

The Ohio State University

Acuron GT: Evaluation of weed control and crop tolerance in a one pass system

Trial ID: 20ACURONGT1PASS Location: Trial Year: 2020
 Protocol ID: HBI007A4-2020US Investigator: Dr. Mark M. Loux
 Master Protocol ID: Study Director: Anthony Dobbels
 Conducted Under GEP: No Sponsor Contact: Dain Bruns, Syngenta
 Trial Origin: P public institution trial

General Trial Information

Study Director: A
Investigator: Dr. Mark M. Loux

Discipline: H herbicide
Trial Status: E established
Trial Status Date: Apr-23-2020 11:07 AM
ARM Trial Created On: Mar-23-2020
Initiation Date: Apr-22-2020

Last Changed By: Dr. Mark M. Loux
Trial Usage/Type: 0 Research and Development

Protocol Revision Number: 1.0 **Protocol Revision Date:** Mar-23-2020

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 °: 39.8595 N
Longitude of LL Corner °: -83.67549 W
Altitude of LL Corner: 1094.00 FT

Conducted Under GLP: No
Conducted Under GEP: No

Objectives:

● Are there are differences in weed control, crop safety and yield among POST applications of Acuron GT, Halex GT and competitive treatments?

Contacts

Study Director: A

Investigator: Dr. Mark M. Loux

Crop Description

Crop 1: C ZEAMD Zea mays indentata

Dent corn

BBCH Scale: BCOR

Entry Date: Apr-23-2020

Stage Scale: BBCH

Variety: SCS1105AM

Attributes: Glyphosate and Glufosinate Resistant

Seed Lot No: B3BFD13011-N

Seed Source: Seed Consultants

% Germination: 95

Planting Rate: 32097 S/A

Planting Date: Apr-22-2020

Depth: 2 IN

Planting Method: PLANTD planted

Rows per Plot: 4

Planting Equipment: FPP finger pickup planter

Row Spacing: 30 IN

Seed Bed: MEDIUM medium

Soil Moisture: NORMAL normal, adequate

Soil Temperature: 54 F

Emergence Date: May-14-2020

Harvest Date: Oct-14-2020

Moisture Meter: Harvest Master

Harvest Equipment: Kincaid 8XP

Harvested Width: 5 FT

% Standard Moisture: 15.5

Harvested Length: 30 FT

Weighing Equipment: Harvest Master HM800

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Conducted Under GEP: No

Pest Description

Pest 1 Type: W **Code:** SETFA *Setaria faberi*
Common Name: foxtail, giant **Entry Date:** May-28-2020

Pest 2 Type: W **Code:** ECHCG *Echinochloa crus-galli*
Common Name: Common barnyard grass **Entry Date:** Jun-9-2020

Pest 3 Type: W **Code:** AMBTR *Ambrosia trifida*
Common Name: ragweed, giant **Entry Date:** May-28-2020

Pest 4 Type: W **Code:** ABUTH *Abutilon theophrasti*
Common Name: velvetleaf **Entry Date:** May-28-2020

Pest 5 Type: W **Code:** IPOHE *Ipomoea hederacea*
Common Name: ivy-leaf morning glory **Entry Date:** Jun-22-2020

Pest 6 Type: W **Code:** SIDSP *Sida spinosa*
Common Name: sida, prickly **Entry Date:** Jun-22-2020

Pest 7 Type: W **Code:** CHEAL *Chenopodium album*
Common Name: lambsquarters, common **Entry Date:** Jun-22-2020

Site and Design

Treated Plot Width: 10 FT **Site Type:** FIELD field
Treated Plot Length: 30 FT **Experimental Unit:** 1 PLOT plot
Treated Plot Area: 300 FT² **Treatments:** 10 **Tillage Type:** CONTIL conventional-till
Replications: 4 **Study Design:** RAOBL Randomized Complete Block (RCB)

Previous

No. Crop Year
 1. GLXMA 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

Application Date May-23-2020 **A**
Appl. Start Time 9:00 AM
Appl. Stop Time 9:47 AM
Application Method NONINC
Application Timing POSPOS
Application Placement BROFOL
Applied By Dobbels
Appl. Entry Date May-28-2020
Air Temperature Start, Stop 65 65 F
% Relative Humidity Start, Stop 90 90
Wind Velocity+Dir. Start 4 MPH E
Wind Velocity+Dir. Stop 4 MPH E
Wind Velocity+Dir. Max 4 MPH E
Wet Leaves (Y/N) N no
Soil Temperature 57 F
Soil Moisture WET
% Cloud Cover 33
Next Moisture Occurred On May-23-2020
Time to Next Moisture 8 HR
Moisture 1 Week after Appl. 1.07 IN

