

The Ohio State University

Zidua Pro Residual Weed Control Vs. Competitors

Trial ID: 21BASFSOY
 Protocol ID: MKD-H-2021-D92 Investigator (Creator): Dr. Mark M. Loux
 Project ID: Study Director:
 Sponsor Contact:

Location: Western Branch G-6 Trial Year: 2021

General Trial Information

Investigator: Dr. Mark M. Loux **Title:** Professor

Discipline: H herbicide
Trial Status: E established

ARM Trial Created On: Apr-2-2021

Initiation Date: May-15-2021

Trial Location

Address (Location): 7721 South Charleston Pike
City: South Charleston **Country:** USA United States
State/Prov.: Ohio
Postal Code: 45368

Latitude of LL Corner °: 39.85956 N
Longitude of LL Corner °: -83.67599 W
Altitude of LL Corner: 1030.00 FT

Conducted Under GLP: No

Conducted Under GEP: No

Role: INVEST investigator

Investigator: Dr. Mark M. Loux **Title:** Professor

Organization: The Ohio State University **Org. Type:** University

Address 1: 2021 Coffey Road

Country: USA United States

City: Columbus

State/Prov: OH

Postal Code: 43210

Crop Description

Crop 1: C GLXMA Glycine max Soybean **BBCH Scale:** BSOY
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
Seed Bed: MEDIUM medium
Soil Moisture: NORMAL normal, adequate
Soil Temperature: 63 F
Emergence Date: Jun-1-2021

Pest Description

Pest 1 Type: W **Code:** SETFA *Setaria faberi* **Entry Date:** Jun-28-2021
Common Name: Giant foxtail **Stage Scale:** BBCH

Pest 2 Type: W **Code:** ECHCG *Echinochloa crus-galli* **Entry Date:** Jun-28-2021
Common Name: Common barnyard grass **Stage Scale:** BBCH

Pest 3 Type: W **Code:** AMBTR *Ambrosia trifida* **Entry Date:** Jun-28-2021
Common Name: Giant ragweed **Stage Scale:** BBCH

Pest 4 Type: W **Code:** CHEAL *Chenopodium album* **Entry Date:** Jun-28-2021
Common Name: common lambsquarters **Stage Scale:** BBCH

Pest 5 Type: W **Code:** AMARE *Amaranthus retroflexus* **Entry Date:** Jun-28-2021
Common Name: Redroot pigweed **Stage Scale:** BBCH

Pest 6 Type: W **Code:** IPOHE *Ipomoea hederacea* **Entry Date:** Jun-28-2021
Common Name: ivy-leaf morning glory **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: 4 **Study Design:** RACOBL Randomized Complete Block (RCB)

Previous

No. Crop Year
 1. ZEAMX 2020

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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

Application Description

Application Date May-15-2021 **A**
Appl. Start Time 3:30 PM
Appl. Stop Time 4:00 PM
Application Method SPRAY
Application Timing PREPRE
Application Placement BROSOI
Applied By DOBBELS
Appl. Entry Date May-17-2021
Air Temperature Start, Stop 72 72 F
% Relative Humidity Start, Stop 22 22
Wind Velocity+Dir. Start 6 MPH SSW
Wind Velocity+Dir. Stop 6 MPH SSW
Wind Velocity+Dir. Max 6 MPH SSW
Wet Leaves (Y/N) N no
Soil Temperature 63 F
Soil Moisture NORMAL
Soil Surface Condition MEDIUM
% Cloud Cover 30
Next Moisture Occurred On May-17-2021
Time to Next Moisture 2.0 DAY
Moisture 6 Hours after Appl. 0 IN
Moisture 1 Week after Appl. 0.79 IN

Crop Stage At Each Application

Crop 1 Code, BBCH Scale GLXMA BSOY **A**
Days after Emergence -17

Pest Stage At Each Application

Pest 1 Code, Type, Scale SETFA W BBCH **A**
Density Average 418 PLA/m2
Density Minimum, Maximum 228 512
Pest 2 Code, Type, Scale ECHCG W BBCH
Density Average 55 PLA/m2
Density Minimum, Maximum 40 88
Pest 3 Code, Type, Scale AMBTR W BBCH
Density Average 104 PLA/m2
Density Minimum, Maximum 32 184
Pest 4 Code, Type, Scale CHEAL W BBCH
Density Average 57 PLA/m2
Density Minimum, Maximum 4 188
Pest 5 Code, Type, Scale AMARE W BBCH
Density Average 11 PLA/m2
Density Minimum, Maximum 0 28
Pest 6 Code, Type, Scale IPOHE W BBCH
Density Average 2 PLA/m2
Density Minimum, Maximum 0 4

