The Ohio State University

University Enlist Weed Control System Endorsement Demo-Pre fb POST

Trial ID: 23ENLIST Cooperator Trial ID:
Protocol ID: NA23K1A011H Location: Trial Year: 2023
Project ID: Project ID 2: K1A Project ID 3:
Study Director: Sponsor Contact:
Investigator:

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

Trial Location

Address (Location): 7721 South Charleston Pike
City: South Charleston Country: USA United States
State/Prov.: Ohio OH County: Clark
Postal Code: 45368 Climate Zone: EPPONE EPPO North East

Latitude of LL Corner °: 39.85778 N
Longitude of LL Corner °: -83.67001 W
Altitude of LL Corner: 1086.00 FT

Crop Description

Crop 1: C GLXMA Glycine max Soybean BBCH Scale: SOYB
Entry Date: May-3-2023 Stage Scale: BBCH
Variety: 28A65E
Attributes: AAD-12/GLU/GLY-TOL
Seed Size: 2441 S/LB
Planting Date: May-31-2023 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: 65 F Soil Moisture: NORMAL normal, adequate
Plant Arrangement: ROW
Emergence Date: Jun-15-2023
Harvest Date: Oct-10-2023 Harvest Equipment: Kincaid 8XP
Moisture Meter: Harvest Master Harvested Width: 6.25 FT
% Standard Moisture: 13 Harvested Length: 30 FT
Weighing Equipment: Harvest Master HM800

Pest Description

Pest 1 Type: W Code: SETFA Setaria faberi Entry Date: Jul-6-2023
Common Name: Giant foxtail Stage Scale: BBCH

Pest 2 Type: W Code: AMBTR Ambrosia trifida Entry Date: Jul-6-2023
Common Name: Giant ragweed Stage Scale: BBCH

Pest 3 Type: W Code: AMARE Amaranthus retroflexus Entry Date: Jul-6-2023
Common Name: Redroot pigweed Stage Scale: BBCH

Pest 4 Type: W Code: IPOHE Ipomoea hederacea Entry Date: Jul-6-2023
Common Name: ivy-leaf morning glory Stage Scale: BBCH

Pest 5 Type: W Code: ABUTH Abutilon theophrasti Entry Date: Jul-6-2023
Common Name: velvetleaf Stage Scale: BBCH

Pest 6 Type: W Code: CHEAL Chenopodium album Entry Date: Jul-6-2023
Common Name: common lambsquarters 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 Tillage Type: CONTIL conventional-till
Replications: 4 Treatments: 10 Plots: 40 Study Design: RACOBL Randomized Complete Block (RCB)
Untreated Arrangement: INCLUDED

No.	Previous Crop	Year
1.	SOYBEAN	2022

Soil Description

Description Name: Big E
% Sand: 44 % OM: 3.1 Texture: SICL silty clay loam
% Silt: 45 Soil Name: Kokomo
% Clay: 11 Fert. Level: G good
pH: 6.6 CEC: 15
g o o d

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Application Description

	A	B
Date	Jun-1-2023	Jul-5-2023
Start Time	9:04 AM	9:49 AM
Stop Time	9:14 AM	9:59 AM
Method	SPRAY	SPRAY
Timing	PRE	4 IN WEEDS
Placement	BROSOI	BROFOL
Applied By	POLING DOBBELS	MCCORMICK
Entry Date	Jun-2-2023	Jul-6-2023
Air Temperature Start, Stop	69, 69 F	80, 80 F
% Relative Humidity Start, Stop	63, 63	74, 74
Wind Velocity+Dir. Start	5 MPH, E	3 MPH, W
Wind Velocity+Dir. Stop	5 MPH, E	3 MPH, W
Wind Velocity+Dir. Max	5 MPH, E	3 MPH, W
Wet Leaves (Y/N)	N, no	N, no
Soil Temperature	69 F	65 F
Soil Moisture	DRY	SLIWET
Soil Surface Condition	MEDTRA	MEDTRA
% Cloud Cover	0	20
First Moisture Occurred On	Jun-2-2023	Jul-6-2023
Time to First Moisture	1.0 DAY	1.0 DAY
Moisture 6 Hours after Appl.	0 IN	0 IN
Moisture 24 Hours after Appl.	0.5 IN	0 IN
Moisture 1 Week after Appl.	0.54 IN	0.69 IN
Problems with Application?	N, no	N, no

