

# The Ohio State University

## Glyphosate & Glufosinate Interaction Trial

Trial ID: 21GLYGLU\_2 Location: Trial Year: 2021  
 Protocol ID: 21GLYGLU Investigator (Creator): Dr. Mark M. Loux  
 Project ID: Study Director:  
 Sponsor Contact:

**Trial Status:** E established  
**ARM Trial Created On:** Apr-9-2021

### Trial Location

**City:** South Charleston **Country:** USA United States  
**State/Prov.:** Ohio  
**Postal Code:** 45368

**Latitude of LL Corner °:** 39.85958 N  
**Longitude of LL Corner °:** -83.67628 W  
**Altitude of LL Corner:** 1028.00 FT

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

### Crop Description

**Crop 1:** C GLXMA Glycine max Soybean  
**Entry Date:** Jun-14-2021 **Stage Scale:** BBCH  
**Variety:** Enlist E3 soybean  
**Attributes:** 2,4-D Choline, Glyphosate, Glufosinate Tol  
**Planting Date:** May-15-2021 **Planting Rate:** 175000 S/A  
**Depth:** 1.5 IN  
**Rows per Plot:** 8 **Planting Method:** PLANTD planted  
**Row Spacing:** 15 IN **Planting Equipment:** FE field equipment  
**Seed Bed:** MEDIUM medium  
**Soil Temperature:** 63 F **Soil Moisture:** NORMAL normal, adequate  
**Emergence Date:** Jun-1-2021

### Pest Description

**Pest 1 Type:** W **Code:** SETFA *Setaria faberi* **Entry Date:** Jun-14-2021  
**Common Name:** Giant foxtail **Stage Scale:** BBCH

**Pest 2 Type:** W **Code:** ECHCG *Echinochloa crus-galli* **Entry Date:** Jun-14-2021  
**Common Name:** Common barnyard grass **Stage Scale:** BBCH

**Pest 3 Type:** D **Code:** AMBTR **Entry Date:** Jun-14-2021  
**Stage Scale:** BBCH

**Pest 4 Type:** W **Code:** CHEAL *Chenopodium album* **Entry Date:** Jun-14-2021  
**Common Name:** common lambsquarters **Stage Scale:** BBCH

**Pest 5 Type:** W **Code:** AMARE *Amaranthus retroflexus* **Entry Date:** Jun-14-2021  
**Common Name:** Redroot pigweed **Stage Scale:** BBCH

**Pest 6 Type:** W **Code:** ABUTH *Abutilon theophrasti* **Entry Date:** Jun-14-2021  
**Common Name:** velvetleaf **Stage Scale:** BBCH

### 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 FT2 **Treatments:** 8 **Tillage Type:** CONTIL conventional-till  
**Replications:** 3 **Study Design:** FACTOR Factorial

### Previous

**No. Crop Year**  
 1. CORN 2020

### Soil Description

**Description Name:** G-6  
**% Sand:** 32 **% OM:** 2.2 **Texture:** SICL silty clay loam  
**% Silt:** 53 **pH:** 5.9 **Soil Name:** Kokomo  
**% Clay:** 15 **CEC:** 14 **Fert. Level:** G good  
 g o o d

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### Application Description

	A	
Application Date	Jun-14-2021	
Appl. Start Time	9:00 AM	
Appl. Stop Time	9:20 AM	
Application Method	spray	
Application Timing	post	
Application Placement	brofol	
Applied By	Loux	
Appl. Entry Date	Jun-14-2021	
Air Temperature Start, Stop	78	78 F
% Relative Humidity Start, Stop	55	55
Wind Velocity+Dir. Start	1	MPH WSW
Wind Velocity+Dir. Stop	2	MPH WSW
Wind Velocity+Dir. Max	2	MPH WSW
Wet Leaves (Y/N)	N no	
Soil Temperature	71	F
Soil Moisture	dry	
Soil Surface Condition	MEDIUM	
% Cloud Cover	45	
Next Moisture Occurred On	Jun-18-2021	
Time to Next Moisture	4.0	DAY
Moisture 6 Hours after Appl.	0	IN
Moisture 1 Week after Appl.	0.61	IN

