

The Ohio State University

Enlist Burndown Reviton Exposure Trial

Trial ID: 23ENLISTNT
 Protocol ID: 23ENLISTNT Location: Western Branch F-9 W Trial Year: 2023
 Project ID: Project ID 2: Project ID 3:
 Study Director: Sponsor Contact:
 Investigator:

Status: E established
 ARM Trial Created On: Mar-30-2023

Trial Location

City: South Charleston Country: USA United States
 State/Prov.: Ohio County: Clark
 Postal Code: 45368 Climate Zone: EPPONE EPO North East

Latitude of LL Corner °: 39.8588 N
 Longitude of LL Corner °: -83.67345 W
 Altitude of LL Corner: 1090.00 FT

Regulations

Conducted Under GLP: No
 Conducted Under GEP: No
 Study Rules: Default

Crop Description

Crop 1: C GLXMA Glycine max Soybean
 Entry Date: May-3-2023 Stage Scale: BBCH
 Variety: Pioneer 28A65E
 Attributes: AAD-12/GLU/GLY-TOL
 Planting Date: Apr-27-2023 Seed Size: 2441 S/LB
 Planting Rate: 155000 S/A
 Depth: 1 IN
 Rows per Plot: 8 Planting Method: PLANTD planted
 Row Spacing: 15 IN Planting Equipment: FE field equipment
 Seed Bed: MEDIUM medium
 Soil Temperature: 50 F Soil Moisture: NORMAL normal, adequate
 Emergence Date: May-8-2023 Harvest Equipment: Kincaid 8XP
 Harvest Date: Oct-11-2023 Harvested Width: 6.25 FT
 Moisture Meter: Harvest Master Harvested Length: 30 FT
 % Standard Moisture: 13.0
 Weighing Equipment: Harvest Master HM800

Pest Description

Pest 1 Type: W Code: STEME Stellaria media Entry Date: May-3-2023
 Common Name: chickweed Stage Scale: BBCH

Pest 2 Type: W Code: LAMPU Lamium purpureum Entry Date: May-3-2023
 Common Name: purple deadnettle Stage Scale: BBCH

Pest 3 Type: W Code: RANAB Ranunculus abortivus Entry Date: May-3-2023
 Common Name: Smallflower buttercup Stage Scale: BBCH

Pest 4 Type: W Code: SENGL Packera glabella Entry Date: May-3-2023
 Common Name: Cressleaf groundsel Stage Scale: BBCH

Pest 5 Type: W Code: ERYRE Erysimum repandum Entry Date: May-3-2023
 Common Name: spreading treacle mustard Stage Scale: BBCH

Pest 6 Type: W Code: ERICA Erigeron canadensis Entry Date: May-3-2023
 Common Name: mare's-tail Stage Scale: BBCH

Pest 7 Type: W Code: CARPE Cardamine pensylvanica Entry Date: May-3-2023
 Common Name: Pennsylvania bittercress Stage Scale: BBCH

Pest 8 Type: W Code: POAAN Poa annua Entry Date: May-3-2023
 Common Name: Annual bluegrass Stage Scale: BBCH

Pest 9 Type: W Code: TAROF Taraxacum officinale Entry Date: May-3-2023
 Common Name: dandelion Stage Scale: BBCH

Pest10 Type: W Code: SETFA Setaria faberi Entry Date: Jun-8-2023
 Common Name: Giant foxtail Stage Scale: BBCH

Pest11 Type: W Code: SETPU Setaria helvola Entry Date: Jun-8-2023
 Common Name: yellow foxtail Stage Scale: BBCH

Pest12 Type: W Code: AMBTR Ambrosia trifida Entry Date: Jun-8-2023
 Common Name: Giant ragweed Stage Scale: BBCH

Pest13 Type: W Code: CHEAL Chenopodium album Entry Date: Jun-8-2023
 Common Name: common lambsquarters Stage Scale: BBCH

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Site and Design

Treated Plot Width: 6.67 FT
 Treated Plot Length: 30 FT
 Treated Plot Area: 200.1 FT²
 Replications: 3 Treatments: 8 Plots: 24 Study Design: RACOB L Randomized Complete Block (RCB)

