

The Ohio State University

Enlist Weed Control Systems

Trial ID: 20ENLIST Location: Western Branch F-7 Trial Year: 2020
 Protocol ID: NA20P2E004H Investigator: Dr. Mark M. Loux
 Project ID: Study Director: Anthony Dobbels
 Sponsor Contact: Jessica Bugg, Corteva

General Trial Information

Study Director: Anthony Dobbels
Investigator: Dr. Mark M. Loux

Trial Status: E established

ARM Trial Created On: Mar-27-2020

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 °: 39.86076 N
Longitude of LL Corner °: -83.6701 W
Altitude of LL Corner: 1092.00 FT

Conducted Under GLP: No
Conducted Under GEP: No

Contacts

Study Director: Anthony Dobbels

Investigator: Dr. Mark M. Loux

Crop Description

Crop 1: C GLXMA Glycine max Soybean **BBCH Scale:** BSOY
Entry Date: May-14-2020 **Stage Scale:** BBCH
Variety: Seed Consultants SC7370E
Attributes: 2,4-D Choline, Glyphosate, Glufosinate Tol
Planting Date: May-13-2020 **Planting Rate:** 160000 S/A
Depth: 2 IN
Rows per Plot: 8 **Planting Method:** PLANTD planted
Row Spacing: 15 IN **Planting Equipment:** FE field equipment
Seed Bed: MEDIUM medium
Soil Temperature: 62 F **Soil Moisture:** NORMAL normal, adequate
Emergence Date: May-25-2020
Harvest Date: Oct-9-2020 **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:** AMBTR *Ambrosia trifida*
Common Name: ragweed, giant **Entry Date:** Jun-25-2020

Pest 2 Type: W **Code:** SETFA *Setaria faberi*
Common Name: foxtail, giant **Entry Date:** Jun-25-2020

Pest 3 Type: W **Code:** ECHCG *Echinochloa crus-galli*
Common Name: barnyardgrass **Entry Date:** Jun-25-2020

Pest 4 Type: W **Code:** SOLPT *Solanum ptychanthum*
Common Name: nightshade, eastern black **Entry Date:** Jun-25-2020

Pest 5 Type: W **Code:** CHEAL *Chenopodium album*
Common Name: lambsquarters, common **Entry Date:** Jun-25-2020

Pest 6 Type: W **Code:** AMBEL *Ambrosia artemisiifolia*
Common Name: ragweed, common **Entry Date:** Jun-25-2020

Pest 7 Type: W **Code:** AMARE *Amaranthus retroflexus*
Common Name: pigweed, redroot **Entry Date:** Jun-25-2020

Pest 8 Type: W **Code:** POLPY *Polygonum pensylvanicum*
Common Name: smartweed, Pennsylvania **Entry Date:** Jul-9-2020

Pest 9 Type: W **Code:** HIBTR *Hibiscus trionum*
Common Name: mallow, Venice **Entry Date:** Aug-12-2020

Pest10 Type: W **Code:** ABUTH *Abutilon theophrasti*
Common Name: velvetleaf **Entry Date:** Aug-12-2020

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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
Site Type: FIELD field
Experimental Unit: 1 PLOT plot
Tillage Type: CONTIL conventional-till
Study Design: RACOB� Randomized Complete Block (RCB)

Previous

No. Crop Year
1. SOYBEAN 2019

Soil Description

Description Name: F-7 East
% Sand: 37 % OM: 2.8 Texture: SICL silty clay loam
% Silt: 48 pH: 5.7 Soil Name: Crosby
% Clay: 15 CEC: 11.8 Fert. Level: G good
Soil Drainage: G good

Application Description

	A	B
Application Date	May-13-2020	Jun-24-2020
Appl. Start Time	4:00 PM	8:00 AM
Appl. Stop Time	4:30 PM	8:30 AM
Interval to Prev. Appl.		42 DAYS
Application Method	SPRAY	SPRAY
Application Timing	PRE	POST
Application Placement	BROSOI	BROFOL
Applied By	Loux	Loux
Appl. Entry Date	May-14-2020	Jun-25-2020
Air Temperature Start, Stop	65 65 F	66 66 F
% Relative Humidity Start, Stop	32 32	80 80
Wind Velocity+Dir. Start	10 MPH SE	8 MPH W
Wind Velocity+Dir. Stop	10 MPH SE	8 MPH W
Wind Velocity+Dir. Max	11 MPH SE	8 MPH W
Wet Leaves (Y/N)	N no	Y yes
Soil Temperature	62 F	69 F
Soil Moisture	Normal	SLIWET
Soil Surface Condition	MEDIUM	MEDIUM
% Cloud Cover	25	30
Next Moisture Occurred On	May-14-2020	Jun-25-2020
Time to Next Moisture	22 HR	1 DAY
Moisture 6 Hours after Appl.	0 IN	0 IN
Moisture 1 Week after Appl.	2.52 IN	0.09 IN

