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Evaluation of pre herbicides in No-Till dicamba soybean systems

Trial ID: 17 BASFXTEND
Protocol ID: 17 BASFXTEND
Project ID: MKD H 2017 US D88 A 01

Location: F-10 MIDDLE Trial Year: 2017
Investigator: Dr. Mark M. Loux
Study Director: Bryan Reeb
Sponsor Contact: Trevor Kraus, BASF

General Trial Information

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

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 °: 39.85861 N
Longitude of LL Corner °: 83.67081 W
Altitude of LL Corner, Unit: 1041.00 FT

Conducted Under GLP: No
Conducted Under GEP: No

Contacts

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

Crop Description

Crop 1: GLXMA Glycine max Soybean
Variety: Asgrow 36X6
Description: Dicamba Tolerant

Planting Rate, Unit: 175000 P/A
Depth, Unit: 1 IN
Row Spacing, Unit: 15 IN
Soil Moisture: GOOD good
Planting Date: May-17-2017
Planting Method: PLANTD planted
Planting Equipment: FE Field Equipment
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:** ERICA *Erigeron canadensis*
Common Name: Canada horseweed
- Pest 3 Type:** W **Code:** STEME *Stellaria media*
Common Name: Common chickweed
- Pest 4 Type:** W **Code:** ERYRE *Erysimum repandum*
Common Name: Bushy wallflower
- Pest 5 Type:** W **Code:** CAPBP *Capsella bursa-pastoris*
Common Name: Shepherd's purse
- Pest 6 Type:** W **Code:** SENGL *Senecio glabellus*
Common Name: Cressleaf groundsel
- Pest 7 Type:** W **Code:** VERAG *Veronica agrestis*
Common Name: Field speedwell
- Pest 8 Type:** W **Code:** SETFA *Setaria faberi*
Common Name: Giant foxtail
- Pest 9 Type:** W **Code:** AMBTR *Ambrosia trifida*
Common Name: Giant ragweed
- Pest10 Type:** W **Code:** TARSS *Taraxacum sp.*
Common Name: Dandelion
- Pest11 Type:** W **Code:** AMARE *Amaranthus retroflexus*
Common Name: Redroot pigweed
- Pest12 Type:** W **Code:** CHEAL *Chenopodium album*
Common Name: common lambsquarters

Site and Design

Treated Plot Width: 10 FT
Treated Plot Length: 30 FT
Treated Plot Area: 300 FT2
Replications: 3

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

Treatments: 12

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	C
Application Date:	Apr-25-2017	Jun-8-2017	Jul-5-2017
Appl. Start Time:	9:30 AM	9:03 AM	10:35 AM
Appl. Stop Time:	10:00 AM	9:20 AM	10:45 AM
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	7 EPP	V3-V4	LPO
Application Placement:	BROSOI	BROFOL	BROFOL
Applied By:	DOBBELS	REEB	REEB
Air Temperature, Unit:	59.2 F	63 F	75 F
% Relative Humidity:	64	65	57
Wind Velocity, Unit:	7.5 MPH	8 MPH	3 MPH
Wind Direction:	ESE	SE	W
Dew Presence (Y/N):	N no	N no	N no
Soil Temperature, Unit:	54 F	59 F	73 F
Soil Moisture:	DRY	SLIDRY	DRY
% Cloud Cover:	60	40	75
Next Moisture Occurred On:	Apr-27-2017	Jun-13-2017	Jul-6-2017
Time to Next Moisture, Unit:	2 DAY	5 DAY	1 DAY

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Crop Stage At Each Application

	A		B		C	
Crop 1 Code, BBCH Scale:	GLXMA	BSOY	GLXMA	BSOY	GLXMA	BSOY
Stage Scale Used:			BBCH		BBCH	
Stage Majority, Percent:			11	100	15	100
Height, Unit:			3.5	IN	10	IN
Height Minimum, Maximum:			2	4	8	12

