100 SL		0.125 % v/v		0.125 % v/v		BURNDN A								
		100 SG		1.0 % w/w		1 % w/w		BURNDN A								
10	AIXR 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PX 21D42 AMS	4.5 SL		1.0 lb ae/a		28.4 fl oz/a		BURNDN A		77 a	98 abc	90 ab	95 a	98 a	73 cde	99 a
		4 SL		0.5 lb ae/a		16 fl oz/a		BURNDN A								
		100 SL		0.125 % v/v		0.125 % v/v		BURNDN A								
		100 SG		1.0 % w/w		1 % w/w		BURNDN A								
11	XR 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PX 21D42 AMS	4.5 SL		1.0 lb ae/a		28.4 fl oz/a		BURNDN A		74 a-e	97 abc	89 abc	88 a	82 b	75 a-d	95 a
		4 SL		0.5 lb ae/a		16 fl oz/a		BURNDN A								
		100 SL		0.125 % v/v		0.125 % v/v		BURNDN A								
		100 SG		1.0 % w/w		1 % w/w		BURNDN A								

Means followed by same letter do not significantly differ (P=.05, LSD)
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Crop Code									5-3-12	5-17-12	5-3-12	5-3-12	5-17-12	5-3-12	5-17-12	
Rating Date									Control	Control	Control	Control	Control	Control	Control	
Rating Type									Percent	Percent	Percent	Percent	Percent	Percent	Percent	
Rating Unit									14 DA-A	28 DA-A	14 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	Unit	Other Rate	Other Rate	Growth Unit Stage	Appl Code							
12	TTI 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PX 21D42 AMS	4.5 SL 4 SL 100 SL 100 SG		1.0 lb ae/a 0.5 lb ae/a 0.125 % v/v 1.0 % w/w		28.4 fl oz/a 16 fl oz/a 0.125 % v/v 1 % w/w		BURNDN A BURNDN A BURNDN A BURNDN A		72 c-f	98 abc	86 b-e	95 a	98 a	73 cde	91 ab
13	TT 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PL 336	4.5 SL 4 SL 100 SL		1.0 lb ae/a 0.5 lb ae/a 1.25 % v/v		28.4 fl oz/a 16 fl oz/a 1.25 % v/v		BURNDN A BURNDN A BURNDN A		42 h	63 e	83 def	95 a	97 a	60 g	99 a
14	AIXR 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PL 336	4.5 SL 4 SL 100 SL		1.0 lb ae/a 0.5 lb ae/a 1.25 % v/v		28.4 fl oz/a 16 fl oz/a 1.25 % v/v		BURNDN A BURNDN A BURNDN A		47 g	63 e	82 ef	90 a	94 a	63 g	66 c
15	XR 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PL 336	4.5 SL 4 SL 100 SL		1.0 lb ae/a 0.5 lb ae/a 1.25 % v/v		28.4 fl oz/a 16 fl oz/a 1.25 % v/v		BURNDN A BURNDN A BURNDN A		43 gh	61 e	87 bcd	89 a	94 a	67 f	72 c
16	TTI 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PL 336	4.5 SL 4 SL 100 SL		1.0 lb ae/a 0.5 lb ae/a 1.25 % v/v		28.4 fl oz/a 16 fl oz/a 1.25 % v/v		BURNDN A BURNDN A BURNDN A		43 gh	61 e	83 def	93 a	99 a	60 g	82 b
17	TT 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PL 331	4.5 SL 4 SL 100 SL		1.0 lb ae/a 0.5 lb ae/a 2.5 % v/v		28.4 fl oz/a 16 fl oz/a 2.5 % v/v		BURNDN A BURNDN A BURNDN A		75 a-d	98 abc	90 ab	95 a	98 a	77 ab	99 a
18	AIXR 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PL 331	4.5 SL 4 SL 100 SL		1.0 lb ae/a 0.5 lb ae/a 2.5 % v/v		28.4 fl oz/a 16 fl oz/a 2.5 % v/v		BURNDN A BURNDN A BURNDN A		71 def	96 abc	87 bcd	94 a	98 a	75 a-d	99 a
19	XR 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PL 331	4.5 SL 4 SL 100 SL		1.0 lb ae/a 0.5 lb ae/a 2.5 % v/v		28.4 fl oz/a 16 fl oz/a 2.5 % v/v		BURNDN A BURNDN A BURNDN A		70 f	91 d	83 def	94 a	98 a	76 abc	95 a
20	TTI 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PL 331	4.5 SL 4 SL 100 SL		1.0 lb ae/a 0.5 lb ae/a 2.5 % v/v		28.4 fl oz/a 16 fl oz/a 2.5 % v/v		BURNDN A BURNDN A BURNDN A		72 c-f	96 abc	80 f	93 a	98 a	78 a	99 a
21	TT 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PL 675 AMS	4.5 SL 4 SL 100 SL 100 SG		1.0 lb ae/a 0.5 lb ae/a 0.25 % v/v 1.0 % w/w		28.4 fl oz/a 16 fl oz/a 0.25 % v/v 1 % w/w		BURNDN A BURNDN A BURNDN A BURNDN A		71 def	99 a	92 a	95 a	99 a	75 a-d	99 a
22	AIXR 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PL 675 AMS	4.5 SL 4 SL 100 SL 100 SG		1.0 lb ae/a 0.5 lb ae/a 0.25 % v/v 1.0 % w/w		28.4 fl oz/a 16 fl oz/a 0.25 % v/v 1 % w/w		BURNDN A BURNDN A BURNDN A BURNDN A		71 def	96 abc	88 a-d	97 a	99 a	77 ab	99 a
23	XR 11004 at 40 PSI ROUNDUP POWERMAX CLARITY PL 675 AMS	4.5 SL 4 SL 100 SL 100 SG		1.0 lb ae/a 0.5 lb ae/a 0.25 % v/v 1.0 % w/w		28.4 fl oz/a 16 fl oz/a 0.25 % v/v 1 % w/w		BURNDN A BURNDN A BURNDN A BURNDN A		74 a-f	96 abc	85 cde	95 a	98 a	77 ab	98 a

