

The Ohio State University

TENDOVO: Crop Tolerance and Efficacy in Conventional Till Soybean (University - Medium Soils)

Trial ID: USNK0H4022022 Official Trial ID: Cooperator Trial ID:
 Protocol ID: HSM050B4-2022US Location: Bruns Dain FS Trial Year: 2022
 Master Protocol ID:
 Study Director: Brett Miller Sponsor Contact: Pete Eure
 Investigator (Creator): Dain Bruns Trial Origin: P public institution trial Conducted Under GEP: No

General Trial Information

Study Director: Brett Miller Title: Sr R&D Scientist
 Investigator: Dain Bruns

Discipline: H herbicide
 Status: E established
 Status Date: May-2-2022 1:56 PM Usage/Type: 0 Research and Development
 ARM Trial Created On: Mar-21-2022 Last Changed By: Dr. Mark M. Loux
 Initiation Date: Apr-27-2022
 Protocol Revision Number: 1.0 Protocol Revision Date: Mar-18-2022

Trial Location

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

Latitude of LL Corner °: 39.8602 N
 Longitude of LL Corner °: -83.67066 W USA OH 42.327132 -38.403423
 -80.518705 -84.820305
 Altitude of LL Corner: 1082.00 FT

Contacts

Role: STYDIR study director
 Study Director: Brett Miller Title: Sr R&D Scientist
 Organization: Syngenta Crop Protection AG
 Address 1: US Remote Site Field USA Mobile No.: +1-7013188957
 Country: USA United States E-mail: brett.miller@syngenta.com
 City: US Remote Site
 Role: INVEST investigator
 Investigator: Dain Bruns
 Organization: Syngenta
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 Country: USA United States E-mail: dain.bruns@syngenta.com
 City: Marysville, OH Postal Code: 43040
 Role: SPONSR sponsor
 Sponsor: Pete Eure Title: Technical Product Lead
 Organization: Syngenta Crop Protection AG
 Address 1: Syngenta Crop Protection LLC 410 Swing Road Greensbor Mobile No.: +1-8323025710
 Country: USA United States E-mail: Pete.Eure@SYNGENTA.COM
 City: Greensboro, NC
 Role: COOPER cooperater
 Cooperator: Mark Loux Title: UNVCOP
 Organization: Ohio State University
 Country: USA United States
 City: Columbus State/Prov: OH

Crop Description

Crop 1: C GLXMA Glycine max Soybean BBCH Scale: BSOY
 Entry Date: May-2-2022 Stage Scale: BBCH
 Variety: B319EE Maturity Group: III
 Attributes: 2,4-D Choline, Glyphosate, Glufosinate Tol
 Seed Lot No: OT34673116 Seed Source: Brevant
 % Germination: 90 1000 Grain Weight: 0.31 LB
 Planting Date: Apr-27-2022 Planting Rate: 165000 S/A
 Depth: 1.5 IN
 Rows per Plot: 8
 Row Spacing: 15 IN Planting Method: PLANTD planted
 Soil Temperature: 52 F Planting Equipment: PP plot planter
 Emergence Date: May-16-2022 Soil Moisture: NORMAL normal, adequate
 Harvest Date: Oct-5-2022 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

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Pest Description

Pest 1 Type: W Code: SETLU Setaria pumila Entry Date: Jun-24-2022
 Common Name: foxtail, yellow Stage Scale: BBCH

Pest 2 Type: W Code: AMBTR Ambrosia trifida Entry Date: Jun-24-2022
 Common Name: Giant ragweed Stage Scale: BBCH

Pest 3 Type: W Code: CHEAL Chenopodium album Entry Date: Jun-24-2022
 Common Name: common lambsquarters Stage Scale: BBCH

Pest 4 Type: W Code: AMARE Amaranthus retroflexus Entry Date: Jun-24-2022
 Common Name: Redroot pigweed Stage Scale: BBCH

Pest 5 Type: W Code: ABUTH Abutilon theophrasti Entry Date: Jun-24-2022
 Common Name: velvetleaf Stage Scale: BBCH

Pest 6 Type: W Code: CONSS Convolvulus sp. Entry Date: Jun-24-2022
 Common Name: Morningglory Stage Scale: BBCH

Pest 7 Type: W Code: ECHCG Echinochloa crus-galli Entry Date: Jul-8-2022
 Common Name: common barnyardgrass Stage Scale: BBCH

Pest 8 Type: W Code: SIDSP Sida spinosa Entry Date: Jul-8-2022
 Common Name: Prickly sida Stage Scale: BBCH

