

Engenia versus PPO Herbicides Demonstration in Dicamba-Tolerant Soybean.

Trial ID: 15-26C-E-M40 Location: Belleville Res. Center Trial Year: 2015
Investigator: Ronald F. Krausz

Trial Status: F one-year/final
Initiation Date: 6-12-15
Completion Date: 8-3-15

Trial Location

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

Objectives:

Evaluate efficacy of Engenia and PPO's on weed control.

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: Dicamba-Tolerant **BBCH Scale:** BSOY
Description: DT
Planting Date: 6-12-15
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:** AMBTR Ambrosia trifida L.
Common Name: ragweed, giant
Pest 2 Type: W **Code:** AMATA Amaranthus rudis Sauer
Common Name: waterhemp, common
Pest 3 Type: W **Code:** IPOHE Ipomoea hederacea (L.) Jacq.
Common Name: morningglory, ivyleaf
Pest 4 Type: W **Code:** ABUTH Abutilon theophrasti Medik.
Common Name: velvetleaf

Site and Design

Treated Plot Width: 7.5 FT **Total Plot Width:** 10 FT **Site Type:** FIELD
Treated Plot Length: 50 FT **Total Plot Length:** 50 FT **Experimental Unit:** 1 PLOT
Tillage Type: REDTIL reduced-till
Study Design: NONRAN Non-Randomized
Replications: 1
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: 26C 2013
% OM: 2.6 **Texture:** SIL silt loam
pH: 6.4 **Soil Name:** Winfield
CEC: 7

Additional Measured Elements

Element	Quantity	Unit
P1	70	lb/A
K	346	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.	6-3-15					7	DAY	53	89	F
2.	6-5-15	0.17	IN	RAIN	rain	1	DAY			
3.	6-8-15	0.66	IN	RAIN	rain	1	DAY			
4.	6-10-15					7	DAY	64	91	F
5.	6-14-15	0.16	IN	RAIN	rain	1	DAY			
6.	6-15-15	0.11	IN	RAIN	rain	1	DAY			
7.	6-16-15	2.25	IN	RAIN	rain	1	DAY			
8.	6-17-15					7	DAY	69	91	F
9.	6-17-15	0.09	IN	RAIN	rain	1	DAY			
10.	6-18-15	0.14	IN	RAIN	rain	1	DAY			
11.	6-19-15	3.29	IN	RAIN	rain	1	DAY			
12.	6-20-15	0.2	IN	RAIN	rain	2	DAY			
13.	6-24-15					7	DAY	62	93	F
14.	6-25-15	1.66	IN	RAIN	rain	2	DAY			
15.	6-28-15	0.6	IN	RAIN	rain	2	DAY			
16.	7-1-15					7	DAY	63	88	F
17.	7-1-15	0.64	IN	RAIN	rain	2	DAY			
18.	7-7-15	1.33	IN	RAIN	rain	2	DAY			
19.	7-10-15	0.26	IN	RAIN	rain	1	DAY			
20.	7-15-15					7	DAY	69	93	F
21.	7-19-15	0.35	IN	RAIN	rain	2	DAY			
22.	7-22-15					7	DAY	65	95	F
23.	7-26-15	1.21	IN	RAIN	rain	3	DAY			
24.	7-29-15					7	DAY	65	93	F
25.	8-5-15					7	DAY	64	88	F
26.	8-5-15	2.25	IN	RAIN	rain	1	DAY			