Application Equipment

Appl. Equipment 6' TTI **A**
Equipment Type BACCAI
Operation Pressure 44 PSI
Nozzle Model 110015
Nozzle Type TTI
Nozzle Spacing 18 IN
Boom Length 6.67 FT
Boom Height 20 IN
Ground Speed 3 MPH
Carrier WATER
Application Amount 15 GAL/AC
Mix Size 1 L
Propellant COMCO2

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Notes

Context Date By Notes
 STATUS Apr-2-2021 Dr. Mark M. Loux Automatically added by ARM: Trial Status updated to 'S' during trial creation.

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	SETFA	ECHSS	AMBTR	AMARE	CONSS
Pest Name	Giant foxtail	Barnyardgrass	Giant ragweed	Redroot pigweed	Morningglory
Crop Type, Code					
Crop Name					
Rating Date	Jun-4-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -
Rating Type	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit/Min/Max	%VISUAL 0	%VISUAL 0	%VISUAL 0	%VISUAL 0	%VISUAL 0
	100	100	100	100	100
Number of Subsamples	1	1	1	1	1
Data Entry Date	Jun-21-2021	Jun-21-2021	Jun-21-2021	Jun-21-2021	Jun-21-2021
Rating Timing	3 WAPL	3 WAPL	3 WAPL	3 WAPL	3 WAPL
Days After First/Last Applic.	20 20	20 20	20 20	20 20	20 20
Trt-Eval Interval	20 DA-A	20 DA-A	20 DA-A	20 DA-A	20 DA-A
Days After Emergence	3 DE-1	3 DE-1	3 DE-1	3 DE-1	3 DE-1
ARM Action Codes					
Number of Decimals	0	0	0	0	0
Trt Treatment	Other	Other	Appl	1*	2*
No. Name	Rate	Rate	Unit Code	3*	4*
				5*	
1 utc		0 b	0 b	0 b	0 b
2 Boundary	24 oz/a	A	88 a	88 a	35 a
3 Zidua Pro	6 oz/a	A	88 a	88 a	45 a
4 Zidua Pro	4.5 oz/a	A	90 a	90 a	40 a
5 Sonic	5 oz/a	A	84 a	84 a	40 a
6 Authority Supreme	6.5 oz/a	A	93 a	93 a	30 a
7 Fierce MTZ	16 oz/a	A	93 a	92 a	38 a
8 Authority Edge	9 oz/a	A	96 a	96 a	35 a
LSD P=.05			11.9	11.5	12.0
Standard Deviation			8.1	7.8	8.1
CV			10.23	9.97	24.8
Levene's F^			0.908	0.661	0.193
Levene's Prob(F)			0.517	0.702	0.984
Skewness^			-0.5055	-0.5135	0.2268
Kurtosis^			-0.5684	-0.6345	-0.4636
Replicate F			3.993	4.616	4.955
Replicate Prob(F)			0.0214	0.0124	0.0093
Treatment F			63.269	66.658	11.804
Treatment Prob(F)			0.0001	0.0001	0.0001
					1.000
					0.4123
					1589.572
					118.134
					0.0001
					1.120
					0.3635

