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Engenia Herbicide applied with AG16098, Class Act Ridion or Iconic in Dicamba Tolerant Soybean.

Trial ID: 17 ENGENIAADJ	Location: Various	Trial Year: 2017
Protocol ID: 17 ENGENIAADJ	Investigator: Dr. Mark M. Loux	
Project ID: 17EXT-ADJ-GphrEngnia-MKT	Study Director: Bryan Reeb	
	Sponsor Contact: Tom Hayden, United Suppliers	

General Trial Information

Study Director: Bryan Reeb
Investigator: Dr. Mark M. Loux

Planned Completion Date: Nov-15-2017

Trial Location

City: South Charleston **Country:** USA United States
State/Prov.: Ohio
Postal Code: 45368 **Climate Zone:** USWARM US Warm Continental

Latitude of LL Corner °: 39.85868 N
Longitude of LL Corner °: 83.67175 W
Altitude of LL Corner, Unit: 1055.00 FT

Conducted Under GLP: No
Conducted Under GEP: No

Objectives:

To evaluate Engenia with AG16098, Class Act Ridion or Iconic in Dicamba Tolerant Soybean.

Contacts

Study Director: Bryan Reeb

Investigator: Dr. Mark M. Loux

Crop Description

Crop 1: GLXMA Glycine max Soybean
Variety: Asgrow AG36X6
Description: Dicamba Tolerant

Planting Rate, Unit: 175000 P/A	Planting Date: May-17-2017
Depth, Unit: 1 IN	Planting Method: PLANTD planted
Row Spacing, Unit: 15 IN	Planting Equipment: FE Field Equipment
Soil Moisture: GOOD good	Emergence Date: May-29-2017

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Pest Description

- Pest 1 Type:** W **Code:** LAMPU *Lamium purpureum*
Common Name: Purple deadnettle
- Pest 2 Type:** W **Code:** STEME *Stellaria media*
Common Name: Common chickweed
- Pest 3 Type:** W **Code:** ERYRE *Erysimum repandum*
Common Name: Bushy wallflower
- Pest 4 Type:** W **Code:** SENGL *Senecio glabellus*
Common Name: Cressleaf groundsel
- Pest 5 Type:** W **Code:** VERAG *Veronica agrestis*
Common Name: Field speedwell
- Pest 6 Type:** W **Code:** ERICA *Erigeron canadensis*
Common Name: Canada horseweed
- Pest 7 Type:** W **Code:** AMBTR *Ambrosia trifida*
Common Name: Giant ragweed
- Pest 8 Type:** W **Code:** SETFA *Setaria faberi*
Common Name: Giant foxtail
- Pest 9 Type:** W **Code:** CHEAL *Chenopodium album*
Common Name: common lambsquarters
- Pest10 Type:** W **Code:** AMARE *Amaranthus retroflexus*
Common Name: Redroot pigweed
- Pest11 Type:** W **Code:** IPOHE *Ipomoea hederacea*
Common Name: ivy-leaf morning glory
- Pest12 Type:** W **Code:** TARSS *Taraxacum sp.*
Common Name: Dandelion

Site and Design

Treated Plot Width: 10 FT
Treated Plot Length: 30 FT
Treated Plot Area: 300 FT2
Replications: 4

Site Type: FIELD field
Experimental Unit: 1 PLOT plot
Tillage Type: NOTILL no-till
Study Design: RACOB� Randomized Complete Block (RCB)

Treatments: 10

Soil Description

Description Name: F-10 East
% OM: 3
pH: 6
CEC: 19.5

Texture: SICL silty clay loam
Soil Name: Kokomo
Fert. Level: G good
Soil Drainage: G good

Application Description

	A	B
Application Date:	May-3-2017	Jun-8-2017
Appl. Start Time:	10:15 AM	9:28 AM
Appl. Stop Time:	11:00 AM	9:45 AM
Application Method:	SPRAY	SPRAY
Application Timing:	ATPL	
Application Placement:	BROSOI	BROFOL
Applied By:	LAMB	LAMB
Air Temperature, Unit:	46 F	63 F
% Relative Humidity:	62	65
Wind Velocity, Unit:	7 MPH	8 MPH
Wind Direction:	N	SE
Dew Presence (Y/N):	N no	N no
Soil Temperature, Unit:	50 F	59 F
Soil Moisture:	SLIWET	SLIDRY
% Cloud Cover:	90	40
Next Moisture Occurred On:	May-4-2017	Jun-13-2017
Time to Next Moisture, Unit:	1 DAY	5 DAY

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Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:		BBCH
Stage Majority, Percent:		12 100
Height, Unit:		4 IN
Height Minimum, Maximum:		3 5

