

# The Ohio State University

## Metribuzin sulfentrazone formulation comparisons

Trial ID: 21WINFIELD  
 Protocol ID: 21-H-B-MTZSUL-FORM-1 Investigator (Creator): Dr. Mark M. Loux  
 Project ID: Study Director:  
 Sponsor Contact:

Location:  
 Trial Year: 2021

**Discipline:** H herbicide  
**Trial Status:** E established  
**ARM Trial Created On:** Apr-7-2021  
**Initiation Date:** May-1-2021

### 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 °:** 39.85881 N  
**Longitude of LL Corner °:** -83.67261 W  
**Altitude of LL Corner:** 1089.00 FT

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

### Crop Description

**Crop 1:** C GLXMA Glycine max Soybean **BBCH Scale:** BSOY  
**Entry Date:** May-17-2021 **Stage Scale:** BBCH  
**Variety:** Asgrow AG38XF1  
**Attributes:** DICAMBA, GLYPHOSATE, GLUFOSINATE TOL  
**% Germination:** 90  
**1000 Grain Weight:** 0.375 LB  
**Seed Treatment Products:** STANDARD FI-ILEVO  
**Planting Rate:** 175000 S/A  
**Planting Date:** May-14-2021  
**Depth:** 1.5 IN  
**Rows per Plot:** 8  
**Row Spacing:** 15 IN  
**Planting Method:** PLANT  
**Planting Equipment:** FE field equipment  
**Seed Bed:** MEDIUM medium  
**Soil Moisture:** NORMAL normal, adequate  
**Soil Temperature:** 60 F  
**Emergence Date:** Jun-1-2021

### Pest Description

**Pest 1 Type:** W **Code:** STEME Stellaria media **Entry Date:** May-3-2021  
**Common Name:** Common chickweed **Stage Scale:** BBCH

**Pest 2 Type:** W **Code:** LAMPU Lamium purpureum **Entry Date:** May-3-2021  
**Common Name:** Purple deadnettle **Stage Scale:** BBCH

**Pest 3 Type:** W **Code:** CARPE Cardamine pensylvanica **Entry Date:** May-3-2021  
**Common Name:** Pennsylvania bittercress **Stage Scale:** BBCH

**Pest 4 Type:** W **Code:** RANAB Ranunculus abortivus **Entry Date:** May-3-2021  
**Common Name:** Smallflower buttercup **Stage Scale:** BBCH

**Pest 5 Type:** W **Code:** AMBTR Ambrosia trifida **Entry Date:** May-3-2021  
**Common Name:** Giant ragweed **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 FT<sup>2</sup> **Treatments:** 6 **Tillage Type:** NOTILL no-till  
**Replications:** 3 **Study Design:** RAOBL Randomized Complete Block (RCB)

### Previous

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

### Soil Description

**Description Name:** F-9 West  
**% Sand:** 33 **% OM:** 1.6 **Texture:** SIL silt loam  
**% Silt:** 53 **pH:** 6 **Soil Name:** Crosby  
**% Clay:** 15 **CEC:** 8.6 **Fert. Level:** G good

# The Ohio State University

## Metribuzin sulfentrazone formulation comparisons

Trial ID: 21WINFIELD      Location:      Trial Year: 2021  
 Protocol ID: 21-H-B-MTZSUL-FORM-1      Investigator (Creator): Dr. Mark M. Loux  
 Project ID:      Study Director:  
    Sponsor Contact:

**Application Description**

	<b>A</b>
Application Date	May-1-2021
Appl. Start Time	8:30 AM
Appl. Stop Time	8:45 AM
Application Method	SPRAY
Application Timing	14 EPP
Application Placement	BROFOL
Applied By	Dobbels
Appl. Entry Date	May-3-2021
Air Temperature Start, Stop	37 37 F
% Relative Humidity Start, Stop	83 83
Wind Velocity+Dir. Start	1 MPH WSW
Wind Velocity+Dir. Stop	1 MPH WSW
Wind Velocity+Dir. Max	1 MPH WSW
Wet Leaves (Y/N)	N no
Soil Temperature	35 F
Soil Moisture	NORMAL
Soil Surface Condition	MEDIUM
% Cloud Cover	0
Next Moisture Occurred On	May-1-2021
Time to Next Moisture	2.0 DAY
Moisture 6 Hours after Appl.	0 IN
Moisture 1 Week after Appl.	0.81 IN

**Crop Stage At Each Application**

	<b>A</b>
Crop 1 Code, BBCH Scale	GLXMA BSOY
Days after Emergence	-31

**Pest Stage At Each Application**

	<b>A</b>
Pest 1 Code, Type, Scale	STEME W BBCH
Stage Majority, Percent	65 100
Height Average	3 IN
Height Minimum, Maximum	2 3
Density Average	8 PLA/m2
Density Minimum, Maximum	2 10
Pest 2 Code, Type, Scale	LAMPU W BBCH
Stage Majority, Percent	65 100
Height Average	6 IN
Height Minimum, Maximum	5 7
Density Average	10 PLA/m2
Density Minimum, Maximum	8 13
Pest 3 Code, Type, Scale	CARPE W BBCH
Stage Majority, Percent	89 100
Height Average	5 IN
Height Minimum, Maximum	4 5
Density Average	3 PLA/m2
Density Minimum, Maximum	1 5
Pest 4 Code, Type, Scale	RANAB W BBCH
Stage Majority, Percent	63 100
Height Average	12 IN
Height Minimum, Maximum	10 12
Density Average	1 PLA/m2
Density Minimum, Maximum	0 3
Pest 5 Code, Type, Scale	AMBTR W BBCH
Stage Majority, Percent	12 60
Stage Minimum, Percent	10 10
Stage Maximum, Percent	14 30
Height Average	3 IN
Height Minimum, Maximum	1 3
Density Average	12 PLA/m2
Density Minimum, Maximum	8 15