Site and Design

Treated Plot Width: 6.67 FT Total Plot Width: 10 FT Site Type: FIELD field
 Treated Plot Length: 30 FT Total Plot Length: 30 FT Experimental Unit: 1 PLOT plot
 Treated Plot Area: 200.1 FT² Tillage Type: CONTIL conventional-till
 Replications: 4 Treatments: 9 Plots: 36 Study Design: RACOB L Randomized Complete Block (RCB)
 Untreated Arrangement: INCLUDED single control randomized in each block
 Block Arrangement: BWRPSS blocks wrapped, plots side by side
 Distance between Blocks: 5 FT

Previous

No. Crop Year
 1. ZEAMX 2021

Soil Description

Description Name: F-7 East
 % Sand: 37 % OM: 2.8 Texture: SICL silty clay loam
 % Silt: 48 Soil Name: Kokomo
 % Clay: 15 Fert. Level: G good
 pH: 5.7 CEC: 11

Application Description

	A	B
Application Date	Apr-28-2022	Jun-3-2022
Appl. Start Time	10:00 AM	11:00 AM
Appl. Stop Time	10:30 AM	11:30 AM
Interval to Prev. Appl.		36 DAYS
Application Method	SPRAY	SPRAY
Application Timing	PREPRE	POSPOS
Application Placement	BROSOI	BROFOL
Applied By	Loux	Dobbels
Appl. Entry Date	May-2-2022	Jun-28-2022
Air Temperature Start, Stop	44, 44 F	67, 67 F
% Relative Humidity Start, Stop	60, 60	52, 52
Wind Velocity+Dir. Start	5 MPH, E	4 MPH, W
Wind Velocity+Dir. Stop	5 MPH, E	4 MPH, W
Wind Velocity+Dir. Max	5 MPH, E	4 MPH, W
Wet Leaves (Y/N)	N, no	N, no
Soil Temperature	51 F	65 F
Soil Moisture	DRY	DRY
% Cloud Cover	90	0
Next Moisture Occurred On	Apr-30-2022	Jun-6-2022
Time to Next Moisture	2.0 DAY	3.0 DAY
Moisture 1 Week after Appl.	1.1 IN	1.08 IN
Weather Source	WSFIELD	WSFIELD

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale	GLXMA, BSOY	GLXMA, BSOY
Stage Scale Used	BBCH	BBCH
Stage Majority, Percent		13, 100
Height Average		4 IN
Height Minimum, Maximum		3, 5

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Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale	SETLU, W, BBCH	SETLU, W, BBCH
Stage Majority, Percent		13, 80
Stage Minimum, Percent		13, 80
Stage Maximum, Percent		15, 20
Height Average		5 IN
Height Minimum, Maximum		4, 6
Density Average		25 PLA/m2
Density Minimum, Maximum		3, 50
Pest 2 Code, Type, Scale	AMBTR, W, BBCH	AMBTR, W, BBCH
Stage Majority, Percent		18, 80
Stage Minimum, Percent		14, 20
Stage Maximum, Percent		18, 80
Diameter Average		4 IN
Diameter Minimum, Maximum		4, 6
Height Average		4 IN
Height Minimum, Maximum		4, 6
Density Average		4 PLA/M2
Density Minimum, Maximum		2, 12
Pest 3 Code, Type, Scale	CHEAL, W, BBCH	CHEAL, W, BBCH
Stage Majority, Percent		18, 80
Stage Minimum, Percent		16, 20
Stage Maximum, Percent		18, 80
Diameter Average		3 IN
Diameter Minimum, Maximum		2, 4
Height Average		4 IN
Height Minimum, Maximum		2, 5
Density Average		7 PLA/M2
Density Minimum, Maximum		1, 12
Pest 4 Code, Type, Scale	AMARE, W, BBCH	AMARE, W, BBCH
Stage Majority, Percent		16, 80
Stage Minimum, Percent		14, 20
Stage Maximum, Percent		16, 80
Diameter Average		2 IN
Diameter Minimum, Maximum		1, 2
Height Average		3 IN
Height Minimum, Maximum		3, 4
Density Average		1 PLA/M2
Density Minimum, Maximum		0, 3
Pest 5 Code, Type, Scale	ABUTH, W, BBCH	ABUTH, W, BBCH
Stage Majority, Percent		13, 80
Stage Minimum, Percent		13, 80
Stage Maximum, Percent		15, 20
Diameter Average		3 IN
Diameter Minimum, Maximum		3, 4
Height Average		3 IN
Height Minimum, Maximum		3, 5
Density Average		3 PLA/M2
Density Minimum, Maximum		0, 5
Pest 6 Code, Type, Scale	CONSS, W, BBCH	CONSS, W, BBCH
Stage Majority, Percent		13, 80
Stage Minimum, Percent		12, 20
Stage Maximum, Percent		13, 80
Diameter Average		2 IN
Diameter Minimum, Maximum		1, 2
Height Average		1 IN
Height Minimum, Maximum		1, 2
Density Average		0.25 PLA/M2
Density Minimum, Maximum		0, 2
Pest 7 Code, Type, Scale	ECHCG, W, BBCH	ECHCG, W, BBCH
Density Average		13 PLA/M2
Density Minimum, Maximum		0, 25
Pest 8 Code, Type, Scale	SIDSP, W, BBCH	SIDSP, W, BBCH
Density Average		8 PLA/M2
Density Minimum, Maximum		3, 15