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	LAMPU W	LAMPU W
Stage Majority, Percent:	89 100	
Height, Unit:	3 IN	
Height Minimum, Maximum:	3 4	
Density, Unit:	15 m2	
Pest 2 Code, Type, Scale:	STEME W	STEME W
Stage Majority, Percent:	69 100	
Diameter, Unit:	12 IN	
Height, Unit:	3 IN	
Height Minimum, Maximum:	2 4	
Density, Unit:	7 m2	
Pest 3 Code, Type, Scale:	ERYRE W	ERYRE W
Stage Majority, Percent:	89 100	
Height, Unit:	12 IN	
Density, Unit:	24 m2	
Pest 4 Code, Type, Scale:	SENGL W	SENGL W
Stage Majority, Percent:	65 100	
Height, Unit:	17 IN	
Height Minimum, Maximum:	15 20	
Density, Unit:	5 m2	
Pest 5 Code, Type, Scale:	VERAG W	VERAG W
Stage Majority, Percent:	65 100	
Diameter, Unit:	2 IN	
Height, Unit:	3 IN	
Height Minimum, Maximum:	2 3	
Density, Unit:	130 m2	
Pest 6 Code, Type, Scale:	ERICA W	ERICA W
Stage Majority, Percent:	30 100	21 100
Height, Unit:	3 IN	17 IN
Height Minimum, Maximum:	1 5	14 20
Density, Unit:	170 m2	
Pest 7 Code, Type, Scale:	AMBTR W	AMBTR W
Stage Majority, Percent:	15 100	18 100
Height, Unit:	4 IN	7 IN
Height Minimum, Maximum:	4 5	6 8
Density, Unit:	7 m2	
Pest 8 Code, Type, Scale:	SETFA W	SETFA W
Stage Majority, Percent:		15 100
Height, Unit:		7 IN
Height Minimum, Maximum:		6 8
Pest 9 Code, Type, Scale:	CHEAL W	CHEAL W
Stage Majority, Percent:		17 100
Height, Unit:		2.5 IN
Height Minimum, Maximum:		2 3
Pest10 Code, Type, Scale:	AMARE W	AMARE W
Stage Majority, Percent:		17 100
Height, Unit:		3 IN
Pest11 Code, Type, Scale:	IPOHE W	IPOHE W
Stage Majority, Percent:		17 100
Height, Unit:		4 IN
Pest12 Code, Type, Scale:	TARSS W	TARSS W
Stage Majority, Percent:		65 100
Diameter, Unit:		10 IN
Height, Unit:		4 IN

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Application Equipment

	A	B
Appl. Equipment:	6' BACKPACK	10' BACKPACK
Equipment Type:	BACCAI	BACCAI
Operation Pressure, Unit:	48 PSI	46 PSI
Nozzle Type:	AIXR	TTI
Nozzle Size:	11015	11015
Nozzle Spacing, Unit:	18 IN	18 IN
Nozzles/Row:	4	4
Boom Length, Unit:	6.67 FT	10 FT
Boom Height, Unit:	20 IN	20 IN
Ground Speed, Unit:	3 MPH	3 MPH
Carrier:	WATER	WATER
Spray Volume, Unit:	15 gal/ac	15 gal/ac
Mix Size, Unit:	1 liters	2 liters
Propellant:	COMCO2	COMCO2

Date	By	Notes
May-10-2017	Reeb	7 Day after application rating - all treatments were at or below 20%
Jul-24-2017	Reeb	Overlaid with Roundup to clean up for harvest

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Engenial Herbicide applied with AG16098, Class Act Ridion or Iconic in Dicamba Tolerant Soybean.

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 Protocol ID: 17 ENGENIAADJ Investigator: Dr. Mark M. Loux
 Project ID: 17EXT-ADJ-GphrEngnia-MKT Study Director: Bryan Reeb
 Sponsor Contact: Tom Hayden, United Suppliers

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	LAMPU	SENGL	ERYRE	STEME	VERAG
Pest Name	Purple deadnet>	Cressleaf grou>	Bushy wallflow>	Common chickwe>	Field speedwell
Crop Code					
Crop Name					
Rating Date	May-16-2017	May-16-2017	May-16-2017	May-16-2017	May-16-2017
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Days After First/Last Applic.	13 13	13 13	13 13	13 13	13 13
Trt-Eval Interval	13 DA-A	13 DA-A	13 DA-A	13 DA-A	13 DA-A
Days After Emergence	-13 DE-1	-13 DE-1	-13 DE-1	-13 DE-1	-13 DE-1