### Crop Stage At Each Application

	A	
Crop 1 Code, BBCH Scale	GLXMA	BSOY
Days after Emergence	13	
Stage Majority, Percent	13	100
Height Average	8	IN
Height Minimum, Maximum	6	10

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### Pest Stage At Each Application

	<b>A</b>	
<b>Pest 1 Code, Type, Scale</b>	SETFA	W BBCH
Stage Majority, Percent	16	60
Stage Minimum, Percent	12	20
Stage Maximum, Percent	16	60
Height Average	10	IN
Height Minimum, Maximum	2	12
Density Average	289	PLA/m2
Density Minimum, Maximum	144	368
<b>Pest 2 Code, Type, Scale</b>	ECHCG	W BBCH
Stage Majority, Percent	16	60
Stage Minimum, Percent	12	20
Stage Maximum, Percent	16	60
Height Average	10	IN
Height Minimum, Maximum	2	12
Density Average	57	PLA/m2
Density Minimum, Maximum	48	76
<b>Pest 3 Code, Type, Scale</b>	AMBTR	D BBCH
Stage Majority, Percent	19	100
Height Average	16	IN
Height Minimum, Maximum	3	22
Density Average	30	PLA/m2
Density Minimum, Maximum	8	40
<b>Pest 4 Code, Type, Scale</b>	CHEAL	W BBCH
Stage Majority, Percent	14	50
Stage Minimum, Percent	12	20
Stage Maximum, Percent	16	20
Height Average	4	IN
Height Minimum, Maximum	2	6
Density Average	38	PLA/m2
Density Minimum, Maximum	24	64
<b>Pest 5 Code, Type, Scale</b>	AMARE	W BBCH
Stage Majority, Percent	14	80
Stage Minimum, Percent	13	10
Stage Maximum, Percent	14	80
Height Average	3	IN
Height Minimum, Maximum	2	3
Density Average	6	PLA/m2
Density Minimum, Maximum	0	16
<b>Pest 6 Code, Type, Scale</b>	ABUTH	W BBCH
Stage Majority, Percent	14	80
Stage Minimum, Percent	12	10
Stage Maximum, Percent	14	80
Height Average	4	IN
Height Minimum, Maximum	4	6
Density Average	0.25	PLA/m2
Density Minimum, Maximum	0	1

### Application Equipment

	<b>A</b>	
<b>Appl. Equipment</b>	6 ft	
<b>Equipment Type</b>	BACCAI	
<b>Operation Pressure</b>	44	PSI
<b>Nozzle Model</b>	XR 11002	
<b>Nozzle Type</b>	XR	
<b>Nozzle TradeName</b>	TeeJet	
<b>Nozzle Tip Size, Color</b>	02	yellow
<b>Nozzle Spacing</b>	18	IN
<b>Boom Length</b>	6.67	FT
<b>Boom Height</b>	20	IN
<b>Ground Speed</b>	3	MPH
<b>Carrier</b>	WATER	
<b>Water Hardness (ppm CaCO3)</b>	250	
<b>Application Amount</b>	20	GAL/AC
<b>Mix Size</b>	1	L
<b>Spray pH</b>	7.8	
<b>Propellant</b>	COMCO2	

### Notes

Context	Date	By	Notes
STATUS	Apr-9-2021	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	Jun-14-2021	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'E' when Application Date entered.

