

The Ohio State University

Valent Actives in a Liberty Link System

Trial ID: 20VALENTLLSOY Location: Western Branch F-7 Trial Year: 2020
 Protocol ID: 20VALENTLLSOY Investigator: Dr. Mark M. Loux
 Project ID: FIERCEMD64.01 Study Director: Anthony Dobbels
 Sponsor Contact: Eric Ott, Valent

General Trial Information

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

Trial Status: E established

ARM Trial Created On: Mar-27-2020

Initiation Date: May-7-2020

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 °: 39.86074 N
Longitude of LL Corner °: -83.66978 W
Altitude of LL Corner: 1052.00 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	Planting Method: PLANTD	planted
	Rows per Plot: 4	Planting Equipment: FE	field equipment
	Row Spacing: 30 IN	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: 5 FT	
	% Standard Moisture: 13	Harvested Length: 30 FT	
	Weighing Equipment: Harvest Master HM800		

The Ohio State University

Valent Actives in a Liberty Link System

Trial ID: 20VALENTLLSOY Location: Western Branch F-7 Trial Year: 2020
 Protocol ID: 20VALENTLLSOY Investigator: Dr. Mark M. Loux
 Project ID: FIERCEMD64.01 Study Director: Anthony Dobbels
 Sponsor Contact: Eric Ott, Valent

Pest Description

Pest 1 Type: W **Code:** SETFA *Setaria faberi*
Common Name: Giant foxtail **Entry Date:** Jun-9-2020

Pest 2 Type: W **Code:** SETPU *Setaria helvola*
Common Name: yellow foxtail **Entry Date:** Jun-9-2020

Pest 3 Type: W **Code:** AMBTR *Ambrosia trifida*
Common Name: ragweed, giant **Entry Date:** Jun-9-2020

Pest 4 Type: W **Code:** CHEAL *Chenopodium album*
Common Name: lambsquarters, common **Entry Date:** Jun-9-2020

Pest 5 Type: W **Code:** AMARE *Amaranthus retroflexus*
Common Name: Redroot pigweed **Entry Date:** Jun-9-2020

Pest 6 Type: W **Code:** HIBTR *Hibiscus trionum*
Common Name: mallow, Venice **Entry Date:** Jun-9-2020

Pest 7 Type: W **Code:** ABUTH *Abutilon theophrasti*
Common Name: velvetleaf **Entry Date:** Jun-9-2020

Pest 8 Type: W **Code:** POLPY *Persicaria pensylvanica*
Common Name: annual smartweed **Entry Date:** Jun-9-2020

Pest 9 Type: W **Code:** AMBEL *Ambrosia artemisiifolia*
Common Name: Common ragweed **Entry Date:** Jun-25-2020

Pest10 Type: W **Code:** POLPE *Polygonum persicaria*
Common Name: ladythumb **Entry Date:** Jun-25-2020

Pest11 Type: W **Code:** SIDSP *Sida spinosa*
Common Name: sida, prickly **Entry Date:** Jun-25-2020

Pest12 Type: W **Code:** ECHCG *Echinochloa crus-galli*
Common Name: barnyardgrass **Entry Date:** Jun-25-2020

Pest13 Type: W **Code:** SOLPT *Solanum ptychanthum*
Common Name: nightshade, eastern black **Entry Date:** Jun-25-2020

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 **Treatments:** 10 **Tillage Type:** CONTIL conventional-till
Replications: 3 **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

The Ohio State University

Valent Actives in a Liberty Link System

Trial ID: 20VALENTLLSOY Location: Western Branch F-7 Trial Year: 2020
 Protocol ID: 20VALENTLLSOY Investigator: Dr. Mark M. Loux
 Project ID: FIERCEMD64.01 Study Director: Anthony Dobbels
 Sponsor Contact: Eric Ott, Valent

