

# The Ohio State University

## Valent Actives in a Roundup Ready Xtend System - Conventional Tillage

Trial ID: 20VALENTRRXCT Location: Trial Year: 2020  
 Protocol ID: 20VALENTRRXCT Investigator: Dr. Mark M. Loux  
 Project ID: Study Director:  
 Sponsor Contact:

### General Trial Information

Investigator: Dr. Mark M. Loux

Discipline: H herbicide  
 Trial Status: E established

ARM Trial Created On: Mar-27-2020 Trial Usage/Type: 0 Research and Development  
 Initiation Date: May-13-2020

### 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 °: 39.85781 N  
 Longitude of LL Corner °: -83.67 W  
 Altitude of LL Corner: 1098.00 FT

Conducted Under GLP: No  
 Conducted Under GEP: No

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: Pioneer 33A24X  
 Attributes: GLYPHOSATE-R,AUXIN-R  
 Seed Lot No: B3GRA13059-00-1207 Seed Source: Illinois  
 % Germination: 90 Seed Size: 2114 S/LB  
 Seed Treatment Products: L  
 Planting Date: May-13-2020 Planting Rate: 160000 S/A  
 Depth: 2 IN  
 Rows per Plot: 4  
 Row Spacing: 30 IN  
 Planting Method: PLANTD planted  
 Planting Equipment: FE field equipment  
 Seed Bed: MEDIUM medium  
 Soil Moisture: NORMAL normal, adequate  
 Plant Arrangement: ROW  
 Soil Temperature: 62 F  
 Emergence Date: May-25-2020  
 Harvest Date: Oct-8-2020 Harvest Equipment: Kincaid 8XP  
 Moisture Meter: Harvest Master Harvested Width: 5 FT  
 % Standard Moisture: 13.0 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: May-14-2020  
 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: ABUTH Abutilon theophrasti  
 Common Name: velvetleaf 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: AMARE Amaranthus retroflexus  
 Common Name: pigweed, redroot Entry Date: Jun-25-2020  
 Pest 7 Type: W Code: IPOHE Ipomoea hederacea  
 Common Name: ivy-leaf morning glory Entry Date: Jul-9-2020  
 Pest 8 Type: W Code: SOLPT Solanum ptychanthum  
 Common Name: Eastern black nightshade Entry Date: Jul-9-2020

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### Site and Design

Treated Plot Width: 6.67 FT  
 Treated Plot Length: 30 FT  
 Treated Plot Area: 200.1 FT<sup>2</sup> Treatments: 10  
 Replications: 4

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. CORN 2019

### Soil Description

Description Name: Big E  
 % Sand: 44 % OM: 3.1 Texture: L loam  
 % Silt: 45 pH: 6.6 Soil Name: Kokomo  
 % Clay: 11 CEC: 15.2 Fert. Level: G good  
 Soil Drainage: G good

### Application Description

	A	B
Application Date	May-13-2020	Jun-24-2020
Appl. Start Time	3:00 PM	8:30 AM
Appl. Stop Time	3:30 PM	9:00 AM
Interval to Prev. Appl.		42 DAYS
Application Method	NONINC	NONINC
Application Timing	PREPRE	POSPOS
Application Placement	BROSOL	BROFOL
Applied By	Ackley and Essman	Kimmet
Appl. Entry Date	May-14-2020	Jun-25-2020
Air Temperature Start, Stop	64 64 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	14 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	
<b>Pest 1 Code, Type, Scale</b>	AMBTR	W	AMBTR	W BBCH
Stage Majority, Percent	18		80	
Stage Minimum, Percent	14		10	
Stage Maximum, Percent	19		10	
Height Average	6		IN	
Height Minimum, Maximum	2		18	
Density Average	55		PLA/m2	
Density Min, Max	4		84	
<b>Pest 2 Code, Type, Scale</b>	SETFA	W	SETFA	W BBCH
Stage Majority, Percent	16		80	
Stage Minimum, Percent	14		10	
Stage Maximum, Percent	19		10	
Height Average	4		IN	
Height Minimum, Maximum	2		8	
Density Average	122		PLA/m2	
Density Min, Max	96		172	
<b>Pest 3 Code, Type, Scale</b>	ECHCG	W	ECHCG	W BBCH
Stage Majority, Percent	18		80	
Stage Minimum, Percent	14		10	
Stage Maximum, Percent	19		10	
Height Average	4		IN	
Height Minimum, Maximum	2		6	
Density Average	43		PLA/m2	
Density Min, Max	28		64	
<b>Pest 4 Code, Type, Scale</b>	ABUTH	W	ABUTH	W BBCH
Stage Majority, Percent	15		90	
Stage Minimum, Percent	14		10	
Stage Maximum, Percent	15		90	
Height Average	4		IN	
Height Minimum, Maximum	2		8	
Density Average	2		PLA/m2	
Density Min, Max	0		8	
<b>Pest 5 Code, Type, Scale</b>	CHEAL	W	CHEAL	W BBCH
Stage Majority, Percent	16		80	
Stage Minimum, Percent	16		80	
Stage Maximum, Percent	19		10	
Height Average	4		IN	
Height Minimum, Maximum	2		8	
Density Average	6		PLA/m2	
Density Min, Max	0		16	
<b>Pest 6 Code, Type, Scale</b>	AMARE	W	AMARE	W BBCH
Stage Majority, Percent	16		80	
Stage Minimum, Percent	16		80	
Stage Maximum, Percent	19		10	
Height Average	4		IN	
Height Minimum, Maximum	2		6	
Density Average	22		PLA/m2	
Density Min, Max	0		60	
<b>Pest 7 Code, Type, Scale</b>	IPOHE	W	IPOHE	W
Density Average	2		PLA/m2	
Density Min, Max	0		8	
<b>Pest 8 Code, Type, Scale</b>	SOLPT	W	SOLPT	W
Density Average	3		PLA/m2	
Density Min, Max	0		4	