Crop Stage At Each Application

Crop 1 Code, BBCH Scale ZEAMD BCOR **A**
Stage Majority, Percent 12 100
Height Average 3 IN
Height Minimum, Maximum 3 3

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Pest Stage At Each Application

	A	
Pest 1 Code, Type, Scale	SETFA	W BBCH
Stage Majority, Percent	11	90
Stage Minimum, Percent	11	90
Stage Maximum, Percent	12	10
Height Average	0.5	IN
Height Minimum, Maximum	0.5	0.75
Density Average	670	PLA/m2
Density Min, Max	200	1600
Pest 2 Code, Type, Scale	ECHCG	W BBCH
Stage Majority, Percent	11	100
Stage Minimum, Percent	11	100
Stage Maximum, Percent	11	100
Height Average	0.5	IN
Height Minimum, Maximum	0.25	0.5
Density Average	320	PLA/m2
Density Min, Max	0	800
Pest 3 Code, Type, Scale	AMBTR	W BBCH
Stage Majority, Percent	14	80
Stage Minimum, Percent	10	10
Stage Maximum, Percent	16	10
Height Average	2	IN
Height Minimum, Maximum	1	3
Density Average	27	PLA/m2
Density Min, Max	8	48
Pest 4 Code, Type, Scale	ABUTH	W BBCH
Stage Majority, Percent	10	100
Stage Minimum, Percent	10	100
Stage Maximum, Percent	10	100
Height Average	0.25	IN
Height Minimum, Maximum	0.25	0.25
Pest 5 Code, Type, Scale	IPOHE	W
Density Average	1	PLA/M2
Density Min, Max	0	2
Pest 6 Code, Type, Scale	SIDSP	W
Density Average	3	PLA/m2
Density Min, Max	0	12
Pest 7 Code, Type, Scale	CHEAL	W
Density Average	9	PLA/m2
Density Min, Max	0	36

Application Equipment

	A	
Appl. Equipment	10'	AIXR
Equipment Type	BACCAI	
Operation Pressure	44	PSI
Nozzle Type	AIXR	
Nozzle Size	110015	
Nozzle Spacing	18	IN
Boom Length	10	FT
Boom Height	20	IN
Ground Speed	3	MPH
Carrier	WATER	
Application Amount	15	GAL/AC
Mix Size	1	L
Propellant	COMCO2	

Context	Date	By	Notes
STATUS	Mar-23-2020	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	Apr-23-2020	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'E' when Initiation Date entered.

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Conducted Under GEP: No

SE Definitions

	1.	2.	3.	4.
Rating Timing	1	2	3	4
SE Name	ZUSX052_C3	ZUSW001	ZUSX003	ZUSX001
SE Description	YIELD/A	%CONTR OL	%PHYTO- STUNTIN G	%PHYTO- GENERAL
Part Rated	GRAIN	PLANT	PLANT	PLANT
Rating Type	YIELD	CONTRO	PHYSTU	PHYGEN
Rating Unit	BU	%	%	%
Sample Size	FT2	1 PLOT	1 PLOT	1 PLOT
Collection Basis	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Reporting Basis	1 A	1 PLOT	1 PLOT	1 PLOT
Calculation	IN	NC	NC	NC
Number of Subsamples	1			
ARM Action Codes	@YLDLBBUADM[1,2]			
Pest ID Code				
Pest Code				
Pest Scientific Name				
Pest Name				
Crop ID Code			1 ZEAMD	1 ZEAMD
BBCH Scale			BCOR	BCOR
Crop Scientific Name			Zea mays indentata	Zea mays indentata
Crop Name			Dent corn	Dent corn
Crop Variety			SCS1105AM	SCS1105AM
Rating Date			Oct-14-2020	Oct-14-2020
SE Name			ZUSX052A	ZUSX052B
SE Description			Yield/A	Yield/A
Part Rated			GRAIN -	GRAIN -
Rating Type			YIELD	CONMOI
Rating Unit			LB	%
Calculation			IN	NC
Sample Size			150 FT2	1 PLOT
Collection Basis			1 PLOT	1 PLOT
Reporting Basis			150 FT2	1 PLOT
Number of Subsamples			1	1
Assessed By				
Data Entry Date			Oct-15-2020	Oct-15-2020
Rating Timing				
Days After First/Last Applic.			144 144	144 144
Trt-Eval Interval			144 DA-A	144 DA-A
Plant-Eval Interval			175 DP-1	175 DP-1
Days After Emergence			153 DE-1	153 DE-1
ARM Action Codes				TY1
Number of Decimals			1	1