Trt No.	Treatment Name	Rate Unit	Appl Code	1	2	3	4	5
1	UTC			0.0 b	0.0 b	0.0 d	0.0 b	0.0 d
2	Presidual	3 pt/a	A	100.0 a	91.7 a	73.3 c	100.0 a	100.0 a
	2 Cornerstone 5 Plus	24 fl oz/a	A					
	2 Class Act NG	2.5 gal/100 gal	A					
	2 Interlock	4 fl oz/a	A					
3	Presidual	3 pt/a	A	100.0 a	100.0 a	75.0 bc	100.0 a	100.0 a
	3 Cornerstone 5 Plus	24 fl oz/a	A					
	3 Class Act NG	2.5 gal/100 gal	A					
	3 Interlock	4 fl oz/a	A					
	3 Engenia	12.8 fl oz/a	B					
	3 AG16098	0.5 % v/v	B					
	3 Interlock	2 fl oz/a	B					
4	Presidual	3 pt/a	A	100.0 a	95.0 a	86.7 abc	100.0 a	100.0 a
	4 Cornerstone 5 Plus	24 fl oz/a	A					
	4 Class Act NG	2.5 gal/100 gal	A					
	4 Interlock	4 fl oz/a	A					
	4 Engenia	12.8 fl oz/a	B					
	4 AG16098	0.5 % v/v	B					
	4 Class Act Ridion	1.0 % v/v	B					
	4 Cornerstone 5 Plus	24 fl oz/a	B					
	4 Interlock	2 fl oz/a	B					
5	Presidual	3 pt/a	A	100.0 a	95.0 a	85.0 abc	100.0 a	100.0 a
	5 Cornerstone 5 Plus	24 fl oz/a	A					
	5 Class Act NG	2.5 gal/100 gal	A					
	5 Interlock	4 fl oz/a	A					
	5 Engenia	12.8 fl oz/a	B					
	5 AG16098	0.5 % v/v	B					
	5 Iconic	0.5 % v/v	B					
6	Presidual	3 pt/a	A	100.0 a	100.0 a	90.0 abc	100.0 a	100.0 a
	6 Cornerstone 5 Plus	24 fl oz/a	A					
	6 Class Act NG	2.5 gal/100 gal	A					
	6 Interlock	4 fl oz/a	A					
	6 Engenia	12.8 fl oz/a	B					
	6 AG16098	0.5 % v/v	B					
	6 Iconic	0.5 % v/v	B					
	6 Cornerstone 5 Plus	24 fl oz/a	B					

Means followed by same letter or symbol 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: Yates=9,10,13,15,16,18,21
 Could not calculate LSD (% mean diff) for columns 1,4,12,17 because error mean square = 0.

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	LAMPU	SENGL	ERYRE	STEME	VERAG		
Pest Name	Purple deadnet> Cressleaf grou> Bushy wallflow> Common chickwe> Field speedwell						
Crop Code							
Crop Name							
Rating Date	May-16-2017	May-16-2017	May-16-2017	May-16-2017	May-16-2017		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1		
Days After First/Last Applic.	13 13	13 13	13 13	13 13	13 13		
Trt-Eval Interval	13 DA-A	13 DA-A	13 DA-A	13 DA-A	13 DA-A		
Days After Emergence	-13 DE-1	-13 DE-1	-13 DE-1	-13 DE-1	-13 DE-1		
Trt Treatment	Rate	Appl	1	2	3	4	5
No. Name	Unit	Code					
7 Roundup Power Max	32 oz/a	A	100.0 a	100.0 a	96.7 ab	100.0 a	76.7 bc
7 N-pak ams	2.5 % v/v	A					
7 Engenia	12.8 fl oz/a	B					
7 AG16098	0.5 % v/v	B					
7 Interlock	2 fl oz/a	B					
8 Roundup Power Max	32 oz/a	A	100.0 a	100.0 a	85.0 abc	100.0 a	75.0 bc
8 N-pak ams	2.5 % v/v	A					
8 Engenia	12.8 fl oz/a	B					
8 AG16098	0.5 % v/v	B					
8 Class Act Ridion	1.0 % v/v	B					
8 Cornerstone 5 Plus	24 fl oz/a	B					
8 Interlock	2 fl oz/a	B					
9 Roundup Power Max	32 oz/a	A	100.0 a	100.0 a	100.0 a	100.0 a	78.3 b
9 N-pak ams	2.5 % v/v	A					
9 Engenia	12.8 fl oz/a	B					
9 AG16098	0.5 % v/v	B					
9 Iconic	0.5 % v/v	B					
10 Roundup Power Max	32 oz/a	A	100.0 a	100.0 a	85.0 abc	100.0 a	65.0 c
10 N-pak ams	2.5 % v/v	A					
10 Engenia	12.8 fl oz/a	B					
10 AG16098	0.5 % v/v	B					
10 Iconic	0.5 % v/v	B					
10 Cornerstone 5 Plus	24 fl oz/a	B					
LSD P=.05			.	10.43	22.49	.	12.93
Standard Deviation			0.00	6.08	13.11	0.00	7.54
CV			0.0	6.89	16.88	0.0	9.48
Bartlett's X2			0.0	0.717	5.806	0.0	2.896
P(Bartlett's X2)			.	0.699	0.445	.	0.408
Replicate F			0.000	0.699	6.420	0.000	2.287
Replicate Prob(F)			1.0000	0.5100	0.0079	1.0000	0.1303
Treatment F			0.000	78.669	14.183	0.000	50.783
Treatment Prob(F)			1.0000	0.0001	0.0001	1.0000	0.0001

