

# The Ohio State University

## Enlist gly-R giant ragweed efficacy

Trial ID: 17ENLISTGRW      Location:      Trial Year: 2017  
 Protocol ID: 17ENLISTGRW      Investigator: Dr. Mark M. Loux  
 Project ID:      Study Director:  
 Sponsor Contact:

### General Trial Information

**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** °: 39.86035    N  
**Longitude of LL Corner** °: 83.67291    W  
**Altitude of LL Corner, Unit:** 1090.00 FT  
**Conducted Under GLP:** No  
**Conducted Under GEP:** No  
**No.**

### Contacts

**Investigator:** Dr. Mark M. Loux  
**Organization:** The Ohio State University  
**Address:** 2021 Coffey Road  
**City+State/Prov:** Columbus, Ohio  
**Postal Code:** 43210  
**Country:** USA    United States

### Cooperator/Landowner

### Other Contacts

### Crop Description

### Pest Description

**Pest 1 Type:** W    **Code:** SETFA *Setaria faberi*  
**Common Name:** Giant foxtail

**Pest 2 Type:** W    **Code:** AMBTR *Ambrosia trifida*  
**Common Name:** Giant ragweed

**Pest 3 Type:** W    **Code:** AMARE *Amaranthus retroflexus*  
**Common Name:** Redroot pigweed

**Pest 4 Type:** W    **Code:** ABUTH *Abutilon theophrasti*  
**Common Name:** velvetleaf

**Pest 5 Type:** W    **Code:** AMBEL *Ambrosia artemisiifolia*  
**Common Name:** Common ragweed

**Pest 6 Type:** W    **Code:** CHEAL *Chenopodium album*  
**Common Name:** common lambsquarters

**Pest 7 Type:** W    **Code:** POLPY *Persicaria pensylvanica*  
**Common Name:** annual smartweed

**Pest 8 Type:** W    **Code:** IPOHE *Ipomoea hederacea*  
**Common Name:** ivy-leaf morning glory

**Pest 9 Type:** W    **Code:** SIDSP *Sida spinosa*  
**Common Name:** Prickly sida

### Site and Design

**Treated Plot Width:** 6.67 FT      **Site Type:** FIELD    field  
**Treated Plot Length:** 30 FT      **Experimental Unit:** 1    PLOT            plot  
**Treated Plot Area:** 200.1 FT<sup>2</sup>    **Treatments:** 14      **Tillage Type:** CONTIL    conventional-till  
**Replications:** 3      **Study Design:** RACOB    Randomized Complete Block (RCB)

**No. Previous Crop Year**  
 1. Corn                            2016

### Maintenance

No.	Date	Type	Maintenance Product Name	Form Conc	Form Unit	Form Type	Form Rate	Maintenance Rate Unit	Maintenance Tank Mix
1.	6-15-2017	HERB	Select Max	0.97	LBA/GAL	EC	9	oz/a	yes
2.	6-15-2017	ADJ	NIS	100	%	SL	0.25	% v/v	yes

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### Soil Description

Description Name: F-7 West

**% OM:** 3.8      **Texture:** SICL silty clay loam  
**pH:** 7.2      **Soil Name:** Kokomo  
**CEC:** 23.6    **Fert. Level:** G good  
**Soil Drainage:** G good

