

# 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: 20ACURONGT Location: Trial Year: 2020  
 Protocol ID: HBI008A4-2020US Investigator: Dr. Mark M. Loux  
 Master Protocol ID: Study Director:  
 Conducted Under GEP: No Sponsor Contact:  
 Trial Origin:

### General Trial Information

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

**Discipline:** H herbicide  
**Trial Status:** E established  
**Trial Status Date:** Apr-23-2020 10:58 AM  
**ARM Trial Created On:** Mar-26-2020  
**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-26-2020

### Trial Location

**Address (Location):** 7721 South Charleston Pike  
**City:** South Charlesont **Country:** USA United States  
**State/Prov.:** Ohio  
**Postal Code:** 45368

**Latitude of LL Corner °:** 39.85939 N  
**Longitude of LL Corner °:** -83.67415 W  
**Altitude of LL Corner:** 1092.00 FT

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Objectives:

● Are there differences in weed control, crop safety and yield among treatments containing Acuron GT and other competitive products? In a one-pass PRE system, does Acuron XR or Acuron Flexi XR provide better and/or longer residual weed control that results in higher yield than Corvus, Resicore, Surestart, Harness Max or Verdict?

In a two-pass system (including glyphosate in the POST treatment), does split applications of Acuron XR or Acuron Flexi XR provide better and/or longer residual weed control that results in higher yield than split applications of Resicore, Harness Max, or programs of Corvus followed by Capreno or Verdict followed by Status?

### Contacts

**Study Director:** Dr. Mark M. Loux

**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:** Pioneer P1197AM  
**Attributes:** Glyphosate and Glufosinate Resistant  
**Seed Lot No:** B3PLY13085-N  
**% 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  
**Soil Temperature:** 54 F  
**Emergence Date:** May-14-2020  
**Harvest Date:** Oct-14-2020  
**Moisture Meter:** Harvest Master  
**Harvest Equipment:** Kincaid 8XP  
**% Standard Moisture:** 15.5  
**Harvested Width:** 5 FT  
**Weighing Equipment:** Harvest Master HM800  
**Harvested Length:** 30 FT

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 Trial Origin:

### Pest Description

**Pest 1 Type:** W **Code:** SETFA *Setaria faberi*  
**Common Name:** foxtail, giant **Entry Date:** Apr-23-2020

**Pest 2 Type:** W **Code:** AMBTR *Ambrosia trifida*  
**Common Name:** ragweed, giant **Entry Date:** Jul-2-2020

**Pest 3 Type:** W **Code:** CHEAL *Chenopodium album*  
**Common Name:** lambsquarters, common **Entry Date:** Jul-2-2020

**Pest 4 Type:** W **Code:** ABUTH *Abutilon theophrasti*  
**Common Name:** velvetleaf **Entry Date:** Jul-2-2020

**Pest 5 Type:** W **Code:** IPOHE *Ipomoea hederacea*  
**Common Name:** ivy-leaf morning glory **Entry Date:** Jul-2-2020

**Pest 6 Type:** W **Code:** SIDSP *Sida spinosa*  
**Common Name:** sida, prickly **Entry Date:** Jul-9-2020

**Pest 7 Type:** W **Code:** AMARE *Amaranthus retroflexus*  
**Common Name:** pigweed, redroot **Entry Date:** Jul-9-2020

### 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 FT<sup>2</sup> **Treatments:** 12 **Tillage Type:** CONTIL conventional-til  
**Replications:** 4 **Study Design:** RACOB L Randomized Complete Block (RCB)

### Trial Initiation Comments:

Fall Chisel Plow, spring finishing tool with disc, field cultivator, drag harrow, and rolling basket

### Previous

**No. Crop Year**  
 1. GLXMA 2019

### Soil Description

**Description Name:** G-6  
**% Sand:** 32 **% OM:** 2.2 **Texture:** SICL silty clay loam  
**% Silt:** 53 **pH:** 5.9 **Soil Name:** Kokomo  
**% Clay:** 15 **CEC:** 14.8 **Fert. Level:** G good  
**Soil Drainage:** G good