Crop Stage At Each Application

	A		B	
Crop 1 Code, BBCH Scale	GLXMA	BSOY	GLXMA	BSOY
Days after Emergence	-12		30	
Stage Majority, Percent			14	100
Height Average			8	IN
Height Minimum, Maximum			6	10

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Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale	AMBTR W	AMBTR W
Stage Majority, Percent	16	80
Stage Minimum, Percent	14	10
Stage Maximum, Percent	19	10
Height Average	6	IN
Height Minimum, Maximum	4	18
Density Average	3	PLA/m2
Density Min, Max	3	3
Pest 2 Code, Type, Scale	SETFA W	SETFA W
Stage Majority, Percent	18	80
Stage Minimum, Percent	14	10
Stage Maximum, Percent	19	10
Height Average	6	IN
Height Minimum, Maximum	2	8
Density Average	132	PLA/m2
Density Min, Max	96	162
Pest 3 Code, Type, Scale	ECHCG W	ECHCG W
Stage Majority, Percent	19	90
Stage Minimum, Percent	14	10
Stage Maximum, Percent	19	90
Height Average	4	IN
Height Minimum, Maximum	2	6
Density Average	10	PLA/m2
Density Min, Max	0	18
Pest 4 Code, Type, Scale	SOLPT W	SOLPT W
Stage Majority, Percent	16	80
Stage Minimum, Percent	14	10
Stage Maximum, Percent	18	10
Height Average	2	IN
Height Minimum, Maximum	2	6
Density Average	0.33	PLA/m2
Density Min, Max	0	3
Pest 5 Code, Type, Scale	CHEAL W	CHEAL W
Stage Majority, Percent	18	80
Stage Minimum, Percent	16	
Stage Maximum, Percent	19	
Height Average	4	IN
Height Minimum, Maximum	2	10
Density Average	23	PLA/m2
Density Min, Max	18	33
Pest 6 Code, Type, Scale	AMBEL W	AMBEL W
Stage Majority, Percent	18	80
Stage Minimum, Percent	14	10
Stage Maximum, Percent	19	10
Height Average	4	IN
Height Minimum, Maximum	2	12
Density Average	0.33	PLA/m2
Density Min, Max	0	1
Pest 7 Code, Type, Scale	AMARE W	AMARE W
Stage Majority, Percent	16	80
Stage Minimum, Percent	12	10
Stage Maximum, Percent	19	10
Height Average	4	IN
Height Minimum, Maximum	2	10
Density Average	11	PLA/m2
Density Min, Max	6	21
Pest 8 Code, Type, Scale	POLPY W	POLPY W
Density Average	2	PLA/m2
Density Min, Max	0	6
Pest 9 Code, Type, Scale	HIBTR W	HIBTR W
Density Average	0.03	PLA/m2
Density Min, Max	0	0.3
Pest10 Code, Type, Scale	ABUTH W	ABUTH W
Density Average	0.01	PLA/m2
Density Min, Max	0	0.25

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Application Equipment

	A	B
Appl. Equipment	6 Foot TTI	10' AIXR
Equipment Type	BACCAI	BACCAI
Operation Pressure	44 PSI	44 PSI
Nozzle Type	TTI	AIXR
Nozzle Size	110015	110015
Nozzle Spacing	18 IN	18 IN
Boom Length	6.67 FT	10 FT
Boom Height	20 IN	20 IN
Ground Speed	3 MPH	3 MPH
Carrier	WATER	WATER
Application Amount	15 GAL/AC	15 GAL/AC
Mix Size	2 L	2 L
Propellant	COMCO2	COMCO2

Context	Date	By	Notes
STATUS	Mar-27-2020	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	May-14-2020	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'E' when Planting Date entered.

