

The Ohio State University

Acuron GT: Evaluation of weed control, crop tolerance and yield in a two pass system - Mid and South University

Trial ID: USNK0H4022021 Location: Bruns Dain FS Trial Year: 2021
 Protocol ID: HBI008A4-2021US Investigator (Creator): Dain Bruns
 Master Protocol ID: Study Director:
 Official Trial ID: Sponsor Contact:
 Conducted Under GEP: No Trial Origin: P public institution trial

General Trial Information

Investigator: Dr. Mark M. Loux **Title:** Professor

Discipline: H herbicide
Trial Status: E established

Trial Status Date: Apr-29-2021 10:44 AM

ARM Trial Created On: Apr-6-2021

Initiation Date: Apr-27-2021

Last Changed By: Dr. Mark M. Loux

Trial Usage/Type: 0 Research and Development

Protocol Revision Number: 1.0 **Protocol Revision Date:** Apr-6-2021

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 °: 39.85774 N
Longitude of LL Corner °: -83.67001 W USAOH 42.327132 -38.403423
 -80.518705 -84.820305

Altitude of LL Corner: 1085.00 FT

Conducted Under GLP: No

Conducted Under GEP: No

Role: INVEST investigator

Investigator: Dr. Mark M. Loux **Title:** Professor

Organization: The Ohio State University **Org. Type:** University

Address 1: 2021 Coffey Road

Country: USA United States

City: Columbus

State/Prov: OH

Postal Code: 43210

Crop Description

Crop 1: C ZEAMD Zea mays indentata Dent corn **BBCH Scale:** BCOR

Entry Date: May-3-2021

Variety: Pioneer P1108Q

Attributes: Glyphosate-R, Glufosinate-R

Seed Lot No: A3STJ13002-N

% Germination: 95

Stage Scale: BBCH

Seed Source: Pioneer

Planting Rate: 32097 S/A

Planting Date: Apr-27-2021

Depth: 2 IN

Rows per Plot: 4

Row Spacing: 30 IN

Planting Method: PLANTD planted

Planting Equipment: FPP finger pickup planter

Seed Bed: MEDIUM medium

Soil Moisture: SLIDRY slightly dry

Soil Temperature: 63 F

Emergence Date: May-14-2021

Harvest Date: Oct-11-2021

Moisture Meter: Harvest Master

% Standard Moisture: 15.5

Weighing Equipment: Harvest Master HM800

Harvest Equipment: Kincaid 8XP

Harvested Width: 5 FT

Harvested Length: 30 FT

Pest Description

Pest 1 Type: W **Code:** SETFA **Setaria faberi**

Common Name: Giant foxtail

Entry Date: Jun-7-2021

Stage Scale: BBCH

Pest 2 Type: W **Code:** AMBTR **Ambrosia trifida**

Common Name: Giant ragweed

Attributes: gly-R

Entry Date: Jun-7-2021

Stage Scale: BBCH

Pest 3 Type: W **Code:** CHEAL **Chenopodium album**

Common Name: common lambsquarters

Attributes: atrazine-R

Entry Date: Jun-7-2021

Stage Scale: BBCH

Pest 4 Type: W **Code:** AMARE **Amaranthus retroflexus**

Common Name: Redroot pigweed

Attributes: atrazine-R

Entry Date: Jun-7-2021

Stage Scale: BBCH

Pest 5 Type: W **Code:** ABUTH **Abutilon theophrasti**

Common Name: velvetleaf

Entry Date: Jun-7-2021

Stage Scale: BBCH

Pest 6 Type: W **Code:** IPOHE **Ipomoea hederacea**

Common Name: ivy-leaf morning glory

Entry Date: Jun-23-2021

Stage Scale: BBCH

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Site and Design

Treated Plot Width: 10 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: 300.0 FT2 Treatments: 16 Tillage Type: CONTIL conventional-till
 Replications: 4 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. GLXMA 2020

