

The Ohio State University

Xtend gly-R giant ragweed efficacy  
 Trial ID: 18XTENGRW Location: Trial Year: 2017  
 Protocol ID: 17XTENDGRW Investigator: Dr. Mark M. Loux  
 Project ID: Study Director:  
 Sponsor Contact:

**General Trial Information**

Investigator: Dr. Mark M. Loux

**Discipline:** H herbicide  
**Trial Status:** F one-year/final **Trial Reliability:** GOOD  
**Initiation Date:** May-1-2018 **Planned Completion Date:** Jul-31-2018  
**Completion Date:** Jul-31-2018

**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 °:** 39.8602 N  
**Longitude of LL Corner °:** 83.67204 W  
**Altitude of LL Corner, Unit:** 1081.00 FT

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

Investigator: Dr. Mark M. Loux

**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:** CHEAL *Chenopodium album*  
**Common Name:** common lambsquarters

**Pest 5 Type:** W **Code:** ABUTH *Abutilon theophrasti*  
**Common Name:** velvetleaf

**Pest 6 Type:** W **Code:** HIBTR *Hibiscus trionum*  
**Common Name:** Venice mallow

**Pest 7 Type:** W **Code:** SIDSP *Sida spinosa*  
**Common Name:** Prickly sida

**Site and Design**

**Treated Plot Width:** 6.67 FT  
**Treated Plot Length:** 30 FT  
**Treated Plot Area:** 200.1 FT<sup>2</sup> **Treatments:** 14  
**Replications:** 3 **Site Type:** FIELD field  
**Study Design:** RACOB L Randomized Complete Block (RCB)

**No. Previous Crop Year**

1. Corn 2017

**Soil Description**

**Description Name:** F-8 Middle  
**% Sand:** 37 **% OM:** 1.6 **Texture:** SICL silty clay loam  
**% Silt:** 47 **pH:** 7.1 **Soil Name:** Celina  
**% Clay:** 16 **CEC:** 9.7 **Fert. Level:** G good  
**Soil Drainage:** G good

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## Application Description

	A	B	C
Application Date:	Jun-6-2018	Jun-18-2018	Jun-28-2018
Appl. Start Time:	9:00 AM	8:45 AM	9:40 AM
Appl. Stop Time:	9:15 AM	8:55 AM	10:15 AM
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	6" AMBTR	1.5 WK	3 WK
Application Placement:	BROFOL	BROFOL	BROFOL
Applied By:	Fisher	Fisher	Fisher
Air Temperature, Unit:	59 F	79.5 F	78 F
% Relative Humidity:	73	74	79
Wind Velocity, Unit:	6 MPH	2.5 MPH	2 MPH
Wind Direction:	NE	WSW	NW
Dew Presence (Y/N):	Y yes	Y yes	Y yes
Soil Temperature, Unit:	60 F	79 F	70 F
Soil Moisture:	NORMAL	GOOD	SLIWET
% Cloud Cover:	0	10	10
Next Moisture Occurred On:	Jun-8-2018	Jun-19-2018	Jul-2-2018
Time to Next Moisture, Unit:	2 DAY	1 DAY	4 DAY
Moisture 1 Week after Appl.:	1.1 IN	1.35 IN	0.71 IN

## Pest Stage At Each Application

	A	B	C
Pest 1 Code, Type, Scale:	SETFA W	SETFA W	SETFA W
Height, Unit:	10 IN		
Height Minimum, Maximum:	6 15		
Pest 2 Code, Type, Scale:	AMBTR W	AMBTR W	AMBTR W
Stage Majority, Percent:		19 100	19 100
Height, Unit:	14 IN	34 IN	10 IN
Height Minimum, Maximum:	7 21	24 36	12 18
Pest 3 Code, Type, Scale:	AMARE W	AMARE W	AMARE W
Stage Majority, Percent:		16 100	19 100
Height, Unit:	7 IN	3 IN	8 IN
Height Minimum, Maximum:	3 9	2 5	6 8
Pest 4 Code, Type, Scale:	CHEAL W	CHEAL W	CHEAL W
Stage Majority, Percent:		16	19 100
Stage Minimum, Percent:		14	
Stage Maximum, Percent:		18	
Height, Unit:	8 IN	4 IN	8 IN
Height Minimum, Maximum:	5 11	2 5	8 12
Pest 5 Code, Type, Scale:	ABUTH W	ABUTH W	ABUTH W
Stage Majority, Percent:			19 100
Height, Unit:	9 IN		12 IN
Height Minimum, Maximum:			8 12
Density, Unit:			1 M2
Pest 6 Code, Type, Scale:	HIBTR W	HIBTR W	HIBTR W
Height, Unit:	6 IN		
Pest 7 Code, Type, Scale:	SIDSP W	SIDSP W	SIDSP W
Stage Majority, Percent:		14	
Height, Unit:		4 IN	
Height Minimum, Maximum:		3 5	