Pest Type	Pest Code	Pest Scientific Name	Pest Name	Crop Type, Code	BBCH Scale	Crop Scientific Name	Crop Name	Rating Date	Rating Type	Rating Unit	Number of Subsamples	Assessed By	Data Entry Date	Days After First/Last Applic.	Trt-Eval Interval	Plant-Eval Interval	Days After Emergence	ARM Action Codes	Number of Decimals
				C GLXMA	C GLXMA	C GLXMA		Oct-9-2020	YIELD	LBS	1		Oct-12-2020	149	149	149	137	TY1	2
				BSOY	BSOY	Glycine max	Soybean	Oct-9-2020	MOICON	%	1		Oct-12-2020	107	107	107	137		2
				BSOY	BSOY	Glycine max	Soybean	Oct-9-2020	YIELD	BU	1								1

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Unit	Appl Code	42*	43*	44*
1	UTC						0.81 c	8.71 -	3.3 c
2	Sonic	220 g ai/ha		4.5 oz/a		A	16.99 ab	12.41 -	66.2 ab
	2 Enlist Duo	2200 g ai/ha		4.75 pt/a		B			
	2 N PAK-AMS	2.5 % v/v		2.5 % v/v		B			
3	Sonic	220 g ai/ha		4.5 oz/a		A	16.38 b	12.86 -	63.5 b
	3 Liberty	656 g ai/ha		32 oz/a		B			
	3 Enlist One	1060 g ai/ha		2 pt/a		B			
	3 N PAK-AMS	2.5 % v/v		2.5 % v/v		B			
4	Sonic	220 g ai/ha		4.5 oz/a		A	17.21 ab	12.42 -	67.1 ab
	4 Durango DMA	1120 g ai/ha		32 oz/a		B			
	4 Enlist One	1060 g ai/ha		2 pt/a		B			
	4 N PAK-AMS	2.5 % v/v		2.5 % v/v		B			
5	Sonic	220 g ai/ha		4.5 oz/a		A	16.30 b	12.45 -	63.5 b
	5 Liberty	656 g ai/ha		32 oz/a		B			
	5 N PAK-AMS	2.5 % v/v		2.5 % v/v		B			
6	Sonic	220 g ai/ha		4.5 oz/a		A	16.78 ab	12.53 -	65.3 ab
	6 Liberty	656 g ai/ha		32 oz/a		B			
	6 Enlist One	1060 g ai/ha		2 pt/a		B			
	6 Select Max	79 g ai/ha		9 oz/a		B			
	6 N PAK-AMS	2.5 % v/v		2.5 % v/v		B			

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Pest Type			
Pest Code			
Pest Scientific Name			
Pest Name			
Crop Type, Code	C GLXMA	C GLXMA	C GLXMA
BBCH Scale	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean
Rating Date	Oct-9-2020	Oct-9-2020	Oct-9-2020
Rating Type	YIELD	MOICON	YIELD
Rating Unit	LBS	%	BU
Number of Subsamples Assessed By	1	1	1
Data Entry Date	Oct-12-2020	Oct-12-2020	
Days After First/Last Applic.	149 107	149 107	149 107
Trt-Eval Interval			
Plant-Eval Interval	149 DP-1	149 DP-1	149 DP-1
Days After Emergence	137 DE-1	137 DE-1	137 DE-1
ARM Action Codes			TY1
Number of Decimals	2	2	1

Trt No.	Treatment Name	Rate Rate Unit	Other Rate	Other Rate Unit	Appl Code	42*	43*	44*
7	Sonic	220 g ai/ha	4.5 oz/a		A	18.37 a	12.39 -	71.6 a
7	Durango DMA	1120 g ai/ha	32 oz/a		B			
7	Enlist One	1060 g ai/ha	2 pt/a		B			
7	EverpreX	1070 g ai/ha	1 pt/a		B			
7	N PAK-AMS	2.5 % v/v	2.5 % v/v		B			
8	Zidua Pro	215 g ai/ha	6 oz/a		A	17.12 ab	12.26 -	66.8 ab
8	Roundup Powermax	1260 g ai/ha	32 oz/a		B			
8	Flexstar	395 g ai/ha	1.5 pt/a		B			
8	N PAK-AMS	2.5 % v/v	2.5 % v/v		B			
	LSD P=.05					1.910	3.652	7.66
	Standard Deviation					1.091	2.086	4.37
	CV					7.27	17.37	7.48
	Grand Mean					14.996	12.004	58.44
	Levene's F					0.538	1.319	0.545
	Levene's Prob(F)					0.794	0.304	0.788
	Rank X2					.	.	.
	P(Rank X2)					.	.	.
	Skewness					-2.1238*	-4.7029*	-2.1172*
	Kurtosis					3.3455*	22.6566*	3.3236*
	Replicate F					9.019	0.978	8.359
	Replicate Prob(F)					0.0030	0.4004	0.0041
	Treatment F					83.817	1.245	78.876
	Treatment Prob(F)					0.0001	0.3431	0.0001

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

Rating Type
 YIELD = yield
 MOICON = moisture content

Rating Unit
 % = percent
 BU = bushel

Plant-Eval Interval
 149 DP-1 = 1 GLXMA May-13-2020

ARM Action Codes
 TY1 = 3.872*[42]*(100-[43])/87