Pest Stage At Each Application

	A		B		C	
Pest 1 Code, Type, Scale:	LAMPU	W	LAMPU	W	LAMPU	W
Stage Majority, Percent:	69	100				
Diameter, Unit:	4	IN				
Height, Unit:	5	IN				
Height Minimum, Maximum:	3	6				
Density, Unit:	9	m2				
Pest 2 Code, Type, Scale:	ERICA	W	ERICA	W	ERICA	W
Stage Majority, Percent:	19	100	19	100	19	100
Diameter, Unit:	2.5	IN				
Height, Unit:	3	IN	15	IN	23	IN
Height Minimum, Maximum:	2	4	10	20	15	35
Density, Unit:	11	m2				
Pest 3 Code, Type, Scale:	STEME	W	STEME	W	STEME	W
Stage Majority, Percent:	69	100				
Diameter, Unit:	10	IN				
Height, Unit:	2	IN				
Height Minimum, Maximum:	1	3				
Density, Unit:	8	m2				
Pest 4 Code, Type, Scale:	ERYRE	W	ERYRE	W	ERYRE	W
Stage Majority, Percent:	65	100				
Height, Unit:	13	IN				
Height Minimum, Maximum:	12	15				
Density, Unit:	12	m2				
Pest 5 Code, Type, Scale:	CAPBP	W	CAPBP	W	CAPBP	W
Stage Majority, Percent:	69	100				
Height, Unit:	20	IN				
Height Minimum, Maximum:	17	22				
Density, Unit:	1	m2				
Pest 6 Code, Type, Scale:	SENGL	W	SENGL	W	SENGL	W
Stage Majority, Percent:	65	100	65	100		
Height, Unit:	15	IN	14	IN		
Height Minimum, Maximum:	13	16	9	20		
Density, Unit:	5	m2				
Pest 7 Code, Type, Scale:	VERAG	W	VERAG	W	VERAG	W
Stage Majority, Percent:	65	100				
Diameter, Unit:	3	IN				
Height, Unit:	3	IN				
Height Minimum, Maximum:	2	3				
Density, Unit:	7	m2				
Pest 8 Code, Type, Scale:	SETFA	W	SETFA	W	SETFA	W
Stage Majority, Percent:	11	100	14	100	15	100
Height, Unit:	1	IN	3	IN	14	IN
Height Minimum, Maximum:	0.5	1.5	2	4	12	16
Density, Unit:	1	m2				
Pest 9 Code, Type, Scale:	AMBTR	W	AMBTR	W	AMBTR	W
Stage Majority, Percent:	14	100	18	100	18	100
Height, Unit:	2	IN	9	IN	20	IN
Height Minimum, Maximum:	1	2	8	10	18	23
Density, Unit:	7	m2				
Pest10 Code, Type, Scale:	TARSS	W	TARSS	W	TARSS	W
Stage Majority, Percent:			65	100		
Diameter, Unit:			9	IN		
Pest11 Code, Type, Scale:	AMARE	W	AMARE	W	AMARE	W
Stage Majority, Percent:			22	100		
Height, Unit:			7	IN		
Pest12 Code, Type, Scale:	CHEAL	W	CHEAL	W	CHEAL	W
Stage Majority, Percent:					19	100
Height, Unit:					13	IN
Height Minimum, Maximum:					10	15

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Application Equipment

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

Date	By	Notes
Aug-1-2017	dobbles	Roundup overlay to clean up for harvest

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	LAMPU	STEME	ERYRE	SENGL	VERAR
Pest Name	Purple deadnet>	Common chickwe>	Bushy wallflow>	Cressleaf grou>	Corn speedwell
Rating Date	May-10-2017	May-10-2017	May-10-2017	May-10-2017	May-10-2017
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Days After First/Last Applic.	15 15	15 15	15 15	15 15	15 15
Trt-Eval Interval	15 DA-A	15 DA-A	15 DA-A	15 DA-A	15 DA-A
Days After Emergence	-19 DE-1	-19 DE-1	-19 DE-1	-19 DE-1	-19 DE-1

Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit Code	1	2	3	4	5
1	UTC				0.0 c	0.0 b	0.0 b	0.0 b	0.0 c
2	Engenia	12.8 oz/a		B	0.0 c	0.0 b	0.0 b	0.0 b	0.0 c
2	Roundup Power Max	32 oz/a		B					
3	Verdict	5 oz/a		A	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
3	Roundup Power Max	32 oz/a		A					
3	MSO	0.6 qt/a		A					
3	N-pak ams	1.5 qt/a		A					
3	Roundup Power Max	32 oz/a		C					
3	N-pak ams	1.5 qt/a		C					
4	Verdict	5 oz/a		A	100.0 a	100.0 a	100.0 a	100.0 a	99.3 b
4	Roundup Power Max	32 oz/a		A					
4	MSO	0.6 qt/a		A					
4	N-pak ams	1.5 qt/a		A					
4	Engenia	12.8 oz/a		B					
4	Roundup Power Max	32 oz/a		B					
5	Verdict	5 oz/a		A	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
5	Outlook	5 oz/a		A					
5	Roundup Power Max	32 oz/a		A					
5	MSO	0.6 qt/a		A					
5	N-pak ams	1.5 qt/a		A					
5	Roundup Power Max	32 oz/a		C					
5	N-pak ams	1.5 qt/a		C					
6	Verdict	5 oz/a		A	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
6	Outlook	5 oz/a		A					
6	Roundup Power Max	32 oz/a		A					
6	MSO	0.6 qt/a		A					
6	N-pak ams	1.5 qt/a		A					
6	Engenia	12.8 oz/a		B					
6	Roundup Power Max	32 oz/a		B					
7	Zidua Pro	4.5 oz/a		A	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
7	Roundup Power Max	32 oz/a		A					
7	MSO	0.6 qt/a		A					
7	N-pak ams	1.5 qt/a		A					
7	Roundup Power Max	32 oz/a		C					
7	N-pak ams	1.5 qt/a		C					

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=12
 Could not calculate LSD (% mean diff) for columns 2,3,4,13,14,24,25,27 because error mean square = 0.