### Additional Measured Elements

### Application Description

	A	B	C
<b>Application Date:</b>	6-12-2017	6-21-2017	7-3-2017
<b>Appl. Start Time:</b>	9:15 AM	8:40 AM	7:40 AM
<b>Appl. Stop Time:</b>	9:35 AM	9:00 AM	7:50 AM
<b>Application Method:</b>	SPRAY	SPRAY	SPRAY
<b>Application Timing:</b>	EPO	MPO	LPO
<b>Application Placement:</b>	BROFOL	BROFOL	BROFOL
<b>Applied By:</b>	ACKLEY	Dobbels	Dobbels
<b>Air Temperature, Unit:</b>	81 F	71 F	67 F
<b>% Relative Humidity:</b>	55	63	84
<b>Wind Velocity, Unit:</b>	4 MPH	3.5 MPH	1 MPH
<b>Wind Direction:</b>	ENE	ENE	W
<b>Dew Presence (Y/N):</b>	N no	N no	Y yes
<b>Soil Temperature, Unit:</b>	72 F	64 F	68 F
<b>Soil Moisture:</b>	DRY	SLIWET	MOIST
<b>% Cloud Cover:</b>	30	35	5
<b>Next Moisture Occurred On:</b>	6-13-2017	6-23-2017	7-6-2017
<b>Time to Next Moisture, Unit:</b>	1 DAY	2 DAY	3 DAY

### Crop Stage At Each Application

B C

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### Pest Stage At Each Application

	A		B		C	
<b>Pest 1 Code, Type, Scale:</b>	SETFA	W	SETFA	W	SETFA	W
<b>Stage Majority, Percent:</b>	14	100				
<b>Height, Unit:</b>	5	IN				
<b>Height Minimum, Maximum:</b>	4	5				
<b>Density, Unit:</b>	126	m2				
<b>Pest 2 Code, Type, Scale:</b>	AMBTR	W	AMBTR	W	AMBTR	W
<b>Stage Majority, Percent:</b>	16	100	19	100	19	100
<b>Height, Unit:</b>	5	IN	15	IN	6	IN
<b>Height Minimum, Maximum:</b>	4	6	12	18	4	6
<b>Density, Unit:</b>	20	m2	20	M2	10	M2
<b>Pest 3 Code, Type, Scale:</b>	AMARE	W	AMARE	W	AMARE	W
<b>Stage Majority, Percent:</b>	16	100	19	100	19	100
<b>Height, Unit:</b>	2.5	IN	7.5	IN	5	IN
<b>Height Minimum, Maximum:</b>	2	3	7	8	4	6
<b>Density, Unit:</b>	3	M2	3	M2	3	M2
<b>Pest 4 Code, Type, Scale:</b>	ABUTH	W	ABUTH	W	ABUTH	W
<b>Stage Majority, Percent:</b>	12	100	18	100	15	100
<b>Height, Unit:</b>	2	IN	7.5	IN	6	IN
<b>Height Minimum, Maximum:</b>	1	3	7	8	5	6
<b>Density, Unit:</b>	1	M2	1	M2	1	M2
<b>Pest 5 Code, Type, Scale:</b>	AMBEL	W	AMBEL	W	AMBEL	W
<b>Stage Majority, Percent:</b>	15	100	19	100	19	100
<b>Height, Unit:</b>	3	IN	7.5	IN	4	IN
<b>Height Minimum, Maximum:</b>	2	4	7	8	4	6
<b>Density, Unit:</b>	1	M2	1	M2	1	M2
<b>Pest 6 Code, Type, Scale:</b>	CHEAL	W	CHEAL	W	CHEAL	W
<b>Stage Majority, Percent:</b>	14	100	19	100	19	100
<b>Height, Unit:</b>	2	IN	7.5	IN	6	IN
<b>Height Minimum, Maximum:</b>	1	3	7	8	4	7
<b>Density, Unit:</b>	16	M2	16	M2	15	M2
<b>Pest 7 Code, Type, Scale:</b>	POLPY	W	POLPY	W	POLPY	W
<b>Stage Majority, Percent:</b>	13	100	18	100	19	100
<b>Height, Unit:</b>	5	IN	6	IN	6	IN
<b>Height Minimum, Maximum:</b>	4	6			3	6
<b>Density, Unit:</b>	3	M2	3	M2	3	M2
<b>Pest 8 Code, Type, Scale:</b>	IPOHE	W	IPOHE	W	IPOHE	W
<b>Stage Majority, Percent:</b>	12	100	13	100	13	100
<b>Height, Unit:</b>	3	IN	3	IN	3	IN
<b>Height Minimum, Maximum:</b>	2	4	2	4	2	4
<b>Density, Unit:</b>	1	M2	1	M2	1	M2
<b>Pest 9 Code, Type, Scale:</b>	SIDSP	W	SIDSP	W	SIDSP	W
<b>Stage Majority, Percent:</b>	12	100	19	100	19	100
<b>Height, Unit:</b>	1.5	IN	3	IN	3	IN
<b>Height Minimum, Maximum:</b>	1	2	2	3	2	3
<b>Density, Unit:</b>	5	M2	5	M2	5	M2