### Application Description

	A	B
<b>Application Date</b>	Apr-22-2020	Jun-9-2020
<b>Appl. Start Time</b>	3:00 PM	8:00 AM
<b>Appl. Stop Time</b>	3:30 PM	8:30 AM
<b>Interval to Prev. Appl.</b>		48 DAYS
<b>Application Method</b>	NONINC	SPRAY
<b>Application Timing</b>	PREPRE	POSPOS
<b>Application Placement</b>	BROSOI	BROFOL
<b>Applied By</b>	Dobbels	Ackley
<b>Appl. Entry Date</b>	Apr-23-2020	Jul-2-2020
<b>Air Temperature Start, Stop</b>	56 57 F	69 69 F
<b>% Relative Humidity Start, Stop</b>	38 38	64 64
<b>Wind Velocity+Dir. Start</b>	7 MPH S	8 MPH ESE
<b>Wind Velocity+Dir. Stop</b>	7 MPH S	8 MPH ESE
<b>Wind Velocity+Dir. Max</b>	7 MPH S	8 MPH ESE
<b>Wet Leaves (Y/N)</b>	N no	N no
<b>Soil Temperature</b>	54 F	68 F
<b>Soil Moisture</b>	NORMAL	DRY
<b>% Cloud Cover</b>	30	15
<b>Next Moisture Occurred On</b>	Apr-23-2020	Jun-9-2020
<b>Time to Next Moisture</b>	20 HR	9.5 HR
<b>Moisture 1 Week after Appl.</b>	1.24 IN	0.37 IN

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Trial ID: 20ACURONGT Location: Trial Year: 2020  
 Protocol ID: HB1008A4-2020US Investigator: Dr. Mark M. Loux  
 Master Protocol ID: Study Director:  
 Conducted Under GEP: No Sponsor Contact:  
 Trial Origin:

### Crop Stage At Each Application

Crop 1 Code, BBCH Scale	A		B	
	ZEAMD	BCOR	ZEAMD	BCOR
Stage Scale Used	BBCH		BBCH	
Stage Majority, Percent			15	90
Stage Minimum, Percent			14	10
Stage Maximum, Percent			15	90
Height Average			15	IN
Height Minimum, Maximum			12	16

### Pest Stage At Each Application

Pest 1 Code, Type, Scale	A		B	
	SETFA	W	SETFA	W
Stage Majority, Percent			12	90
Stage Minimum, Percent			11	10
Stage Maximum, Percent			12	90
Height Average			3	IN
Height Minimum, Maximum			1	3
Density Average			42	PLA/m2
Density Min, Max			20	80
Pest 2 Code, Type, Scale	AMBTR	W	AMBTR	W
Stage Majority, Percent			18	60
Stage Minimum, Percent			12	20
Stage Maximum, Percent			18	60
Height Average			6	IN
Height Minimum, Maximum			1	8
Density Average			16	PLA/m2
Density Min, Max			12	24
Pest 3 Code, Type, Scale	CHEAL	W	CHEAL	W
Stage Majority, Percent			14	80
Stage Minimum, Percent			12	10
Stage Maximum, Percent			14	80
Height Average			2	IN
Height Minimum, Maximum			1	2
Density Average			74	PLA/m2
Density Min, Max			48	88
Pest 4 Code, Type, Scale	ABUTH	W	ABUTH	W
Stage Majority, Percent			12	100
Height Average			1	IN
Height Minimum, Maximum			0.5	
Density Average			2	PLA/m2
Density Min, Max			0	8
Pest 5 Code, Type, Scale	IPOHE	W	IPOHE	W
Stage Majority, Percent			10	90
Stage Minimum, Percent			10	90
Stage Maximum, Percent			12	10
Height Average			1	IN
Height Minimum, Maximum			0.5	1
Density Average			0.25	PLA/m2
Density Min, Max			0	2
Pest 6 Code, Type, Scale	SIDSP	W	SIDSP	W
Density Average			3	PLA/m2
Density Min, Max			1	5
Pest 7 Code, Type, Scale	AMARE	W	AMARE	W
Density Average			4	PLA/m2
Density Min, Max			0	12

### Application Equipment

Appl. Equipment	A		B	
	10 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	10 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	

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 Conducted Under GEP: No Sponsor Contact:  
 Trial Origin:

Context	Date	By	Notes
STATUS	Mar-26-2020	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	Mar-26-2020	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.
STATUS	Apr-23-2020	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'E' when Planting Date entered.