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Pest Type			W Weed	W Weed	W Weed	W Weed	W Weed	
Pest Code			LAMPU	STEME	ERYRE	SENGL	VERAR	
Pest Name			Purple deadnet>	Common chickwe>	Bushy wallflow>	Cressleaf grou>	Corn speedwell	
Rating Date			May-10-2017	May-10-2017	May-10-2017	May-10-2017	May-10-2017	
Rating Type			CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	
Rating Unit			%	%	%	%	%	
Number of Subsamples			1	1	1	1	1	
Days After First/Last Applic.			15 15	15 15	15 15	15 15	15 15	
Trt-Eval Interval			15 DA-A	15 DA-A	15 DA-A	15 DA-A	15 DA-A	
Days After Emergence			-19 DE-1	-19 DE-1	-19 DE-1	-19 DE-1	-19 DE-1	
Trt Treatment	Other Rate	Other Rate	Appl Unit Code	1	2	3	4	5
8 Zidua Pro	4.5 oz/a		A	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
8 Roundup Power Max	32 oz/a		A					
8 MSO	0.6 qt/a		A					
8 N-pak ams	1.5 qt/a		A					
8 Engenia	12.8 oz/a		B					
8 Roundup Power Max	32 oz/a		B					
9 Zidua Pro	6 oz/a		A	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
9 Roundup Power Max	32 oz/a		A					
9 MSO	0.6 qt/a		A					
9 N-pak ams	1.5 qt/a		A					
9 Roundup Power Max	32 oz/a		C					
9 N-pak ams	1.5 qt/a		C					
10 Zidua Pro	6 oz/a		A	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
10 Roundup Power Max	32 oz/a		A					
10 MSO	0.6 qt/a		A					
10 N-pak ams	1.5 qt/a		A					
10 Engenia	12.8 oz/a		B					
10 Roundup Power Max	32 oz/a		B					
11 Zidua Pro	6 oz/a		A	98.3 b	100.0 a	100.0 a	100.0 a	100.0 a
11 Roundup Power Max	32 oz/a		A					
11 Engenia	12.8 oz/a		A					
11 MSO	0.6 qt/a		A					
11 Roundup Power Max	32 oz/a		B					
11 N-pak ams	1.5 qt/a		B					
12 Zidua Pro	6 oz/a		A	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a
12 Metribuzin	8 oz/a		A					
12 Roundup Power Max	32 oz/a		A					
12 Engenia	12.8 oz/a		A					
12 MSO	0.6 qt/a		A					
12 Roundup Power Max	32 oz/a		B					
12 N-pak ams	1.5 qt/a		B					
LSD P=.05				1.41	.	.	.	0.56
Standard Deviation				0.83	0.00	0.00	0.00	0.33
CV				1.0	0.0	0.0	0.0	0.4
Bartlett's X2				0.0	0.0	0.0	0.0	0.0
P(Bartlett's X2)			
Replicate F				1.000	0.000	0.000	0.000	1.000
Replicate Prob(F)				0.3840	1.0000	1.0000	1.0000	0.3840
Treatment F				6524.637	0.000	0.000	0.000	40855.550
Treatment Prob(F)				0.0001	1.0000	1.0000	1.0000	0.0001

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	ERICA	AMBTR	SETFA	SETFA	AMBTR			
Pest Name	Canada horsewee>	Giant ragweed	Giant foxtail	Giant foxtail	Giant ragweed			
Rating Date	May-10-2017	May-10-2017	May-10-2017	Jun-6-2017	Jun-6-2017			
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO			
Rating Unit	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1			
Days After First/Last Applic.	15 15	15 15	15 15	42 42	42 42			
Trt-Eval Interval	15 DA-A	15 DA-A	15 DA-A	42 DA-A	42 DA-A			
Days After Emergence	-19 DE-1	-19 DE-1	-19 DE-1	8 DE-1	8 DE-1			
Trt Treatment	Other Rate	Other Rate	Appl Unit Code	6	7	8	9	10
1 UTC				0.0 c	0.0 d	0.0 d	0.0 d	0.0 a
2 Engenia	12.8 oz/a		B	0.0 c	0.0 d	0.0 d	0.0 d	0.0 a
2 Roundup Power Max	32 oz/a		B					
3 Verdict	5 oz/a		A	99.7 ab	96.0 abc	98.3 abc	3.3 cd	10.0 a
3 Roundup Power Max	32 oz/a		A					
3 MSO	0.6 qt/a		A					
3 N-pak ams	1.5 qt/a		A					
3 Roundup Power Max	32 oz/a		C					
3 N-pak ams	1.5 qt/a		C					
4 Verdict	5 oz/a		A	100.0 a	97.0 abc	97.7 abc	3.3 cd	13.3 a
4 Roundup Power Max	32 oz/a		A					
4 MSO	0.6 qt/a		A					
4 N-pak ams	1.5 qt/a		A					
4 Engenia	12.8 oz/a		B					
4 Roundup Power Max	32 oz/a		B					
5 Verdict	5 oz/a		A	100.0 a	98.3 ab	96.7 bc	3.3 cd	30.0 a
5 Outlook	5 oz/a		A					
5 Roundup Power Max	32 oz/a		A					
5 MSO	0.6 qt/a		A					
5 N-pak ams	1.5 qt/a		A					
5 Roundup Power Max	32 oz/a		C					
5 N-pak ams	1.5 qt/a		C					
6 Verdict	5 oz/a		A	98.3 b	95.0 bc	96.0 c	0.0 d	13.3 a
6 Outlook	5 oz/a		A					
6 Roundup Power Max	32 oz/a		A					
6 MSO	0.6 qt/a		A					
6 N-pak ams	1.5 qt/a		A					
6 Engenia	12.8 oz/a		B					
6 Roundup Power Max	32 oz/a		B					
7 Zidua Pro	4.5 oz/a		A	100.0 a	96.0 abc	97.7 abc	13.3 bcd	13.3 a
7 Roundup Power Max	32 oz/a		A					
7 MSO	0.6 qt/a		A					
7 N-pak ams	1.5 qt/a		A					
7 Roundup Power Max	32 oz/a		C					
7 N-pak ams	1.5 qt/a		C					