## Application Equipment

	A	B	C
Appl. Equipment:	10' TTI	10' TTI	10' AI XR
Equipment Type:	SPRBAC	SPRBAC	SPRBAC
Operation Pressure, Unit:	42 PSI	46 PSI	42 PSI
Nozzle Type:	AI XR	AI XR	AI XR
Nozzle Size:	110015	110015	110015
Nozzle Spacing, Unit:	18 IN	18 IN	18 IN
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 GPA	15 GPA	15 GPA
Mix Size, Unit:	2 L	2 L	2 Liters
Propellant:	COMCO2	CO2	COMCO2

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	AMBTR	CHEAL	AMARE	ABUTH	AMBTR	CHEAL		
Pest Name	Giant ragweed	common lambsqu>	Redroot pigweed	velvetleaf	Giant ragweed	common lambsqu>		
Rating Date	Jun-19-2018	Jun-19-2018	Jun-19-2018	Jun-19-2018	Jun-26-2018	Jun-26-2018		
Number of Subsamples	1	1	1	1	1	1		
Days After First/Last Applic.	13	13	13	13	20	20		
Trt-Eval Interval	1	1	1	1	8	8		
Trt Treatment	Rate	Appl	1*	2*	3*	4*	5*	6*
No. Name	Rate	Unit Code						
1 Xtendimax	0.5 lb ai/a	A	61.7 b	61.7 b	55.0 bc	40.0 a	76.7 a	81.7 a
Xtendimax	0.25 lb ai/a	C						
2 Xtendimax	0.5 lb ai/a	A	63.3 b	61.7 b	50.0 c	40.0 a	71.7 abc	75.0 a
Cobra	0.125 lb ai/a	C						
COC	1 % v/v	C						
3 Xtendimax	0.25 lb ai/a	A	56.7 b	60.0 b	45.0 c	40.0 a	61.7 a-d	80.0 a
Cobra	0.125 lb ai/a	C						
COC	1 % v/v	C						
4 Xtendimax	0.5 lb ai/a	A	61.7 b	60.0 b	45.0 c	40.0 a	71.7 abc	75.0 a
Liberty	0.402 lb ai/a	C						
N PAK AMS	2.5 % v/v	C						
5 Xtendimax	0.25 lb ai/a	A	58.3 b	56.7 b	50.0 c	35.0 a	60.0 a-d	71.7 a
Liberty	0.402 lb ai/a	C						
N PAK AMS	2.5 % v/v	C						
6 Xtendimax	0.25 lb ai/a	A	61.7 b	65.0 b	60.0 bc	55.0 a	56.7 bcd	73.3 a
Flexstar	0.235 lb ai/a	A						
Cobra	0.125 lb ai/a	C						
COC	1 % v/v	C						
7 Xtendimax	0.25 lb ai/a	A	63.3 b	63.3 b	60.0 bc	45.0 a	55.0 cde	73.3 a
Flexstar	0.235 lb ai/a	A						
Liberty	0.402 lb ai/a	C						
N PAK AMS	2.5 % v/v	C						
8 Xtendimax	0.25 lb ai/a	A	81.7 a	81.7 a	82.5 a	55.0 a	73.3 ab	78.3 a
Liberty	0.402 lb ai/a	A						
Cobra	0.125 lb ai/a	C						
COC	1 % v/v	C						
9 Xtendimax	0.25 lb ai/a	A	81.3 a	83.3 a	70.0 b	55.0 a	74.3 ab	78.3 a
Liberty	0.402 lb ai/a	A						
Liberty	0.402 lb ai/a	C						
N PAK AMS	2.5 % v/v	C						
10 Xtendimax	0.25 lb ai/a	B	0.0	0.0 c	0.0 d	0.0 b	46.7 de	56.7 b
11 Xtendimax	0.5 lb ai/a	B	0.0 c	0.0	0.0 d	0.0 b	40.0 e	53.3 b
12 Xtendimax	0.25 lb ai/a	B	0.0 c	0.0 c	0.0 d	0.0 b	51.7 de	60.0 b
Flexstar	0.235 lb ai/a	B						
13 Xtendimax	0.25 lb ai/a	B	0.0 c	0.0 c	0.0 d	0.0 b	78.3 a	76.7 a
Liberty	0.402 lb ai/a	B						
14 Untreated			0.0 c	0.0 c	0.0 d	0.0 b	0.0 f	0.0 c
LSD P=.05			5.54	7.32	11.28	19.38	11.64	8.92
Standard Deviation			3.29	4.34	5.22	8.97	6.93	5.32
CV			7.25	9.51	14.13	31.01	11.87	7.97
Levene's F			0.443	0.932			0.665	0.565
Levene's Prob(F)			0.93	0.532			0.779	0.861
Skewness			-0.64	-0.617	-0.2187	-0.1529	-1.4232*	-2.3434*
Kurtosis			-1.2958	-1.3118	-1.4578	-1.4052	2.4485*	5.475*
Replicate F			1.604	1.258	0.295	0.044	1.168	0.274
Replicate Prob(F)			0.2219	0.3024	0.5964	0.8364	0.3268	0.7626
Treatment F			291.108	169.518	66.874	13.396	26.488	47.332
Treatment Prob(F)			0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)

t=Mean descriptions are reported in transformed data units, and are not de-transformed.