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Pest Type	W Weed	W Weed	W Weed	W Weed	
Pest Code	SETFA	ECHSS	AMBTR	CHEAL	
Pest Name	Giant foxtail	Barnyardgrass	Giant ragweed	common lambsqua>	
Crop Type, Code	C GLXMA				
Crop Name	Soybean				
Rating Date	Jun-24-2021	Jun-24-2021	Jun-24-2021	Jun-24-2021	
Part Rated	PLANT -	PLOT -	PLOT -	PLOT -	
Rating Type	PHYGEN	CONTROL	CONTROL	CONTROL	
Rating Unit/Min/Max	%VISUAL 0	%VISUAL 0	%VISUAL 0	%VISUAL 0 100	
Number of Subsamples	100	100	100	100	
Data Entry Date	1	1	1	1	
Rating Timing	Jun-24-2021	Jun-24-2021	Jun-24-2021	Jun-24-2021	
Days After First/Last Applic.	6 WAPL	6 WAPL	6 WAPL	6 WAPL	
Trt-Eval Interval	40 40	40 40	40 40	40 40	
Days After Emergence	40 DA-A	40 DA-A	40 DA-A	40 DA-A	
ARM Action Codes	23 DE-1	23 DE-1	23 DE-1	23 DE-1	
Number of Decimals	0	0	0	0	
Trt Treatment	6*	7*	8*	9*	10*
No. Name	Other Rate	Other Rate	Appl Unit Code		
1 utc	0 -	0	0	0 b	0 b
2 Boundary	24 oz/a A	0 - 76 bc	76 bc	23 a	85 a
3 Zidua Pro	6 oz/a A	0 - 76 bc	76 bc	23 a	95 a
4 Zidua Pro	4.5 oz/a A	0 - 83 bc	83 bc	23 a	91 a
5 Sonic	5 oz/a A	0 - 71 c	71 c	23 a	94 a
6 Authority Supreme	6.5 oz/a A	0 - 85 b	85 b	20 a	88 a
7 Fierce MTZ	16 oz/a A	0 - 78 bc	79 bc	20 a	89 a
8 Authority Edge	9 oz/a A	0 - 95 a	95 a	20 a	100 a
LSD P=.05	.	8.5	8.1	3.9	15.9
Standard Deviation	0.0	5.7	5.5	2.7	10.8
CV	0.0	7.12	6.79	14.25	13.52
Levene's F^	.	1.339	1.137	0.00	3.15
Levene's Prob(F)	.	0.284	0.376	1.00	0.017*
Skewness^	.	0.5528	0.5171	0.0	-0.3872
Kurtosis^	.	0.2262	0.0897	-0.5701	1.043
Replicate F	0.000	0.996	1.037	7.000	1.319
Replicate Prob(F)	1.0000	0.4173	0.3999	0.0019	0.2946
Treatment F	0.000	7.124	7.668	33.000	36.482
Treatment Prob(F)	1.0000	0.0005	0.0003	0.0001	0.0001

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Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	ABUTH	AMARE	CONSS	SETFA
Pest Name	velvetleaf	Redroot pigweed	Morningglory	Giant foxtail
Crop Type, Code				C GLXMA
Crop Name				Soybean
Rating Date	Jun-24-2021	Jun-24-2021	Jun-24-2021	Jul-14-2021
Part Rated	PLOT -	PLOT -	PLOT -	PLANT -
Rating Type	CONTROL	CONTROL	CONTROL	PHYGEN CONTROL
Rating Unit/Min/Max	%VISUAL 0	%VISUAL 0	%VISUAL 0	%VISUAL 0 %VISUAL 0 100
Number of Subsamples	100	100	100	100
Data Entry Date	1	1	1	1
Rating Timing	Jun-24-2021	Jun-24-2021	Jun-24-2021	Jul-14-2021
Days After First/Last Applic.	6 WAPL	6 WAPL	6 WAPL	9 WAPL
Trt-Eval Interval	40 40	40 40	40 40	60 60
Days After Emergence	40 DA-A	40 DA-A	40 DA-A	60 DA-A
ARM Action Codes	23 DE-1	23 DE-1	23 DE-1	43 DE-1
Number of Decimals	ET2			EC
Trt Treatment	0	0	0	0
No. Name	11*	12*	13*	14*
	Other Rate	Other Rate	Appl Unit Code	15*
1 utc		0 b	0 -	0 b
2 Boundary	24 oz/a	A	88	100 -
3 Zidua Pro	6 oz/a	A	91 a	100 -
4 Zidua Pro	4.5 oz/a	A	100 a	100 -
5 Sonic	5 oz/a	A	94 a	100 -
6 Authority Supreme	6.5 oz/a	A	94 a	100 -
7 Fierce MTZ	16 oz/a	A	100 a	100 -
8 Authority Edge	9 oz/a	A	91 a	100 -
LSD P=.05			11.6	.
Standard Deviation			7.8	0.0
CV			9.58	0.0
Levene's F^			1.715	.
Levene's Prob(F)			0.167	.
Skewness^			-0.2807	.
Kurtosis^			-0.0351	.
Replicate F			1.524	0.000
Replicate Prob(F)			0.2423	1.0000
Treatment F			85.554	0.000
Treatment Prob(F)			0.0001	1.0000