Application Description

	A	B
Date	Apr-27-2023	Jun-7-2023
Start Time	11:39 AM	9:20 AM
Stop Time	12:00 PM	9:30 AM
Method	SPRAY	SPRAY
Timing	PRE	POSPOS
Placement	BROFOL	BROADC
Applied By		mccormick
Entry Date	May-3-2023	Jun-8-2023
Air Temperature Start, Stop	53, 53 F	62, 62 F
% Relative Humidity Start, Stop	54, 54	53, 53
Wind Velocity+Dir. Start	9 MPH, E	5 MPH, NNE
Wind Velocity+Dir. Stop	9 MPH, E	5 MPH, NNE
Wind Velocity+Dir. Max	9 MPH, E	8 MPH, NNE
Wet Leaves (Y/N)	N, no	N, no
Soil Temperature	44 F	63 F
Soil Moisture	DRY	dry
Soil Surface Condition	MEDIUM	MEDIUM
% Cloud Cover	50	25
First Moisture Occurred On	Apr-28-2023	Jun-11-2023
Time to First Moisture	21.0 HR	4.0 DAY
Moisture 6 Hours after Appl.	0 IN	0 IN
Moisture 24 Hours after Appl.	0.04 IN	0 IN
Moisture 1 Week after Appl.	0.13 IN	2.09 IN
Problems with Application?	N, no	N, no

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale	GLXMA, SOYB	GLXMA, SOYB
Days after Emergence	-11	30
Stage Majority, Percent		12, 100
Stage Minimum, Percent		12, 100
Stage Maximum, Percent		12, 100
Height Average		3 IN
Height Minimum, Maximum		3, 4

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Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale	STEME, W, BBCH	STEME, W, BBCH
Stage Majority, Percent	67, 100	
Diameter Average	4 IN	
Diameter Minimum, Maximum	4, 6	
Height Average	2 IN	
Height Minimum, Maximum	2, 3	
Pest 2 Code, Type, Scale	LAMPU, W, BBCH	LAMPU, W, BBCH
Stage Majority, Percent	67, 100	
Diameter Average	3 IN	
Diameter Minimum, Maximum	3, 4	
Height Average	7 IN	
Height Minimum, Maximum	3, 7	
Pest 3 Code, Type, Scale	RANAB, W, BBCH	RANAB, W, BBCH
Stage Majority, Percent	67, 100	
Diameter Average	3 IN	
Diameter Minimum, Maximum	3, 4	
Height Average	6 IN	
Height Minimum, Maximum	3, 10	
Pest 4 Code, Type, Scale	SENGL, W, BBCH	SENGL, W, BBCH
Stage Majority, Percent	67, 100	
Diameter Average	4 IN	
Diameter Minimum, Maximum	3, 4	
Height Average	4 IN	
Height Minimum, Maximum	3, 5	
Pest 5 Code, Type, Scale	ERYRE, W, BBCH	ERYRE, W, BBCH
Stage Majority, Percent	67, 100	
Diameter Average	4 IN	
Diameter Minimum, Maximum	3, 5	
Height Average	7 IN	
Height Minimum, Maximum	5, 11	
Pest 6 Code, Type, Scale	ERICA, W, BBCH	ERICA, W, BBCH
Stage Majority, Percent	19, 100	19, 100
Stage Minimum, Percent		19, 100
Stage Maximum, Percent		19, 100
Diameter Average	3 IN	
Diameter Minimum, Maximum	3, 4	
Height Average	4 IN	12 IN
Height Minimum, Maximum	2, 4	7, 17
Pest 7 Code, Type, Scale	CARPE, W, BBCH	CARPE, W, BBCH
Stage Majority, Percent	67, 100	
Diameter Average	3 IN	
Diameter Minimum, Maximum	3, 4	
Height Average	8 IN	
Height Minimum, Maximum	6, 10	
Pest 8 Code, Type, Scale	POAAN, W, BBCH	POAAN, W, BBCH
Stage Majority, Percent	67, 100	
Height Average	3 IN	
Height Minimum, Maximum	2, 4	
Pest 9 Code, Type, Scale	TAROF, W, BBCH	TAROF, W, BBCH
Stage Majority, Percent	67, 100	67, 100
Diameter Average	4 IN	12 IN
Diameter Minimum, Maximum	3, 4	12, 14
Height Average	4 IN	7 IN
Height Minimum, Maximum	3, 5	6, 8
Pest10 Code, Type, Scale	SETFA, W, BBCH	SETFA, W, BBCH
Stage Majority, Percent		15, 80
Stage Minimum, Percent		15, 80
Stage Maximum, Percent		17, 10
Height Average		7 IN
Height Minimum, Maximum		6, 8
Pest11 Code, Type, Scale	SETPU, W, BBCH	SETPU, W, BBCH
Stage Majority, Percent		15, 80
Stage Minimum, Percent		13, 10
Stage Maximum, Percent		15, 80
Height Average		5 IN
Height Minimum, Maximum		4, 6
Pest12 Code, Type, Scale	AMBTR, W, BBCH	AMBTR, W, BBCH
Stage Majority, Percent		19, 100
Height Average		8 IN
Height Minimum, Maximum		6, 10
Pest13 Code, Type, Scale	CHEAL, W, BBCH	CHEAL, W, BBCH
Stage Majority, Percent		19, 100
Height Average		6 IN
Height Minimum, Maximum		2, 7