### SE Definitions

	1.	2.	3.	4.	5.	6.	7.	8.
<b>Rating Timing</b>	1	2	3	4	1	2	3	4
<b>SE Name</b>	ZUSW001	ZUSX003	ZUSX001	ZUSX052_C3	ZUSW001	ZUSX001	ZUSX052_C3	ZUSX003
<b>SE Description</b>	%CONTR OL	%PHYTO- STUNTIN G	%PHYTO- GENERAL	YIELD/A	%Control	%PHYTO- GENERAL	YIELD/A	%PHYTO- STUNTIN G
<b>Part Rated</b>	PLANT	PLANT	PLANT	GRAIN	PLANT	PLANT	GRAIN	PLANT
<b>Rating Type</b>	CONTRO	PHYSTU	PHYGEN	YIELD	CONTRO	PHYGEN	YIELD	PHYSTU
<b>Rating Unit</b>	%	%	%	BU	%	%	BU	%
<b>Sample Size</b>	1	PLOT 1	PLOT 1	PLOT FT2	1	PLOT 1	PLOT FT2	1
<b>Collection Basis</b>	1	PLOT 1	PLOT 1	PLOT 1 PLOT	1	PLOT 1	PLOT 1 PLOT	1
<b>Reporting Basis</b>	1	PLOT 1	PLOT 1	PLOT 1 A	1	PLOT 1	PLOT 1 A	1
<b>Calculation</b>	NC	NC	NC	IN	NC	NC	IN	NC
<b>Number of Subsamples</b>				1			1	
<b>ARM Action Codes</b>				@YLDLBBUADM[1,2]			@YLDLBBUADM[1,2]	

### Instructions:

**CROPS:** Corn (ZEAMD) – One regionally popular GT Hybrid

**TARGETS:** Difficult to control and/or GLY-R weeds (AMAPA, AMATA, AMBTR, CHEAL, IPOSS, KCHSC, SASKR, ECHCG)

### CRITICAL PROTOCOL TASKS:

- If possible, irrigate trial for herbicide activation if no activating rainfall occurs or is expected 5-7 days after application
- Use a GT hybrid with large market share in your area
- Use appropriate buffer rows (minimum 10 ft) around the trial for yield
- Place in area with very high weed density
- Work with ASR/TDL and University cooperator to add 3 treatments as "local standards"

### ADDITIONAL DATA REQUIREMENTS:

- **Crop:** At all applications – growth stage (BBCH) and height. At establishment - variety, attributes (including AI traits), and planting date, method, rate, equipment, depth, and row spacing
- **Pest - Weed:** growth stage range (BBCH or number of leaves) and height required at each application, density, attributes (identify AI resistance), natural/artificial population
- **Application Time Weather:** beginning/ending temps (air and soil), %RH, wind details; wet leaves (Y/N); soil moisture; cloud cover.
- **Applications via Liquids:** spray volume, nozzle/type and screens, spray pressure, ground speed, boom height, carrier, propellant
- **Soil** - sand:silt:clay, %OM, pH, CEC, and soil texture
- **Trial Rainfall and Irrigation:** overall moisture conditions, closest weather station, and rainfall/irrigation data from planting to 4 weeks after application.

### EXPERIMENTAL DESIGN AND PLOT DIMENSIONS:

- RCB
- 4 replications
- Plot size: Appropriate for assessments

### TREATMENT DETAILS:

- Water Volume: 15 GPA
- Coarse to ultra-coarse droplets are necessary. Nozzle type must be recorded in the NOZZLE DESCRIPTION field,

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 Master Protocol ID:      Study Director:  
 Conducted Under GEP: No      Sponsor Contact:  
    Trial Origin:

located in the APPLICATION tab.

- Recently sourced (<2 years) NPAK AMS, may be used instead of AMSOL liquid AMS.