Protocol Application Directions:

o Researcher Defined: treatments 1-2 use PRE at 1X use rate (Kyber, Zidua Pro, Sonic Surveil, Outlook) at plant AND treatments 3-8 use PRE at 1/2X use rate of rate used in treatments 1-2. In trt 3-8, the use of the 1/2X rate of PRE herbicide is to try to better demonstrate the benefit of using residual Group 15 in the POST application. The field scientist is to discuss a low rate of a commercial standard to be utilize based on geography and weed pressure.

o Note: if no till then include Enlist One (2pt) + Durango (1qt) with PRE herbicide

o Apply applications using AIXR nozzles, calibrated to deliver 15 - 20 GPA (may require AIXR-110015 nozzles @ 30-45 psi @ 3 MPH, for example)

o (A) PRE - apply within 2 days after planting

o (B) POST - apply 25 - 30 DAAA - or before weeds exceed 4" height in treatments 3-8. Use 1/2X use rate PRE weed growth as deciding weed height for POST spray.

o If PRE herbicides are not fully effective, then make POST applications when weeds reach approximately 4" height, which may be earlier than 25 - 30 days after the PRE treatments.

o Apply POST 25-30 DAAA include Group 15 in select treatments: Group 15 POST (1X use rate) apply either Zidua, EverpreX, or your own choice for in season application.

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale	GLXMA, SOYB	GLXMA, SOYB
Days after Emergence	-14	20
Stage Majority, Percent		V3, 90
Stage Minimum, Percent		V3, 90
Stage Maximum, Percent		V4, 10
Height Average		5 IN
Height Minimum, Maximum		4, 8

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Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale	SETFA, W, BBCH	SETFA, W, BBCH
Stage Majority, Percent		16, 70
Stage Minimum, Percent		13, 10
Stage Maximum, Percent		19, 10
Height Average		3 IN
Height Minimum, Maximum		2, 9
Density Average		895 M2
Density Minimum, Maximum		653, 965
Pest 2 Code, Type, Scale	AMBTR, W, BBCH	AMBTR, W, BBCH
Stage Majority, Percent		18, 80
Stage Minimum, Percent		16, 10
Stage Maximum, Percent		19, 10
Height Average		4 IN
Height Minimum, Maximum		2, 10
Density Average		8 M2
Density Minimum, Maximum		6, 12
Pest 3 Code, Type, Scale	AMARE, W, BBCH	AMARE, W, BBCH
Stage Majority, Percent		16, 70
Stage Minimum, Percent		14, 10
Stage Maximum, Percent		19, 10
Height Average		4 IN
Height Minimum, Maximum		3, 5
Density Average		6 M2
Density Minimum, Maximum		4, 14
Pest 4 Code, Type, Scale	IPOHE, W, BBCH	IPOHE, W, BBCH
Stage Majority, Percent		16, 70
Stage Minimum, Percent		14, 10
Stage Maximum, Percent		19, 10
Height Average		3 IN
Height Minimum, Maximum		2, 4
Density Average		0.33 M2
Density Minimum, Maximum		0, 3
Pest 5 Code, Type, Scale	ABUTH, W, BBCH	ABUTH, W, BBCH
Stage Majority, Percent		14, 70
Stage Minimum, Percent		12, 10
Stage Maximum, Percent		18, 10
Height Average		4 IN
Height Minimum, Maximum		2, 5
Density Average		0.33 M2
Density Minimum, Maximum		0, 2
Pest 6 Code, Type, Scale	CHEAL, W, BBCH	CHEAL, W, BBCH
Stage Majority, Percent		18, 70
Stage Minimum, Percent		14, 10
Stage Maximum, Percent		19, 10
Height Average		4 IN
Height Minimum, Maximum		2, 6
Density Average		14 M2
Density Minimum, Maximum		12, 20