# The Ohio State University

## Metribuzin sulfentrazone formulation comparisons

Trial ID: 21WINFIELD Location: Trial Year: 2021  
 Protocol ID: 21-H-B-MTZSUL-FORM-1 Investigator (Creator): Dr. Mark M. Loux  
 Project ID: Study Director:  
 Sponsor Contact:

**Application Equipment**

**A**

Appl. Equipment 6' TT  
 Equipment Type BACCAI  
 Operation Pressure 44 PSI  
 Nozzle Model 110015  
 Nozzle Type TT  
 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 15 GAL/AC  
 Mix Size 1 L  
 Spray pH 7.8  
 Propellant COMCO2

**Notes**

Context	Date	By	Notes				
STATUS	Apr-7-2021	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'S' during trial creation.				
STATUS	May-3-2021	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'E' when Application Date entered.				
Pest Type		W Weed	W Weed	W Weed	W Weed	W Weed	
Pest Code		STEME	LAMPU	CARPE	RANAB	AMBTR	
Pest Scientific Name		Stellaria media	Lamium purpureum	Cardamine pensy>	Ranunculus abor>	Ambrosia trifida	
Pest Name		chickweed	purple archangel	Pennsylvania bi>	Smallflower but>	Giant ragweed	
Crop Type, Code							
Crop Name							
Rating Date	May-14-2021		May-14-2021	May-14-2021	May-14-2021	May-14-2021	
Part Rated	PLANT -		PLANT -	PLANT -	PLANT -	PLANT -	
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	May-17-2021		May-17-2021	May-17-2021	May-17-2021	May-17-2021	
Days After First/Last Applic.	13 13		13 13	13 13	13 13	13 13	
Trt-Eval Interval	13 DA-A		13 DA-A	13 DA-A	13 DA-A	13 DA-A	
Plant-Eval Interval	0 DP-1		0 DP-1	0 DP-1	0 DP-1	0 DP-1	
Days After Emergence	-18 DE-1		-18 DE-1	-18 DE-1	-18 DE-1	-18 DE-1	
ARM Action Codes			ET6	AS			
Number of Decimals	0		0	0	0	0	

Trt No.	Treatment Name	Rate	Appl Code	1*	2*	3*	4*	5*
		Rate Unit				dAS		
1	UNTREATED CHECK			0 b	0 c	0 c	0 b	0 -
2	Roundup Powermax 3	30 fl oz/a	A	72 a	57 b	85 b	87 a	100 -
	2,4-D Ester	16 oz/a	A					
	CLASS ACT NG	2.5 % v/v	A					
	STRIKELOCK	8 fl oz/a	A					
3	AUTHORITY MTZ	12 oz/a	A	88 a	90 a	98 a	98 a	100 -
	Roundup Powermax 3	32 fl oz/a	A					
	2,4-D Ester	16 oz/a	A					
	CLASS ACT NG	2.5 % v/v	A					
	STRIKELOCK	8 fl oz/a	A					
4	AGH20016	10 fl oz/a	A	92 a	92 a	98 a	100 a	100 -
	Roundup Powermax 3	32 fl oz/a	A					
	2,4-D Ester	16 oz/a	A					
	CLASS ACT NG	2.5 % v/v	A					
	STRIKELOCK	8 fl oz/a	A					
5	AUTHORITY MTZ	16 oz/a	A	93 a	87 a	95 a	98 a	100 -
	Roundup Powermax 3	30 fl oz/a	A					
	2,4-D Ester	16 oz/a	A					
	CLASS ACT NG	2.5 % v/v	A					
	STRIKELOCK	8 fl oz/a	A					

# The Ohio State University

## Metribuzin sulfentrazone formulation comparisons

Trial ID: 21WINFIELD  
 Protocol ID: 21-H-B-MTZSUL-FORM-1 Investigator (Creator): Dr. Mark M. Loux  
 Project ID: Study Director:  
 Sponsor Contact:

Location:  
 Trial Year: 2021

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	STEME	LAMPU	CARPE	RANAB	AMBTR		
Pest Scientific Name	Stellaria media	Lamium purpureum	Cardamine pensy>	Ranunculus abor>	Ambrosia trifida		
Pest Name	chickweed	purple archangel	Pennsylvania bi>	Smallflower but>	Giant ragweed		
Crop Type, Code							
Crop Name							
Rating Date	May-14-2021	May-14-2021	May-14-2021	May-14-2021	May-14-2021		
Part Rated	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit/Min/Max	% 0	% 0 100	% 0 100	% 0 100	% 0 100		
Number of Subsamples	100	1	1	1	1		
Data Entry Date	May-17-2021	May-17-2021	May-17-2021	May-17-2021	May-17-2021		
Days After First/Last Applic.	13 13	13 13	13 13	13 13	13 13		
Trt-Eval Interval	13 DA-A	13 DA-A	13 DA-A	13 DA-A	13 DA-A		
Plant-Eval Interval	0 DP-1	0 DP-1	0 DP-1	0 DP-1	0 DP-1		
Days After Emergence	-18 DE-1	-18 DE-1	-18 DE-1	-18 DE-1	-18 DE-1		
ARM Action Codes		ET6	AS				
Number of Decimals	0	0	0	0	0		
Trt Treatment No. Name	Rate	Appl Code	1*	2*	3*	4*	5*
	Rate Unit				dAS		
6 AGH20016	14 fl oz/a	A	67 a	95	98 a	97 a	100 -
Roundup Powermax 3	30 fl oz/a	A					
2,4-D Ester	16 oz/a	A					
CLASS ACT NG	2.5 % v/v	A					
STRIKELOCK	8 fl oz/a	A					
LSD P=.05			40.1	9.2	3.5 - 3.7	17.8	.
Standard Deviation			22.0	4.9	0.1t	9.8	0.0
CV			32.09	7.5	1.25t	12.24	0.0
Levene's F^			0.536	0.035	0.571	0.558	.
Levene's Prob(F)			0.746	0.997	0.721	0.731	.
Skewness^			-1.1043*	-0.0275	-0.7186	-1.3029*	.
Kurtosis^			2.8941*	-1.5199	0.0213	4.1213*	.
Replicate F			0.708	4.421	1.000	0.826	0.000
Replicate Prob(F)			0.5159	0.0509	0.4019	0.4655	1.0000
Treatment F			7.739	192.632	3881.979	48.800	0.000
Treatment Prob(F)			0.0032	0.0001	0.0001	0.0001	1.0000

# The Ohio State University

## Metribuzin sulfentrazone formulation comparisons

Trial ID: 21WINFIELD Location: Trial Year: 2021  
 Protocol ID: 21-H-B-MTZSUL-FORM-1 Investigator (Creator): Dr. Mark M. Loux  
 Project ID: Study Director:  
 Sponsor Contact:

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	STEME	LAMPU	CARPE	RANAB	AMBTR		
Pest Scientific Name	Stellaria media	Lamium purpureum	Cardamine pensy>	Ranunculus abor>	Ambrosia trifida		
Pest Name	chickweed	purple archangel	Pennsylvania bi>	Smallflower but>	Giant ragweed		
Crop Type, Code							
Crop Name							
Rating Date	May-21-2021	May-21-2021	May-21-2021	May-21-2021	May-21-2021		
Part Rated	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -		
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	May-25-2021	May-25-2021	May-25-2021	May-25-2021	May-25-2021		
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		
Plant-Eval Interval	7 DP-1	7 DP-1	7 DP-1	7 DP-1	7 DP-1		
Days After Emergence	-11 DE-1	-11 DE-1	-11 DE-1	-11 DE-1	-11 DE-1		
ARM Action Codes		ET3					
Number of Decimals	0	0	0	0	0		
Trt Treatment	Rate	Appl	6*	7*	8*	9*	10*
No. Name	Rate Unit	Code					
1 UNTREATED CHECK			0 -	0 c	0 -	0 -	0 b
2 Roundup Powermax 3	30 fl oz/a A		100 -	60 b	100 -	100 -	100 a
2,4-D Ester	16 oz/a A						
CLASS ACT NG	2.5 % v/v A						
STRIKELock	8 fl oz/a A						
3 AUTHORITY MTZ	12 oz/a A		100 -	92	100 -	100 -	97 a
Roundup Powermax 3	32 fl oz/a A						
2,4-D Ester	16 oz/a A						
CLASS ACT NG	2.5 % v/v A						
STRIKELock	8 fl oz/a A						
4 AGH20016	10 fl oz/a A		100 -	100 a	100 -	100 -	98 a
Roundup Powermax 3	32 fl oz/a A						
2,4-D Ester	16 oz/a A						
CLASS ACT NG	2.5 % v/v A						
STRIKELock	8 fl oz/a A						
5 AUTHORITY MTZ	16 oz/a A		100 -	98 a	100 -	100 -	100 a
Roundup Powermax 3	30 fl oz/a A						
2,4-D Ester	16 oz/a A						
CLASS ACT NG	2.5 % v/v A						
STRIKELock	8 fl oz/a A						

# The Ohio State University

## Metribuzin sulfentrazone formulation comparisons

Trial ID: 21WINFIELD Location: Trial Year: 2021  
 Protocol ID: 21-H-B-MTZSUL-FORM-1 Investigator (Creator): Dr. Mark M. Loux  
 Project ID: Study Director:  
 Sponsor Contact:

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	
Pest Code	STEME	LAMPU	CARPE	RANAB	AMBTR	
Pest Scientific Name	Stellaria media	Lamium purpureum	Cardamine pensy>	Ranunculus abor>	Ambrosia trifida	
Pest Name	chickweed	purple archangel	Pennsylvania bi>	Smallflower but>	Giant ragweed	
Crop Type, Code						
Crop Name						
Rating Date	May-21-2021	May-21-2021	May-21-2021	May-21-2021	May-21-2021	
Part Rated	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -	
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	May-25-2021	May-25-2021	May-25-2021	May-25-2021	May-25-2021	
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	
Plant-Eval Interval	7 DP-1	7 DP-1	7 DP-1	7 DP-1	7 DP-1	
Days After Emergence	-11 DE-1	-11 DE-1	-11 DE-1	-11 DE-1	-11 DE-1	
ARM Action Codes		ET3				
Number of Decimals	0	0	0	0	0	
Trt Treatment No. Name	Rate Unit Code	6*	7*	8*	9*	10*
6 AGH20016	14 fl oz/a A	100 -	100 a	100 -	100 -	97 a
Roundup Powermax 3	30 fl oz/a A					
2,4-D Ester	16 oz/a A					
CLASS ACT NG	2.5 % v/v A					
STRIKELOCK	8 fl oz/a A					
LSD P=.05		.	2.4	.	.	6.1
Standard Deviation		0.0	1.3	0.0	0.0	3.4
CV		0.0	1.8	0.0	0.0	4.12
Levene's F^		.	0.45	.	.	0.288
Levene's Prob(F)		.	0.77	.	.	0.91
Skewness^		.	-1.1823*	.	.	-0.5772
Kurtosis^		.	3.2308*	.	.	-0.633
Replicate F		0.000	1.000	0.000	0.000	1.585
Replicate Prob(F)		1.0000	0.4096	1.0000	1.0000	0.2523
Treatment F		0.000	3415.000	0.000	0.000	425.098
Treatment Prob(F)		1.0000	0.0001	1.0000	1.0000	0.0001

# The Ohio State University

## Metribuzin sulfentrazone formulation comparisons

Trial ID: 21WINFIELD  
 Protocol ID: 21-H-B-MTZSUL-FORM-1 Investigator (Creator): Dr. Mark M. Loux  
 Project ID: Study Director:  
 Sponsor Contact: Location: Trial Year: 2021

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	SETFA	AMBTR	ERICA	CHEAL	TARSS			
Pest Scientific Name	Setaria faberi	Ambrosia trifida	Erigeron canadensis	Chenopodium album	Taraxacum sp.	SOYBEAN		
Pest Name	Giant foxtail	Giant ragweed	Hogweed	green pigweed	Dandelion			
Crop Type, Code						C GLXMA		
Crop Name						Soybean		
Rating Date	Jun-1-2021	Jun-1-2021	Jun-1-2021	Jun-1-2021	Jun-1-2021	Jun-11-2021		
Part Rated	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit/Min/Max	% 0 %	0 100 %	0 100 %	0 100 %	0 100 %	0 100 %		
Number of Subsamples	100	1	1	1	1	1		
Data Entry Date	Jun-22-2021	Jun-22-2021	Jun-22-2021	Jun-22-2021	Jun-22-2021	Jun-21-2021		
Days After First/Last Applic.	31 31	31 31	31 31	31 31	31 31	41 41		
Trt-Eval Interval	31 DA-A	31 DA-A	31 DA-A	31 DA-A	31 DA-A	41 DA-A		
Plant-Eval Interval	18 DP-1	18 DP-1	18 DP-1	18 DP-1	18 DP-1	28 DP-1		
Days After Emergence	0 DE-1	0 DE-1	0 DE-1	0 DE-1	0 DE-1	10 DE-1		
ARM Action Codes	ER3	EC						
Number of Decimals	0	0	0	0	0	0		
Trt Treatment								
No. Name	Rate Unit	Appl Code	11*	12*	13*	14*	15*	16*
1 UNTREATED CHECK			0 b	0	0 -	0 -	0 b	0 -
2 Roundup Powermax 3	30 fl oz/a A		40 a	75 -	100 -	100 -	100 a	0 -
2,4-D Ester	16 oz/a A							
CLASS ACT NG	2.5 % v/v A							
STRIKELOCK	8 fl oz/a A							
3 AUTHORITY MTZ	12 oz/a A		63 a	73 -	100 -	100 -	95 a	0 -
Roundup Powermax 3	32 fl oz/a A							
2,4-D Ester	16 oz/a A							
CLASS ACT NG	2.5 % v/v A							
STRIKELOCK	8 fl oz/a A							
4 AGH20016	10 fl oz/a A		63 a	73 -	100 -	100 -	93 a	0 -
Roundup Powermax 3	32 fl oz/a A							
2,4-D Ester	16 oz/a A							
CLASS ACT NG	2.5 % v/v A							
STRIKELOCK	8 fl oz/a A							
5 AUTHORITY MTZ	16 oz/a A		75 a	72 -	100 -	100 -	100 a	0 -
Roundup Powermax 3	30 fl oz/a A							
2,4-D Ester	16 oz/a A							
CLASS ACT NG	2.5 % v/v A							
STRIKELOCK	8 fl oz/a A							

# The Ohio State University

## Metribuzin sulfentrazone formulation comparisons

Trial ID: 21WINFIELD  
 Protocol ID: 21-H-B-MTZSUL-FORM-1 Investigator (Creator): Dr. Mark M. Loux  
 Project ID: Study Director:  
 Sponsor Contact:

Trial Year: 2021

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	SETFA	AMBTR	ERICA	CHEAL	TARSS			
Pest Scientific Name	Setaria faberi	Ambrosia trifida	Erigeron canadensis	Chenopodium album	Taraxacum sp.	SOYBEAN		
Pest Name	Giant foxtail	Giant ragweed	Hogweed	green pigweed	Dandelion			
Crop Type, Code						C GLXMA		
Crop Name						Soybean		
Rating Date	Jun-1-2021	Jun-1-2021	Jun-1-2021	Jun-1-2021	Jun-1-2021	Jun-11-2021		
Part Rated	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit/Min/Max	% 0 %	0 100	% 0 100	% 0 100	% 0 %	0 100		
Number of Subsamples	100	1	1	1	100	1		
Data Entry Date	Jun-22-2021	Jun-22-2021	Jun-22-2021	Jun-22-2021	Jun-22-2021	Jun-21-2021		
Days After First/Last Applic.	31 31	31 31	31 31	31 31	31 31	41 41		
Trt-Eval Interval	31 DA-A	31 DA-A	31 DA-A	31 DA-A	31 DA-A	41 DA-A		
Plant-Eval Interval	18 DP-1	18 DP-1	18 DP-1	18 DP-1	18 DP-1	28 DP-1		
Days After Emergence	0 DE-1	0 DE-1	0 DE-1	0 DE-1	0 DE-1	10 DE-1		
ARM Action Codes	ER3	EC						
Number of Decimals	0	0	0	0	0	0		
Trt Treatment No. Name	Rate	Appl Code	11*	12*	13*	14*	15*	16*
6 AGH20016	14 fl oz/a	A	75 a	72 -	100 -	100 -	93 a	0 -
Roundup Powermax 3	30 fl oz/a	A						
2,4-D Ester	16 oz/a	A						
CLASS ACT NG	2.5 % v/v	A						
STRIKELOCK	8 fl oz/a	A						
LSD P=.05			30.8	9.3	.	.	10.7	.
Standard Deviation			12.0	5.0	0.0	0.0	5.9	0.0
CV			22.8	6.79	0.0	0.0	7.34	0.0
Levene's F^			0.459	0.913	.	.	0.038	.
Levene's Prob(F)			0.799	0.493	.	.	0.999	.
Skewness^			-0.6366	-0.5948	.	.	-0.0686	.
Kurtosis^			0.4417	0.919	.	.	-1.385	.
Replicate F			2.849	2.441	0.000	0.000	4.840	0.000
Replicate Prob(F)			0.1522	0.1488	1.0000	1.0000	0.0339	1.0000
Treatment F			11.512	0.237	0.000	0.000	134.440	0.000
Treatment Prob(F)			0.0090	0.9095	1.0000	1.0000	0.0001	1.0000



# The Ohio State University

## Metribuzin sulfentrazone formulation comparisons

Trial ID: 21WINFIELD  
 Protocol ID: 21-H-B-MTZSUL-FORM-1 Investigator (Creator): Dr. Mark M. Loux  
 Project ID: Study Director:  
 Sponsor Contact: Location: Trial Year: 2021

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	SETFA	AMBTR	ERICA	CHEAL	AMARE		
Pest Scientific Name	Setaria faberi	Ambrosia trifida	Erigeron canadensis	Chenopodium album	Amaranthus retrofractus		
Pest Name	Giant foxtail	Giant ragweed	Hogweed	green pigweed	Redroot pigweed		
Crop Type, Code							
Crop Name							
Rating Date	Jun-11-2021	Jun-11-2021	Jun-11-2021	Jun-11-2021	Jun-11-2021		
Part Rated	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -		
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-21-2021	Jun-21-2021	Jun-21-2021	Jun-21-2021	Jun-21-2021		
Days After First/Last Applic.	41 41	41 41	41 41	41 41	41 41		
Trt-Eval Interval	41 DA-A	41 DA-A	41 DA-A	41 DA-A	41 DA-A		
Plant-Eval Interval	28 DP-1	28 DP-1	28 DP-1	28 DP-1	28 DP-1		
Days After Emergence	10 DE-1	10 DE-1	10 DE-1	10 DE-1	10 DE-1		
ARM Action Codes			AS	AS	AS		
Number of Decimals	0	0	0	0	0		
Trt Treatment No. Name	Rate	Appl Code	17*	18*	19*	20*	21*
	Rate Unit				dAS	dAS	dAS
1 UNTREATED CHECK			0 c	0 b	0 c	0 c	0 b
2 Roundup Powermax 3	30 fl oz/a A		20 b	58 a	73 b	86 b	93 a
2,4-D Ester	16 oz/a A						
CLASS ACT NG	2.5 % v/v A						
STRIKELOCK	8 fl oz/a A						
3 AUTHORITY MTZ	12 oz/a A		57 a	43 a	100 a	100 a	86 a
Roundup Powermax 3	32 fl oz/a A						
2,4-D Ester	16 oz/a A						
CLASS ACT NG	2.5 % v/v A						
STRIKELOCK	8 fl oz/a A						
4 AGH20016	10 fl oz/a A		57 a	65 a	100 a	100 a	100 a
Roundup Powermax 3	32 fl oz/a A						
2,4-D Ester	16 oz/a A						
CLASS ACT NG	2.5 % v/v A						
STRIKELOCK	8 fl oz/a A						
5 AUTHORITY MTZ	16 oz/a A		60 a	47 a	100 a	100 a	100 a
Roundup Powermax 3	30 fl oz/a A						
2,4-D Ester	16 oz/a A						
CLASS ACT NG	2.5 % v/v A						
STRIKELOCK	8 fl oz/a A						

# The Ohio State University

## Metribuzin sulfentrazone formulation comparisons

Trial ID: 21WINFIELD  
 Protocol ID: 21-H-B-MTZSUL-FORM-1 Investigator (Creator): Dr. Mark M. Loux  
 Project ID: Study Director:  
 Sponsor Contact:

Trial Year: 2021

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	SETFA	AMBTR	ERICA	CHEAL	AMARE		
Pest Scientific Name	Setaria faberi	Ambrosia trifida	Erigeron canadensis	Chenopodium album	Amaranthus retrus		
Pest Name	Giant foxtail	Giant ragweed	Hogweed	green pigweed	Redroot pigweed		
Crop Type, Code							
Crop Name							
Rating Date	Jun-11-2021	Jun-11-2021	Jun-11-2021	Jun-11-2021	Jun-11-2021		
Part Rated	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit/Min/Max	% 0 %	0 100	% 0 100	% 0 100	% 0 100		
Number of Subsamples	100	1	1	1	1		
Data Entry Date	Jun-21-2021	Jun-21-2021	Jun-21-2021	Jun-21-2021	Jun-21-2021		
Days After First/Last Applic.	41 41	41 41	41 41	41 41	41 41		
Trt-Eval Interval	41 DA-A	41 DA-A	41 DA-A	41 DA-A	41 DA-A		
Plant-Eval Interval	28 DP-1	28 DP-1	28 DP-1	28 DP-1	28 DP-1		
Days After Emergence	10 DE-1	10 DE-1	10 DE-1	10 DE-1	10 DE-1		
ARM Action Codes			AS	AS	AS		
Number of Decimals	0	0	0	0	0		
Trt Treatment No. Name	Rate Unit	Appl Code	17*	18*	19* dAS	20* dAS	21* dAS
6 AGH20016	14 fl oz/a	A	65 a	40 a	100 a	100 a	100 a
Roundup Powermax 3	30 fl oz/a	A					
2,4-D Ester	16 oz/a	A					
CLASS ACT NG	2.5 % v/v	A					
STRIKELOCK	8 fl oz/a	A					
LSD P=.05			13.9	19.2	4.3 - 4.9	8.6 - 8.8	11.7 - 11.8
Standard Deviation			7.6	10.6	0.1t	0.2t	0.3t
CV			17.7	25.0	1.65t	2.97t	4.01t
Levene's F^			0.45	0.269	0.533	0.533	0.48
Levene's Prob(F)			0.806	0.921	0.747	0.747	0.785
Skewness^			-0.3183	-0.8961	1.3829*	1.3829*	0.0
Kurtosis^			-0.1171	0.094	4.8663*	4.8663*	0.2007
Replicate F			0.885	1.733	1.000	1.000	1.667
Replicate Prob(F)			0.4426	0.2258	0.4019	0.4019	0.2373
Treatment F			36.426	13.935	2267.906	687.763	376.301
Treatment Prob(F)			0.0001	0.0003	0.0001	0.0001	0.0001

# The Ohio State University

## Metribuzin sulfentrazone formulation comparisons

Trial ID: 21WINFIELD  
 Protocol ID: 21-H-B-MTZSUL-FORM-1 Investigator (Creator): Dr. Mark M. Loux  
 Project ID: Study Director:  
 Sponsor Contact:

Location:  
 Trial Year: 2021

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	TARSS	SETFA	ECHSS	AMBTR	ERICA			
Pest Scientific Name	Taraxacum sp.	SOYBEAN	Setaria faberi	Echinochloa sp.	Ambrosia trifida	Erigeron canadensis		
Pest Name	Dandelion		Giant foxtail	Barnyardgrass	Giant ragweed	Hogweed		
Crop Type, Code		C GLXMA						
Crop Name		Soybean						
Rating Date	Jun-11-2021	Jun-17-2021	Jun-17-2021	Jun-17-2021	Jun-17-2021	Jun-17-2021		
Part Rated	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -		
Rating Type	CONTRO	PHYGEN	CONTROL	CONTRO	CONTRO	CONTRO		
Rating Unit/Min/Max	% 0 100 %	0 100	% 0 100 %	0 100 %	0 100 %	% 0 100		
Number of Subsamples	1	1	1	1	1	1		
Data Entry Date	Jun-21-2021	Jun-21-2021	Jun-21-2021	Jun-21-2021	Jun-21-2021	Jun-21-2021		
Days After First/Last Applic.	41 41	47 47	47 47	47 47	47 47	47 47		
Trt-Eval Interval	41 DA-A	47 DA-A	47 DA-A	47 DA-A	47 DA-A	47 DA-A		
Plant-Eval Interval	28 DP-1	34 DP-1	34 DP-1	34 DP-1	34 DP-1	34 DP-1		
Days After Emergence	10 DE-1	16 DE-1	16 DE-1	16 DE-1	16 DE-1	16 DE-1		
ARM Action Codes								
Number of Decimals	0	0	0	0	0	0		
Trt Treatment No. Name	Rate	Appl Code	22*	23*	24*	25*	26*	27*
1 UNTREATED CHECK			0 b	0 -	0 d	0 d	0 b	0 c
2 Roundup Powermax 3	30 fl oz/a A		80 a	0 -	20 c	20 c	68 a	77 b
2,4-D Ester	16 oz/a A							
CLASS ACT NG	2.5 % v/v A							
STRIKELOCK	8 fl oz/a A							
3 AUTHORITY MTZ	12 oz/a A		73 a	0 -	60 ab	60 ab	43 a	100 a
Roundup Powermax 3	32 fl oz/a A							
2,4-D Ester	16 oz/a A							
CLASS ACT NG	2.5 % v/v A							
STRIKELOCK	8 fl oz/a A							
4 AGH20016	10 fl oz/a A		70 a	0 -	47 b	47 b	55 a	93 a
Roundup Powermax 3	32 fl oz/a A							
2,4-D Ester	16 oz/a A							
CLASS ACT NG	2.5 % v/v A							
STRIKELOCK	8 fl oz/a A							
5 AUTHORITY MTZ	16 oz/a A		77 a	0 -	60 ab	60 ab	47 a	100 a
Roundup Powermax 3	30 fl oz/a A							
2,4-D Ester	16 oz/a A							
CLASS ACT NG	2.5 % v/v A							
STRIKELOCK	8 fl oz/a A							