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Application Equipment

	A	B
Equipment Name	6' AIXR	6' AIXR
Equipment Type	BACCAI	BACCAI
Operation Pressure	44 PSI	44 PSI
Nozzle Model	110015	110015
Nozzle Type	AIXR	AIXR
Nozzle TradeName	Air Inducted XR Flat	Air Inducted XR Flat
Nozzle Tip Size, Color	015, GREEN	015, GREEN
Nozzle Spacing	18 IN	18.0 IN
Boom Length	6.67 FT	6.67 FT
Boom Height	20 IN	20.0 IN
Ground Speed	3 MPH	3 MPH
Carrier	WATER	WATER
Water Hardness (ppm CaCO3)	250	250
Application Amount	15 GAL/AC	15 GAL/AC
Mix Size	1 L	1.0 L
Spray pH	7.8	7.8
Propellant	COMCO2	COMCO2

Notes

Context	Date	By	Notes
STATUS	Mar-30-2023	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	May-3-2023	Dr. Mark M. Loux	Automatically added by ARM: Status changed to: E: changed by (EOHLOM).
STATUS	May-3-2023	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'E' when Application Date entered.

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Rating Date	Oct-11-2023	Oct-11-2023	Oct-11-2023	Oct-11-2023
Part Rated	GRAIN, C	GRAIN, C	GRAIN, C	GRAIN, C
Rating Type	WEIGHT	MOICON	YIELD	WEITES
Rating Unit/Min/Max	LBS, -, -	%, 0, 100	BU, -, -	LBS, -, -
Sample Size	1 PLOT	1 QT	1 A	1 QT
Collection Basis	1 PLOT	1 QT	1 PLOT	1 QT
Reporting Basis	1 PLOT	1 PLOT		1 BU
Number of Subsamples	1	1	1	1
Crop Type, Code	C, GLXMA	C, GLXMA	C, GLXMA	C, GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean
Pest Type				
Pest Code				
Pest Scientific Name				
Pest Name				
Days After First/Last Applic.	167, 126	167, 126	167, 126	167, 126
Trt-Eval Interval				
Plant-Eval Interval	167 DP-1	167 DP-1	167 DP-1	167 DP-1
Days After Emergence	156 DE-1	156 DE-1	156 DE-1	156 DE-1
EDC App				
ARM Action Codes			TY1	
Number of Decimals			1	
Data Entry Date	Oct-16-2023	Oct-16-2023		Oct-16-2023

Trt Treatment No. Name	Rate Rate Unit	Other Rate	Other Rate Unit	Appl Code	29*	30*	31*	32*
1 UNTREATED CHECK					14.500b	11.23-	57.3b	55.13-
2 Roundup Powermax 3	20 oz/a	20 oz/a		A	17.490ab	11.07-	69.2ab	55.53-
2 2,4-D Ester	16 oz/a	16 oz/a		A				
2 FIERCE EZ (2065)	6 fl oz/a			A				
2 AMSOL	2.5% v/v			A				
2 PERPETUO	6 fl oz/a			B				
2 Enlist Duo	76 fl oz/a			B				
2 AMSOL	2.5% v/v			A				
3 Roundup Powermax 3	20 oz/a	20 oz/a		A	17.843a	10.63-	71.0a	54.03-
3 2,4-D Ester	16 oz/a	16 oz/a		A				
3 FIERCE MTZ SC (2030)	16 fl oz/a			A				
3 AMSOL	2.5% v/v			A				
3 PERPETUO	6 fl oz/a			B				
3 Enlist Duo	76 fl oz/a			B				
3 AMSOL	2.5% v/v			B				
4 Roundup Powermax 3	20 oz/a	20 oz/a		A	18.510a	11.57-	72.8a	54.97-
4 2,4-D Ester	16 oz/a	16 oz/a		A				
4 AMSOL	2.5% v/v			A				
4 FIERCE XLT (1868)	4 oz wt/a			A				
4 PERPETUO	6 fl oz/a			B				
4 Enlist Duo	76 fl oz/a			B				
4 AMSOL	2.5% v/v			B				
5 Roundup Powermax 3	20 oz/a	20 oz/a		A	16.977ab	10.43-	67.7ab	55.43-
5 2,4-D Ester	16 oz/a	16 oz/a		A				
5 AMSOL	2.5% v/v			A				
5 Tendovo	2 qt/a			A				
5 PERPETUO	6 fl oz/a			B				
5 Enlist Duo	76 fl oz/a			B				
5 AMSOL	2.5% v/v			B				
6 Reviton	1 oz/a			A	17.557ab	11.17-	69.4ab	55.00-
6 Roundup Powermax 3	20 oz/a	20 oz/a		A				
6 Helmet MTZ	2.1 pt/a			A				
6 AMSOL	2.5% v/v			A				
6 MSO	1% v/v			A				
6 PERPETUO	6 fl oz/a			B				
6 Enlist Duo	76 fl oz/a			B				
6 AMSOL	2.5% v/v			B				