Application Equipment

	A	B
Equipment Name	6' TTI	6' AIXR
Equipment Type	BACCAI	BACCAI
Operation Pressure	44 PSI	44 PSI
Nozzle Model	1110015	110015
Nozzle Type	TTI	AIXR
Nozzle TradeName	Turbo Tee Injection	Air Inducted XR Flat
Nozzle Tip Size, Color	015, green	015, GREEN
Nozzle Spacing	18 IN	18 IN
Boom Length	6.67 FT	6.67 FT
Boom Height	20 IN	20 IN
Ground Speed	3 MPH	3 MPH
Carrier	WATER	WATER
Water Hardness (ppm CaCO3)	250	250
Application Amount	15 GAL/AC	15 GAL/AC
Minimum Mix/Treatment	1.0433	1.0433
Mix Size	1 L	1 L
Spray pH	7.8	7.8
Propellant	COMCO2	COMCO2

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Rating Date						Oct-10-2023	Oct-10-2023	Oct-10-2023	Oct-10-2023
SE Name									
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 PLOT	1 QT
Collection Basis						1 PLOT	1 QT	1 PLOT	1 QT
Reporting Basis						1 PLOT	1 PLOT	1 A	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
Crop Variety									
Pest Type									
Pest Code									
Pest Scientific Name									
Pest Name									
Days After First/Last Applic.						131, 97	131, 97	131, 97	131, 97
Trt-Eval Interval									
Plant-Eval Interval						132 DP-1	132 DP-1	132 DP-1	132 DP-1
Days After Emergence						117 DE-1	117 DE-1	117 DE-1	117 DE-1
ARM Action Codes								TY1	
Number of Decimals								1	
Data Entry Date						Oct-16-2023	Oct-16-2023		Oct-16-2023
Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	33*	34*	35*	36*
1	UNTREATED					AB	2.7830 b	7.260 -	11.1 b	21.95 b
2	Sonic	220	g ae/ha	4.5	oz/a	A	14.9173 a	10.650 -	59.3 a	54.80 a
2	Enlist One	1070	g ae/ha	2	pt pr/a	B				
2	LIBERTY	600	g ae/ha	2	pt pr/a	B				
2	AMSOL	2.5	% v/v	2.5	% v/v	B				
3	Sonic	220	g ae/ha	4.5	oz/a	A	14.2355 a	10.675 -	56.6 a	54.10 a
3	Enlist One	1070	g ae/ha	2	pt pr/a	B				
3	LIBERTY	600	g ae/ha	2	pt pr/a	B				
3	EverpreX	1390	g ai/ha	1.3	pt pr/a	B				
3	AMSOL	2.5	% v/v	2.5	% v/v	B				
4	Sonic	110	g ae/ha	2.25	oz/a	A	15.1918 a	10.825 -	60.3 a	53.93 a
4	Enlist One	1070	g ae/ha	2	pt pr/a	B				
4	LIBERTY	600	g ae/ha	2	pt pr/a	B				
4	AMSOL	2.5	% v/v	2.5	% v/v	B				
5	Sonic	110	g ae/ha	2.25	oz/a	A	16.1478 a	10.675 -	64.2 a	54.38 a
5	Enlist One	1070	g ae/ha	2	pt pr/a	B				
5	Roundup PowerMAX 3	1340	g ae/ha	1	qt pr/a	B				
5	AMSOL	2.5	% v/v	2.5	% v/v	B				
6	Sonic	110	g ae/ha	2.25	oz/a	A	13.9298 a	11.125 -	55.1 a	54.60 a
6	Enlist One	1070	g ae/ha	2	pt pr/a	B				
6	LIBERTY	600	g ae/ha	2	pt pr/a	B				
6	EverpreX	1390	g ai/ha	1.3	pt pr/a	B				
6	AMSOL	2.5	% v/v	2.5	% v/v	B				
7	Sonic	110	g ae/ha	2.25	oz/a	A	15.6495 a	10.375 -	62.4 a	53.95 a
7	Enlist One	1070	g ae/ha	2	pt pr/a	B				
7	Roundup PowerMAX 3	1340	g ae/ha	1	qt pr/a	B				
7	EverpreX	1390	g ai/ha	1.3	pt pr/a	B				
7	AMSOL	2.5	% v/v	2.5	% v/v	B				
8	Sonic	110	g ae/ha	2.25	oz/a	A	14.9975 a	10.450 -	59.8 a	52.10 a
8	FLEXSTAR	264	g ai/ha	1	pt pr/a	B				
8	LIBERTY	600	g ae/ha	2	pt pr/a	B				
8	AMSOL	2.5	% v/v	2.5	% v/v	B				