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Pest Type	W Weed	O Other	W Weed	W Weed	W Weed		
Pest Code	ERICA	PHTYO	SETFA	AMBTR	AMARE		
Pest Name	Canada horsewe>		Giant foxtail	Giant ragweed	Redroot pigweed		
Crop Code		GLXMA					
Crop Name		Soybean					
Rating Date	May-16-2017	Jun-15-2017	Jun-15-2017	Jun-15-2017	Jun-15-2017		
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1		
Days After First/Last Applic.	13 13	43 7	43 7	43 7	43 7		
Trt-Eval Interval	13 DA-A						
Days After Emergence	-13 DE-1	17 DE-1	17 DE-1	17 DE-1	17 DE-1		
Trt Treatment	Rate	Appl	6	7	8	9	10
No. Name	Rate Unit	Code					
1 UTC			0.0 e	0.0 a	0.0 e	0.0 c	0.0 c
2 Presidual	3 pt/a	A	58.3 abc	0.0 a	0.0 e	0.0 c	0.0 c
2 Cornerstone 5 Plus	24 fl oz/a	A					
2 Class Act NG	2.5 gal/100 gal	A					
2 Interlock	4 fl oz/a	A					
3 Presidual	3 pt/a	A	58.3 abc	0.0 a	76.7 bc	23.3 b	50.0 b
3 Cornerstone 5 Plus	24 fl oz/a	A					
3 Class Act NG	2.5 gal/100 gal	A					
3 Interlock	4 fl oz/a	A					
3 Engenia	12.8 fl oz/a	B					
3 AG16098	0.5 % v/v	B					
3 Interlock	2 fl oz/a	B					
4 Presidual	3 pt/a	A	63.3 ab	0.0 a	88.3 ab	48.3 a	90.0 a
4 Cornerstone 5 Plus	24 fl oz/a	A					
4 Class Act NG	2.5 gal/100 gal	A					
4 Interlock	4 fl oz/a	A					
4 Engenia	12.8 fl oz/a	B					
4 AG16098	0.5 % v/v	B					
4 Class Act Ridion	1.0 % v/v	B					
4 Cornerstone 5 Plus	24 fl oz/a	B					
4 Interlock	2 fl oz/a	B					
5 Presidual	3 pt/a	A	56.7 a-d	0.0 a	70.0 c	27.6 ab	38.6 b
5 Cornerstone 5 Plus	24 fl oz/a	A					
5 Class Act NG	2.5 gal/100 gal	A					
5 Interlock	4 fl oz/a	A					
5 Engenia	12.8 fl oz/a	B					
5 AG16098	0.5 % v/v	B					
5 Iconic	0.5 % v/v	B					
6 Presidual	3 pt/a	A	75.0 a	0.0 a	96.7 a	26.7 b	96.2 a
6 Cornerstone 5 Plus	24 fl oz/a	A					
6 Class Act NG	2.5 gal/100 gal	A					
6 Interlock	4 fl oz/a	A					
6 Engenia	12.8 fl oz/a	B					
6 AG16098	0.5 % v/v	B					
6 Iconic	0.5 % v/v	B					
6 Cornerstone 5 Plus	24 fl oz/a	B					

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Pest Type	W Weed	O Other	W Weed	W Weed	W Weed		
Pest Code	ERICA	PHTYO	SETFA	AMBTR	AMARE		
Pest Name	Canada horsewe>		Giant foxtail	Giant ragweed	Redroot pigweed		
Crop Code		GLXMA					
Crop Name		Soybean					
Rating Date	May-16-2017	Jun-15-2017	Jun-15-2017	Jun-15-2017	Jun-15-2017		
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1		
Days After First/Last Applic.	13 13	43 7	43 7	43 7	43 7		
Trt-Eval Interval	13 DA-A						
Days After Emergence	-13 DE-1	17 DE-1	17 DE-1	17 DE-1	17 DE-1		
Trt Treatment	Rate	Appl	6	7	8	9	10
No. Name	Unit	Code					
7 Roundup Power Max	32 oz/a	A	36.7 cd	0.0 a	0.0 e	43.3 ab	91.2 a
7 N-pak ams	2.5 % v/v	A					
7 Engenia	12.8 fl oz/a	B					
7 AG16098	0.5 % v/v	B					
7 Interlock	2 fl oz/a	B					
8 Roundup Power Max	32 oz/a	A	33.3 d	0.3 a	43.3 d	33.3 ab	83.3 a
8 N-pak ams	2.5 % v/v	A					
8 Engenia	12.8 fl oz/a	B					
8 AG16098	0.5 % v/v	B					
8 Class Act Ridion	1.0 % v/v	B					
8 Cornerstone 5 Plus	24 fl oz/a	B					
8 Interlock	2 fl oz/a	B					
9 Roundup Power Max	32 oz/a	A	40.0 bcd	0.0 a	40.0 d	30.0 ab	92.7 a
9 N-pak ams	2.5 % v/v	A					
9 Engenia	12.8 fl oz/a	B					
9 AG16098	0.5 % v/v	B					
9 Iconic	0.5 % v/v	B					
10 Roundup Power Max	32 oz/a	A	36.7 cd	0.0 a	40.0 d	33.3 ab	36.7 b
10 N-pak ams	2.5 % v/v	A					
10 Engenia	12.8 fl oz/a	B					
10 AG16098	0.5 % v/v	B					
10 Iconic	0.5 % v/v	B					
10 Cornerstone 5 Plus	24 fl oz/a	B					
LSD P=.05			23.87	0.31	16.43	21.37	25.16
Standard Deviation			13.91	0.18	9.58	12.41	14.37
CV			30.36	547.72	21.05	46.66	24.83
Bartlett's X2			10.288	0.0	7.497	10.376	6.946
P(Bartlett's X2)			0.245	.	0.277	0.168	0.326
Replicate F			0.986	1.000	1.989	1.375	2.689
Replicate Prob(F)			0.3925	0.3874	0.1658	0.2796	0.1027
Treatment F			6.966	1.000	44.683	4.940	21.074
Treatment Prob(F)			0.0003	0.4742	0.0001	0.0023	0.0001