Soil Description

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

Application Description

	A	B
Application Date	Apr-28-2021	Jun-6-2021
Appl. Start Time	7:30 AM	9:30 AM
Appl. Stop Time	8:00 AM	10:00 AM
Interval to Prev. Appl.		39 DAYS
Application Method	NONINC	NONINC
Application Timing	PREPRE	POSPOS
Application Placement	BROSIOI	BROFOL
Applied By	Ackley	Ackley
Appl. Entry Date	Apr-29-2021	Jun-7-2021
Air Temperature Start, Stop	66 67.7 F	81 83 F
% Relative Humidity Start, Stop	65 63	60 56
Wind Velocity+Dir. Start	6 MPH WSW	4 MPH SSW
Wind Velocity+Dir. Stop	8 MPH WSW	4 MPH SSW
Wind Velocity+Dir. Max	9.2 MPH WSW	4 MPH SSW
Wet Leaves (Y/N)	N no	N no
Soil Temperature	58 F	67 F
Soil Moisture	DRY	dry
% Cloud Cover	40	60
Next Moisture Occurred On	Apr-28-2021	Jun-7-2021
Time to Next Moisture	11.5 HR	23.0 HR
Moisture 1 Week after Appl.	1.1 IN	0.48 IN
Weather Source	WSFIELD	WSFIELD

Crop Stage At Each Application

	A		B	
Crop 1 Code, BBCH Scale	ZEAMD	BCOR	ZEAMD	BCOR
Stage Scale Used	BBCH		BBCH	
Stage Majority, Percent	00	100	15	100
Height Average			12	IN
Height Minimum, Maximum			11	13

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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			13	80
Stage Minimum, Percent			12	10
Stage Maximum, Percent			14	10
Height Average			8	IN
Height Minimum, Maximum			8	10
Density Average			259	PLA/m2
Density Minimum, Maximum			64	484
Pest 2 Code, Type, Scale	AMBTR	W BBCH	AMBTR	W BBCH
Stage Majority, Percent			19	80
Stage Minimum, Percent			14	10
Stage Maximum, Percent			19	80
Height Average			8	IN
Height Minimum, Maximum			6	10
Density Average			34	PLA/m2
Density Minimum, Maximum			12	60
Pest 3 Code, Type, Scale	CHEAL	W BBCH	CHEAL	W BBCH
Stage Majority, Percent			16	80
Stage Minimum, Percent			14	10
Stage Maximum, Percent			18	10
Height Average			3	IN
Height Minimum, Maximum			2	3
Density Average			101	PLA/m2
Density Minimum, Maximum			4	188
Pest 4 Code, Type, Scale	AMARE	W BBCH	AMARE	W BBCH
Stage Majority, Percent			14	80
Stage Minimum, Percent			12	10
Stage Maximum, Percent			16	10
Height Average			2	IN
Height Minimum, Maximum			1	2
Density Average			1	PLA/m2
Density Minimum, Maximum			1	1
Pest 5 Code, Type, Scale	ABUTH	W BBCH	ABUTH	W BBCH
Stage Majority, Percent			13	80
Stage Minimum, Percent			12	10
Stage Maximum, Percent			14	10
Height Average			3	IN
Height Minimum, Maximum			2	3
Density Average			1	PLA/m2
Density Minimum, Maximum			1	1
Pest 6 Code, Type, Scale	IPOHE	W BBCH	IPOHE	W BBCH
Stage Majority, Percent			12	100
Height Average			2	IN
Height Minimum, Maximum			1	2
Density Average			1	PLA/m2
Density Minimum, Maximum			1	1

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		TeeJet	
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	
Application Amount	15	GAL/AC	15	GAL/AC
Minimum Mix/Treatment	1.564	L	1.564	L
Mix Overage			25	mL
Mix Size	1	L	2	L
Spray pH			7.8	
Propellant	COMCO2		COMCO2	
Tank Mix (Y/N)			Y	yes

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Notes

Context	Date	By	Notes
STATUS	Apr-6-2021	Dain Bruns	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	Apr-29-2021	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'E' when Initiation Date entered.

