

Glufosinate with Array.

Trial ID: 15-T1-S120 Location: Belleville Res. Center Trial Year: 2015
Investigator: Ronald F. Krausz

Trial Status: F one-year/final
Initiation Date: 6-7-15
Completion Date: 8-14-15

Trial Location

City: Belleville **Country:** USA
State/Prov.: Illinois IL
Postal Code: 62221

Objectives:

Evaluate weed efficacy with Array and glufosinate.

Contacts

Study Director: Ronald F. Krausz **Title:** Researcher/Farm Manager
Organization: Belleville Research Center - Southern Illinois Univ Carbondale
Address: 2036 Charles Lane **Phone No.:** 618-566-4761
City+State/Prov: Belleville, IL
Postal Code: 62221 **E-mail:** rkrausz@siu.edu
Country: USA

Crop Description

Crop 1: GLXMA Glycine max **Soybean**
Variety: P37T09L **BBCH Scale:** BSOY
Description: LL
Planting Date: 6-7-15
Planting Rate, Unit: 140000 S/A **Planting Method:** SEEDED
Depth, Unit: 1 IN
Row Spacing, Unit: 30 IN

Pest Description

Pest 1 Type: W **Code:** AMATA *Amaranthus rudis* Sauer
Common Name: waterhemp, common
Pest 2 Type: W **Code:** XANST *Xanthium strumarium* L.
Common Name: cocklebur, common
Pest 3 Type: W **Code:** PANDI *Panicum dichotomiflorum* Michx.
Common Name: panicum, fall

Site and Design

Treated Plot Width: 7.5 FT **Total Plot Width:** 10 FT **Site Type:** FIELD
Treated Plot Length: 27 FT **Total Plot Length:** 27 FT **Experimental Unit:** 1 PLOT
Tillage Type: REDTIL reduced-till
Study Design: RACOB L Randomized Complete Block (RCB)
Replications: 4
Untreated Arrangement: INCLUDED single control randomized in each block

No.	Previous Crop	Year
1.	GLXMA	2014

Maintenance

No.	Maintenance Product Name
1.	N 0 LB/A, P2O5 50 LB/A, K2O 100 LB/A

Soil Description

Description Name: T1_2013
% OM: 3 **Texture:** SIL silt loam
pH: 6.4 **Soil Name:** Bethalto
CEC: 9

Additional Measured Elements

Element	Quantity	Unit
P1	57	lb/A
K	369	lb/A

Moisture and Weather Conditions

Overall Moisture Conditions: ABONOR
Closest Weather Station: ICN - Belleville IL **Distance, Unit:** 0.5 MI

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No.	Date	Amount	Unit	Type	Type Description	Interval	Unit	Min Temp	Max Temp	Temp Unit
1.	4-29-15					7	DAY	36	84	F
2.	5-6-15					7	DAY	49	85	F
3.	5-8-15	4.09	IN	RAIN	rain	4	DAY			
4.	5-13-15					7	DAY	45	83	F
5.	5-14-15	0.33	IN	RAIN	rain	4	DAY			
6.	5-20-15					7	DAY	44	85	F
7.	5-20-15	0.16	IN	RAIN	rain	1	DAY			
8.	5-24-15	0.89	IN	RAIN	rain	1	DAY			
9.	5-26-15	0.59	IN	RAIN	rain	2	DAY			
10.	5-27-15					7	DAY	55	84	F
11.	5-29-15	2.15	IN	RAIN	rain	2	DAY			
12.	6-3-15					7	DAY	53	89	F
13.	6-5-15	0.17	IN	RAIN	rain	1	DAY			
14.	6-8-15	0.66	IN	RAIN	rain	1	DAY			
15.	6-10-15					7	DAY	64	91	F
16.	6-14-15	0.16	IN	RAIN	rain	1	DAY			
17.	6-15-15	0.11	IN	RAIN	rain	1	DAY			
18.	6-16-15	2.25	IN	RAIN	rain	1	DAY			
19.	6-17-15					7	DAY	69	91	F
20.	6-17-15	0.09	IN	RAIN	rain	1	DAY			
21.	6-18-15	0.14	IN	RAIN	rain	1	DAY			
22.	6-19-15	3.29	IN	RAIN	rain	1	DAY			
23.	6-20-15	0.2	IN	RAIN	rain	2	DAY			
24.	6-24-15					7	DAY	62	93	F
25.	6-25-15	1.66	IN	RAIN	rain	2	DAY			
26.	6-28-15	0.6	IN	RAIN	rain	2	DAY			
27.	7-1-15					7	DAY	63	88	F
28.	7-1-15	0.64	IN	RAIN	rain	2	DAY			
29.	7-7-15	1.33	IN	RAIN	rain	2	DAY			
30.	7-8-15					7	DAY	59	97	F
31.	7-10-15	0.26	IN	RAIN	rain	1	DAY			
32.	7-15-15					7	DAY	69	93	F
33.	7-19-15	0.35	IN	RAIN	rain	2	DAY			
34.	7-22-15					7	DAY	65	95	F
35.	7-26-15	1.21	IN	RAIN	rain	3	DAY			
36.	7-29-15					7	DAY	65	93	F
37.	8-5-15					7	DAY	64	88	F
38.	8-5-15	2.25	IN	RAIN	rain	1	DAY			
39.	8-9-15	0.47	IN	RAIN	rain	1	DAY			
40.	8-12-15					7	DAY	63	89	F
41.	8-18-15	2.23	IN	RAIN	rain	2	DAY			