Means followed by same letter or symbol do not significantly differ (P=,05, Student-Newman-Keuls).
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
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Rating Date	Oct-11-2023	Oct-11-2023	Oct-11-2023	Oct-11-2023
Part Rated	GRAIN, C	GRAIN, C	GRAIN, C	GRAIN, C
Rating Type	WEIGHT	MOICON	YIELD	WEITES
Rating Unit/Min/Max	LBS, -, -	%, 0, 100	BU, -, -	LBS, -, -
Sample Size	1 PLOT	1 QT	1 A	1 QT
Collection Basis	1 PLOT	1 QT	1 PLOT	1 QT
Reporting Basis	1 PLOT	1 PLOT		1 BU
Number of Subsamples	1	1	1	1
Crop Type, Code	C, GLXMA	C, GLXMA	C, GLXMA	C, GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean
Pest Type				
Pest Code				
Pest Scientific Name				
Pest Name				
Days After First/Last Applic.	167, 126	167, 126	167, 126	167, 126
Trt-Eval Interval				
Plant-Eval Interval	167 DP-1	167 DP-1	167 DP-1	167 DP-1
Days After Emergence	156 DE-1	156 DE-1	156 DE-1	156 DE-1
EDC App				
ARM Action Codes			TY1	
Number of Decimals			1	
Data Entry Date	Oct-16-2023	Oct-16-2023		Oct-16-2023

Trt Treatment No. Name	Rate Rate Unit	Other Rate	Other Rate Unit	Appl Code	29*	30*	31*	32*
7 Reviton	1 oz/a			A	16.727 ab	10.87 -	66.4 ab	55.00 -
7 Roundup Powermax 3	20 oz/a	20 oz/a		A				
7 Zone Elite	32 oz/a			A				
7 AMSOL	2.5% v/v			A				
7 MSO	1% v/v			A				
7 PERPETUO	6 fl oz/a			B				
7 Enlist Duo	76 fl oz/a			B				
7 AMSOL	2.5% v/v			B				
8 Reviton	1 oz/a			A	17.463 ab	10.87 -	69.3 ab	55.13 -
8 Roundup Powermax 3	20 oz/a	20 oz/a		A				
8 Helmet MTZ	2.1 pt/a			A				
8 2,4-D Ester	1 pt/a			A				
8 AMSOL	2.5% v/v			A				
8 MSO	1% v/v			A				
8 PERPETUO	6 fl oz/a			B				
8 Enlist Duo	76 fl oz/a			B				
8 AMSOL	2.5% v/v			B				
LSD P=.05					2.0899	0.976	8.43	2.168
Standard Deviation					1.1934	0.557	4.81	1.238
CV					6.97	5.08	7.09	2.25
Grand Mean					17.1333	10.979	67.88	55.029
Levene's F^					0.374	0.501	0.353	0.945
Levene's Prob(F)					0.904	0.82	0.916	0.50
Rank X2				
P(Rank X2)				
Shapiro-Wilk^					0.9756	0.9453	0.9753	0.9719
P(Shapiro-Wilk)^					0.803	0.2139	0.7973	0.7134
Skewness^					0.2925	0.7919	0.2797	0.3547
P(Skewness)^					0.5652	0.1278	0.5823	0.4864
Kurtosis^					-0.4284	0.5042	-0.4019	1.5142
P(Kurtosis)^					0.6642	0.6097	0.6837	0.1338
Replicate F					7.578	0.166	7.204	0.232
Replicate Prob(F)					0.0059	0.8485	0.0071	0.7959
Treatment F					2.991	1.235	2.863	0.402
Treatment Prob(F)					0.0385	0.3477	0.0446	0.8856

Part Rated
 GRAIN = grain
 C = Crop is Part Rated
 Rating Type
 WEIGHT = weight
 MOICON = moisture content
 YIELD = yield
 WEITES = weight - test

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
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Rating Unit/Min/Max
%, 0, 100 = percent
BU, , = bushel

PLOT = total plot
QT = quart
A = acre

PLOT = total plot
QT = quart

PLOT = total plot
BU = bushel

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

Plant-Eval Interval
167 DP-1 = 1 GLXMA Apr-27-2023

ARM Action Codes
TY1 = $3.872 * [29]^{(100-[30])/87}$

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