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
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SE Name								
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 PLOT	1 QT
Collection Basis					1 PLOT	1 QT	1 PLOT	1 QT
Reporting Basis					1 PLOT	1 PLOT	1 A	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
Crop Variety								
Pest Type								
Pest Code								
Pest Scientific Name								
Pest Name								
Days After First/Last Applic.					131, 97	131, 97	131, 97	131, 97
Trt-Eval Interval								
Plant-Eval Interval					132 DP-1	132 DP-1	132 DP-1	132 DP-1
Days After Emergence					117 DE-1	117 DE-1	117 DE-1	117 DE-1
ARM Action Codes							TY1	
Number of Decimals							1	
Data Entry Date					Oct-16-2023	Oct-16-2023		Oct-16-2023
Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	33*	34*	35*	36*
9	Sonic	110	g ae/ha	2.25	oz/a	A	13.5340 a	10.425 -	53.9 a	53.40 a
9	Roundup PowerMAX 3	1340	g ae/ha	1	qt pr/a	B				
9	FLEXSTAR	264	g ai/ha	1	pt pr/a	B				
9	AMSOL	2.5	% v/v	2.5	% v/v	B				
10	Sonic	110	g ae/ha	2.25	oz/a	A	15.6645 a	10.550 -	62.4 a	54.03 a
10	Enlist One	1070	g ae/ha	2	pt pr/a	B				
10	Roundup PowerMAX 3	1340	g ae/ha	1	qt pr/a	B				
10	LIBERTY	600	g ae/ha	2	pt pr/a	B				
10	EverpreX	1390	g ai/ha	1.3	pt pr/a	B				
10	AMSOL	2.5	% v/v	2.5	% v/v	B				
LSD P=.05							2.57763	2.3508	10.36	11.915
Standard Deviation							1.77662	1.6203	7.14	8.212
CV							12.96	15.73	13.1	16.19
Grand Mean							13.70505	10.3010	54.51	50.723
Levene's F^							2.802*	1.641	2.729*	34.22*
Levene's Prob(F)							0.016*	0.148	0.019*	0.00*
Rank X2							.	.	.	.
P(Rank X2)							.	.	.	.
Shapiro-Wilk^							0.9826	0.6843*	0.9846	0.764*
P(Shapiro-Wilk)^							0.7858	0.0*	0.8516	0.0*
Skewness^							0.0572	-2.5598*	0.0933	0.2358
P(Skewness)^							0.8834	0.0*	0.811	0.5466
Kurtosis^							-0.5565	15.1128*	-0.5411	6.6561*
P(Kurtosis)^							0.4683	0.0*	0.4806	0.0*
Replicate F							1.337	0.970	1.250	1.047
Replicate Prob(F)							0.2830	0.4212	0.3113	0.3876
Treatment F							19.515	1.813	19.098	6.095
Treatment Prob(F)							0.0001	0.1120	0.0001	0.0001

Part Rated
GRAIN = grain
C = Crop is Part Rated
Rating Type
WEIGHT = weight
MOICON = moisture content
YIELD = yield
WEITES = weight - test
Rating Unit/Min/Max
%, 0, 100 = percent
BU, , = bushel

PLOT = total plot
QT = quart

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
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PLOT = total plot
QT = quart

PLOT = total plot
A = acre
BU = bushel

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

Plant-Eval Interval
132 DP-1 = 1 GLXMA May-31-2023

ARM Action Codes
TY1 = 3.872*[33]*(100-[34])/87

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