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Unit	Appl Code	19*	20*	21*
1	UNTREATED CHECK						7.8 d	19.6 -	38.0 d
2	AMSOL	2.5 %	v/v	2.5 %	v/v	A	38.1 a	19.9 -	186.7 a
	NIS	0.25 %	v/v	0.25 %	v/v	A			
	ACURON GT	32.3 oz	ai/a	3.75 pt/a		A			
3	AMSOL	2.5 %	v/v	2.5 %	v/v	A	19.1 bcd	18.7 -	94.4 bcd
	NIS	0.25 %	v/v	0.25 %	v/v	A			
	HALEX GT 4.38 CS	31.5 oz	ai/a	3.6 pt/a		A			
4	AMSOL	2.5 %	v/v	2.5 %	v/v	A	18.9 bcd	17.8 -	95.6 bcd
	RESICORE 3.29 SC	16.4 oz	ai/a	1.25 qt/a		A			
	ROUNDUP POWERMAX 4.5 SL	15 oz	ae/a	26.6 fl oz/a		A			
5	AMSOL	2.5 %	v/v	2.5 %	v/v	A	13.7 d	18.3 -	68.4 d
	CAPRENO 3.45 SC	1.29 oz	ai/a	3 fl oz/a		A			
	ROUNDUP POWERMAX 4.5 SL	15 oz	ae/a	26.6 fl oz/a		A			
	SUPERB HC	0.5 %	v/v	0.5 %	v/v	A			
6	AMSOL	2.5 %	v/v	2.5 %	v/v	A	20.5 bcd	19.2 -	101.5 bcd
	HARNESS MAX 3.85 SC	19.3 oz	ai/a	40 fl oz/a		A			
	ROUNDUP POWERMAX 4.5 SL	15 oz	ae/a	26.6 fl oz/a		A			
7	AMSOL	2.5 %	v/v	2.5 %	v/v	A	21.5 bcd	17.7 -	108.4 bcd
	ARMEZON PRO	13.38 oz	ai/a	20 fl oz/a		A			
	ROUNDUP POWERMAX 4.5 SL	15 oz	ae/a	26.6 fl oz/a		A			

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 Sponsor Contact: Dain Bruns, Syngenta
 Trial Origin: P public institution trial

Conducted Under GEP: No

Pest ID Code			
Pest Code			
Pest Scientific Name			
Pest Name			
Crop ID Code	1 ZEAMD	1 ZEAMD	1 ZEAMD
BBCH Scale	BCOR	BCOR	BCOR
Crop Scientific Name	Zea mays indentata	Zea mays indentata	Zea mays indentata
Crop Name	Dent corn	Dent corn	Dent corn
Crop Variety	SCS1105AM	SCS1105AM	SCS1105AM
Rating Date	Oct-14-2020	Oct-14-2020	Oct-14-2020
SE Name	ZUSX052A	ZUSX052B	ZUSX052_C3
SE Description	Yield/A	Yield/A	YIELD/A
Part Rated	GRAIN -	GRAIN -	GRAIN -
Rating Type	YIELD	CONMOI	YIELD
Rating Unit	LB	%	BU
Calculation	IN	NC	IN
Sample Size	150 FT2	1 PLOT	1 A
Collection Basis	1 PLOT	1 PLOT	1 PLOT
Reporting Basis	150 FT2	1 PLOT	1 A
Number of Subsamples	1	1	1
Assessed By			
Data Entry Date	Oct-15-2020	Oct-15-2020	
Rating Timing			
Days After First/Last Applic.	144 144	144 144	144 144
Trt-Eval Interval	144 DA-A	144 DA-A	144 DA-A
Plant-Eval Interval	175 DP-1	175 DP-1	175 DP-1
Days After Emergence	153 DE-1	153 DE-1	153 DE-1
ARM Action Codes			TY1
Number of Decimals	1	1	1