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### Application Equipment

	A	B	C
<b>Appl. Equipment:</b>	6 FOOT BOOM	6 FOOT BOOM	6 FOOT BOOM
<b>Equipment Type:</b>	SPRBAC	SPRBAC	SPRBAC
<b>Operation Pressure, Unit:</b>	46 PSI	46 PSI	46 PSI
<b>Nozzle Type:</b>	AI XR	AI XR	AI XR
<b>Nozzle Size:</b>	110015	110015	110015
<b>Nozzle Spacing, Unit:</b>	18 IN	18 IN	18 IN
<b>Boom Length, Unit:</b>	10 FT	10 FT	10 FT
<b>Boom Height, Unit:</b>	20 IN	20 IN	20 IN
<b>Ground Speed, Unit:</b>	3 MPH	3 MPH	3 MPH
<b>Carrier:</b>	WATER	WATER	WATER
<b>Spray Volume, Unit:</b>	15 GPA	15 GPA	15 GPA
<b>Mix Size, Unit:</b>	1 Liters	1 Liters	1 Liters
<b>Propellant:</b>	CO2	CO2	CO2

### Trt No Treatment Application Comment

Date By Notes

No. Date By Deviations

	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Type	AMBTR	AMBEL	CHEAL	AMARE	ABUTH	POLPY
Pest Code	Giant	Common	common	Redroot	velvetleaf	annual smartwe>
Pest Name	ragweed	ragweed	lambsqu>	pigweed		
Rating Date	6-30-2017	6-30-2017	6-30-2017	6-30-2017	6-30-2017	6-30-2017
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1
Days After First/Last Applic.	18 9	18 9	18 9	18 9	18 9	18 9
Trt-Eval Interval	18 DA-A	18 DA-A	18 DA-A	18 DA-A	18 DA-A	18 DA-A
Number of Decimals	0	0	0	0	0	0

Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit Code	1	2	3	4	5	6
1	2,4-D Choline	32 oz/a		A	85 bcd	93 ab	90 abc	83 ab	33 d	40 b
1	2,4-D Choline	16 oz/a		C						
2	2,4-D Choline	32 oz/a		A	85 bcd	68 c-f	95 ab	77 abc	30 d	30 b
2	Cobra	8 oz/a		C						
2	COC	19.2 oz/a		C						
3	2,4-D Choline	16 oz/a		A	87 bc	53 f	88 abc	50 f	37 d	23 b
3	Cobra	8 oz/a		C						
3	COC	19.2 oz/a		C						
4	2,4-D Choline	32 oz/a		A	97 a	63 def	85 abc	65 cde	43 cd	27 b
4	Liberty	22 oz/a		C						
4	N PAK AMS	48 oz/a		C						
5	2,4-D Choline	16 oz/a		A	93 ab	80 a-d	80 bc	53 ef	37 d	27 b
5	Liberty	22 oz/a		C						
5	N PAK AMS	48 oz/a		C						
6	2,4-D Choline	16 oz/a		A	93 ab	100 a	100 a	90 a	47 cd	33 b
6	Flexstar	1 pt/a		A						
6	Cobra	8 oz/a		C						
6	COC	19.2 oz/a		C						
7	2,4-D Choline	16 oz/a		A	93 ab	88 abc	90 abc	82 ab	37 d	20 bc
7	Flexstar	1 pt/a		A						
7	Liberty	22 oz/a		C						
7	N PAK AMS	48 oz/a		C						