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Application Description

	A
Application Date:	7-10-15
Appl. Start Time:	16:00
Appl. Stop Time:	17:00
Application Method:	Spray
Application Timing:	V5
Application Placement:	BROFOL
Applied By:	RFK
Air Temperature, Unit:	78 F
% Relative Humidity:	77
Wind Velocity, Unit:	2 MPH
Wind Direction:	E
Dew Presence (Y/N):	N
Soil Temperature, Unit:	80 F
Soil Moisture:	ABONOR
% Cloud Cover:	50
Next Moisture Occurred On:	7-19-15
Time to Next Moisture, Unit:	9 DAY

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	GLXMA
Stage Scale Used:	DESC
Stage Majority, Percent:	V5
Stage Minimum, Percent:	V5
Stage Maximum, Percent:	V5
Height, Unit:	10 IN
Height Minimum, Maximum:	8 10

Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale:	AMATA W
Stage Majority, Percent:	10+
Stage Minimum, Percent:	10+
Stage Maximum, Percent:	10+
Height, Unit:	6 IN
Height Minimum, Maximum:	4 10
Density, Unit:	5 FT2
Pest 2 Code, Type, Scale:	XANST W
Stage Majority, Percent:	10+
Stage Minimum, Percent:	10+
Stage Maximum, Percent:	10+
Height, Unit:	12 IN
Height Minimum, Maximum:	4 20
Density, Unit:	4 FT2
Pest 3 Code, Type, Scale:	PANDI W
Stage Majority, Percent:	6
Stage Minimum, Percent:	5
Stage Maximum, Percent:	10
Height, Unit:	12 IN
Height Minimum, Maximum:	8 20
Density, Unit:	5 FT2

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Application Equipment

	A
Appl. Equipment:	CO2 sprayer
Equipment Type:	BACSPR
Operation Pressure, Unit:	30 PSI
Nozzle Type:	XR
Nozzle Size:	8002
Boom Length, Unit:	7.5 FT
Spray Volume, Unit:	15 GPA