Application Description

	A	B	C	D
Application Date	May-13-2020	Jun-9-2020	Jul-1-2020	Jun-24-2020
Appl. Start Time	3:00 PM	7:40 AM	8:30 AM	8:00 AM
Appl. Stop Time	3:30 PM	8:00 AM	9:00 AM	8:30 AM
Interval to Prev. Appl.		27 DAYS	7 DAYS	15 DAYS
Application Method	Spray	SPRAY	SPRAY	SPRAY
Application Timing	PRE	POST	POSPOS	POST
Application Placement	BROSOI	BROSOL	BROFOL	BROFOL
Applied By	LOUX	Kimmet	Dobbels	Loux
Appl. Entry Date	May-14-2020	Jun-9-2020	Jul-9-2020	Jun-29-2020
Air Temperature Start, Stop	64 64 F	69 69 F	73 73 F	66 66 F
% Relative Humidity Start, Stop	32 32	64 64	93 93	80 80
Wind Velocity+Dir. Start	10 MPH SE	5 MPH ESE	1 MPH ENE	8 MPH W
Wind Velocity+Dir. Stop	10 MPH SE	5 MPH ESE	1 MPH ENE	8 MPH W
Wind Velocity+Dir. Max	11 MPH SE	5 MPH ESE	1 MPH ENE	8 MPH W
Wet Leaves (Y/N)	N no	N no	Y yes	Y yes
Soil Temperature	62 F	68 F	69 F	69 F
Soil Moisture	NORMAL	DRY	DRY	SLIWET
Soil Surface Condition	NORMAL	MEDIUM	MEDIUM	MEDIUM
% Cloud Cover	25	20	3	30
Next Moisture Occurred On	May-14-2020	Jun-9-2020	Jul-1-2020	Jun-25-2020
Time to Next Moisture	22 HR	10 HR	2 DAY	1 DAY
Moisture 6 Hours after Appl.	0 IN	0 IN	0 IN	0 IN
Moisture 1 Week after Appl.	2.52 IN	0.37 IN	0.02 IN	0.09 IN

Crop Stage At Each Application

	A		B		C		D	
Crop 1 Code, BBCH Scale	GLXMA	BSOY	GLXMA	BSOY	GLXMA	BSOY	GLXMA	BSOY
Days after Emergence	-12		15		37		30	
Stage Majority, Percent			12	100	51	100	14	100
Height Average			4	IN	12	IN	8	IN
Height Minimum, Maximum							6	10

Pest Stage At Each Application

	A		B		C		D	
Pest 1 Code, Type, Scale	SETFA	W	SETFA	W	SETFA	W	SETFA	W
Stage Majority, Percent			12	100	15	80	16	80
Stage Minimum, Percent					2	10	14	
Stage Maximum, Percent					10	10	19	
Height Average			2	IN	8	IN	6	IN
Height Minimum, Maximum			1	3	2	14	2	8
Density Average							118	PLA/m2
Density Min, Max							69	192
Pest 2 Code, Type, Scale	SETPU	W	SETPU	W	SETPU	W	SETPU	W
Stage Majority, Percent			13	100	15	80		
Stage Minimum, Percent					2	10		
Stage Maximum, Percent					15	10		
Height Average			2	IN	6	IN		
Height Minimum, Maximum			1	3	4	18		
Pest 3 Code, Type, Scale	AMBTR	W	AMBTR	W	AMBTR	W	AMBTR	W
Stage Majority, Percent			16	80	18	80	16	80
Stage Minimum, Percent			14	10	14	10	14	10
Stage Maximum, Percent			16	80	19	10	18	10
Height Average			3.5	IN	7	IN	8	IN
Height Minimum, Maximum			3	5	3	14	4	21
Density Average							5	PLA/m2
Density Min, Max							3	6
Pest 4 Code, Type, Scale	CHEAL	W	CHEAL	W	CHEAL	W	CHEAL	W
Stage Majority, Percent			16	100	19	90	18	80
Stage Minimum, Percent					16	10	14	10
Stage Maximum, Percent					19	90	19	10
Height Average			2	IN	4	IN	4	IN
Height Minimum, Maximum			1	3	2	7	2	8
Density Average							19	PLA/m2
Density Min, Max							15	24
Pest 5 Code, Type, Scale	AMARE	W	AMARE	W	AMARE	W	AMARE	W
Stage Majority, Percent			13	100	16	80	18	80
Stage Minimum, Percent					12	10	14	10
Stage Maximum, Percent					19	10	19	10
Height Average			1.5	IN	4	IN	6	IN
Height Minimum, Maximum			1	1.75	2	5	2	10
Density Average							10	PLA/m2
Density Min, Max							0	15
Pest 6 Code, Type, Scale	HIBTR	W	HIBTR	W	HIBTR	W	HIBTR	W

The Ohio State University

Valent Actives in a Liberty Link System

Trial ID: 20VALENTLLSOY Location: Western Branch F-7 Trial Year: 2020
 Protocol ID: 20VALENTLLSOY Investigator: Dr. Mark M. Loux
 Project ID: FIERCEMD64.01 Study Director: Anthony Dobbels
 Sponsor Contact: Eric Ott, Valent