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	ECHSS	AMBTR	CHEAL	ABUTH	AMARE		
Pest Name	Barnyardgrass	Giant ragweed	common lambsqua>	velvetleaf	Redroot pigweed		
Crop Type, Code							
Crop Name							
Rating Date	Jul-14-2021	Jul-14-2021	Jul-14-2021	Jul-14-2021	Jul-14-2021		
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -		
Rating Type	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL		
Rating Unit/Min/Max	%VISUAL 0 100	%VISUAL 0 100	%VISUAL 0 100	%VISUAL 0 100	%VISUAL 0 100		
Number of Subsamples	1	1	1	1	1		
Data Entry Date	Jul-14-2021	Jul-14-2021	Jul-14-2021	Jul-14-2021	Jul-14-2021		
Rating Timing	9 WAPL	9 WAPL	9 WAPL	9 WAPL	9 WAPL		
Days After First/Last Applic.	60 60	60 60	60 60	60 60	60 60		
Trt-Eval Interval	60 DA-A	60 DA-A	60 DA-A	60 DA-A	60 DA-A		
Days After Emergence	43 DE-1	43 DE-1	43 DE-1	43 DE-1	43 DE-1		
ARM Action Codes	EC		ET8				
Number of Decimals	0	0	0	0	0		
Trt Treatment	Other Other	Appl	16*	17*	18*	19*	20*
No. Name	Rate	Rate Unit Code					
1 utc			0	0 -	0 b	0 b	0 -
2 Boundary	24 oz/a	A	91 a	20 -	88 a	99 a	100 -
3 Zidua Pro	6 oz/a	A	85 a	20 -	95 a	95 a	100 -
4 Zidua Pro	4.5 oz/a	A	90 a	20 -	100 a	100 a	100 -
5 Sonic	5 oz/a	A	71 b	20 -	89 a	95 a	100 -
6 Authority Supreme	6.5 oz/a	A	90 a	20 -	91 a	98 a	100 -
7 Fierce MTZ	16 oz/a	A	93 a	20 -	100 a	100 a	100 -
8 Authority Edge	9 oz/a	A	91 a	20 -	89	96 a	100 -
LSD P=.05			8.8	.	10.0	7.3	.
Standard Deviation			5.9	0.0	6.7	5.0	0.0
CV			6.81	0.0	8.35	5.84	0.0
Levene's F^			1.153	.	1.396	0.216	.
Levene's Prob(F)			0.367	.	0.262	0.978	.
Skewness^			-0.48	.	-0.0749	-0.9691*	.
Kurtosis^			-0.7696	.	0.0687	0.8382	.
Replicate F			1.871	0.000	1.496	3.228	0.000
Replicate Prob(F)			0.1706	1.0000	0.2495	0.0432	1.0000
Treatment F			6.379	0.000	113.734	191.910	0.000
Treatment Prob(F)			0.0010	1.0000	0.0001	0.0001	1.0000

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Pest Type W Weed
 Pest Code CONSS
 Pest Name Morningglory
 Crop Type, Code
 Crop Name
 Rating Date Jul-14-2021
 Part Rated PLOT -
 Rating Type CONTROL
 Rating Unit/Min/Max %VISUAL 0
 100
 Number of Subsamples 1
 Data Entry Date Jul-14-2021
 Rating Timing 9 WAPL
 Days After First/Last Applic. 60 60
 Trt-Eval Interval 60 DA-A
 Days After Emergence 43 DE-1
 ARM Action Codes EC
 Number of Decimals 0

Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit Code	21*
1	utc				0
2	Boundary	24 oz/a		A	79 -
3	Zidua Pro	6 oz/a		A	79 -
4	Zidua Pro	4.5 oz/a		A	81 -
5	Sonic	5 oz/a		A	79 -
6	Authority Supreme	6.5 oz/a		A	81 -
7	Fierce MTZ	16 oz/a		A	84 -
8	Authority Edge	9 oz/a		A	79 -
LSD P=.05					8.4
Standard Deviation					5.6
CV					7.03
Levene's F^					0.935
Levene's Prob(F)					0.491
Skewness^					-0.069
Kurtosis^					-0.0061
Replicate F					4.303
Replicate Prob(F)					0.0187
Treatment F					0.488
Treatment Prob(F)					0.8091

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Pest Type

W, Weed = Weed or volunteer crop

Pest Code

SETFA, Setaria faberi, Giant foxtail = US
ECHSS, Echinochloa sp., Barnyardgrass = US
AMBTR, Ambrosia trifida, Giant ragweed = US
AMARE, Amaranthus retroflexus, Redroot pigweed = US
CONSS, Convolvulus sp., Morningglory = US
CHEAL, Chenopodium album, common lambsquarters = US
ABUTH, Abutilon theophrasti, velvetleaf = US

Crop Type Code

C = EPPO species (Bayer) codes
GLXMA, BSOY, Glycine max, Soybean = US

Part Rated

PLOT = plot
PLANT = plant

Rating Type

PHYGEN = phytotoxicity - general / injury

ARM Action Codes

EC = Do not analyze untreated check, while still reporting treatment mean on AOV Means Table
ET2 = Excluded treatment 2
ET8 = Excluded treatment 8