Pest ID Code				
Pest Code				
Pest Scientific Name				
Pest Name				
Crop ID Code	1 ZEAMD	1 ZEAMD	1 ZEAMD	1 ZEAMD
BBCH Scale	BCOR	BCOR	BCOR	BCOR
Crop Scientific Name	Zea mays indent>	Zea mays indent>	Zea mays indent>	Zea mays indent>
Crop Name	Dent corn	Dent corn	Dent corn	Dent corn
Crop Variety	Pioneer P1108Q	Pioneer P1108Q	Pioneer P1108Q	Pioneer P1108Q
Rating Date	Oct-11-2021	Oct-11-2021	Oct-11-2021	Oct-11-2021
SE Group No.	45	46	50	49
SE Name	ZUSX052B		ZUSX052B	
SE Description	Yield/A		Yield/A	
Part Rated	GRAIN -	GRAIN -	GRAIN -	GRAIN -
Rating Type	WEIGHT	CONMOI	YIELD	WEITES
Rating Unit/Min/Max	LB - -	% 0 100	BU - -	LB - -
Calculation	NC	NC	NC	NC
Sample Size	1 PLOT	1 PLOT	1 A	1 PLOT
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
Crop Stage Scale				
Crop Stage Majority/Min/Max				
Assessed By				
Data Entry Date	Oct-12-2021	Oct-12-2021		Oct-12-2021
Days After First/Last Applic.	166 127	166 127	166 127	166 127
Trt-Eval Interval				
Plant-Eval Interval	167 DP-1	167 DP-1	167 DP-1	167 DP-1
Days After Emergence	150 DE-1	150 DE-1	150 DE-1	150 DE-1
ARM Action Codes			TY1	
Number of Decimals	1	1	1	1

Trt Treatment No. Name	Other Rate	Other Rate	Appl Unit Code	20*	21*	22*	23*
1 UNTREATED CHECK				10.6 c	15.2 ab	52.2 c	40.3 -
2 BICEP II MAGNUM	1.6 qt/a		A	56.3 a	19.4 ab	278.4 a	54.7 -
AMSOL	2.5 qt/a		B				
NIS	0.25 % v/v		B				
ACURON GT	3.75 pt/a		B				
3 LEXAR EZ 3.7 ZC	1.8 qt/a		A	55.4 a	19.4 ab	273.9 a	55.1 -
AMSOL	2.5 qt/a		B				
NIS	0.25 % v/v		B				
ACURON GT	3.75 pt/a		B				
4 SURESTART II 4.25 SC	1.75 pt/a		A	54.0 a	18.9 ab	268.8 a	54.6 -
AMSOL	2.5 qt/a		B				
NIS	0.25 % v/v		B				
ACURON GT	3.75 pt/a		B				
5 HARNESS XTRA 5.6L	1.8 qt/a		A	56.4 a	18.2 ab	283.2 a	53.8 -
AMSOL	2.5 qt/a		B				
NIS	0.25 % v/v		B				
ACURON GT	3.75 pt/a		B				
6 VERDICT 5.57 EC	14 fl oz/a		A	56.7 a	19.9 ab	278.6 a	54.7 -
AMSOL	2.5 qt/a		B				
NIS	0.25 % v/v		B				
ACURON GT	3.75 pt/a		B				
7 SURESTART II 4.25 SC	1.75 pt/a		A	54.9 a	18.2 ab	275.4 a	54.7 -
AMSOL	2.5 qt/a		B				
RESICORE 3.29 SC	1.25 qt/a		B				
ROUNDUP POWERMAX 4.5 SL	26.6 fl oz/a		B				
8 HARNESS XTRA 5.6L	1.8 qt/a		A	54.5 a	19.3 ab	269.5 a	54.7 -
AMSOL	2.5 qt/a		B				
LAUDIS 3.5 SC	3 fl oz/a		B				
ROUNDUP POWERMAX 4.5 SL	26.6 fl oz/a		B				
SUPERB HC	0.5 % v/v		B				