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	SETFA	ECHCG	AMBTR	SETFA	ECHCG	AMBTR
Pest Name	Giant foxtail	Common barnyard>	Giant ragweed	Giant foxtail	Common barnyard>	Giant ragweed
Rating Date	Jun-25-2021	Jun-25-2021	Jun-25-2021	Jul-14-2021	Jul-14-2021	Jul-14-2021
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit/Min/Max	% 0	% 0 100	% 0	% 0	% 0 100	% 0
Number of Subsamples	100	100	100	100	100	100
Data Entry Date	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jul-15-2021	Jul-15-2021	Jul-15-2021
Days After First/Last Applic.	11 11	11 11	11 11	30 30	30 30	30 30
Trt-Eval Interval	11 DA-A	11 DA-A	11 DA-A	30 DA-A	30 DA-A	30 DA-A
Days After Emergence	24 DE-1	24 DE-1	24 DE-1	43 DE-1	43 DE-1	43 DE-1
Number of Decimals	0	0	0	0	0	0

Trt No.	Treatment Name	Other Rate	Other Unit	Appl Code	1* dAA	2*	3*	4*	5*	6* dAA
1	Buccaneer Plus	48 oz/a		A	95 -	67 -	100 -	100 -	40 ab	100 a
	Interline	32 oz/a		A						
	No AMS	32 oz/a		A						
	No Control Duo									
2	Buccaneer PPlus	48 oz/a		A	95 -	72 -	100 -	100 -	50 ab	100 a
	Interline	32 oz/a		A						
	No AMS	32 oz/a		A						
	Control Duo	1 qt/100 gal		A						
3	Buccaneer PPlus	48 oz/a		A	99 -	77 -	100 -	100 -	50 ab	100 a
	Interline	32 oz/a		A						
	No AMS	32 oz/a		A						
	Control Duo	2 qt/100 gal		A						
4	Buccaneer PPlus	48 oz/a		A	98 -	81 -	100 -	100 -	53 ab	100 a
	Interline	32 oz/a		A						
	AMSOL	5 % v/v		A						
	No Control Duo									
5	Buccaneer PPlus	48 oz/a		A	97 -	74 -	100 -	100 -	43 ab	100 a
	Interline	32 oz/a		A						
	AMSOL	5 % v/v		A						
	Control Duo	1 qt/100 gal		A						
6	Buccaneer PPlus	48 oz/a		A	95 -	75 -	100 -	100 -	40 ab	100 a
	Interline	32 oz/a		A						
	AMSOL	5 % v/v		A						
	Control Duo	2 qt/100 gal		A						
7	Buccaneer PPlus	48 oz/a		A	92 -	75 -	50	100 -	72 a	60 b
8	Interline	32 oz/a		A	81 -	53 -	100 -	100 -	17 b	100 a
	LSD P=.05				12.1 - 15.8	16.5	.	.	23.8	1.0 - 9.6
	Standard Deviation				8.7t	9.4	0.0	0.0	13.6	3.3t
	CV				11.26t	13.1	0.0	0.0	29.79	3.89t
	Levene's F^				0.09	0.352	.	.	0.398	1.166
	Levene's Prob(F)				0.998	0.917	.	.	0.89	0.374
	Skewness^				-0.0391	-0.1378	.	.	-0.3824	-0.2188
	Kurtosis^				-1.3766	0.0644	.	.	0.1135	2.0535*
	Analyzed as				RCB	RCB	RCB	RCB	RCB	RCB
	Replicate F				3.376	6.624	0.000	0.000	0.626	0.305
	Replicate Prob(F)				0.0636	0.0095	1.0000	1.0000	0.5490	0.7417
	Treatment F				1.527	2.442	0.000	0.000	3.906	51.598
	Treatment Prob(F)				0.2368	0.0735	1.0000	1.0000	0.0144	0.0001

**Pest Type**

W, Weed = Weed or volunteer crop

**Pest Code**

SETFA, Setaria faberi, Giant foxtail = US  
 ECHCG, Echinochloa crus-galli, Common barnyard grass = US  
 AMBTR, Ambrosia trifida, Giant ragweed = US

**Rating Type**

CONTRO = control / burndown or knockdown

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

Could not calculate LSD (% mean diff) for columns 3,4 because error mean square = 0.

^Calculated from residual.

d=Means are reported in de-transformed data units

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Rating Unit/Min/Max  
%, 0, 100 = percent

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