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	AMBTR	SETFA	SETFA	AMBTR
Pest Name	Canada horsewe>	Giant ragweed	Giant foxtail	Giant foxtail	Giant ragweed
Rating Date	May-10-2017	May-10-2017	May-10-2017	Jun-6-2017	Jun-6-2017
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Days After First/Last Applic.	15 15	15 15	15 15	42 42	42 42
Trt-Eval Interval	15 DA-A	15 DA-A	15 DA-A	42 DA-A	42 DA-A
Days After Emergence	-19 DE-1	-19 DE-1	-19 DE-1	8 DE-1	8 DE-1

Trt Treatment	Other Rate	Other Rate	Appl Unit Code	6	7	8	9	10
8 Zidua Pro	4.5 oz/a		A	100.0 a	93.3 c	98.7 abc	16.7 bc	6.7 a
8 Roundup Power Max	32 oz/a		A					
8 MSO	0.6 qt/a		A					
8 N-pak ams	1.5 qt/a		A					
8 Engenia	12.8 oz/a		B					
8 Roundup Power Max	32 oz/a		B					
9 Zidua Pro	6 oz/a		A	100.0 a	97.3 ab	99.7 a	26.7 ab	0.0 a
9 Roundup Power Max	32 oz/a		A					
9 MSO	0.6 qt/a		A					
9 N-pak ams	1.5 qt/a		A					
9 Roundup Power Max	32 oz/a		C					
9 N-pak ams	1.5 qt/a		C					
10 Zidua Pro	6 oz/a		A	100.0 a	96.3 abc	99.3 ab	13.3 bcd	10.0 a
10 Roundup Power Max	32 oz/a		A					
10 MSO	0.6 qt/a		A					
10 N-pak ams	1.5 qt/a		A					
10 Engenia	12.8 oz/a		B					
10 Roundup Power Max	32 oz/a		B					
11 Zidua Pro	6 oz/a		A	100.0 a	99.3 a	99.3 ab	20.0 b	0.0 a
11 Roundup Power Max	32 oz/a		A					
11 Engenia	12.8 oz/a		A					
11 MSO	0.6 qt/a		A					
11 Roundup Power Max	32 oz/a		B					
11 N-pak ams	1.5 qt/a		B					
12 Zidua Pro	6 oz/a		A	100.0 a	97.3 ab	98.7 abc	36.7 a	10.0 a
12 Metribuzin	8 oz/a		A					
12 Roundup Power Max	32 oz/a		A					
12 Engenia	12.8 oz/a		A					
12 MSO	0.6 qt/a		A					
12 Roundup Power Max	32 oz/a		B					
12 N-pak ams	1.5 qt/a		B					
LSD P=.05				1.45	3.71	2.91	15.85	18.09
Standard Deviation				0.86	2.19	1.72	9.36	10.68
CV				1.03	2.72	2.1	82.19	120.19
Bartlett's X2				3.744	5.817	7.503	7.147	2.206
P(Bartlett's X2)				0.053	0.668	0.585	0.414	0.948
Replicate F				0.794	2.720	1.895	2.314	12.947
Replicate Prob(F)				0.4646	0.0880	0.1741	0.1224	0.0002
Treatment F				6161.774	883.181	1488.586	4.873	1.982
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0008	0.0828