Trt No.	Treatment Name	Rate	Other Rate	Other Unit	Appl Code	19*	20*	21*
8	AMSOL	2.5 % v/v	2.5 % v/v		A	17.0 cd	17.9 -	86.1 cd
	LAUDIS 3.5 SC	1.31 oz ai/a	3 fl oz/a		A			
	ROUNDUP POWERMAX 4.5 SL	15 oz ae/a	26.6 fl oz/a		A			
	SUPERB HC	0.5 % v/v	0.5 % v/v		A			
9	LAUDIS 3.5 SC	1.31 oz ai/a	3 fl oz/a		A	28.5 abc	17.8 -	143.6 abc
	INTACT	0.5 % v/v	0.5 % v/v		A			
	CLASS ACT RIDION	1 % v/v	1 % v/v		A			
	XTENDIMAX 2.9 SL	6.2 oz ae/a	17 fl oz/a		A			
	ROUNDUP POWERMAX 4.5 SL	15 oz ae/a	26.6 fl oz/a		A			
10	AMSOL	2.5 % v/v	2.5 % v/v		A	33.7 ab	19.4 -	165.4 ab
	ANTHEM MAXX 4.3 SC	2.43 oz ai/a	4.5 fl oz/a		A			
	ATRAZINE 4L 4 SC	8 oz ai/a	16 fl oz/a		A			
	ROUNDUP POWERMAX 4.5 SL	15 oz ae/a	26.6 fl oz/a		A			
	LSD P=.05					14.84	1.70	72.46
	Standard Deviation					10.23	1.17	49.95
	CV					46.73	6.29	45.9
	Grand Mean					21.88	18.61	108.81
	Levene's F					0.903	0.736	0.93
	Levene's Prob(F)					0.535	0.673	0.514
	Rank X2					.	.	.
	P(Rank X2)					.	.	.
	Skewness					0.4671	0.3856	0.4073
	Kurtosis					-0.5184	-0.76	-0.618
	Replicate F					4.072	4.666	4.059
	Replicate Prob(F)					0.0165	0.0094	0.0167
	Treatment F					3.205	2.054	3.220
	Treatment Prob(F)					0.0091	0.0718	0.0089

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 Conducted Under GEP: No Sponsor Contact: Dain Bruns, Syngenta
 Trial Origin: P public institution trial

Pest ID Code
 Pest Code
 Pest Scientific Name
 Pest Name
 Crop ID Code 1 ZEAMD
 BBCH Scale BCOR
 Crop Scientific Name Zea mays
 indentata
 Dent corn
 Crop Name SCS1105AM
 Crop Variety Oct-14-2020
 Rating Date
 SE Name
 SE Description
 Part Rated GRAIN -
 Rating Type WEITES
 Rating Unit LBS
 Calculation IN
 Sample Size 1 QT
 Collection Basis 1 PLOT
 Reporting Basis 1 BU
 Number of Subsamples 1
 Assessed By
 Data Entry Date Oct-15-2020
 Rating Timing
 Days After First/Last Applic. 144 144
 Trt-Eval Interval 144 DA-A
 Plant-Eval Interval 175 DP-1
 Days After Emergence 153 DE-1
 ARM Action Codes
 Number of Decimals 1

Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	22*
1	UNTREATED CHECK						52.2 -
2	AMSOL	2.5 % v/v		2.5 % v/v		A	53.7 -
	NIS	0.25 % v/v		0.25 % v/v		A	
	ACURON GT	32.3 oz ai/a		3.75 pt/a		A	
3	AMSOL	2.5 % v/v		2.5 % v/v		A	50.1 -
	NIS	0.25 % v/v		0.25 % v/v		A	
	HALEX GT 4.38 CS	31.5 oz ai/a		3.6 pt/a		A	
4	AMSOL	2.5 % v/v		2.5 % v/v		A	49.4 -
	RESICORE 3.29 SC	16.4 oz ai/a		1.25 qt/a		A	
	ROUNDUP POWERMAX 4.5 SL	15 oz ae/a		26.6 fl oz/a		A	
5	AMSOL	2.5 % v/v		2.5 % v/v		A	48.1 -
	CAPRENO 3.45 SC	1.29 oz ai/a		3 fl oz/a		A	
	ROUNDUP POWERMAX 4.5 SL	15 oz ae/a		26.6 fl oz/a		A	
	SUPERB HC	0.5 % v/v		0.5 % v/v		A	
6	AMSOL	2.5 % v/v		2.5 % v/v		A	51.4 -
	HARNESS MAX 3.85 SC	19.3 oz ai/a		40 fl oz/a		A	
	ROUNDUP POWERMAX 4.5 SL	15 oz ae/a		26.6 fl oz/a		A	
7	AMSOL	2.5 % v/v		2.5 % v/v		A	47.5 -
	ARMEZON PRO	13.38 oz ai/a		20 fl oz/a		A	
	ROUNDUP POWERMAX 4.5 SL	15 oz ae/a		26.6 fl oz/a		A	