### Application Timing:

A = PREEMERGENCE

B = POSTEMERGENCE (V4-5 or 11" corn height)

### FORMULATION OBSERVATIONS:

- Please inform the Syngenta contact if any abnormal characteristics, such as excessive settling, separation, nozzle clogging due to particulate matter, etc. are observed with any of the products as soon as possible by e-mail or phone.

### MAINTENANCE DETAILS:

- Please maintain trial appropriately for yield (4-8 border rows, CRW protection, etc.)

### ASSESSMENT TIMING SUMMARY:

Schedule assessments as follows: DA-B is days after B (POST) application.

Evaluation 1: At B application - CONTROL, PHYGEN

Evaluation 2: 7 DA-B (+/-2) - PHYGEN

Evaluation 3: 28 DA-B (+/-3) - PHYGEN, PHYSTU (following directions in assessment details), CONTROL and PHOTOS of most representative replication

Evaluation 4: 56 DA-B (+/-3) - CONTROL, PHOTOS of most representative replication

Evaluation 5: Yield (adjusted to 15.5% moisture)

If severe injury (>15%) is observed, please inform Syngenta contact.

### ASSESSMENT DETAILS:

\*Use "SE" description attached to the protocol to help standardize evaluations.

**PHYGEN**, General Phytotoxicity (%/plot): Visually assess crop injury (%) due to the treatment (ignoring any environmental stress affect) at the time of the assessment. PHYGEN represents an overall phytotoxicity assessment and could include necrosis, chlorosis, stunting, epinasty, etc. PHYGEN ratings range from 0 to 100%, with the untreated check (or running check) representing 0% PHYGEN and complete death representing 100% PHYGEN. Compare the treated crop to the untreated check (or running check) in each replicate. If no phytotoxicity is observed, record data as zeroes in ARM for each requested assessment date. Describe any symptomology in the comments section.

**PHYSTU**, Stunting Phytotoxicity (%/Plot), (ZUSX003): Assess stunting due to the treatment (ignoring any environmental stress affect) at the time of the assessment. Determine the % growth reduction (by visual estimates or measurements) of the plant/plot as compared to the growth of the largest plant/plot found in the replicate (which is not necessarily the untreated check which can be shortened by pest competition). Dead plants are 100% PHYSTU (and not a missing value). The largest plant/plot found in the replicate is rated as 0% PHYSTU.

**WEED CONTROL** (%/Plot), (ZUSW001): Visually assess % weed control due to the treatment for each weed species independently. Identify genus and species of each weed. Document known resistant types in the pest description tab in the Attributes field even if only a small percentage is resistant. Compare the treated plots to the untreated check (or running check) within each replicate to determine % weed control. Ratings range from 100% being complete control and 0% representing weed populations/growth similar to what is observed in the untreated check. Only assess species present at a sufficient density/consistency for reliable ratings.

**YIELD (BU/A)**: corn yield at maturity adjusted to 15.5% moisture.

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 Master Protocol ID: Study Director:  
 Conducted Under GEP: No Sponsor Contact:  
 Trial Origin:

**PHOTOS** - Photos should be sent to Syngenta contact as appropriate. Photos should be compiled by the Syngenta trial manager (including photos from cooperators), labeled, and saved in the "G" drive folder named "2020-Herbicide-PRT-Photos". Instructions for photo taking and labeling can be found on the "Bioteam Image Capture Instructions.docx" and "2020 Syngenta Field Trial Photo Instructions - Plot.docx" file in that folder. Save your photos under the pertinent subfolder for the protocol and create a subfolder for the trial manager name.

**REPORT DATA BY: Weed control, crop safety and yield by 12/1/2020**

### **OTHER NOTES:**

### **CROP DESTRUCT:**

Plots, and/or harvested material from plots, from this trial must be destroyed to ensure that no plant material enters the food or feed system. Any exception can only be granted, in writing, from Syngenta Crop Protection.

### **DESIGN CODES:**

Scientists should order these products directly from Starlims.