Application Description				
	A	B	C	D
Application Date:	6-15-15	6-30-15	7-6-15	7-13-15
Appl. Start Time:	10:00	9:00	8:10	7:00
Appl. Stop Time:	10:30	9:20	8:20	7:15
Application Method:	Spray	Spray	Spray	Spray
Application Timing:	PRE	2-4"W	4-6"W	0-7DBP
Application Placement:	BROSOI	BROFOL	BROFOL	BROFOL
Applied By:	RFK	MEJ	MEJ	EAE
Air Temperature, Unit:	84 F	77 F	78 F	82 F
% Relative Humidity:	72	82	97	85
Wind Velocity, Unit:	3 MPH	1 MPH	2 MPH	2 MPH
Wind Direction:	S	W	SW	SW
Dew Presence (Y/N):	N	N	Y	Y
Soil Temperature, Unit:	76 F	76 F	74 F	80 F
Soil Moisture:	N	ABONOR	ABONOR	ABONOR
% Cloud Cover:	0	100	40	0
Next Moisture Occurred On:	6-15-15	7-1-15	7-7-15	7-19-15
Time to Next Moisture, Unit:	9 HR	30 HR	24 HR	6 DAY

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Crop Stage At Each Application

	A	B	C	D
Crop 1 Code, BBCH Scale:	GLXMA	GLXMA	GLXMA	GLXMA
Stage Scale Used:	DESC	DESC	DESC	DESC
Stage Majority, Percent:	NA	V1	V3	V4
Stage Minimum, Percent:		V1	V2	V4
Stage Maximum, Percent:		V1	V3	V5
Height, Unit:		6.5 IN	10 IN	14 IN
Height Minimum, Maximum:		5 6.5	8 10	12 14

Pest Stage At Each Application

	A	B	C	D
Pest 1 Code, Type, Scale:	AMBTR W	AMBTR W	AMBTR W	AMBTR W
Stage Majority, Percent:	NA	6	6	12
Stage Minimum, Percent:		4	6	8
Stage Maximum, Percent:		7	8	13
Height, Unit:		2 IN	4 IN	12 IN
Height Minimum, Maximum:		1 3	3 5	10 12
Density, Unit:		0.1 FT2	0.01 FT2	0.01 FT2
Pest 2 Code, Type, Scale:	AMATA W	AMATA W	AMATA W	AMATA W
Stage Majority, Percent:	NA	4	6	12
Stage Minimum, Percent:		2	4	10
Stage Maximum, Percent:		8	8	15
Height, Unit:		1.5 IN	4 IN	10 IN
Height Minimum, Maximum:		0.5 2	0.5 5	8 12
Density, Unit:		0.1 FT2	1 FT2	3 FT2
Pest 3 Code, Type, Scale:	IPOHE W	IPOHE W	IPOHE W	IPOHE W
Stage Majority, Percent:	NA	4	6	15
Stage Minimum, Percent:		2	4	10
Stage Maximum, Percent:		6	8	15
Height, Unit:		2 IN	2 IN	4 IN
Height Minimum, Maximum:		1 3	1.5 3	3 6
Density, Unit:		0.01 FT2	0.01 FT2	0.01 FT2
Pest 4 Code, Type, Scale:	ABUTH W	ABUTH W	ABUTH W	ABUTH W
Stage Majority, Percent:	NA	2	NA	NA
Stage Minimum, Percent:		2		
Stage Maximum, Percent:		2		
Height, Unit:		1 IN		
Height Minimum, Maximum:		1 1		
Density, Unit:		0.001 FT2		

Application Equipment

	A	B	C	D
Appl. Equipment:	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer
Equipment Type:	BACSPR	BACSPR	BACSPR	BACSPR
Operation Pressure, Unit:	30 PSI	30 PSI	30 PSI	30 PSI
Nozzle Type:	See	See	See	See
Nozzle Size:	comment	comment	comment	comment
Boom Length, Unit:	7.5 FT	7.5 FT	7.5 FT	7.5 FT
Spray Volume, Unit:	15 GPA	15 GPA	15 GPA	15 GPA