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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	
Pest Code	SIDSP	AMBTR	AMBEL	CHEAL	AMARE	ABUTH	
Pest Name	Prickly Giant ragweed		Common ragweed		common lambsqu>	Redroot pigweed	velvetleaf
Rating Date	6-30-2017	7-25-2017	7-25-2017	7-25-2017	7-25-2017	7-25-2017	
Rating Type	CONTRO	CONTROL	CONTRO	CONTRO	CONTRO	CONTRO	
Rating Unit	%	%	%	%	%	%	
Number of Subsamples	1	1	1	1	1	1	
Days After First/Last Applic.	18 9	43 22	43 22	43 22	43 22	43 22	
Trt-Eval Interval	18 DA-A	22 DA-C	22 DA-C	22 DA-C	22 DA-C	22 DA-C	
Number of Decimals	0	0	0	0	0	0	

Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit Code	7	8	9	10	11	12
1	2,4-D Choline	32 oz/a		A	30 cd	75 ab	100 a	100 a	100 a	53 cd
1	2,4-D Choline	16 oz/a		C						
2	2,4-D Choline	32 oz/a		A	20 de	72 ab	100 a	93 a	100 a	65 bc
2	Cobra	8 oz/a		C						
2	COC	19.2 oz/a		C						
3	2,4-D Choline	16 oz/a		A	15 e	82 ab	77 bc	63 b	87 a	30 d
3	Cobra	8 oz/a		C						
3	COC	19.2 oz/a		C						
4	2,4-D Choline	32 oz/a		A	27 de	80 ab	100 a	100 a	100 a	50 cd
4	Liberty	22 oz/a		C						
4	N PAK AMS	48 oz/a		C						
5	2,4-D Choline	16 oz/a		A	25 de	85 a	100 a	100 a	100 a	50 cd
5	Liberty	22 oz/a		C						
5	N PAK AMS	48 oz/a		C						
6	2,4-D Choline	16 oz/a		A	30 cd	82 ab	100 a	85 a	100 a	47 cd
6	Flexstar	1 pt/a		A						
6	Cobra	8 oz/a		C						
6	COC	19.2 oz/a		C						
7	2,4-D Choline	16 oz/a		A	30 cd	83 ab	100 a	93 a	93 a	87 ab
7	Flexstar	1 pt/a		A						
7	Liberty	22 oz/a		C						
7	N PAK AMS	48 oz/a		C						



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Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	POLPY	SIDSP	AMBTR	AMBTR
Pest Name	annual Prickly sida	annual Prickly sida	Giant ragweed	Giant ragweed
Rating Date	7-25-2017	7-25-2017	7-25-2017	7-25-2017
Rating Type	CONTRO	CONTRO	new plants	old plants
Rating Unit	%	%	/m2	/m2
Number of Subsamples	1	1	1	1
Days After First/Last Applic.	43 22	43 22	43 22	43 22
Trt-Eval Interval	22 DA-C	22 DA-C	22 DA-C	22 DA-C
Number of Decimals	0	0	0	0

Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit Code	13	14	15	16	17
1	2,4-D Choline	32 oz/a		A	43 cde	87 a		3 -	0 b
1	2,4-D Choline	16 oz/a		C					
2	2,4-D Choline	32 oz/a		A	30 de	72 ab		4 -	0 b
2	Cobra	8 oz/a		C					
2	COC	19.2 oz/a		C					
3	2,4-D Choline	16 oz/a		A	23 e	37 de		1 -	0 b
3	Cobra	8 oz/a		C					
3	COC	19.2 oz/a		C					
4	2,4-D Choline	32 oz/a		A	67 b	73 ab		1 -	0 b
4	Liberty	22 oz/a		C					
4	N PAK AMS	48 oz/a		C					
5	2,4-D Choline	16 oz/a		A	53 bc	53 cd		1 -	0 b
5	Liberty	22 oz/a		C					
5	N PAK AMS	48 oz/a		C					
6	2,4-D Choline	16 oz/a		A	57 bc	60 bc		1 -	0 b
6	Flexstar	1 pt/a		A					
6	Cobra	8 oz/a		C					
6	COC	19.2 oz/a		C					
7	2,4-D Choline	16 oz/a		A	70 ab	53 cd		1 -	0 b
7	Flexstar	1 pt/a		A					
7	Liberty	22 oz/a		C					
7	N PAK AMS	48 oz/a		C					



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Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	POLPY	SIDSP	AMBTR	AMBTR
Pest Name	annual Prickly sida	annual Prickly sida	Giant ragweed	Giant ragweed
Rating Date	7-25-2017	7-25-2017	7-25-2017	7-25-2017
Rating Type	CONTRO	CONTRO	new plants	old plants
Rating Unit	%	%	/m2	/m2
Number of Subsamples	1	1	1	1
Days After First/Last Applic.	43 22	43 22	43 22	43 22
Trt-Eval Interval	22 DA-C	22 DA-C	22 DA-C	22 DA-C
Number of Decimals	0	0	0	0

Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit Code	13	14	15	16	17
8	2,4-D Choline	16 oz/a		A	45 cd	82 a	1 -		0 b
8	Liberty	22 oz/a		A					
8	N PAK AMS	48 oz/a		A					
8	Cobra	8 oz/a		C					
8	COC	19.2 oz/a		C					
9	2,4-D Choline	16 oz/a		A	92 a	87 a	4 -		0 b
9	Liberty	22 oz/a		A					
9	N PAK AMS	48 oz/a		A					
9	Liberty	22 oz/a		C					
9	N PAK AMS	48 oz/a		C					
10	2,4-D Choline	16 oz/a		B	20 ef	20 e	1 -		1 b
11	2,4-D Choline	32 oz/a		B	30 de	60 bc	1 -		0 b
12	2,4-D Choline	16 oz/a		B	40 cde	20 e	1 -		0 b
12	Flexstar	1 pt/a		B					
13	2,4-D Choline	16 oz/a		B	50 bcd	43 cd	1 -		0 b
13	Liberty	22 oz/a		B					
14	Untreated				0 f	0 f	0 -		23 a
LSD P=.05					21.5	17.0	2.8		4.6
Standard Deviation					12.8	10.1	1.7		2.7
CV					28.89	18.69	107.91		159.13
Bartlett's X2					5.944	10.84	4.868		2.626
P(Bartlett's X2)					0.654	0.543	0.962		0.105
Skewness					0.265	-0.5281	1.2654*		4.152*
Kurtosis					-0.2129	-0.6813	1.107		17.9998*
Replicate F					0.548	0.442	0.836		0.822
Replicate Prob(F)					0.5852	0.6475	0.4451		0.4513
Treatment F					9.430	20.095	1.983		14.838
Treatment Prob(F)					0.0001	0.0001	0.0687		0.0001

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### Pest Type

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

### Pest Code

AMBTR, Ambrosia trifida, Giant ragweed = US  
AMBEL, Ambrosia artemisiifolia, Common ragweed = US  
CHEAL, Chenopodium album, common lambsquarters = US  
AMARE, Amaranthus retroflexus, Redroot pigweed = US  
ABUTH, Abutilon theophrasti, velvetleaf = US  
POLPY, Persicaria pensylvanica, annual smartweed = US  
SIDSP, Sida spinosa, Prickly sida = US

### Rating Type

CONTRO = control / burndown or knockdown

### Rating Unit

% = percent

/m2 = per square meter