### Application Equipment

	A		B	
<b>Appl. Equipment</b>	6' TTI		10' TTI	
<b>Equipment Type</b>	BACCAI		BACCAI	
<b>Operation Pressure</b>	44 PSI		44 PSI	
<b>Nozzle Type</b>	TTI		TTI	
<b>Nozzle Size</b>	1110015		110015	
<b>Nozzle Spacing</b>	18 IN		18 IN	
<b>Boom Length</b>	6.67 FT		10 FT	
<b>Boom Height</b>	20 IN		20 IN	
<b>Ground Speed</b>	3 MPH		3 MPH	
<b>Carrier</b>	WATER		WATER	
<b>Application Amount</b>	15 GAL/AC		15 GAL/AC	
<b>Mix Size</b>	1 L		2 L	
<b>Propellant</b>	COMCO2		COMCO2	
<b>Tank Mix (Y/N)</b>			Y yes	

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 Project ID: Study Director:  
 Sponsor Contact:

**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 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.  
 STATUS May-28-2020 Dr. Mark M. Loux Automatically added by ARM: Trial Status updated to 'E' when Initiation 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-8-2020	Oct-8-2020	Oct-8-2020
Rating Type	YIELD	MOICON	YIELD
Rating Unit	LBS	%	BU
Number of Subsamples	1	1	1
Data Entry Date	Oct-12-2020	Oct-12-2020	
Days After First/Last Applic.	148 106	148 106	148 106
Trt-Eval Interval			
Plant-Eval Interval	148 DP-1	148 DP-1	148 DP-1
Days After Emergence	136 DE-1	136 DE-1	136 DE-1
ARM Action Codes			TY1
Number of Decimals	2	2	1

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Unit	Appl Code	19*	20*	21*
1	UTC						3.87 d	14.43 a	18.4 d
2	Roundup Powermax	1.13 lb	ae/a	32 oz/a		B	13.17 c	11.53 b	64.8 c
	Xtendimax	0.5 lb	ae/a	22 oz/a		B			
	Select Max	0.07 lb	ai/a	9 oz/a		B			
	Induce	0.25 %	v/v	0.25 % v/v		B			
	In-Place	0.25 %	v/v	0.25 % v/v		B			
3	Roundup Powermax	1.13 lb	ae/a	32 oz/a		B	14.14 abc	11.58 b	69.6 abc
	Xtendimax	0.5 lb	ae/a	22 oz/a		B			
	Perpetuo	0.108 lb	ai/a	6 oz/a		B			
	Select Max	0.07 lb	ai/a	9 oz/a		B			
	Induce	0.25 %	v/v	0.25 % v/v		B			
	In-Place	0.25 %	v/v	0.25 % v/v		B			
4	Fierce EZ	0.143 lb	ai/a	6 oz/a		A	15.17 ab	11.45 b	74.7 ab
	Roundup Powermax	1.13 lb	ae/a	32 oz/a		B			
	Xtendimax	0.5 lb	ae/a	22 oz/a		B			
	Select Max	0.07 lb	ai/a	9 oz/a		B			
	Induce	0.25 %	v/v	0.25 % v/v		B			
	In-Place	0.25 %	v/v	0.25 % v/v		B			
5	Fierce MTZ	0.33 lb	ai/a	1 pt/a		A	14.21 abc	11.45 b	70.0 abc
	Roundup Powermax	1.13 lb	ae/a	32 oz/a		B			
	Xtendimax	0.5 lb	ae/a	22 oz/a		B			
	Select Max	0.07 lb	ai/a	9 oz/a		B			
	Induce	0.25 %	v/v	0.25 % v/v		B			
	In-Place	0.25 %	v/v	0.25 % v/v		B			
6	Authority MTZ	0.31 lb	ai/a	11 oz/a		A	13.78 bc	11.60 b	67.8 bc
	Roundup Powermax	1.13 lb	ae/a	32 oz/a		B			
	Xtendimax	0.5 lb	ae/a	22 oz/a		B			
	Select Max	0.07 lb	ai/a	9 oz/a		B			
	Induce	0.25 %	v/v	0.25 % v/v		B			
	In-Place	0.25 %	v/v	0.25 % 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-8-2020	Oct-8-2020	Oct-8-2020
Rating Type	YIELD	MOICON	YIELD
Rating Unit	LBS	%	BU
Number of Subsamples	1	1	1
Data Entry Date	Oct-12-2020	Oct-12-2020	
Days After First/Last Applic.	148 106	148 106	148 106
Trt-Eval Interval			
Plant-Eval Interval	148 DP-1	148 DP-1	148 DP-1
Days After Emergence	136 DE-1	136 DE-1	136 DE-1
ARM Action Codes			TY1
Number of Decimals	2	2	1