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Pest Type		W Weed	W Weed	W Weed	W Weed		
Pest Code		ERICA	AMARE	VERAR	SETFA		
Pest Name		Canada horsewe>	Redroot pigweed	Corn speedwell	Giant foxtail		
Rating Date		Jun-6-2017	Jun-6-2017	Jun-6-2017	Jul-5-2017		
Rating Type		CONTRO	CONTRO	CONTRO	PHYGEN		
Rating Unit		%	%	%	%		
Number of Subsamples		1	1	1	1		
Days After First/Last Applic.		42 42	42 42	42 42	71 27		
Trt-Eval Interval		42 DA-A	42 DA-A	42 DA-A	71 27		
Days After Emergence		8 DE-1	8 DE-1	8 DE-1	37 DE-1		
Trt Treatment	Other Other	Appl					
No. Name	Rate Rate	Unit Code	11	12	13		
			14	15			
1 UTC			0.0 d	0.0 c	0.0 b	0.0 a	0.0 d
2 Engenia	12.8 oz/a	B	0.0 d	0.0 c	0.0 b	0.0 a	30.0 c
2 Roundup Power Max	32 oz/a	B					
3 Verdict	5 oz/a	A	96.7 abc	46.7 b	100.0 a	0.0 a	0.0 d
3 Roundup Power Max	32 oz/a	A					
3 MSO	0.6 qt/a	A					
3 N-pak ams	1.5 qt/a	A					
3 Roundup Power Max	32 oz/a	C					
3 N-pak ams	1.5 qt/a	C					
4 Verdict	5 oz/a	A	95.0 bc	53.3 b	100.0 a	0.0 a	46.7 a
4 Roundup Power Max	32 oz/a	A					
4 MSO	0.6 qt/a	A					
4 N-pak ams	1.5 qt/a	A					
4 Engenia	12.8 oz/a	B					
4 Roundup Power Max	32 oz/a	B					
5 Verdict	5 oz/a	A	98.3 ab	13.3 c	100.0 a	0.0 a	0.0 d
5 Outlook	5 oz/a	A					
5 Roundup Power Max	32 oz/a	A					
5 MSO	0.6 qt/a	A					
5 N-pak ams	1.5 qt/a	A					
5 Roundup Power Max	32 oz/a	C					
5 N-pak ams	1.5 qt/a	C					
6 Verdict	5 oz/a	A	98.3 ab	0.0 c	100.0 a	0.0 a	36.7 bc
6 Outlook	5 oz/a	A					
6 Roundup Power Max	32 oz/a	A					
6 MSO	0.6 qt/a	A					
6 N-pak ams	1.5 qt/a	A					
6 Engenia	12.8 oz/a	B					
6 Roundup Power Max	32 oz/a	B					
7 Zidua Pro	4.5 oz/a	A	98.3 ab	100.0 a	100.0 a	0.0 a	0.0 d
7 Roundup Power Max	32 oz/a	A					
7 MSO	0.6 qt/a	A					
7 N-pak ams	1.5 qt/a	A					
7 Roundup Power Max	32 oz/a	C					
7 N-pak ams	1.5 qt/a	C					

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
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 Missing data estimates are included in columns: Yates=12
 Could not calculate LSD (% mean diff) for columns 2,3,4,13,14,24,25,27 because error mean square = 0.

The Ohio State University

Pest Type	W Weed	W Weed	W Weed	W Weed				
Pest Code	ERICA	AMARE	VERAR	SETFA				
Pest Name	Canada horsewe>	Redroot pigweed	Corn speedwell	Giant foxtail				
Rating Date	Jun-6-2017	Jun-6-2017	Jun-6-2017	Jul-5-2017				
Rating Type	CONTRO	CONTRO	CONTRO	PHYGEN				
Rating Unit	%	%	%	%				
Number of Subsamples	1	1	1	1				
Days After First/Last Applic.	42 42	42 42	42 42	71 27				
Trt-Eval Interval	42 DA-A	42 DA-A	42 DA-A	71 27				
Days After Emergence	8 DE-1	8 DE-1	8 DE-1	37 DE-1				
Trt Treatment	Other Rate	Other Rate	Appl Unit Code	11	12	13	14	15
8 Zidua Pro	4.5 oz/a		A	100.0 a	98.3 a	100.0 a	0.0 a	36.7 bc
8 Roundup Power Max	32 oz/a		A					
8 MSO	0.6 qt/a		A					
8 N-pak ams	1.5 qt/a		A					
8 Engenia	12.8 oz/a		B					
8 Roundup Power Max	32 oz/a		B					
9 Zidua Pro	6 oz/a		A	93.3 c	96.7 a	100.0 a	0.0 a	0.0 d
9 Roundup Power Max	32 oz/a		A					
9 MSO	0.6 qt/a		A					
9 N-pak ams	1.5 qt/a		A					
9 Roundup Power Max	32 oz/a		C					
9 N-pak ams	1.5 qt/a		C					
10 Zidua Pro	6 oz/a		A	95.0 bc	100.0 a	100.0 a	0.0 a	46.7 a
10 Roundup Power Max	32 oz/a		A					
10 MSO	0.6 qt/a		A					
10 N-pak ams	1.5 qt/a		A					
10 Engenia	12.8 oz/a		B					
10 Roundup Power Max	32 oz/a		B					
11 Zidua Pro	6 oz/a		A	98.3 ab	96.7 a	100.0 a	0.0 a	33.3 bc
11 Roundup Power Max	32 oz/a		A					
11 Engenia	12.8 oz/a		A					
11 MSO	0.6 qt/a		A					
11 Roundup Power Max	32 oz/a		B					
11 N-pak ams	1.5 qt/a		B					
12 Zidua Pro	6 oz/a		A	100.0 a	100.0 a	100.0 a	0.0 a	40.0 ab
12 Metribuzin	8 oz/a		A					
12 Roundup Power Max	32 oz/a		A					
12 Engenia	12.8 oz/a		A					
12 MSO	0.6 qt/a		A					
12 Roundup Power Max	32 oz/a		B					
12 N-pak ams	1.5 qt/a		B					
LSD P=.05				4.98	20.03	.	.	8.21
Standard Deviation				2.94	11.79	0.00	0.00	4.85
CV				3.63	20.07	0.0	0.0	21.54
Bartlett's X2				1.887	10.124	0.0	0.0	2.193
P(Bartlett's X2)				0.966	0.072	.	.	0.70
Replicate F				0.562	0.105	0.000	0.000	4.613
Replicate Prob(F)				0.5780	0.9009	1.0000	1.0000	0.0212
Treatment F				499.329	43.412	0.000	0.000	53.194
Treatment Prob(F)				0.0001	0.0001	1.0000	1.0000	0.0001

