

# The Ohio State University

## Glufosinate activity with Control Duo

Trial ID: 21GLUSURF Location: Trial Year: 2021  
 Protocol ID: 21GLUFSURF 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 °:** 39.85999 N  
**Longitude of LL Corner °:** -83.67097 W  
**Altitude of LL Corner:** 1090.00 FT

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

### Crop Description

**Crop 1:** C GLXMA Glycine max Soybean  
**Entry Date:** May-17-2021 **Stage Scale:** BBCH  
**Variety:** Pioneer P34T21SE  
**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  
**Soil Temperature:** 63 F **Seed Bed:** MEDIUM medium  
**Emergence Date:** Jun-1-2021 **Soil Moisture:** NORMAL normal, adequate

### 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:** W **Code:** AMBTR **Entry Date:** Jun-14-2021  
**Stage Scale:** BBCH

**Pest 4 Type:** W **Code:** CEHAL **Entry Date:** Jun-14-2021  
**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 FT **Site Type:** FIELD field  
**Treated Plot Length:** 30 FT **Experimental Unit:** 1 PLOT plot  
**Treated Plot Area:** 180.0 FT<sup>2</sup> **Treatments:** 12 **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

	A	
<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	376	PLA/m2
Density Minimum, Maximum	192	720
<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	196	PLA/m2
Density Minimum, Maximum	64	304
<b>Pest 3 Code, Type, Scale</b>	AMBTR	W BBCH
Stage Majority, Percent	19	100
Height Average	16	IN
Height Minimum, Maximum	3	22
Density Average	65	PLA/m2
Density Minimum, Maximum	48	76
<b>Pest 4 Code, Type, Scale</b>	CEHAL	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	32	PLA/m2
Density Minimum, Maximum	4	46
<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	12	PLA/m2
Density Minimum, Maximum	8	14
<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	2	PLA/m2
Density Minimum, Maximum	0	3

## Application Equipment

	A	
<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.
STATUS	Jun-30-2021	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'E' when Next Moisture Occurred On entered.

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

Trt No.	Treatment Name	Other Rate	Other Unit	Appl Code	1*	2*	3*	4*	5*
						dAL	dAA		dAA
1	Interline No AMS No Control Duo	36 oz/a		A	83 ab	69 -	100 -	33 -	84 -
2	Interline No AMS Control Duo	36 oz/a	1 qt/100 gal A	A	90 a	66 -	100 -	30 -	82 -
3	Interline No AMS Control Duo	36 oz/a	2 qt/100 gal A	A	83 ab	63 -	100 -	37 -	75 -
4	Interline AMSOL No Control Duo	36 oz/a	128 oz/a	A	90 a	65 -	100 -	30 -	84 -
5	Interline AMSOL Control Duo	36 oz/a	128 oz/a	A	82 ab	53 -	100 -	33 -	75 -
6	Interline AMSOL Control Duo	36 oz/a	128 oz/a	A	90 a	64 -	100 -	40 -	81 -
7	Interline No AMS No Control Duo	27 oz/a		A	70 ab	50 -	93 -	23 -	65 -
8	Interline No AMS Control Duo	27 oz/a	1 qt/100 gal A	A	63 b	50 -	98 -	27 -	68 -
9	Interline No AMS Control Duo	27 oz/a	2 qt/100 gal A	A	66 ab	46 -	95 -	30 -	64 -
10	Interline AMSOL No Control Duo	27 oz/a	128 oz/a	A	75 ab	49 -	98 -	23 -	47 -
11	Interline AMSOL Control Duo	27 oz/a	128 oz/a	A	73 ab	50 -	99 -	23 -	69 -