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Pest Code	Crop Code	Rating Date	Rating Type	Rating Unit	Rating Timing	Trt-Eval Interval	GLXMA 7-17-15 Injury Percent	GLXMA 7-24-15 Injury Percent	GLXMA 7-31-15 Injury Percent	GLXMA 8-14-15 Injury Percent
							7 DA-A	14 DA-A	21 DA-A	35 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Other Rate Rate Unit	Growth Stage	Appl Code			
1	NONTREATED							0	0	0
2	LIBERTY 280	2.34 EC		0.53 lb ai/a	29 fl oz/a	V5	A	0 e	0 a	0 a
3	LIBERTY 280 ARRAY	2.34 EC 100 SG		0.53 lb ai/a 9 lb/a	29 fl oz/a 9 lb/a	V5 V5	A A	4 bc	0 a	0 a
4	LIBERTY 280 ARRAY	2.34 EC 100 SG		0.53 lb ai/a 1 lb/a	29 fl oz/a 1 lb/a	V5 V5	A A	0 e	0 a	0 a
5	LIBERTY 280 ARRAY AMS	2.34 EC 100 SG 100 SG		0.53 lb ai/a 9 lb/a 1 lb/a	29 fl oz/a 9 lb/a 1 lb/a	V5 V5 V5	A A A	5 abc	0 a	0 a
6	LIBERTY 280 AMS	2.34 EC 100 SG		0.53 lb ai/a 3 lb/a	29 fl oz/a 3 lb/a	V5 V5	A A	0 e	0 a	0 a
7	INTERLINE	2.34 SL		0.53 lb ai/a	29 fl oz/a	V5	A	5 bc	0 a	0 a
8	INTERLINE ARRAY	2.34 SL 100 SG		0.53 lb ai/a 9 lb/a	29 fl oz/a 9 lb/a	V5 V5	A A	6 ab	0 a	0 a
9	INTERLINE ARRAY	2.34 SL 100 SG		0.53 lb ai/a 1 lb/a	29 fl oz/a 1 lb/a	V5 V5	A A	4 cd	0 a	0 a
10	INTERLINE ARRAY AMS	2.34 SL 100 SG 100 SG		0.53 lb ai/a 9 lb/a 1 lb/a	29 fl oz/a 9 lb/a 1 lb/a	V5 V5 V5	A A A	7 a	0 a	0 a
11	INTERLINE AMS	2.34 SL 100 SG		0.53 lb ai/a 3 lb/a	29 fl oz/a 3 lb/a	V5 V5	A A	3 d	0 a	0 a
12	CHEETAH	2.34 SL		0.53 lb ai/a	29 fl oz/a	V5	A	0 e	0 a	0 a
13	CHEETAH ARRAY	2.34 SL 100 SG		0.53 lb ai/a 9 lb/a	29 fl oz/a 9 lb/a	V5 V5	A A	4 bcd	0 a	0 a
14	CHEETAH ARRAY	2.34 SL 100 SG		0.53 lb ai/a 1 lb/a	29 fl oz/a 1 lb/a	V5 V5	A A	0 e	0 a	0 a
15	CHEETAH ARRAY AMS	2.34 SL 100 SG 100 SG		0.53 lb ai/a 9 lb/a 1 lb/a	29 fl oz/a 9 lb/a 1 lb/a	V5 V5 V5	A A A	4 cd	0 a	0 a
16	CHEETAH AMS	2.34 SL 100 SG		0.53 lb ai/a 3 lb/a	29 fl oz/a 3 lb/a	V5 V5	A A	0 e	0 a	0 a
LSD P=.05							1.6	.	.	.
Standard Deviation							1.1	0.0	0.0	0.0
CV							40.88	0.0	0.0	0.0
Replicate F							0.522	0.000	0.000	0.000
Replicate Prob(F)							0.6698	1.0000	1.0000	1.0000
Treatment F							19.545	0.000	0.000	0.000
Treatment Prob(F)							0.0001	1.0000	1.0000	1.0000

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.

Missing data estimates are included in columns: Average=5,9,13,17,6,10,14,18,7,11,15,19,8,12,16,20

Could not calculate LSD (% mean diff) for columns 9,13,17 because error mean square = 0.