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Pest Code								GLXMA	GLXMA	GLXMA	AMBTR	AMBTR	AMBTR
Crop Code								Injury	Injury	Injury	Control	Control	Control
Rating Date								Percent	Percent	Percent	Percent	Percent	Percent
Rating Type								7 DAT	14 DAT	21 DAT	7 DAT	14 DAT	21 DAT
Rating Unit													
Rating Timing													
Trt-Eval Interval													
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
2	TTI NOZZLES ENGENIA	5	SL	0.5 lb ae/a	12.8 fl oz/a		PRE	A	0	0	0	90	90
3	TTI NOZZLES ENGENIA PREFERENCE	5 100	SL SL	0.5 lb ae/a 0.25 % v/v	12.8 fl oz/a 0.25 % v/v		2-4"W 2-4"W	B B	0	0	0	90	99
4	TTI NOZZLES ENGENIA PREFERENCE	5 100	SL SL	0.5 lb ae/a 0.25 % v/v	12.8 fl oz/a 0.25 % v/v		4-6"W 4-6"W	C C	0	0	0	90	99
5	TTI NOZZLES ENGENIA PREFERENCE	5 100	SL SL	0.5 lb ae/a 0.25 % v/v	12.8 fl oz/a 0.25 % v/v		8-12"W 8-12"W	D D	0	0	0	90	90
6	XR NOZZLES FLEXSTAR PRIME OIL COC	1.88 100	EC SL	0.294 lb ai/a 1 % v/v	20 fl oz/a 1 % v/v		2-4"W 2-4"W	B B	15	0	0	99	99
7	XR NOZZLES FLEXSTAR PRIME OIL COC	1.88 100	EC SL	0.294 lb ai/a 1 % v/v	20 fl oz/a 1 % v/v		4-6"W 4-6"W	C C	15	0	0	99	99
8	XR NOZZLES FLEXSTAR PRIME OIL COC	1.88 100	EC SL	0.294 lb ai/a 1 % v/v	20 fl oz/a 1 % v/v		8-12"W 8-12"W	D D	20	0	0	99	99
LSD P=.05								.	.	.	.	.	.
Standard Deviation								.	.	.	.	.	.
CV								.	.	.	.	.	.

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.
Could not calculate LSD (% mean diff) for columns 5,10,15,6,11,16,7,12,17,8,13,18,9,14,19 because error mean square = 0.

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Pest Code								AMATA	AMATA	AMATA	IPOHE	IPOHE	IPOHE
Crop Code								Control	Control	Control	Control	Control	Control
Rating Date								Percent	Percent	Percent	Percent	Percent	Percent
Rating Type								7 DAT	14 DAT	21 DAT	7 DAT	14 DAT	21 DAT
Rating Unit													
Rating Timing													
Trt-Eval Interval													
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
2	TTI NOZZLES ENGENIA	5 SL		0.5 lb ae/a	12.8 fl oz/a		PRE	A	.	50	0	.	90
3	TTI NOZZLES ENGENIA PREFERENCE	5 SL 100 SL		0.5 lb ae/a 0.25 % v/v	12.8 fl oz/a 0.25 % v/v		2-4"W 2-4"W	B B	50	90	90	90	98
4	TTI NOZZLES ENGENIA PREFERENCE	5 SL 100 SL		0.5 lb ae/a 0.25 % v/v	12.8 fl oz/a 0.25 % v/v		4-6"W 4-6"W	C C	50	90	90	90	98
5	TTI NOZZLES ENGENIA PREFERENCE	5 SL 100 SL		0.5 lb ae/a 0.25 % v/v	12.8 fl oz/a 0.25 % v/v		8-12"W 8-12"W	D D	50	80	80	90	99
6	XR NOZZLES FLEXSTAR PRIME OIL COC	1.88 EC 100 SL		0.294 lb ai/a 1 % v/v	20 fl oz/a 1 % v/v		2-4"W 2-4"W	B B	99	99	99	99	99
7	XR NOZZLES FLEXSTAR PRIME OIL COC	1.88 EC 100 SL		0.294 lb ai/a 1 % v/v	20 fl oz/a 1 % v/v		4-6"W 4-6"W	C C	95	95	95	99	99
8	XR NOZZLES FLEXSTAR PRIME OIL COC	1.88 EC 100 SL		0.294 lb ai/a 1 % v/v	20 fl oz/a 1 % v/v		8-12"W 8-12"W	D D	99	90	90	99	99
LSD P=.05							
Standard Deviation							
CV							