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Pest Code				
Pest Scientific Name				
Pest Name				
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BBCH Scale	BCOR	BCOR	BCOR	BCOR
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays
	indent>	indent>	indent>	indent>
Crop Name	Dent corn	Dent corn	Dent corn	Dent corn
Crop Variety	Pioneer P1108Q	Pioneer P1108Q	Pioneer P1108Q	Pioneer P1108Q
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SE Description	Yield/A		Yield/A	
Part Rated	GRAIN -	GRAIN -	GRAIN -	GRAIN -
Rating Type	WEIGHT	CONMOI	YIELD	WEITES
Rating Unit/Min/Max	LB - -	% 0 100	BU - -	LB - -
Calculation	NC	NC	NC	NC
Sample Size	1 PLOT	1 PLOT	1 A	1 PLOT
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
Crop Stage Scale				
Crop Stage Majority/Min/Max				
Assessed By				
Data Entry Date	Oct-12-2021	Oct-12-2021		Oct-12-2021
Days After First/Last Applic.	166 127	166 127	166 127	166 127
Trt-Eval Interval				
Plant-Eval Interval	167 DP-1	167 DP-1	167 DP-1	167 DP-1
Days After Emergence	150 DE-1	150 DE-1	150 DE-1	150 DE-1
ARM Action Codes			TY1	
Number of Decimals	1	1	1	1

Trt Treatment No. Name	Other Rate	Other Rate	Appl Unit Code	20*	21*	22*	23*
9 VERDICT 5.57 EC	10 fl oz/a		A	53.6 a	19.7 ab	264.2 a	55.3 -
AMSOL	2.5 qt/a		B				
ARMEZON PRO	18 fl oz/a		B				
ROUNDUP POWERMAX 4.5 SL	26.6 fl oz/a		B				
10 ACURON XR	3.5 qt/a		A	31.4 b	17.5 ab	156.8 b	51.9 -
11 ACURON XR	3 qt/a		A	25.8 b	16.6 ab	131.5 b	53.1 -
12 HARNESS MAX 3.85 SC	75 fl oz/a		A	12.9 c	12.1 b	67.9 c	45.2 -
13 ACURON 3.44 ZC	3 qt/a		A	26.8 b	15.6 ab	138.5 b	50.8 -
14 HARNESS MAX 3.85 SC	37.5 fl oz/a		A	53.0 a	18.5 ab	265.2 a	54.5 -
AMSOL	2.5 qt/a		B				
HARNESS MAX 3.85 SC	37.5 fl oz/a		B				
ROUNDUP POWERMAX 4.5 SL	26.6 fl oz/a		B				
15 ACURON 3.44 ZC	1.5 qt/a		A	55.4 a	19.3 ab	274.3 a	55.3 -
AMSOL	2.5 qt/a		B				
ACURON 3.44 ZC	1.5 qt/a		B				
ROUNDUP POWERMAX 4.5 SL	26.6 fl oz/a		B				
16 ACURON XR	1.5 qt/a		A	55.3 a	20.2 a	270.7 a	53.5 -
AMSOL	2.5 qt/a		B				
ACURON XR	1.5 qt/a		B				
ROUNDUP POWERMAX 4.5 SL	26.6 fl oz/a		B				
LSD P=.05				9.10	4.40	45.77	10.10
Standard Deviation				6.39	3.09	32.14	7.09
CV				14.35	17.18	14.49	13.48
Levene's F^				1.088	1.587	0.877	1.15
Levene's Prob(F)				0.392	0.113	0.593	0.341
Skewness^				-0.4527	-2.2582*	-0.4298	-3.735*
Kurtosis^				3.1514*	13.7321*	2.7621*	26.8895*
Replicate F				2.630	1.622	2.292	0.645
Replicate Prob(F)				0.0616	0.1975	0.0909	0.5900
Treatment F				27.567	1.941	26.044	1.371
Treatment Prob(F)				0.0001	0.0440	0.0001	0.2033

Crop ID Code
 1, ZEAMD, BCOR, Zea mays indentata, Dent corn, Pioneer P1108Q = Glyphosate-R, Glufosinate-R
Part Rated
 GRAIN = grain
Rating Type

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Master Protocol ID:

Study Director:

Official Trial ID:

Sponsor Contact:

Conducted Under GEP: No

Trial Origin: P public institution trial

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

PLOT = total plot

A = acre

PLOT = total plot

PLOT = total plot

A = acre

BU = bushel

Plant-Eval Interval

167 DP-1 = 1 ZEAMD Apr-27-2021

ARM Action Codes

TY1 = $5.18571429 \cdot [20] \cdot (100 - [21]) / 84.5$