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The Ohio State University

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed				
Pest Code	AMBTR	ERICA	ABUTH	SIDSP	AMARE	SETFA				
Pest Name	Giant ragweed	Canada horsewe>	velvetleaf	Prickly sida	Redroot pigweed	Giant foxtail				
Rating Date	Jul-5-2017	Jul-5-2017	Jul-5-2017	Jul-5-2017	Jul-5-2017	Aug-1-2017				
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO				
Rating Unit	%	%	%	%	%	%				
Number of Subsamples	1	1	1	1	1	1				
Days After First/Last Applic.	71 27	71 27	71 27	71 27	71 27	98 27				
Trt-Eval Interval										
Days After Emergence	37 DE-1	37 DE-1	37 DE-1	37 DE-1	37 DE-1	64 DE-1				
Trt Treatment	Other Rate	Other Rate	Appl Unit	Code	16	17	18	19	20	21
1 UTC					0.0 e	0.0 d	0.0 c	0.0 c	0.0 d	0.0 d
2 Engenia	12.8 oz/a		B		86.7 a	91.7 abc	100.0 a	96.7 ab	100.0 a	88.3 bc
2 Roundup Power Max	32 oz/a		B							
3 Verdict	5 oz/a		A		16.7 cd	90.0 abc	96.7 ab	100.0 a	73.3 b	100.0 a
3 Roundup Power Max	32 oz/a		A							
3 MSO	0.6 qt/a		A							
3 N-pak ams	1.5 qt/a		A							
3 Roundup Power Max	32 oz/a		C							
3 N-pak ams	1.5 qt/a		C							
4 Verdict	5 oz/a		A		66.7 b	100.0 a	96.7 ab	99.3 a	73.3 b	86.7 c
4 Roundup Power Max	32 oz/a		A							
4 MSO	0.6 qt/a		A							
4 N-pak ams	1.5 qt/a		A							
4 Engenia	12.8 oz/a		B							
4 Roundup Power Max	32 oz/a		B							
5 Verdict	5 oz/a		A		26.7 c	90.0 abc	96.7 ab	96.7 ab	58.3 c	100.0 a
5 Outlook	5 oz/a		A							
5 Roundup Power Max	32 oz/a		A							
5 MSO	0.6 qt/a		A							
5 N-pak ams	1.5 qt/a		A							
5 Roundup Power Max	32 oz/a		C							
5 N-pak ams	1.5 qt/a		C							
6 Verdict	5 oz/a		A		100.0 a	98.3 ab	100.0 a	91.7 b	78.3 b	93.3 abc
6 Outlook	5 oz/a		A							
6 Roundup Power Max	32 oz/a		A							
6 MSO	0.6 qt/a		A							
6 N-pak ams	1.5 qt/a		A							
6 Engenia	12.8 oz/a		B							
6 Roundup Power Max	32 oz/a		B							
7 Zidua Pro	4.5 oz/a		A		10.0 de	85.0 c	100.0 a	100.0 a	100.0 a	100.0 a
7 Roundup Power Max	32 oz/a		A							
7 MSO	0.6 qt/a		A							
7 N-pak ams	1.5 qt/a		A							
7 Roundup Power Max	32 oz/a		C							
7 N-pak ams	1.5 qt/a		C							

