

The Ohio State University

Glyphosate - Glufosinate Dose Response

Trial ID: 21DOSE Location: Trial Year: 2020
 Protocol ID: 20DOSE Investigator (Creator): Dr. Mark M. Loux
 Project ID: Study Director:
 Sponsor Contact:

Trial Status: E established
ARM Trial Created On: Apr-2-2021

Trial Location

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

Latitude of LL Corner °: 39.85962 N
Longitude of LL Corner °: -83.67664 W
Altitude of LL Corner: 1032.00 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
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

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:** 16 **Tillage Type:** CONTIL conventional-till
Replications: 3 **Study Design:** RACOB� Randomized Complete Block (RCB)

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

Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale	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	497 PLA/m2
Density Minimum, Maximum	376 712
Pest 2 Code, Type, Scale	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	108 PLA/m2
Density Minimum, Maximum	88 120
Pest 3 Code, Type, Scale	AMBTR D BBCH
Stage Majority, Percent	19 100
Height Average	16 IN
Height Minimum, Maximum	3 22
Density Average	21 PLA/m2
Density Minimum, Maximum	4 56

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Application Equipment

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

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.
STATUS	Jun-14-2021	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'E' when Application Date entered.
STATUS	Jun-25-2021	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'E' when Emergence Date entered.

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	SETFA	ECHCG	AMBTR	SETFA	ECHCG
Pest Name	Giant foxtail	Common barnyard>	Giant ragweed	Giant foxtail	Common barnyard>
Rating Date	Jun-25-2021	Jun-25-2021	Jun-25-2021	Jul-14-2021	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	Jul-15-2021	Jul-15-2021
Days After First/Last Applic.	11 11	11 11	11 11	30 30	30 30
Trt-Eval Interval	11 DA-A	11 DA-A	11 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
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit Code	1*	2*	3*	4*	5*
1	Liberty	64 oz/a	A	A	100 a	85 ab	100 a	93 a	47 cd
	N PAK-AMS	2.5 % v/v	A	A					
2	Liberty	32 oz/a	A	A	93 a	60 cde	100 a	97 a	23 def
	N PAK-AMS	2.5 % v/v	A	A					
3	Liberty	16 oz/a	A	A	90 a	53 c-f	98 a	77 a	17 ef
	N PAK-AMS	2.5 % v/v	A	A					
4	Liberty	8 oz/a	A	A	67 bc	33 fgh	97 a	43 b	13 ef
	N PAK-AMS	2.5 % v/v	A	A					
5	Liberty	4 oz/a	A	A	40 d	20 hi	20 cd	23 bc	0 f
	N PAK-AMS	2.5 % v/v	A	A					
6	Roundup Powermax	64 oz/a	A	A	100 a	99 a	70 ab	100 a	93 a
	N PAK-AMS	2.5 % v/v	A	A					
7	Roundup Powermax	32 oz/a	A	A	100 a	98 ab	60 abc	100 a	92 a
	N PAK-AMS	2.5 % v/v	A	A					
8	Roundup Powermax	16 oz/a	A	A	97 a	73 bcd	43 bc	100 a	66 bc
	N PAK-AMS	2.5 % v/v	A	A					
9	Roundup Powermax	8 oz/a	A	A	95 a	55 c-f	57 abc	100 a	47 cd
	N PAK-AMS	2.5 % v/v	A	A					
10	Roundup Powermax	4 oz/a	A	A	77 ab	27 gh	23 cd	93 a	20 ef
	N PAK-AMS	2.5 % v/v	A	A					
11	Liberty	64 oz/a	A	A	100 a	97 ab	100 a	100 a	79 ab
	Roundup Powermax	64 oz/a	A	A					
	N PAK-AMS	2.5 % v/v	A	A					
12	Liberty	32 oz/a	A	A	99 a	77 abc	100 a	93 a	60 bc
	Roundup Powermax	32 oz/a	A	A					
	N PAK-AMS	2.5 % v/v	A	A					
13	Liberty	16 oz/a	A	A	95 a	50 def	97 a	98 a	33 de
	Roundup Powermax	16 oz/a	A	A					
	N PAK-AMS	2.5 % v/v	A	A					