Acuron GT = A23011C

Lexar EZ = A17622G

**CROPS:** Roundup Ready Corn

### **TARGETS:**

- Grasses and small seeded broadleaf weed
- Target a location with heavy weed pressure (AMATU; AMAPA; and IPOSS) where multiple weed flushes will be possible throughout the season

### **CRITICAL PROTOCOL TASKS:**

- Must control all weeds prior to trial establishment - suggest a tillage pass 1-2 days prior to PRE application to ensure all emerged weeds are controlled
- Irrigation if possible 1 to 2 days after each application for residual activation
- Apply a minimum of 0.5" of water if irrigating

### **ADDITIONAL DATA REQUIREMENTS:**

- **Crop - Corn:** growth stage range (BBCH or number of leaves) and height required at each application
- **Pest - Weed:** growth stage range (BBCH or number of leaves) and height required at each application, density, attributes (identify AI resistance), natural/artificial population
- **Application Time Weather:** beginning/ending temps (air and soil), %RH, wind details; wet leaves (Y/N); soil moisture; cloud cover.
- **Applications via Liquids:** spray volume, nozzle/type and screens, spray pressure, ground speed, boom height, carrier, propellant
- **Soil - sand:silt:clay, %OM, pH, CEC, and soil texture**
- **Trial Rainfall and Irrigation:** overall moisture conditions, closest weather station, and rainfall/irrigation data from PRE application to completion of trial.

### **EXPERIMENTAL DESIGN AND PLOT DIMENSIONS:**

- RCB
- 4 replications
- Plot size: 300 Sq.Ft

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Location:

Trial Year: 2020

Protocol ID: HBI008A4-2020US

Investigator: Dr. Mark M. Loux

Master Protocol ID:

Study Director:

Sponsor Contact:

Trial Origin:

Conducted Under GEP: No

- 10 ft X 30 ft treated area.

## TREATMENT DETAILS:

- Water Volume: 15 - 20 GPA
- Nozzle type/droplet size at discretion of scientist. Nozzle type must be recorded in the NOZZLE DESCRIPTION field, located in the APPLICATION tab.

## **Application Timing:**

A = PREEMERGENCE

B = POSTEMERGENCE V4 to V5 corn or 11 inch corn height, whichever comes first.

## FORMULATION OBSERVATIONS:

- Please inform the protocol sponsor (Kitt) or FPC (Cully) if any abnormal characteristics, such as excessive settling, separation, nozzle clogging due to particulate matter, etc. are observed with any of the products as soon as possible by e-mail or phone.

## MAINTENANCE DETAILS:

- Each treatment is a stand-alone treatment and will be expected to have broad spectrum weed control in corn

## ASSESSMENT TIMING SUMMARY:

Schedule assessments as follows: (DA-B = Days After POST Treatment)

Evaluation 1: At Application B timing - CONTROL, PHYGEN

Evaluation 2: 7 DA-B (+/-2) - PHYGEN

Evaluation 3: 28 BA-B (+/-3) - CONTROL, PHYGEN

Evaluation 4: At Harvest - CONTROL

Evaluation 5: Yield converted to Bu/A

## ASSESSMENT DETAILS:

\*Use "SE" description attached to the protocol to help standardize evaluations.

**PHYGEN**, General Phytotoxicity (%/plot): Visually assess crop injury (%) due to the treatment (ignoring any environmental stress affect) at the time of the assessment. PHYGEN represents an overall phytotoxicity assessment and could include necrosis, chlorosis, stunting, epinasty, etc. PHYGEN ratings range from 0 to 100%, with the untreated check (or running check) representing 0% PHYGEN and complete death representing 100% PHYGEN. Compare the treated crop to the Bicep II Magnum PRE fb Halex GT POST treatment in each replicate. If no phytotoxicity is observed, record data as zeroes in ARM for each requested assessment date. Describe any symptomology in the comments section.

**PHYSTU**, Stunting Phytotoxicity (%/Plot), (ZUSX003): Assess stunting due to the treatment (ignoring any environmental stress affect) at the time of the assessment. Determine the % growth reduction (by visual estimates or measurements) of the plant/plot as compared to the growth of the largest plant/plot found in the replicate (which is not necessarily the untreated check which can be shortened by pest competition). Dead plants are 100% PHYSTU (and not a missing value). The largest plant/plot found in the replicate is rated as 0% PHYSTU.