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.  
 Due to missing data, the effective replicates used for mean comparisons are: col. 4=2.8  
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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed				
Pest Code	SETFA	ECHCG	AMBTR	CHEAL	SETFA				
Pest Name	Giant foxtail	Common barnyard>	Giant ragweed	common lambsqua>	Giant foxtail				
Rating Date	Jun-25-2021	Jun-25-2021	Jun-25-2021	Jun-25-2021	Jul-14-2021				
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO				
Rating Unit/Min/Max	% 0 100	% 0 100	% 0 100	% 0 100 %	0 100				
Number of Subsamples	1	1	1	1	1				
Data Entry Date	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jul-15-2021				
Days After First/Last Applic.	11 11	11 11	11 11	11 11	30 30				
Trt-Eval Interval	11 DA-A	11 DA-A	11 DA-A	11 DA-A	30 DA-A				
Days After Emergence	24 DE-1	24 DE-1	24 DE-1	24 DE-1	43 DE-1				
Number of Decimals	0	0	0	0	0				
Trt No.	Treatment Name	Other Rate	Other Rate Unit	Appl Code	1*	2*	3*	4*	5*
12	Interline AMSOL Control Duo	27 oz/a	A	A	67 ab	46 -	98 -	12 -	59 -
		128 oz/a	A	A					
		2 qt/100 gal	A	A					
LSD P=.05					14.5	13.4 - 15.3	6.0 - 6.7	22.6	24.1 - 26.3
Standard Deviation					8.5	0.1t	8.4t	13.3	9.2t
CV					10.98	3.64t	9.91t	46.5	15.98t
Levene's F^					0.295	0.521	0.583	0.978	0.642
Levene's Prob(F)					0.981	0.87	0.824	0.494	0.776
Skewness^					-0.0791	-0.2034	-0.4823	-0.0771	0.3538
Kurtosis^					-0.9354	0.1276	-0.0008	0.7731	0.6122
Analyzed as					RCB	RCB	RCB	RCB	RCB
Replicate F					4.898	0.215	3.688	1.508	13.435
Replicate Prob(F)					0.0174	0.8085	0.0416	0.2454	0.0002
Treatment F					4.058	3.043	1.306	0.814	1.788
Treatment Prob(F)					0.0025	0.0127	0.2848	0.6271	0.1186

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

Trt No.	Treatment Name	Other Rate	Other Rate Unit	Appl Code	6*	7* dAA	8*
1	Interline No AMS No Control Duo	36 oz/a		A	33 -	95 -	23 -
2	Interline No AMS Control Duo	36 oz/a	1 qt/100 gal A	A	27 -	99 -	37 -
3	Interline No AMS Control Duo	36 oz/a	2 qt/100 gal A	A	27 -	93 -	30 -
4	Interline AMSOL No Control Duo	36 oz/a	128 oz/a A	A	30 -	97 -	27 -
5	Interline AMSOL Control Duo	36 oz/a	128 oz/a A	A	13 -	99 -	33 -
6	Interline AMSOL Control Duo	36 oz/a	128 oz/a A	A	23 -	97 -	37 -
7	Interline No AMS No Control Duo	27 oz/a		A	20 -	82 -	23 -
8	Interline No AMS Control Duo	27 oz/a	1 qt/100 gal A	A	23 -	87 -	23 -
9	Interline No AMS Control Duo	27 oz/a	2 qt/100 gal A	A	20 -	91 -	37 -
10	Interline AMSOL No Control Duo	27 oz/a	128 oz/a A	A	17 -	95 -	23 -
11	Interline AMSOL Control Duo	27 oz/a	128 oz/a A	A	17 -	98 -	37 -

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Pest Type	W Weed	W Weed	W Weed				
Pest Code	ECHCG	AMBTR	CHEAL				
Pest Name	Common Giant ragweed		common				
Rating Date	Jul-14-2021	Jul-14-2021	Jul-14-2021				
Rating Type	CONTRO	CONTRO	CONTRO				
Rating Unit/Min/Max	% 0 100	% 0 100	% 0 100				
Number of Subsamples	1	1	1				
Data Entry Date	Jul-15-2021	Jul-15-2021	Jul-15-2021				
Days After First/Last Applic.	30 30	30 30	30 30				
Trt-Eval Interval	30 DA-A	30 DA-A	30 DA-A				
Days After Emergence	43 DE-1	43 DE-1	43 DE-1				
Number of Decimals	0	0	0				
Trt No.	Treatment Name	Other Rate	Other Rate Unit	Appl Code	6*	7* dAA	8*
12	Interline AMSOL Control Duo	27 oz/a	A	A	17 -	93 -	37 -
		128 oz/a	A				
		2 qt/100 gal	A				
LSD P=.05					13.2	9.3 - 13.6	20.3
Standard Deviation					7.8	7.5t	12.0
CV					34.96	9.81t	39.23
Levene's F^					0.338	0.605	0.465
Levene's Prob(F)					0.968	0.806	0.907
Skewness^					-0.1874	-0.2226	0.1144
Kurtosis^					-0.6437	0.108	-0.595
Analyzed as					RCB	RCB	RCB
Replicate F					5.569	13.296	0.599
Replicate Prob(F)					0.0110	0.0002	0.5579
Treatment F					1.841	1.776	0.794
Treatment Prob(F)					0.1075	0.1213	0.6441

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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

CHEAL, Chenopodium album, common lambsquarters = US

Rating Type

CONTRO = control / burndown or knockdown

Rating Unit/Min/Max

%, 0, 100 = percent