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 Sponsor Contact: Dain Bruns, Syngenta
 Trial Origin: P public institution trial

Conducted Under GEP: No

Pest ID Code
 Pest Code
 Pest Scientific Name
 Pest Name
 Crop ID Code 1 ZEAMD
 BBCH Scale BCOR
 Crop Scientific Name Zea mays
 indentata
 Crop Name Dent corn
 Crop Variety SCS1105AM
 Rating Date Oct-14-2020
 SE Name
 SE Description
 Part Rated GRAIN -
 Rating Type WEITES
 Rating Unit LBS
 Calculation IN
 Sample Size 1 QT
 Collection Basis 1 PLOT
 Reporting Basis 1 BU
 Number of Subsamples 1
 Assessed By
 Data Entry Date Oct-15-2020
 Rating Timing
 Days After First/Last Applic. 144 144
 Trt-Eval Interval 144 DA-A
 Plant-Eval Interval 175 DP-1
 Days After Emergence 153 DE-1
 ARM Action Codes
 Number of Decimals 1

Trt No.	Treatment Name	Rate Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	22*
8	AMSOL	2.5 %	v/v	2.5 %	v/v	A	47.9 -
	LAUDIS 3.5 SC	1.31 oz	ai/a	3 fl	oz/a	A	
	ROUNDUP POWERMAX 4.5 SL	15 oz	ae/a	26.6 fl	oz/a	A	
	SUPERB HC	0.5 %	v/v	0.5 %	v/v	A	
9	LAUDIS 3.5 SC	1.31 oz	ai/a	3 fl	oz/a	A	48.6 -
	INTACT	0.5 %	v/v	0.5 %	v/v	A	
	CLASS ACT RIDION	1 %	v/v	1 %	v/v	A	
	XTENDIMAX 2.9 SL	6.2 oz	ae/a	17 fl	oz/a	A	
	ROUNDUP POWERMAX 4.5 SL	15 oz	ae/a	26.6 fl	oz/a	A	
10	AMSOL	2.5 %	v/v	2.5 %	v/v	A	53.4 -
	ANTHEM MAXX 4.3 SC	2.43 oz	ai/a	4.5 fl	oz/a	A	
	ATRAZINE 4L 4 SC	8 oz	ai/a	16 fl	oz/a	A	
	ROUNDUP POWERMAX 4.5 SL	15 oz	ae/a	26.6 fl	oz/a	A	
	LSD P=.05						4.74
	Standard Deviation						3.27
	CV						6.51
	Grand Mean						50.21
	Levene's F						0.367
	Levene's Prob(F)						0.942
	Rank X2						.
	P(Rank X2)						.
	Skewness						-0.2156
	Kurtosis						0.2895
	Replicate F						4.492
	Replicate Prob(F)						0.0111
	Treatment F						2.012
	Treatment Prob(F)						0.0775

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Master Protocol ID:	Study Director: Anthony Dobbels	
Conducted Under GEP: No	Sponsor Contact: Dain Bruns, Syngenta	
	Trial Origin: P public institution trial	

Crop ID Code

1, ZEAMD, BCOR, Zea mays indentata, Dent corn, SCS1105AM = Glyphosate and Glufosinate Resistant

Part Rated

GRAIN = grain

Rating Type

YIELD = yield

CONMOI = content - moisture

WEITES = weight - test

Rating Unit

LB = pound

% = percent

BU = bushel

Calculation

IN = increase

NC = no calculation

FT2 = square foot

PLOT = total plot

A = acre

QT = quart

PLOT = total plot

FT2 = square foot

PLOT = total plot

A = acre

BU = bushel

Plant-Eval Interval

175 DP-1 = 1 ZEAMD Apr-22-2020

ARM Action Codes

TY1 = 5.185714*[19]*(100-[20])/84.5