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Pest Code	ERICA	PHTYO	SETFA	AMBTR	AMARE		
Pest Name	Canada horsewe>		Giant foxtail	Giant ragweed	Redroot pigweed		
Crop Code		GLXMA					
Crop Name		Soybean					
Rating Date	Jun-15-2017	Jun-22-2017	Jun-22-2017	Jun-22-2017	Jun-22-2017		
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1		
Days After First/Last Applic.	43 7	50 14	50 14	50 14	50 14		
Trt-Eval Interval							
Days After Emergence	17 DE-1	24 DE-1	24 DE-1	24 DE-1	24 DE-1		
Trt Treatment	Rate	Appl	11	12	13	14	15
No. Name	Rate Unit	Code					
1 UTC			0.0 d	0.0 a	0.0 c	0.0 c	0.0 e
2 Presidual	3 pt/a	A	0.0 d	0.0 a	7.8 c	0.0 c	0.0 e
2 Cornerstone 5 Plus	24 fl oz/a	A					
2 Class Act NG	2.5 gal/100 gal	A					
2 Interlock	4 fl oz/a	A					
3 Presidual	3 pt/a	A	58.3 abc	0.0 a	23.3 bc	78.3 b	50.0 cd
3 Cornerstone 5 Plus	24 fl oz/a	A					
3 Class Act NG	2.5 gal/100 gal	A					
3 Interlock	4 fl oz/a	A					
3 Engenia	12.8 fl oz/a	B					
3 AG16098	0.5 % v/v	B					
3 Interlock	2 fl oz/a	B					
4 Presidual	3 pt/a	A	66.7 ab	0.0 a	86.7 a	85.0 ab	91.7 a
4 Cornerstone 5 Plus	24 fl oz/a	A					
4 Class Act NG	2.5 gal/100 gal	A					
4 Interlock	4 fl oz/a	A					
4 Engenia	12.8 fl oz/a	B					
4 AG16098	0.5 % v/v	B					
4 Class Act Ridion	1.0 % v/v	B					
4 Cornerstone 5 Plus	24 fl oz/a	B					
4 Interlock	2 fl oz/a	B					
5 Presidual	3 pt/a	A	40.0 c	0.0 a	40.0 b	80.0 ab	61.7 bc
5 Cornerstone 5 Plus	24 fl oz/a	A					
5 Class Act NG	2.5 gal/100 gal	A					
5 Interlock	4 fl oz/a	A					
5 Engenia	12.8 fl oz/a	B					
5 AG16098	0.5 % v/v	B					
5 Iconic	0.5 % v/v	B					
6 Presidual	3 pt/a	A	80.0 a	0.0 a	80.0 a	78.3 b	83.3 ab
6 Cornerstone 5 Plus	24 fl oz/a	A					
6 Class Act NG	2.5 gal/100 gal	A					
6 Interlock	4 fl oz/a	A					
6 Engenia	12.8 fl oz/a	B					
6 AG16098	0.5 % v/v	B					
6 Iconic	0.5 % v/v	B					
6 Cornerstone 5 Plus	24 fl oz/a	B					