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Application Equipment

	A	B
Appl. Equipment	6' TTI	10' AIXR
Equipment Type	BACCAI	BACCAI
Operation Pressure	44 PSI	44 PSI
Nozzle Model	1110015	110015
Nozzle Type	TEEJAI	ARINDH
Nozzle TradeName	TeeJet TTI	TeeJet AI XR
Nozzle Tip Size, Color	015, green	015, green
Nozzle Spacing	18 IN	18 IN
Nozzle Filter Mesh	100	100
Boom Length	6.67 FT	10 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 L	1.0433 L
Mix Overage		25 mL
Mix Size	1 L	2 L
Spray pH	7.8	7.8
Propellant	COMCO2	COMCO2
Tank Mix (Y/N)		Y, yes

Pest ID Code				
Pest Code				
Pest Scientific Name				
Pest Name				
Crop ID Code	1, GLXMA	1, GLXMA	1, GLXMA	1, 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	B319EE	B319EE	B319EE	B319EE
Rating Date	Oct-5-2022	Oct-5-2022	Oct-5-2022	Oct-5-2022
SE Group No.	51	52	56	53
SE Name	ZUSX052_C3			
SE Description	YIELD/A			
Part Rated	GRAIN, -	GRAIN, -	GRAIN, -	GRAIN, -
Rating Type	WEIGHT	CONMOI	YIELD	WEITES
Rating Unit/Min/Max	LB, -, -	%, 0, 100	BU, -, -	BU, -, -
Calculation	NC	NC	IN	IN
Sample Size	1 PLOT	1 QT	1 A	1 QT
Collection Basis	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Reporting Basis	1 PLOT	1 PLOT	1 A	1 BU
Number of Subsamples	1	1	1	1
Data Entry Date	Oct-7-2022	Oct-7-2022		Oct-7-2022
Days After First/Last Applic.	160, 124	160, 124	160, 124	160, 124
Trt-Eval Interval				
Plant-Eval Interval	161 DP-1	161 DP-1	161 DP-1	161 DP-1
Days After Emergence	142 DE-1	142 DE-1	142 DE-1	142 DE-1
ARM Action Codes			TY1	
Number of Decimals			1	

Trt Treatment No. Name	Rate	Appl Code	27*	28*	29*	30*
1 UNTREATED CHECK			14.74838-	12.965-	57.8-	55.5570-
2 TENDOVO HERBICIDE 2030 g ai/ha A			19.42525-	11.645-	76.4-	56.3603-
2 CLASS ACT RIDION 1% v/v B						
2 SEQUENCE 5.25 EW 2570 g ae/ha B						
2 ENLIST ONE 3.8 SL 1060 g ae/ha B						
3 TENDOVO HERBICIDE 2440 g ai/ha A			19.62600-	12.270-	76.6-	55.8260-
3 CLASS ACT RIDION 1% v/v B						
3 SEQUENCE 5.25 EW 2570 g ae/ha B						
3 ENLIST ONE 3.8 SL 1060 g ae/ha B						
4 BOUNDARY 6.5 EC 1640 g ai/ha A			19.30050-	11.815-	75.8-	56.2888-
4 CLASS ACT RIDION 1% v/v B						
4 SEQUENCE 5.25 EW 2570 g ae/ha B						
4 ENLIST ONE 3.8 SL 1060 g ae/ha B						