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Crop Code									5-3-12	5-17-12	5-3-12	5-3-12	5-17-12	5-3-12	5-17-12		
Rating Date									Control	Control	Control	Control	Control	Control	Control		
Rating Type									Percent	Percent	Percent	Percent	Percent	Percent	Percent		
Rating Unit									14 DA-A	28 DA-A	14 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	Unit	Other Rate	Other Rate	Growth Unit	Stage	Appl Code							
24	TTI 11004 at 40 PSI										73 b-f	99 ab	82 ef	96 a	98 a	77 ab	99 a
	ROUNDUP POWERMAX	4.5	SL	1.0 lb ae/a		28.4 fl oz/a			BURNDN A								
	CLARITY	4	SL	0.5 lb ae/a		16 fl oz/a			BURNDN A								
	PL 675	100	SL	0.25 % v/v		0.25 % v/v			BURNDN A								
	AMS	100	SG	1.0 % w/w		1 % w/w			BURNDN A								
25	TT 11004 at 40 PSI										73 a-f	98 abc	87 a-d	94 a	98 a	76 abc	98 a
	ROUNDUP POWERMAX	4.5	SL	1.0 lb ae/a		28.4 fl oz/a			BURNDN A								
	CLARITY	4	SL	0.5 lb ae/a		16 fl oz/a			BURNDN A								
	PL 747	100	SL	0.25 % v/v		0.25 % v/v			BURNDN A								
	AMS	100	SG	1.0 % w/w		1 % w/w			BURNDN A								
26	AIXR 11004 at 40 PSI										71 ef	99 a	85 cde	95 a	98 a	77 ab	99 a
	ROUNDUP POWERMAX	4.5	SL	1.0 lb ae/a		28.4 fl oz/a			BURNDN A								
	CLARITY	4	SL	0.5 lb ae/a		16 fl oz/a			BURNDN A								
	PL 747	100	SL	0.25 % v/v		0.25 % v/v			BURNDN A								
	AMS	100	SG	1.0 % w/w		1 % w/w			BURNDN A								
27	XR 11004 at 40 PSI										72 c-f	95 bc	85 cde	96 a	99 a	73 cde	95 a
	ROUNDUP POWERMAX	4.5	SL	1.0 lb ae/a		28.4 fl oz/a			BURNDN A								
	CLARITY	4	SL	0.5 lb ae/a		16 fl oz/a			BURNDN A								
	PL 747	100	SL	0.25 % v/v		0.25 % v/v			BURNDN A								
	AMS	100	SG	1.0 % w/w		1 % w/w			BURNDN A								
28	TTI 11004 at 40 PSI										73 a-f	95 c	85 cde	92 a	96 a	76 abc	99 a
	ROUNDUP POWERMAX	4.5	SL	1.0 lb ae/a		28.4 fl oz/a			BURNDN A								
	CLARITY	4	SL	0.5 lb ae/a		16 fl oz/a			BURNDN A								
	PL 747	100	SL	0.25 % v/v		0.25 % v/v			BURNDN A								
	AMS	100	SG	1.0 % w/w		1 % w/w			BURNDN A								
LSD (P=.05)									3.9	3.5	4.8	5.4	6.6	3.9	9.5		
Standard Deviation									2.4	2.1	3.0	3.3	4.1	2.3	5.7		
CV									3.5	2.31	3.45	3.55	4.18	3.16	6.03		
Replicate F									1.500	6.969	4.190	0.697	3.697	0.282	0.828		
Replicate Prob(F)									0.2324	0.0021	0.0205	0.5028	0.0314	0.7562	0.4457		
Treatment F									57.614	105.934	3.084	1.515	1.891	14.361	6.110		
Treatment Prob(F)									0.0001	0.0001	0.0002	0.0977	0.0238	0.0001	0.0001		

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Trial Comments

1. Protocol: Precision Labs (Burndown).
2. WC at 14 and 28 DAT.
3. Nozzle size and type are per treatment, see treatment list. All applications are at 12 MPH.
4. ERICA-HR = Herbicide-resistant marestail (glyphosate).
5. Not harvested, non-crop.