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Pest Code	SETFA	ECHCG	AMBTR	SETFA	ECHCG				
Pest Name	Giant foxtail	Common barnyard>	Giant ragweed	Giant foxtail	Common barnyard>				
Rating Date	Jun-25-2021	Jun-25-2021	Jun-25-2021	Jul-14-2021	Jul-14-2021				
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO				
Rating Unit/Min/Max	% 0 100	% 0 100 %	0 100	% 0 100	% 0 100				
				100					
Number of Subsamples	1	1	1	1	1				
Data Entry Date	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jul-15-2021	Jul-15-2021				
Days After First/Last Applic.	11 11	11 11	11 11	30 30	30 30				
Trt-Eval Interval	11 DA-A	11 DA-A	11 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				
Number of Decimals	0	0	0	0	0				
Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit Code	1*	2*	3*	4*	5*
14	Liberty	8 oz/a	A		80 ab	47 efg	84 a	90 a	33 de
	Roundup Powermax	8 oz/a	A						
	N PAK-AMS	2.5 % v/v	A						
15	Liberty	4 oz/a	A		50 cd	20 hi	43 bc	85 a	17 ef
	Roundup Powermax	4 oz/a	A						
	N PAK-AMS	2.5 % v/v	A						
16	utc				0 e	0 i	0 d	0 c	0 f
LSD P=.05					17.5	17.2	26.9	24.6	17.8
Standard Deviation					10.5	10.3	16.1	14.8	10.7
CV					13.07	18.45	23.61	18.25	26.64
Levene's F^					1.216	1.003	0.979	1.096	0.544
Levene's Prob(F)					0.31	0.476	0.498	0.397	0.895
Skewness^					-0.1168	0.3436	1.466*	0.3906	0.8498*
Kurtosis^					4.3042*	2.2039*	4.7597*	3.9212*	2.044*
Replicate F					1.046	1.608	0.021	0.691	2.043
Replicate Prob(F)					0.3640	0.2170	0.9795	0.5087	0.1473
Treatment F					21.964	26.497	13.284	13.068	24.615
Treatment Prob(F)					0.0001	0.0001	0.0001	0.0001	0.0001

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

Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit Code	6* dAA
1	Liberty	64 oz/a		A	100 a
	N PAK-AMS	2.5 % v/v		A	
2	Liberty	32 oz/a		A	100 a
	N PAK-AMS	2.5 % v/v		A	
3	Liberty	16 oz/a		A	96 a
	N PAK-AMS	2.5 % v/v		A	
4	Liberty	8 oz/a		A	88 ab
	N PAK-AMS	2.5 % v/v		A	
5	Liberty	4 oz/a		A	23 c
	N PAK-AMS	2.5 % v/v		A	
6	Roundup Powermax	64 oz/a		A	98 a
	N PAK-AMS	2.5 % v/v		A	
7	Roundup Powermax	32 oz/a		A	81 abc
	N PAK-AMS	2.5 % v/v		A	
8	Roundup Powermax	16 oz/a		A	67 abc
	N PAK-AMS	2.5 % v/v		A	
9	Roundup Powermax	8 oz/a		A	60 abc
	N PAK-AMS	2.5 % v/v		A	
10	Roundup Powermax	4 oz/a		A	36 bc
	N PAK-AMS	2.5 % v/v		A	
11	Liberty	64 oz/a		A	100 a
	Roundup Powermax	64 oz/a		A	
	N PAK-AMS	2.5 % v/v		A	
12	Liberty	32 oz/a		A	100 a
	Roundup Powermax	32 oz/a		A	
	N PAK-AMS	2.5 % v/v		A	
13	Liberty	16 oz/a		A	96 a
	Roundup Powermax	16 oz/a		A	
	N PAK-AMS	2.5 % v/v		A	

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

Trt No.	Treatment Name	Other Rate	Other Rate Unit	Appl Code	6* dAA
14	Liberty	8 oz/a	A		78 abc
	Roundup Powermax	8 oz/a	A		
	N PAK-AMS	2.5 % v/v	A		
15	Liberty	4 oz/a	A		41 bc
	Roundup Powermax	4 oz/a	A		
	N PAK-AMS	2.5 % v/v	A		
16	utc				0 d
	LSD P=.05				15.2 - 38.5
	Standard Deviation				13.8t
	CV				21.9t
	Levene's F^				0.562
	Levene's Prob(F)				0.882
	Skewness^				0.4765
	Kurtosis^				0.4433
	Replicate F				1.881
	Replicate Prob(F)				0.1699
	Treatment F				10.960
	Treatment Prob(F)				0.0001

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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

Rating Type

CONTRO = control / burndown or knockdown

Rating Unit/Min/Max

%, 0, 100 = percent