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Pest ID Code				
Pest Code				
Pest Scientific Name				
Pest Name				
Crop ID Code	1, GLXMA	1, GLXMA	1, GLXMA	1, 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	B319EE	B319EE	B319EE	B319EE
Rating Date	Oct-5-2022	Oct-5-2022	Oct-5-2022	Oct-5-2022
SE Group No.	51	52	56	53
SE Name			ZUSX052_C3	
SE Description			YIELD/A	
Part Rated	GRAIN, -	GRAIN, -	GRAIN, -	GRAIN, -
Rating Type	WEIGHT	CONMOI	YIELD	WEITES
Rating Unit/Min/Max	LB, -, -	%, 0, 100	BU, -, -	BU, -, -
Calculation	NC	NC	IN	IN
Sample Size	1 PLOT	1 QT	1 A	1 QT
Collection Basis	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Reporting Basis	1 PLOT	1 PLOT	1 A	1 BU
Number of Subsamples	1	1	1	1
Data Entry Date	Oct-7-2022	Oct-7-2022		Oct-7-2022
Days After First/Last Applic.	160, 124	160, 124	160, 124	160, 124
Trt-Eval Interval				
Plant-Eval Interval	161 DP-1	161 DP-1	161 DP-1	161 DP-1
Days After Emergence	142 DE-1	142 DE-1	142 DE-1	142 DE-1
ARM Action Codes			TY1	
Number of Decimals			1	

Trt Treatment No. Name	Rate Rate Unit	Appl Code	27*	28*	29*	30*
5BROADAXE XC 7 EC	1530 g ai/ha	A	19.14678-	11.770-	75.2-	56.3575-
5CLASS ACT RIDION	1% v/v	B				
5SEQUENCE 5.25 EW	2570 g ae/ha	B				
5ENLIST ONE 3.8 SL	1060 g ae/ha	B				
6SONIC 70 DF	316 g ai/ha	A	19.23950-	11.595-	75.7-	56.1663-
6CLASS ACT RIDION	1% v/v	B				
6SEQUENCE 5.25 EW	2570 g ae/ha	B				
6ENLIST ONE 3.8 SL	1060 g ae/ha	B				
7FIERCE XLT 62.41 WG	197 g ai/ha	A	20.02535-	11.933-	78.5-	56.0548-
7CLASS ACT RIDION	1% v/v	B				
7SEQUENCE 5.25 EW	2570 g ae/ha	B				
7ENLIST ONE 3.8 SL	1060 g ae/ha	B				
8ZIDUA PRO 4.09 SC	215 g ai/ha	A	19.94005-	12.753-	77.4-	55.4748-
8CLASS ACT RIDION	1% v/v	B				
8SEQUENCE 5.25 EW	2570 g ae/ha	B				
8ENLIST ONE 3.8 SL	1060 g ae/ha	B				
9AUTHORITY EDGE	333 g ai/ha	A	20.23830-	11.893-	79.4-	56.1123-
9CLASS ACT RIDION	1% v/v	B				
9SEQUENCE 5.25 EW	2570 g ae/ha	B				
9ENLIST ONE 3.8 SL	1060 g ae/ha	B				
LSD P=.05			4.653953	1.2077	18.38	1.08540
Standard Deviation			3.188957	0.8275	12.59	0.74373
CV			16.72	6.86	16.85	1.33
Grand Mean			19.076680	12.0708	74.75	56.02195
Levene's F^			0.925	0.684	0.937	0.693
Levene's Prob(F)			0.512	0.701	0.503	0.695
Rank X2		
P(Rank X2)		
Skewness^			-2.4771*	2.4833*	-2.4636*	-1.027*
Kurtosis^			12.2092*	11.6125*	12.0719*	0.7922
Replicate F			0.607	1.074	0.612	0.164
Replicate Prob(F)			0.6171	0.3788	0.6138	0.9193
Treatment F			1.093	1.401	1.064	0.798
Treatment Prob(F)			0.4013	0.2463	0.4194	0.6104

Crop ID Code
 1, GLXMA, BSOY, Glycine max, Soybean, B319EE = 2,4-D Choline, Glyphosate, Glufosinate Tol
 Part Rated
 GRAIN = grain
 Rating Type

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WEIGHT = weight
 CONMOI = content - moisture
 YIELD = yield
 WEITES = weight - test

Rating Unit/Min/Max

LB, , = pound
 %, 0, 100 = percent
 BU, , = bushel

Calculation

NC = no calculation
 IN = increase

PLOT = total plot
 QT = quart
 A = acre

PLOT = total plot

PLOT = total plot
 A = acre
 BU = bushel

Plant-Eval Interval

161 DP-1 = 1 GLXMA Apr-27-2022

ARM Action Codes

TY1 = 3.872*[27]*(100-[28])/87