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Crop Code								Control	Control	Control
Rating Date								Percent	Percent	Percent
Rating Type								7 DAT	14 DAT	21 DAT
Rating Unit										
Rating Timing										
Trt-Eval Interval										
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Other Rate	Other Rate	Growth Stage	Appl Code		
1	NONTREATED								0	0
2	TTI NOZZLES ENGENIA	5	SL	0.5 lb ae/a	12.8 fl oz/a		PRE	A		90
3	TTI NOZZLES ENGENIA PREFERENCE	5 100	SL SL	0.5 lb ae/a 0.25 % v/v	12.8 fl oz/a 0.25 % v/v		2-4"W 2-4"W	B B	90	99
4	TTI NOZZLES ENGENIA PREFERENCE	5 100	SL SL	0.5 lb ae/a 0.25 % v/v	12.8 fl oz/a 0.25 % v/v		4-6"W 4-6"W	C C	90	98
5	TTI NOZZLES ENGENIA PREFERENCE	5 100	SL SL	0.5 lb ae/a 0.25 % v/v	12.8 fl oz/a 0.25 % v/v		8-12"W 8-12"W	D D	80	99
6	XR NOZZLES FLEXSTAR PRIME OIL COC	1.88 100	EC SL	0.294 lb ai/a 1 % v/v	20 fl oz/a 1 % v/v		2-4"W 2-4"W	B B	99	99
7	XR NOZZLES FLEXSTAR PRIME OIL COC	1.88 100	EC SL	0.294 lb ai/a 1 % v/v	20 fl oz/a 1 % v/v		4-6"W 4-6"W	C C	99	99
8	XR NOZZLES FLEXSTAR PRIME OIL COC	1.88 100	EC SL	0.294 lb ai/a 1 % v/v	20 fl oz/a 1 % v/v		8-12"W 8-12"W	D D	99	99
LSD P=.05										
Standard Deviation										
CV										

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Trial Comments

1. Protocol: BASF (DEM-H-2015-US-D04-A-01 revision sent 6-10-15).
2. Ratings:
CI 7, 14, and 21 DA-A+B+C+D.
WC14 and 21 DA-A+B+C+D.
3. No yield (crop destruct).
4. Nozzles are per treatment, see treatment list.
Use TTI 11002 for Engenia and XR 8002 for Flexstar.
5. Can add glyphosate to PRE treatment if needed in no-till.
Blanket application of Select to remove grasses was applied on 6-25-15 at soybean stage V1.
6. Photos.
7. Rainfall following the PRE application was 2.36 inches over 2 days beginning 9 hours later.
Rainfall following the 2-4"W application was 0.64 inch over 2 days beginning 35 hours later.
Rainfall following the 4-6"W application was 1.33 inch over 2 days beginning 24 hours later.
Rainfall following the 8-12"W application was 0.35 inch over 2 days beginning 6 days later.
8. Crop injury was necrosis.
9. DAT = Days after various applications.
Ratings at 7 days after the PRE, 2-4"W, 4-6"W, and 8-12"W applications were on 6-22-15, 7-7-15, 7-13-15, and 7-20-15, respectively.
Ratings at 14 days after the PRE, 2-4"W, 4-6"W, and 8-12"W applications were on 6-29-15, 7-14-15, 7-20-15, and 7-27-15, respectively.
Ratings at 21 days after the PRE, 2-4"W, 4-6"W, and 8-12"W applications were on 7-6-15, 7-21-15, 7-27-15, and 8-3-15, respectively.
10. At 7 days after the PRE application few weeds emerged in nontreated, too soon to rate weed control.
11. Not harvested, crop destruct.