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Pest Code	Crop Code	Rating Date	Rating Type	Rating Unit	Rating Timing	Trt-Eval Interval	AMATA	AMATA	AMATA	AMATA
							7-17-15 Control Percent	7-24-15 Control Percent	7-31-15 Control Percent	8-14-15 Control Percent
							7 DA-A	14 DA-A	21 DA-A	35 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code		
1	NONTREATED								0	0
2	LIBERTY 280	2.34	EC	0.53 lb ai/a	29 fl oz/a		V5	A	95 ab	93 ab
3	LIBERTY 280 ARRAY	2.34 100	EC SG	0.53 lb ai/a 9 lb/a	29 fl oz/a 9 lb/a		V5 V5	A A	79 e	73 de
4	LIBERTY 280 ARRAY	2.34 100	EC SG	0.53 lb ai/a 1 lb/a	29 fl oz/a 1 lb/a		V5 V5	A A	97 a	95 a
5	LIBERTY 280 ARRAY AMS	2.34 100 100	EC SG SG	0.53 lb ai/a 9 lb/a 1 lb/a	29 fl oz/a 9 lb/a 1 lb/a		V5 V5 V5	A A A	88 bcd	82 a-d
6	LIBERTY 280 AMS	2.34 100	EC SG	0.53 lb ai/a 3 lb/a	29 fl oz/a 3 lb/a		V5 V5	A A	94 ab	93 a
7	INTERLINE	2.34	SL	0.53 lb ai/a	29 fl oz/a		V5	A	96 a	95 a
8	INTERLINE ARRAY	2.34 100	SL SG	0.53 lb ai/a 9 lb/a	29 fl oz/a 9 lb/a		V5 V5	A A	81 de	79 bcd
9	INTERLINE ARRAY	2.34 100	SL SG	0.53 lb ai/a 1 lb/a	29 fl oz/a 1 lb/a		V5 V5	A A	92 abc	88 abc
10	INTERLINE ARRAY AMS	2.34 100 100	SL SG SG	0.53 lb ai/a 9 lb/a 1 lb/a	29 fl oz/a 9 lb/a 1 lb/a		V5 V5 V5	A A A	84 de	84 a-d
11	INTERLINE AMS	2.34 100	SL SG	0.53 lb ai/a 3 lb/a	29 fl oz/a 3 lb/a		V5 V5	A A	97 a	92 ab
12	CHEETAH	2.34	SL	0.53 lb ai/a	29 fl oz/a		V5	A	83 de	76 cde
13	CHEETAH ARRAY	2.34 100	SL SG	0.53 lb ai/a 9 lb/a	29 fl oz/a 9 lb/a		V5 V5	A A	86 cde	85 a-d
14	CHEETAH ARRAY	2.34 100	SL SG	0.53 lb ai/a 1 lb/a	29 fl oz/a 1 lb/a		V5 V5	A A	94 ab	88 abc
15	CHEETAH ARRAY AMS	2.34 100 100	SL SG SG	0.53 lb ai/a 9 lb/a 1 lb/a	29 fl oz/a 9 lb/a 1 lb/a		V5 V5 V5	A A A	69 f	63 e
16	CHEETAH AMS	2.34 100	SL SG	0.53 lb ai/a 3 lb/a	29 fl oz/a 3 lb/a		V5 V5	A A	96 a	89 abc
LSD P=.05							7.4	13.9	19.6	30.1
Standard Deviation							5.2	9.7	13.7	21.0
CV							5.83	11.46	16.73	26.77
Replicate F							1.696	3.387	1.959	2.227
Replicate Prob(F)							0.1828	0.0269	0.1353	0.0995
Treatment F							10.289	3.544	2.053	1.749
Treatment Prob(F)							0.0001	0.0008	0.0373	0.0825