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The Ohio State University

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed				
Pest Code	AMBTR	ERICA	ABUTH	SIDSP	AMARE	SETFA				
Pest Name	Giant ragweed	Canada horsewe>	velvetleaf	Prickly sida	Redroot pigweed	Giant foxtail				
Rating Date	Jul-5-2017	Jul-5-2017	Jul-5-2017	Jul-5-2017	Jul-5-2017	Aug-1-2017				
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO				
Rating Unit	%	%	%	%	%	%				
Number of Subsamples	1	1	1	1	1	1				
Days After First/Last Applic.	71 27	71 27	71 27	71 27	71 27	98 27				
Trt-Eval Interval										
Days After Emergence	37 DE-1	37 DE-1	37 DE-1	37 DE-1	37 DE-1	64 DE-1				
Trt Treatment	Other Rate	Other Rate	Appl Unit	Code	16	17	18	19	20	21
8 Zidua Pro	4.5 oz/a		A		70.0 b	100.0 a	98.3 ab	100.0 a	96.7 a	91.7 bc
8 Roundup Power Max	32 oz/a		A							
8 MSO	0.6 qt/a		A							
8 N-pak ams	1.5 qt/a		A							
8 Engenia	12.8 oz/a		B							
8 Roundup Power Max	32 oz/a		B							
9 Zidua Pro	6 oz/a		A		0.0 e	86.7 c	100.0 a	100.0 a	100.0 a	100.0 a
9 Roundup Power Max	32 oz/a		A							
9 MSO	0.6 qt/a		A							
9 N-pak ams	1.5 qt/a		A							
9 Roundup Power Max	32 oz/a		C							
9 N-pak ams	1.5 qt/a		C							
10 Zidua Pro	6 oz/a		A		70.0 b	100.0 a	100.0 a	96.7 ab	100.0 a	95.0 ab
10 Roundup Power Max	32 oz/a		A							
10 MSO	0.6 qt/a		A							
10 N-pak ams	1.5 qt/a		A							
10 Engenia	12.8 oz/a		B							
10 Roundup Power Max	32 oz/a		B							
11 Zidua Pro	6 oz/a		A		66.7 b	83.3 c	95.0 ab	98.3 a	100.0 a	88.3 bc
11 Roundup Power Max	32 oz/a		A							
11 Engenia	12.8 oz/a		A							
11 MSO	0.6 qt/a		A							
11 Roundup Power Max	32 oz/a		B							
11 N-pak ams	1.5 qt/a		B							
12 Zidua Pro	6 oz/a		A		65.0 b	88.3 bc	86.7 b	96.7 ab	95.0 a	90.0 bc
12 Metribuzin	8 oz/a		A							
12 Roundup Power Max	32 oz/a		A							
12 Engenia	12.8 oz/a		A							
12 MSO	0.6 qt/a		A							
12 Roundup Power Max	32 oz/a		B							
12 N-pak ams	1.5 qt/a		B							
LSD P=.05					15.45	10.36	12.59	6.26	13.41	7.93
Standard Deviation					9.13	6.12	7.44	3.70	7.92	4.68
CV					18.93	7.25	8.34	4.12	9.74	5.44
Bartlett's X2					4.569	7.358	11.332	6.339	8.41	4.391
P(Bartlett's X2)					0.803	0.393	0.045*	0.386	0.135	0.624
Replicate F					3.011	0.130	1.055	1.910	1.628	2.314
Replicate Prob(F)					0.0699	0.8789	0.3652	0.1719	0.2190	0.1224
Treatment F					44.679	59.629	43.548	176.422	41.091	104.254
Treatment Prob(F)					0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

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The Ohio State University

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	AMBTR	ERICA	ABUTH	SIDSP	ECHCG
Pest Name	Giant ragweed	Canada horsewe>	velvetleaf	Prickly sida	Common barnyar>
Rating Date	Aug-1-2017	Aug-1-2017	Aug-1-2017	Aug-1-2017	Aug-1-2017
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Days After First/Last Applic.	98 27	98 27	98 27	98 27	98 27
Trt-Eval Interval					
Days After Emergence	64 DE-1	64 DE-1	64 DE-1	64 DE-1	64 DE-1
Trt Treatment	Other Rate	Other Rate	Appl Unit	Code	
No. Name					
1 UTC				22	23
				24	25
				26	27
0.0 e				0.0 e	0.0 b
0.0 e				0.0 b	0.0 b
0.0 e				0.0 e	0.0 e
2 Engenia	12.8 oz/a	B		90.0 ab	100.0 a
2 Roundup Power Max	32 oz/a	B		100.0 a	100.0 a
90.0 ab				100.0 a	100.0 a
63.3 cd					
3 Verdict	5 oz/a	A		90.0 ab	88.3 c
3 Roundup Power Max	32 oz/a	A		100.0 a	100.0 a
3 MSO	0.6 qt/a	A			
3 N-pak ams	1.5 qt/a	A			
3 Roundup Power Max	32 oz/a	C			
3 N-pak ams	1.5 qt/a	C			
90.0 ab					
95.0 a					
4 Verdict	5 oz/a	A		70.0 cd	100.0 a
4 Roundup Power Max	32 oz/a	A		100.0 a	100.0 a
4 MSO	0.6 qt/a	A			
4 N-pak ams	1.5 qt/a	A			
4 Engenia	12.8 oz/a	B			
4 Roundup Power Max	32 oz/a	B			
70.0 cd					
100.0 a					
73.3 b					
5 Verdict	5 oz/a	A		95.0 ab	86.7 cd
5 Outlook	5 oz/a	A		100.0 a	100.0 a
5 Roundup Power Max	32 oz/a	A			
5 MSO	0.6 qt/a	A			
5 N-pak ams	1.5 qt/a	A			
5 Roundup Power Max	32 oz/a	C			
5 N-pak ams	1.5 qt/a	C			
95.0 ab					
96.7 a					
6 Verdict	5 oz/a	A		100.0 a	100.0 a
6 Outlook	5 oz/a	A		100.0 a	100.0 a
6 Roundup Power Max	32 oz/a	A			
6 MSO	0.6 qt/a	A			
6 N-pak ams	1.5 qt/a	A			
6 Engenia	12.8 oz/a	B			
6 Roundup Power Max	32 oz/a	B			
100.0 a					
100.0 a					
66.7 bc					
7 Zidua Pro	4.5 oz/a	A		81.7 bc	80.0 d
7 Roundup Power Max	32 oz/a	A		100.0 a	100.0 a
7 MSO	0.6 qt/a	A			
7 N-pak ams	1.5 qt/a	A			
7 Roundup Power Max	32 oz/a	C			
7 N-pak ams	1.5 qt/a	C			
81.7 bc					
80.0 d					
95.0 a					