Stage Majority, Percent	13	100	15	80		
Stage Minimum, Percent			15	80		
Stage Maximum, Percent			19	10		
Height Average	1	IN	4	IN		
Height Minimum, Maximum			2	5		
Density Average					2	PLA/m2
Density Min, Max					0	6
Pest 7 Code, Type, Scale	ABUTH	W	ABUTH	W	ABUTH	W
Stage Majority, Percent	13	100	15	80	18	80
Stage Minimum, Percent			13	10	14	
Stage Maximum, Percent			17	10	19	
Height Average	2	IN	5	IN	4	IN
Height Minimum, Maximum			3	8	2	8
Pest 8 Code, Type, Scale	POLPY	W	POLPY	W	POLPY	W
Stage Majority, Percent	14	100	19	80	18	80
Stage Minimum, Percent			15	10	14	10
Stage Maximum, Percent			19	80	19	10
Height Average	1	IN	5	IN	4	IN
Height Minimum, Maximum			4	10	2	6
Pest 9 Code, Type, Scale	AMBEL	W	AMBEL	W	AMBEL	W
Stage Majority, Percent					18	80
Stage Minimum, Percent					14	
Stage Maximum, Percent					19	
Height Average					4	IN
Height Minimum, Maximum					2	6
Pest10 Code, Type, Scale	POLPE	W	POLPE	W	POLPE	W
Stage Majority, Percent					18	80
Stage Minimum, Percent					14	
Stage Maximum, Percent					19	
Height Average					4	IN
Height Minimum, Maximum					2	8
Density Average					3	PLA/m2
Density Min, Max					3	3
Pest11 Code, Type, Scale	SIDSP	W	SIDSP	W	SIDSP	W
Stage Majority, Percent					19	80
Stage Minimum, Percent					12	10
Stage Maximum, Percent					19	80
Height Average					5	IN
Height Minimum, Maximum					4	6
Density Average					3	PLA/m2
Density Min, Max					0	6
Pest12 Code, Type, Scale	ECHCG	W	ECHCG	W	ECHCG	W
Stage Majority, Percent					19	90
Stage Minimum, Percent					14	
Stage Maximum, Percent					19	
Height Average					3	IN
Height Minimum, Maximum					2	6
Density Average					11	PLA/m2
Density Min, Max					0	24
Pest13 Code, Type, Scale	SOLPT	W	SOLPT	W	SOLPT	W
Stage Majority, Percent					16	80
Stage Minimum, Percent					14	10
Stage Maximum, Percent					18	10
Height Average					3	IN
Height Minimum, Maximum					2	4
Density Average					11	PLA/m2
Density Min, Max					0	30

Application Equipment

	A	B	C	D
Appl. Equipment	6' AIXR	6' AIXR	6' AIXR	6' AIXR
Equipment Type	BACCAI	BACCAI	BACCAI	BACCAI
Operation Pressure	44 PSI	44 PSI	44 PSI	44 PSI
Nozzle Type	AIXR	AIXR	AIXR	AIXR
Nozzle Size	1110015	1110015	1110015	1110015
Nozzle Spacing	18 IN	18 IN	18 IN	18 IN
Boom Length	6.67 FT	6.67 FT	6.67 FT	6.67 FT
Boom Height	20 IN	20 IN	20 IN	20 IN
Ground Speed	3 MPH	3 MPH	3 MPH	3 MPH
Carrier	WATER	WATER	WATER	WATER
Application Amount	15 GAL/AC	15 GAL/AC	15 GAL/AC	15 GAL/AC
Mix Size	1 L	1 L	1 L	1 L
Propellant	COMCO2	COMCO2	COMCO2	COMCO2

The Ohio State University

Valent Actives in a Liberty Link System

Trial ID: 20VALENTLLSOY Location: Western Branch F-7 Trial Year: 2020
 Protocol ID: 20VALENTLLSOY Investigator: Dr. Mark M. Loux
 Project ID: FIERCEMD64.01 Study Director: Anthony Dobbels
 Sponsor Contact: Eric Ott, Valent