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Pest Code	Crop Code	Rating Date	Rating Type	Rating Unit	Rating Timing	Trt-Eval Interval	XANST	XANST	XANST	XANST	PANDI	PANDI	PANDI	PANDI
							7-17-15 Control Percent	7-24-15 Control Percent	7-31-15 Control Percent	8-14-15 Control Percent	7-17-15 Control Percent	7-24-15 Control Percent	7-31-15 Control Percent	8-14-15 Control Percent
							7 DA-A	14 DA-A	21 DA-A	35 DA-A	7 DA-A	14 DA-A	21 DA-A	35 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code						
1	NONTREATED								0	0	0	0	0	0
2	LIBERTY 280	2.34	EC	0.53 lb ai/a	29 fl oz/a		V5	A	99 a	99 a	99 a	99 a	93 a	92 ab
3	LIBERTY 280 ARRAY	2.34 100	EC SG	0.53 lb ai/a 9 lb/a	29 fl oz/a 9 lb/a		V5 V5	A A	97 a	97 a	96 a	96 a	80 f	67 cde
4	LIBERTY 280 ARRAY	2.34 100	EC SG	0.53 lb ai/a 1 lb/a	29 fl oz/a 1 lb/a		V5 V5	A A	99 a	99 a	99 a	99 a	95 a	95 a
5	LIBERTY 280 ARRAY AMS	2.34 100 100	EC SG SG	0.53 lb ai/a 9 lb/a 1 lb/a	29 fl oz/a 9 lb/a 1 lb/a		V5 V5 V5	A A A	99 a	99 a	99 a	99 a	86 de	66 de
6	LIBERTY 280 AMS	2.34 100	EC SG	0.53 lb ai/a 3 lb/a	29 fl oz/a 3 lb/a		V5 V5	A A	99 a	99 a	99 a	99 a	94 a	95 a
7	INTERLINE	2.34	SL	0.53 lb ai/a	29 fl oz/a		V5	A	98 a	99 a	99 a	99 a	93 ab	90 ab
8	INTERLINE ARRAY	2.34 100	SL SG	0.53 lb ai/a 9 lb/a	29 fl oz/a 9 lb/a		V5 V5	A A	98 a	98 a	94 a	93 a	80 f	51 ef
9	INTERLINE ARRAY	2.34 100	SL SG	0.53 lb ai/a 1 lb/a	29 fl oz/a 1 lb/a		V5 V5	A A	99 a	99 a	98 a	98 a	90 bc	88 ab
10	INTERLINE ARRAY AMS	2.34 100 100	SL SG SG	0.53 lb ai/a 9 lb/a 1 lb/a	29 fl oz/a 9 lb/a 1 lb/a		V5 V5 V5	A A A	92 b	91 a	89 a	91 a	86 de	50 ef
11	INTERLINE AMS	2.34 100	SL SG	0.53 lb ai/a 3 lb/a	29 fl oz/a 3 lb/a		V5 V5	A A	99 a	98 a	97 a	98 a	94 a	92 ab
12	CHEETAH	2.34	SL	0.53 lb ai/a	29 fl oz/a		V5	A	98 a	95 a	92 a	92 a	86 de	74 bcd
13	CHEETAH ARRAY	2.34 100	SL SG	0.53 lb ai/a 9 lb/a	29 fl oz/a 9 lb/a		V5 V5	A A	97 a	97 a	94 a	94 a	84 e	56 def
14	CHEETAH ARRAY	2.34 100	SL SG	0.53 lb ai/a 1 lb/a	29 fl oz/a 1 lb/a		V5 V5	A A	99 a	99 a	98 a	98 a	88 cd	85 abc
15	CHEETAH ARRAY AMS	2.34 100 100	SL SG SG	0.53 lb ai/a 9 lb/a 1 lb/a	29 fl oz/a 9 lb/a 1 lb/a		V5 V5 V5	A A A	90 c	90 a	86 a	73 a	80 f	44 f
16	CHEETAH AMS	2.34 100	SL SG	0.53 lb ai/a 3 lb/a	29 fl oz/a 3 lb/a		V5 V5	A A	99 a	99 a	98 a	97 a	90 bc	87 ab
LSD P=.05							2.6	6.4	11.7	19.9	2.8	18.9	24.7	32.6
Standard Deviation							1.8	4.5	8.2	14.0	2.0	13.2	17.3	22.8
CV							1.89	4.63	8.55	14.7	2.27	17.56	26.08	45.01
Replicate F							0.954	2.258	1.755	1.276	0.751	2.177	4.830	2.377
Replicate Prob(F)							0.4236	0.0960	0.1708	0.2953	0.5281	0.1054	0.0057	0.0839
Treatment F							8.852	1.709	0.973	0.899	29.113	7.576	7.397	8.535
Treatment Prob(F)							0.0001	0.0912	0.4955	0.5657	0.0001	0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: Rosen's (Glufosinate/Array).
2. Ratings:
 CI at 7, 14, 21, and 35 DA-A.
 WC at 7, 14, 21, and 35 DA-A.
3. Yield not requested.
4. Missing data for plot 103 was due to spray equipment problem.
5. Not harvested.