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Pest Type	W Weed	O Other	W Weed	W Weed	W Weed		
Pest Code	ERICA	PHTYO	SETFA	AMBTR	AMARE		
Pest Name	Canada horsewe>		Giant foxtail	Giant ragweed	Redroot pigweed		
Crop Code		GLXMA					
Crop Name		Soybean					
Rating Date	Jun-15-2017	Jun-22-2017	Jun-22-2017	Jun-22-2017	Jun-22-2017		
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1		
Days After First/Last Applic.	43 7	50 14	50 14	50 14	50 14		
Trt-Eval Interval							
Days After Emergence	17 DE-1	24 DE-1	24 DE-1	24 DE-1	24 DE-1		
Trt Treatment	Rate	Appl					
No. Name	Unit	Code	11	12	13	14	15
7 Roundup Power Max	32 oz/a	A	50.0 bc	0.0 a	0.0 c	93.3 a	73.3 abc
7 N-pak ams	2.5 % v/v	A					
7 Engenia	12.8 fl oz/a	B					
7 AG16098	0.5 % v/v	B					
7 Interlock	2 fl oz/a	B					
8 Roundup Power Max	32 oz/a	A	46.7 bc	0.0 a	43.3 b	75.0 b	66.7 abc
8 N-pak ams	2.5 % v/v	A					
8 Engenia	12.8 fl oz/a	B					
8 AG16098	0.5 % v/v	B					
8 Class Act Ridion	1.0 % v/v	B					
8 Cornerstone 5 Plus	24 fl oz/a	B					
8 Interlock	2 fl oz/a	B					
9 Roundup Power Max	32 oz/a	A	60.0 abc	0.0 a	13.3 c	81.7 ab	26.1 d
9 N-pak ams	2.5 % v/v	A					
9 Engenia	12.8 fl oz/a	B					
9 AG16098	0.5 % v/v	B					
9 Iconic	0.5 % v/v	B					
10 Roundup Power Max	32 oz/a	A	46.7 bc	0.0 a	43.3 b	85.0 ab	33.3 d
10 N-pak ams	2.5 % v/v	A					
10 Engenia	12.8 fl oz/a	B					
10 AG16098	0.5 % v/v	B					
10 Iconic	0.5 % v/v	B					
10 Cornerstone 5 Plus	24 fl oz/a	B					
LSD P=.05			26.53	.	23.59	14.61	25.88
Standard Deviation			15.47	0.00	13.69	8.51	15.03
CV			34.49	0.0	40.53	12.97	30.91
Bartlett's X2			6.032	0.0	6.498	5.348	7.597
P(Bartlett's X2)			0.536	.	0.483	0.618	0.369
Replicate F			4.415	0.000	1.004	7.322	12.370
Replicate Prob(F)			0.0275	1.0000	0.3872	0.0047	0.0005
Treatment F			8.645	0.000	15.364	50.605	14.224
Treatment Prob(F)			0.0001	1.0000	0.0001	0.0001	0.0001

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Pest Type	W Weed	O Other	W Weed	W Weed	W Weed		
Pest Code	ERICA	PHTYO	SETFA	AMBTR	AMARE		
Pest Name	Canada horsewe>		Giant foxtail	Giant ragweed	Redroot pigweed		
Crop Code		GLXMA					
Crop Name		Soybean					
Rating Date	Jun-22-2017	Jul-13-2017	Jul-13-2017	Jul-13-2017	Jul-13-2017		
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1		
Days After First/Last Applic.	50 14	71 35	71 35	71 35	71 35		
Trt-Eval Interval							
Days After Emergence	24 DE-1	45 DE-1	45 DE-1	45 DE-1	45 DE-1		
Trt Treatment	Rate	Appl	16	17	18	19	20
No. Name	Rate Unit	Code					
1 UTC			0.0 c	0.0 a	0.0 d	0.0 d	0.0 d
2 Presidual	3 pt/a	A	44.3 b	0.0 a	21.6 cd	0.0 d	16.7 cd
2 Cornerstone 5 Plus	24 fl oz/a	A					
2 Class Act NG	2.5 gal/100 gal	A					
2 Interlock	4 fl oz/a	A					
3 Presidual	3 pt/a	A	86.7 a	0.0 a	26.7 cd	76.7 b	63.3 ab
3 Cornerstone 5 Plus	24 fl oz/a	A					
3 Class Act NG	2.5 gal/100 gal	A					
3 Interlock	4 fl oz/a	A					
3 Engenia	12.8 fl oz/a	B					
3 AG16098	0.5 % v/v	B					
3 Interlock	2 fl oz/a	B					
4 Presidual	3 pt/a	A	85.0 a	0.0 a	86.7 a	63.3 b	80.0 ab
4 Cornerstone 5 Plus	24 fl oz/a	A					
4 Class Act NG	2.5 gal/100 gal	A					
4 Interlock	4 fl oz/a	A					
4 Engenia	12.8 fl oz/a	B					
4 AG16098	0.5 % v/v	B					
4 Class Act Ridion	1.0 % v/v	B					
4 Cornerstone 5 Plus	24 fl oz/a	B					
4 Interlock	2 fl oz/a	B					
5 Presidual	3 pt/a	A	85.0 a	0.0 a	83.3 ab	66.7 b	70.0 ab
5 Cornerstone 5 Plus	24 fl oz/a	A					
5 Class Act NG	2.5 gal/100 gal	A					
5 Interlock	4 fl oz/a	A					
5 Engenia	12.8 fl oz/a	B					
5 AG16098	0.5 % v/v	B					
5 Iconic	0.5 % v/v	B					
6 Presidual	3 pt/a	A	90.0 a	0.0 a	73.3 ab	36.7 c	83.3 ab
6 Cornerstone 5 Plus	24 fl oz/a	A					
6 Class Act NG	2.5 gal/100 gal	A					
6 Interlock	4 fl oz/a	A					
6 Engenia	12.8 fl oz/a	B					
6 AG16098	0.5 % v/v	B					
6 Iconic	0.5 % v/v	B					
6 Cornerstone 5 Plus	24 fl oz/a	B					