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	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	1		1		1	
Data Entry Date	Oct-12-2020		Oct-12-2020			
Rating Timing						
Days After First/Last Applic.	149	100	149	100	149	100
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	Other Rate	Other Rate	Appl Unit Code	27*	28*	29*
1	UTC					0.90 c	13.41 -	4.3 c
2	Scout	0.585 lb ai/a	32 oz/a		B	12.42 ab	14.83 -	58.8 ab
2	N PAK-AMS	2.5 % v/v	2.5 % v/v		B			
2	Scout	0.585 lb ai/a	32 oz/a		C			
2	Select Max	0.07 lb ai/a	9 oz/a		C			
2	Induce	0.25 % v/v	0.25 % v/v		C			
2	N PAK-AMS	2.5 % v/v	2.5 % v/v		C			
3	Scout	0.585 lb ai/a	32 oz/a		B	13.48 a	13.87 -	64.6 a
3	Perpetuo	0.108 lb ai/a	6 oz/a		B			
3	N PAK-AMS	2.5 % v/v	2.5 % v/v		B			
3	Scout	0.585 lb ai/a	32 oz/a		C			
3	Select Max	0.07 lb ai/a	9 oz/a		C			
3	Induce	0.25 % v/v	0.25 % v/v		C			
3	N PAK-AMS	2.5 % v/v	2.5 % v/v		C			
4	Fierce EZ	0.143 lb ai/a	6 oz/a		A	12.14 ab	13.63 -	58.3 ab
4	Scout	0.585 lb ai/a	32 oz/a		D			
4	Select Max	0.07 lb ai/a	9 oz/a		D			
4	Induce	0.25 % v/v	0.25 % v/v		D			
4	N PAK-AMS	2.5 % v/v	2.5 % v/v		D			
5	Fierce MTZ	0.33 lb ai/a	16 oz/a		A	10.99 b	14.26 -	52.4 b
5	Scout	0.585 lb ai/a	32 oz/a		D			
5	Select Max	0.07 lb ai/a	9 oz/a		D			
5	Induce	0.25 % v/v	0.25 % v/v		D			
5	N PAK-AMS	2.5 % v/v	2.5 % v/v		D			
6	Fierce EZ	0.143 lb ai/a	6 oz/a		A	13.09 a	13.01 -	63.3 a
6	Scout	0.585 lb ai/a	32 oz/a		D			
6	Perpetuo	0.108 lb ai/a	6 oz/a		D			
6	Select Max	0.07 lb ai/a	9 oz/a		D			
6	Induce	0.25 % v/v	0.25 % v/v		D			
6	N PAK-AMS	2.5 % v/v	2.5 % v/v		D			
7	Fierce MTZ	0.33 lb ai/a	16 oz/a		A	13.44 a	13.42 -	64.7 a
7	Scout	0.585 lb ai/a	32 oz/a		D			
7	Perpetuo	0.108 lb ai/a	6 oz/a		D			
7	Select Max	0.07 lb ai/a	9 oz/a		D			
7	Induce	0.25 % v/v	0.25 % v/v		D			
7	N PAK-AMS	2.5 % v/v	2.5 % v/v		D			

The Ohio State University

Valent Actives in a Liberty Link System

Trial ID: 20VALENTLLSOY Location: Western Branch F-7 Trial Year: 2020
 Protocol ID: 20VALENTLLSOY Investigator: Dr. Mark M. Loux
 Project ID: FIERCEMD64.01 Study Director: Anthony Dobbels
 Sponsor Contact: Eric Ott, Valent

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 1 1 1
 Data Entry Date Oct-12-2020 Oct-12-2020
 Rating Timing
 Days After First/Last Applic. 149 100 149 100 149 100
 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	Other Rate	Other Unit	Appl Code	27*	28*	29*
8	Authority MTZ	0.31 lb ai/a	11 oz/a		A	11.92 ab	13.99 -	57.0 ab
8	Scout	0.585 lb ai/a	32 oz/a		D			
8	Anthem Maxx	0.084 lb ai/a	2.5 oz/a		D			
8	Select Max	0.07 lb ai/a	9 oz/a		D			
8	Induce	0.25 % v/v	0.25 % v/v		D			
8	N PAK-AMS	2.5 % v/v	2.5 % v/v		D			
9	Zidua Pro	0.144 lb ai/a	4.5 oz/a		A	12.88 a	13.38 -	62.1 a
9	Scout	0.585 lb ai/a	32 oz/a		D			
9	Perpetuo	0.108 lb ai/a	6 oz/a		D			
9	Select Max	0.07 lb ai/a	9 oz/a		D			
9	Induce	0.25 % v/v	0.25 % v/v		D			
9	N PAK-AMS	2.5 % v/v	2.5 % v/v		D			
10	Fierce XLT	0.156 lb ai/a	4 oz/a		A	13.26 a	14.14 -	63.3 a
10	Scout	0.585 lb ai/a	32 oz/a		D			
10	Perpetuo	0.108 lb ai/a	6 oz/a		D			
10	Select Max	0.07 lb ai/a	9 oz/a		D			
10	Induce	0.25 % v/v	0.25 % v/v		D			
10	N PAK-AMS	2.5 % v/v	2.5 % v/v		D			
LSD P=.05						1.846	2.988	8.63
Standard Deviation						1.076	1.742	5.03
CV						9.4	12.63	9.16
Grand Mean						11.450	13.794	54.89
Levene's F						0.276	1.092	0.307
Levene's Prob(F)						0.974	0.411	0.964
Rank X2						.	.	.
P(Rank X2)						.	.	.
Skewness						-2.3529*	0.3033	-2.3329*
Kurtosis						4.7392*	1.4802	4.6696*
Replicate F						0.510	1.778	1.088
Replicate Prob(F)						0.6092	0.1974	0.3579
Treatment F						37.157	0.282	39.355
Treatment Prob(F)						0.0001	0.9714	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 = 4.84*[27]*(100-[28])/87