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The Ohio State University

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed				
Pest Code	AMBTR	ERICA	ABUTH	SIDSP	ECHCG				
Pest Name	Giant ragweed	Canada horsewe>	velvetleaf	Prickly sida	Common barnyar>				
Rating Date	Aug-1-2017	Aug-1-2017	Aug-1-2017	Aug-1-2017	Aug-1-2017				
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO				
Rating Unit	%	%	%	%	%				
Number of Subsamples	1	1	1	1	1				
Days After First/Last Applic.	98 27	98 27	98 27	98 27	98 27				
Trt-Eval Interval									
Days After Emergence	64 DE-1	64 DE-1	64 DE-1	64 DE-1	64 DE-1				
Trt Treatment	Other Rate	Other Rate	Appl Unit Code	22	23	24	25	26	27
8 Zidua Pro	4.5 oz/a		A	71.7 cd	100.0 a	100.0 a	100.0 a	56.7 d	
8 Roundup Power Max	32 oz/a		A						
8 MSO	0.6 qt/a		A						
8 N-pak ams	1.5 qt/a		A						
8 Engenia	12.8 oz/a		B						
8 Roundup Power Max	32 oz/a		B						
9 Zidua Pro	6 oz/a		A	88.3 ab	90.0 bc	100.0 a	100.0 a	93.3 a	
9 Roundup Power Max	32 oz/a		A						
9 MSO	0.6 qt/a		A						
9 N-pak ams	1.5 qt/a		A						
9 Roundup Power Max	32 oz/a		C						
9 N-pak ams	1.5 qt/a		C						
10 Zidua Pro	6 oz/a		A	68.3 cd	100.0 a	100.0 a	100.0 a	73.3 b	
10 Roundup Power Max	32 oz/a		A						
10 MSO	0.6 qt/a		A						
10 N-pak ams	1.5 qt/a		A						
10 Engenia	12.8 oz/a		B						
10 Roundup Power Max	32 oz/a		B						
11 Zidua Pro	6 oz/a		A	63.3 d	91.7 bc	100.0 a	100.0 a	63.3 cd	
11 Roundup Power Max	32 oz/a		A						
11 Engenia	12.8 oz/a		A						
11 MSO	0.6 qt/a		A						
11 Roundup Power Max	32 oz/a		B						
11 N-pak ams	1.5 qt/a		B						
12 Zidua Pro	6 oz/a		A	60.0 d	96.7 ab	100.0 a	100.0 a	73.3 b	
12 Metribuzin	8 oz/a		A						
12 Roundup Power Max	32 oz/a		A						
12 Engenia	12.8 oz/a		A						
12 MSO	0.6 qt/a		A						
12 Roundup Power Max	32 oz/a		B						
12 N-pak ams	1.5 qt/a		B						
LSD P=.05		14.73			8.13	.	.	8.56	.
Standard Deviation		8.70			4.80	0.00	0.00	5.06	.
CV		11.89			5.57	0.0	0.0	7.14	.
Bartlett's X2		7.276			4.097	0.0	0.0	1.639	.
P(Bartlett's X2)		0.608			0.393	.	.	0.996	.
Replicate F		7.716			2.381	0.000	0.000	4.644	
Replicate Prob(F)		0.0029			0.1159	1.0000	1.0000	0.0208	
Treatment F		27.832			101.545	0.000	0.000	82.222	
Treatment Prob(F)		0.0001			0.0001	1.0000	1.0000	0.0001	

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The Ohio State University

Evaluation of pre herbicides in No-Till dicamba soybean systems

Trial ID: 17 BASFXTEND Location: F-10 MIDDLE Trial Year: 2017
Protocol ID: 17 BASFXTEND Investigator: Dr. Mark M. Loux
Project ID: MKD H 2017 US D88 A 01 Study Director: Bryan Reeb
Sponsor Contact: Trevor Kraus, BASF

Pest Type

W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop

Pest Code

LAMPU, Lamium purpureum, Purple deadnettle = US
STEME, Stellaria media, Common chickweed = US
ERYRE, Erysimum repandum, Bushy wallflower = US
SENGL, Senecio glabellus, Cressleaf groundsel = US
VERAR, Veronica arvensis, Corn speedwell = US
ERICA, Erigeron canadensis, Canada horseweed = US
AMBTR, Ambrosia trifida, Giant ragweed = US
SETFA, Setaria faberi, Giant foxtail = US
AMARE, Amaranthus retroflexus, Redroot pigweed = US
ABUTH, Abutilon theophrasti, velvetleaf = US
SIDSP, Sida spinosa, Prickly sida = US
ECHCG, Echinochloa crus-galli, Common barnyard grass = US

Rating Type

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

Rating Unit

% = percent