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The Ohio State University

Pest Type	W Weed	O Other	W Weed	W Weed	W Weed		
Pest Code	ERICA	PHTYO	SETFA	AMBTR	AMARE		
Pest Name	Canada horsewe>		Giant foxtail	Giant ragweed	Redroot pigweed		
Crop Code	GLXMA						
Crop Name	Soybean						
Rating Date	Jun-22-2017	Jul-13-2017	Jul-13-2017	Jul-13-2017	Jul-13-2017		
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1		
Days After First/Last Applic.	50 14	71 35	71 35	71 35	71 35		
Trt-Eval Interval							
Days After Emergence	24 DE-1	45 DE-1	45 DE-1	45 DE-1	45 DE-1		
Trt Treatment	Rate	Appl					
No. Name	Unit	Code	16	17	18	19	20
7 Roundup Power Max	32 oz/a	A	85.0 a	0.0 a	46.6 bc	100.0 a	98.3 a
7 N-pak ams	2.5 % v/v	A					
7 Engenia	12.8 fl oz/a	B					
7 AG16098	0.5 % v/v	B					
7 Interlock	2 fl oz/a	B					
8 Roundup Power Max	32 oz/a	A	86.7 a	0.0 a	90.0 a	70.0 b	83.3 ab
8 N-pak ams	2.5 % v/v	A					
8 Engenia	12.8 fl oz/a	B					
8 AG16098	0.5 % v/v	B					
8 Class Act Ridion	1.0 % v/v	B					
8 Cornerstone 5 Plus	24 fl oz/a	B					
8 Interlock	2 fl oz/a	B					
9 Roundup Power Max	32 oz/a	A	90.0 a	0.0 a	75.0 ab	70.0 b	86.7 ab
9 N-pak ams	2.5 % v/v	A					
9 Engenia	12.8 fl oz/a	B					
9 AG16098	0.5 % v/v	B					
9 Iconic	0.5 % v/v	B					
10 Roundup Power Max	32 oz/a	A	85.0 a	0.0 a	90.0 a	60.0 b	50.0 bc
10 N-pak ams	2.5 % v/v	A					
10 Engenia	12.8 fl oz/a	B					
10 AG16098	0.5 % v/v	B					
10 Iconic	0.5 % v/v	B					
10 Cornerstone 5 Plus	24 fl oz/a	B					
LSD P=.05			7.04	.	37.19	21.45	41.66
Standard Deviation			4.09	0.00	21.49	12.51	24.29
CV			5.54	0.0	36.23	23.02	38.45
Bartlett's X2			4.733	0.0	12.511	6.553	7.194
P(Bartlett's X2)			0.786	.	0.051	0.364	0.516
Replicate F			10.574	0.000	0.550	8.318	0.281
Replicate Prob(F)			0.0010	1.0000	0.5876	0.0028	0.7582
Treatment F			153.336	0.000	7.091	20.369	5.231
Treatment Prob(F)			0.0001	1.0000	0.0004	0.0001	0.0014

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The Ohio State University

Pest Type			W Weed	W Weed
Pest Code			CHEAL	ERICA
Pest Name			common lambsqu	Canada horsewe>
Crop Code				
Crop Name				
Rating Date			Jul-13-2017	Jul-13-2017
Rating Type			CONTRO	CONTRO
Rating Unit			%	%
Number of Subsamples			1	1
Days After First/Last Applic.			71 35	71 35
Trt-Eval Interval				
Days After Emergence			45 DE-1	45 DE-1
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code	21	22
1 UTC			0.0 b	0.0 c
2 Presidual	3 pt/a	A	22.4 b	43.3 b
2 Cornerstone 5 Plus	24 fl oz/a	A		
2 Class Act NG	2.5 gal/100 gal	A		
2 Interlock	4 fl oz/a	A		
3 Presidual	3 pt/a	A	86.7 a	100.0 a
3 Cornerstone 5 Plus	24 fl oz/a	A		
3 Class Act NG	2.5 gal/100 gal	A		
3 Interlock	4 fl oz/a	A		
3 Engenia	12.8 fl oz/a	B		
3 AG16098	0.5 % v/v	B		
3 Interlock	2 fl oz/a	B		
4 Presidual	3 pt/a	A	83.3 a	96.7 a
4 Cornerstone 5 Plus	24 fl oz/a	A		
4 Class Act NG	2.5 gal/100 gal	A		
4 Interlock	4 fl oz/a	A		
4 Engenia	12.8 fl oz/a	B		
4 AG16098	0.5 % v/v	B		
4 Class Act Ridion	1.0 % v/v	B		
4 Cornerstone 5 Plus	24 fl oz/a	B		
4 Interlock	2 fl oz/a	B		
5 Presidual	3 pt/a	A	93.3 a	100.0 a
5 Cornerstone 5 Plus	24 fl oz/a	A		
5 Class Act NG	2.5 gal/100 gal	A		
5 Interlock	4 fl oz/a	A		
5 Engenia	12.8 fl oz/a	B		
5 AG16098	0.5 % v/v	B		
5 Iconic	0.5 % v/v	B		
6 Presidual	3 pt/a	A	93.3 a	100.0 a
6 Cornerstone 5 Plus	24 fl oz/a	A		
6 Class Act NG	2.5 gal/100 gal	A		
6 Interlock	4 fl oz/a	A		
6 Engenia	12.8 fl oz/a	B		
6 AG16098	0.5 % v/v	B		
6 Iconic	0.5 % v/v	B		
6 Cornerstone 5 Plus	24 fl oz/a	B		