# The Ohio State University

## Metribuzin sulfentrazone formulation comparisons

Trial ID: 21WINFIELD  
 Protocol ID: 21-H-B-MTZSUL-FORM-1 Investigator (Creator): Dr. Mark M. Loux  
 Project ID: Study Director:  
 Sponsor Contact:

Trial Year: 2021

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	TARSS	SETFA	ECHSS	AMBTR	ERICA			
Pest Scientific Name	Taraxacum sp.	SOYBEAN	Setaria faberi	Echinochloa sp.	Ambrosia trifida	Erigeron canadense		
Pest Name	Dandelion		Giant foxtail	Barnyardgrass	Giant ragweed	Hogweed		
Crop Type, Code		C GLXMA						
Crop Name		Soybean						
Rating Date	Jun-11-2021	Jun-17-2021	Jun-17-2021	Jun-17-2021	Jun-17-2021	Jun-17-2021		
Part Rated	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -		
Rating Type	CONTRO	PHYGEN	CONTROL	CONTRO	CONTRO	CONTRO		
Rating Unit/Min/Max	% 0 100 %	0 100	% 0	% 0 100 %	% 0 100 %	% 0 100 %		
Number of Subsamples	1	1	1	1	1	1		
Data Entry Date	Jun-21-2021	Jun-21-2021	Jun-21-2021	Jun-21-2021	Jun-21-2021	Jun-21-2021		
Days After First/Last Applic.	41 41	47 47	47 47	47 47	47 47	47 47		
Trt-Eval Interval	41 DA-A	47 DA-A	47 DA-A	47 DA-A	47 DA-A	47 DA-A		
Plant-Eval Interval	28 DP-1	34 DP-1	34 DP-1	34 DP-1	34 DP-1	34 DP-1		
Days After Emergence	10 DE-1	16 DE-1	16 DE-1	16 DE-1	16 DE-1	16 DE-1		
ARM Action Codes								
Number of Decimals	0	0	0	0	0	0		
Trt Treatment No. Name	Rate	Appl Code	22*	23*	24*	25*	26*	27*
6 AGH20016	14 fl oz/a	A	70 a	0 -	68 a	68 a	45 a	100 a
Roundup Powermax 3	30 fl oz/a	A						
2,4-D Ester	16 oz/a	A						
CLASS ACT NG	2.5 % v/v	A						
STRIKELOCK	8 fl oz/a	A						
LSD P=.05			10.4	.	15.5	15.5	24.4	15.2
Standard Deviation			5.7	0.0	8.5	8.5	13.4	8.4
CV			9.24	0.0	20.03	20.03	31.14	10.68
Levene's F^			0.269	.	1.543	1.543	0.904	1.505
Levene's Prob(F)			0.922	.	0.249	0.249	0.51	0.26
Skewness^			0.4618	.	-0.1782	-0.1782	-0.5269	-0.6679
Kurtosis^			-0.7868	.	1.4233	1.4233	0.5133	2.2881*
Replicate F			2.436	0.000	0.402	0.402	0.703	0.238
Replicate Prob(F)			0.1375	1.0000	0.6791	0.6791	0.5179	0.7925
Treatment F			85.641	0.000	29.874	29.874	8.855	66.619
Treatment Prob(F)			0.0001	1.0000	0.0001	0.0001	0.0019	0.0001

# The Ohio State University

## Metribuzin sulfentrazone formulation comparisons

Trial ID: 21WINFIELD  
 Protocol ID: 21-H-B-MTZSUL-FORM-1 Investigator (Creator): Dr. Mark M. Loux  
 Project ID: Study Director:  
 Location: retr-> Trial Year: 2021  
 Sponsor Contact:

Pest Type	W Weed	W Weed
Pest Code	CHEAL	AMARE
Pest Scientific Name	Chenopodium alb>	Amaranthus retr->
Pest Name	green pigweed	Redroot pigweed
Crop Type, Code		
Crop Name		
Rating Date	Jun-17-2021	Jun-17-2021
Part Rated	PLANT -	PLANT -
Rating Type	CONTRO	CONTRO
Rating Unit/Min/Max	% 0 100	% 0 100
Number of Subsamples	1	1
Data Entry Date	Jun-21-2021	Jun-21-2021
Days After First/Last Applic.	47 47	47 47
Trt-Eval Interval	47 DA-A	47 DA-A
Plant-Eval Interval	34 DP-1	34 DP-1
Days After Emergence	16 DE-1	16 DE-1
ARM Action Codes	AS	AS
Number of Decimals	0	0