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

\* Adjusted means

Excluded replicate 1 in column 3; 3 in 4

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	AMARE	ABUTH	AMBTR	CHEAL	AMARE	ABUTH		
Pest Name	Redroot pigweed	velvetleaf	Giant ragweed	common lambsqu	Redroot pigweed	velvetleaf		
Rating Date	Jun-26-2018	Jun-26-2018	Jul-18-2018	Jul-18-2018	Jul-18-2018	Jul-18-2018		
Number of Subsamples	1	1	1	1	1	1		
Days After First/Last Applic.	20 8	20 8	42 20	42 20	42 20	42 20		
Trt-Eval Interval			20 DA-C	20 DA-C	20 DA-C	20 DA-C		
Trt Treatment No. Name	Rate	Appl Unit Code	7*	8*	9*	10*	11*	12*
1 Xtendimax	0.5 lb ai/a	A	70.0 a	43.3 ab	96.7 a	93.3 a	81.7 a	59.4 a
Xtendimax	0.25 lb ai/a	C						
2 Xtendimax	0.5 lb ai/a	A	58.3 a	43.3 ab	85.0 ab	56.7 bc	80.0 ab	43.1 a
Cobra	0.125 lb ai/a	C						
COC	1 % v/v	C						
3 Xtendimax	0.25 lb ai/a	A	56.7 a	40.0 ab	81.7 ab	53.3 c	76.7 abc	40.8 a
Cobra	0.125 lb ai/a	C						
COC	1 % v/v	C						
4 Xtendimax	0.5 lb ai/a	A	63.3 a	43.3 ab	66.7 b	95.0 a	63.3 abc	45.0 a
Liberty	0.402 lb ai/a	C						
N PAK AMS	2.5 % v/v	C						
5 Xtendimax	0.25 lb ai/a	A	53.3 a	43.3 ab	66.7 b	100.0 a	53.3 c	84.4 a
Liberty	0.402 lb ai/a	C						
N PAK AMS	2.5 % v/v	C						
6 Xtendimax	0.25 lb ai/a	A	63.3 a	50.0 ab	83.3 ab	60.0 bc	75.0 abc	58.6 a
Flexstar	0.235 lb ai/a	A						
Cobra	0.125 lb ai/a	C						
COC	1 % v/v	C						
7 Xtendimax	0.25 lb ai/a	A	56.7 a	50.0 ab	80.0 ab	80.0 ab	68.3 abc	35.6 a
Flexstar	0.235 lb ai/a	A						
Liberty	0.402 lb ai/a	C						
N PAK AMS	2.5 % v/v	C						
8 Xtendimax	0.25 lb ai/a	A	65.0 a	43.3 ab	95.0 a	66.7 bc	73.3 abc	39.2 a
Liberty	0.402 lb ai/a	A						
Cobra	0.125 lb ai/a	C						
COC	1 % v/v	C						
9 Xtendimax	0.25 lb ai/a	A	60.0 a	46.7 ab	88.3 ab	95.0 a	56.7 bc	45.0 a
Liberty	0.402 lb ai/a	A						
Liberty	0.402 lb ai/a	C						
N PAK AMS	2.5 % v/v	C						
10 Xtendimax	0.25 lb ai/a	B	46.7 a	30.0 b	68.3 b	70.0 bc	63.3 abc	46.4 a
11 Xtendimax	0.5 lb ai/a	B	50.0 a	30.0 b	70.0 b	66.7 bc	60.0 abc	43.1 a
12 Xtendimax	0.25 lb ai/a	B	63.3 a	56.7 a	81.7 ab	78.3 ab	60.0 abc	39.2 a
Flexstar	0.235 lb ai/a	B						
13 Xtendimax	0.25 lb ai/a	B	71.7 a	60.0 a	73.3 b	80.0 ab	60.0 abc	46.4 a
Liberty	0.402 lb ai/a	B						
14 Untreated			0.0 b	0.0 c	0.0	0.0 d	0.0 d	0.0 b
LSD P=.05			14.32	14.91	13.25	15.26	13.81	30.61 - 38.89
Standard Deviation			8.53	8.88	7.86	9.09	8.23	0.16t
CV			15.34	21.45	9.86	12.79	13.22	10.08t
Levene's F			0.731	1.249	0.217	0.548	0.741	0.41
Levene's Prob(F)			0.719	0.299	0.996	0.873	0.71	0.953
Skewness			-1.768*	-0.8236*	-0.1477	-1.3156*	-1.8145*	-2.7518*
Kurtosis			3.8962*	2.053*	-0.6219	2.0378*	4.0888*	7.5848*
Replicate F			3.837	0.090	0.944	0.605	0.905	0.738
Replicate Prob(F)			0.0347	0.9138	0.4031	0.5538	0.4168	0.4878
Treatment F			12.592	8.037	5.053	23.513	17.807	25.522
Treatment Prob(F)			0.0001	0.0001	0.0004	0.0001	0.0001	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  
CHEAL, Chenopodium album, common lambsquarters = US  
AMARE, Amaranthus retroflexus, Redroot pigweed = US  
ABUTH, Abutilon theophrasti, velvetleaf = US