Trt No.	Treatment Name	Rate Rate Unit	Other Rate Rate Unit	Appl Code	19*	20*	21*
7	Zidua Pro	0.192 lb ai/a	6 oz/a	A	14.72 abc	11.53 b	72.5 abc
7	Roundup Powermax	1.13 lb ae/a	32 oz/a	B			
7	Xtendimax	0.5 lb ae/a	22 oz/a	B			
7	Select Max	0.07 lb ai/a	9 oz/a	B			
7	Induce	0.25 % v/v	0.25 % v/v	B			
7	In-Place	0.25 % v/v	0.25 % v/v	B			
8	Fierce EZ	0.143 lb ai/a	6 oz/a	A	14.48 abc	11.93 b	70.9 abc
8	Roundup Powermax	1.13 lb ae/a	32 oz/a	B			
8	Xtendimax	0.5 lb ae/a	22 oz/a	B			
8	Perpetuo	0.108 lb ai/a	6 oz/a	B			
8	Select Max	0.07 lb ai/a	9 oz/a	B			
8	Induce	0.25 % v/v	0.25 % v/v	B			
8	In-Place	0.25 % v/v	0.25 % v/v	B			
9	Fierce MTZ	0.33 lb ai/a	1 pt/a	A	14.02 abc	11.80 b	68.8 abc
9	Roundup Powermax	1.13 lb ae/a	32 oz/a	B			
9	Xtendimax	0.5 lb ae/a	22 oz/a	B			
9	Perpetuo	0.108 lb ai/a	6 oz/a	B			
9	Select Max	0.07 lb ai/a	9 oz/a	B			
9	Induce	0.25 % v/v	0.25 % v/v	B			
9	In-Place	0.25 % v/v	0.25 % v/v	B			
10	Fierce XLT	0.156 lb ai/a	4 oz/a	A	15.72 a	11.40 b	77.5 a
10	Roundup Powermax	1.13 lb ae/a	32 oz/a	B			
10	Xtendimax	0.5 lb ae/a	22 oz/a	B			
10	Select Max	0.07 lb ai/a	9 oz/a	B			
10	Induce	0.25 % v/v	0.25 % v/v	B			
10	In-Place	0.25 % v/v	0.25 % v/v	B			
LSD P=.05					1.777	1.294	8.91
Standard Deviation					1.225	0.892	6.14
CV					9.19	7.52	9.38
Grand Mean					13.328	11.868	65.50
Levene's F					0.429	2.866	0.494
Levene's Prob(F)					0.909	0.014*	0.867
Rank X2					.	.	.
P(Rank X2)					.	.	.
Skewness					-2.1087*	3.7168*	-2.0962*
Kurtosis					3.9761*	17.1151*	3.9441*
Replicate F					1.555	0.229	1.531
Replicate Prob(F)					0.2231	0.8754	0.2292
Treatment F					30.810	4.192	30.351
Treatment Prob(F)					0.0001	0.0018	0.0001

Crop Type, Code

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

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Sponsor Contact:  
Trial Year: 2020

YIELD = yield

MOICON = moisture content

Rating Unit

% = percent

BU = bushel

Plant-Eval Interval

148 DP-1 = 1 GLXMA May-13-2020

ARM Action Codes

TY1 =  $4.84 * [19] * (100 - [20]) / 87$