Means followed by same letter or symbol 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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 Could not calculate LSD (% mean diff) for columns 1,4,12,17 because error mean square = 0.

The Ohio State University

Pest Type	W Weed	W Weed
Pest Code	CHEAL	ERICA
Pest Name	common lambsqu	Canada horsewe>
Crop Code		
Crop Name		
Rating Date	Jul-13-2017	Jul-13-2017
Rating Type	CONTRO	CONTRO
Rating Unit	%	%
Number of Subsamples	1	1
Days After First/Last Applic.	71 35	71 35
Trt-Eval Interval		
Days After Emergence	45 DE-1	45 DE-1

Trt No.	Treatment Name	Rate Unit	Appl Code	21	22
7	Roundup Power Max	32 oz/a	A	100.0 a	100.0 a
7	N-pak ams	2.5 % v/v	A		
7	Engenia	12.8 fl oz/a	B		
7	AG16098	0.5 % v/v	B		
7	Interlock	2 fl oz/a	B		
8	Roundup Power Max	32 oz/a	A	100.0 a	100.0 a
8	N-pak ams	2.5 % v/v	A		
8	Engenia	12.8 fl oz/a	B		
8	AG16098	0.5 % v/v	B		
8	Class Act Ridion	1.0 % v/v	B		
8	Cornerstone 5 Plus	24 fl oz/a	B		
8	Interlock	2 fl oz/a	B		
9	Roundup Power Max	32 oz/a	A	100.0 a	100.0 a
9	N-pak ams	2.5 % v/v	A		
9	Engenia	12.8 fl oz/a	B		
9	AG16098	0.5 % v/v	B		
9	Iconic	0.5 % v/v	B		
10	Roundup Power Max	32 oz/a	A	100.0 a	100.0 a
10	N-pak ams	2.5 % v/v	A		
10	Engenia	12.8 fl oz/a	B		
10	AG16098	0.5 % v/v	B		
10	Iconic	0.5 % v/v	B		
10	Cornerstone 5 Plus	24 fl oz/a	B		
LSD P=.05				25.58	27.76
Standard Deviation				14.85	16.18
CV				19.06	19.26
Bartlett's X2				2.513	5.87
P(Bartlett's X2)				0.642	0.015*
Replicate F				0.800	1.184
Replicate Prob(F)				0.4656	0.3288
Treatment F				17.662	13.573
Treatment Prob(F)				0.0001	0.0001

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The Ohio State University

Engenial Herbicide applied with AG16098, Class Act Ridion or Iconic in Dicamba Tolerant Soybean.

Trial ID: 17 ENGENIAADJ	Location: Various	Trial Year: 2017
Protocol ID: 17 ENGENIAADJ	Investigator: Dr. Mark M. Loux	
Project ID: 17EXT-ADJ-GphrEngnia-MKT	Study Director: Bryan Reeb	
Sponsor Contact: Tom Hayden, United Suppliers		

Pest Type

W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop
 O, Other, G-BYRO7, G-OthStg = Other animal or nematode

Pest Code

LAMPU, Lamium purpureum, Purple deadnettle = US
 SENGL, Senecio glabellus, Cressleaf groundsel = US
 ERYRE, Erysimum repandum, Bushy wallflower = US
 STEME, Stellaria media, Common chickweed = US
 VERAG, Veronica agrestis, Field speedwell = US
 ERICA, Erigeron canadensis, Canada horseweed = US
 PHTYO, , = PHTYO, ,
 SETFA, Setaria faberi, Giant foxtail = US
 AMBTR, Ambrosia trifida, Giant ragweed = US
 AMARE, Amaranthus retroflexus, Redroot pigweed = US
 CHEAL, Chenopodium album, common lambsquarters = US

Crop Code

GLXMA, BSOY, Glycine max, Soybean = US

Rating Type

CONTRO = control / burndown or knockdown
 PHYGEN = phytotoxicity - general / injury

Rating Unit

% = percent