Trt No.	Treatment Name	Rate	Appl Unit	Code	28* dAS	29* dAS
1	UNTREATED CHECK				0 c	0 b
2	Roundup Powermax 3	30 fl oz/a	A		78 b	100 a
	2,4-D Ester	16 oz/a	A			
	CLASS ACT NG	2.5 % v/v	A			
	STRIKELOCK	8 fl oz/a	A			
3	AUTHORITY MTZ	12 oz/a	A		100 a	100 a
	Roundup Powermax 3	32 fl oz/a	A			
	2,4-D Ester	16 oz/a	A			
	CLASS ACT NG	2.5 % v/v	A			
	STRIKELOCK	8 fl oz/a	A			
4	AGH20016	10 fl oz/a	A		100 a	93 a
	Roundup Powermax 3	32 fl oz/a	A			
	2,4-D Ester	16 oz/a	A			
	CLASS ACT NG	2.5 % v/v	A			
	STRIKELOCK	8 fl oz/a	A			
5	AUTHORITY MTZ	16 oz/a	A		100 a	100 a
	Roundup Powermax 3	30 fl oz/a	A			
	2,4-D Ester	16 oz/a	A			
	CLASS ACT NG	2.5 % v/v	A			
	STRIKELOCK	8 fl oz/a	A			

# The Ohio State University

## Metribuzin sulfentrazone formulation comparisons

Trial ID: 21WINFIELD Location: Trial Year: 2021  
 Protocol ID: 21-H-B-MTZSUL-FORM-1 Investigator (Creator): Dr. Mark M. Loux  
 Project ID: Study Director:  
 Sponsor Contact:

Pest Type	W Weed	W Weed
Pest Code	CHEAL	AMARE
Pest Scientific Name	Chenopodium alb>	Amaranthus retr>
Pest Name	green pigweed	Redroot pigweed
Crop Type, Code		
Crop Name		
Rating Date	Jun-17-2021	Jun-17-2021
Part Rated	PLANT -	PLANT -
Rating Type	CONTRO	CONTRO
Rating Unit/Min/Max	% 0 100	% 0 100
Number of Subsamples	1	1
Data Entry Date	Jun-21-2021	Jun-21-2021
Days After First/Last Applic.	47 47	47 47
Trt-Eval Interval	47 DA-A	47 DA-A
Plant-Eval Interval	34 DP-1	34 DP-1
Days After Emergence	16 DE-1	16 DE-1
ARM Action Codes	AS	AS
Number of Decimals	0	0

Trt No.	Treatment Name	Rate	Appl Unit	Code	28* dAS	29* dAS
6	AGH20016	14 fl oz/a	A		100 a	100 a
	Roundup Powermax 3	30 fl oz/a	A			
	2,4-D Ester	16 oz/a	A			
	CLASS ACT NG	2.5 % v/v	A			
	STRIKELock	8 fl oz/a	A			
	LSD P=.05				5.8 - 6.4	8.8 - 8.9
	Standard Deviation				0.2t	0.2t
	CV				2.14t	2.95t
	Levene's F^				1.549	0.533
	Levene's Prob(F)				0.247	0.747
	Skewness^				-0.7871	-1.3829*
	Kurtosis^				4.8663*	4.8663*
	Replicate F				1.000	1.000
	Replicate Prob(F)				0.4019	0.4019
	Treatment F				1336.161	695.384
	Treatment Prob(F)				0.0001	0.0001

# The Ohio State University

## Metribuzin sulfentrazone formulation comparisons

Trial ID: 21WINFIELD      Location:      Trial Year: 2021  
Protocol ID: 21-H-B-MTZSUL-FORM-1      Investigator (Creator): Dr. Mark M. Loux  
Project ID:      Study Director:  
Sponsor Contact:

Pest Type

W, Weed = Weed or volunteer crop

Pest Code

STEME, Stellaria media, chickweed = US  
LAMPU, Lamium purpureum, purple archangel = US  
CARPE, Cardamine pensylvanica, Pennsylvania bittercress = US  
RANAB, Ranunculus abortivus, Smallflower buttercup = US  
AMBTR, Ambrosia trifida, Giant ragweed = US  
SETFA, Setaria faberi, Giant foxtail = US  
ERICA, Erigeron canadensis, Hogweed = US  
CHEAL, Chenopodium album, green pigweed = US  
TARSS, Taraxacum sp., Dandelion = US  
AMARE, Amaranthus retroflexus, Redroot pigweed = US  
ECHSS, Echinochloa sp., Barnyardgrass = US

Crop Type, Code

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

Part Rated

PLANT = plant

Rating Type

CONTRO = control / burndown or knockdown  
PHYGEN = phytotoxicity - general / injury

Rating Unit/Min/Max

%, 0, 100 = percent

Plant-Eval Interval

0 DP-1 = 1 GLXMA May-14-2021  
7 DP-1 = 1 GLXMA May-14-2021  
18 DP-1 = 1 GLXMA May-14-2021  
28 DP-1 = 1 GLXMA May-14-2021  
34 DP-1 = 1 GLXMA May-14-2021

ARM Action Codes

ET6 = Excluded treatment 6  
AS = Automatic square root transformation of X+0.5  
ET3 = Excluded treatment 3  
ER3 = Excluded replicate 3  
EC = Do not analyze untreated check, while still reporting treatment mean on AOV Means Table