**WEED CONTROL** (%/Plot), (ZUSW001): Visually assess % weed control due to the treatment for each weed species independently. Identify genus and species of each weed. Document known resistant types in the pest description tab in the Attributes field even if only a small percentage is resistant. Compare the treated plots to the untreated check (or running check) within each replicate to determine % weed control. Ratings range from 100% being complete control and 0% representing weed populations/growth similar to what is observed in the untreated check. Only assess species present at a sufficient density/consistency for reliable ratings.

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Master Protocol ID:	Study Director:	
Conducted Under GEP: No	Sponsor Contact:	
	Trial Origin:	

**YIELD (BU/A):** corn yield at maturity adjusted to 15.5% moisture

**PHOTOS** - Photos should be compiled by the Syngenta trial manager (including photos from cooperators), labeled, and saved in the "G" drive folder named "2020-Herbicide-PRT-Photos". Instructions for photo taking and labeling can be found on the "Bioteam Image Capture Instructions.docx" and "2020 Syngenta Field Trial Photo Instructions - Plot.docx" file in that folder. Save your photos under the pertinent subfolder for the protocol and create a subfolder for the trial manager name.

**REPORT DATA BY:** Evaluations 1-3: **10/9/2020**, Evaluations 4-5: **12/15/2020**

**OTHER NOTES:**

**CROP DESTRUCT:**

Plots, and/or harvested material from plots, from this trial must be destroyed to ensure that no plant material enters the food or feed system. Any exception can only be granted, in writing, from Syngenta Crop Protection.

**DESIGN CODES:**

Syngenta scientists should order these products directly from Starlims:

- A22668C - Acuron XR
- A22760C - Acuron Flexi XR

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	Pioneer P1197AM	Pioneer P1197AM	Pioneer P1197AM
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
Data Entry Date	Oct-19-2020	Oct-19-2020	
Days After First/Last Applic.	175 127	175 127	175 127
Trt-Eval Interval			
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 Treatment No. Name	Rate Rate Unit	Other Rate	Other Rate	Other Rate	Appl Unit Code	18*	19*	20*
1 UNTREATED CHECK						4.2 c	20.4 b	20.6 c
2 BICEP II MAGNUM	35.3 oz ai/a	1.6 qt/a			A	49.4 b	21.8 a	237.0 b
AMSOL	2.5 % v/v	2.5 % v/v			B			
NIS	0.25 % v/v	0.25 % v/v			B			
ACURON GT	32.3 oz ai/a	3.75 pt/a			B			



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 Trial Origin:

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	Pioneer P1197AM	Pioneer P1197AM	Pioneer P1197AM
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
Data Entry Date	Oct-19-2020	Oct-19-2020	
Days After First/Last Applic.	175 127	175 127	175 127
Trt-Eval Interval			
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 Rate	Appl Unit Code	18*	19*	20*
3	LEXAR EZ 3.7 ZC	26.7 oz ai/a	1.8 qt/a		A	54.7 a	21.2 a	264.5 a
	AMSOL	2.5 % v/v	2.5 % v/v		B			
	NIS	0.25 % v/v	0.25 % v/v		B			
	ACURON GT	32.3 oz ai/a	3.75 pt/a		B			
4	SURESTART II 4.25 SC	14.8 oz ai/a	1.75 pt/a		A	55.0 a	21.3 a	265.4 a
	AMSOL	2.5 % v/v	2.5 % v/v		B			
	NIS	0.25 % v/v	0.25 % v/v		B			
	ACURON GT	32.3 oz ai/a	3.75 pt/a		B			
5	HARNESS XTRA 5.6L	40.4 oz ai/a	1.8 qt/a		A	50.8 ab	21.3 a	245.6 ab
	AMSOL	2.5 % v/v	2.5 % v/v		B			
	NIS	0.25 % v/v	0.25 % v/v		B			
	ACURON GT	32.3 oz ai/a	3.75 pt/a		B			
6	VERDICT 5.57 EC	9.7 oz ai/a	14 fl oz/a		A	54.5 a	21.5 a	262.7 a
	AMSOL	2.5 % v/v	2.5 % v/v		B			
	NIS	0.25 % v/v	0.25 % v/v		B			
	ACURON GT	32.3 oz ai/a	3.75 pt/a		B			
7	SURESTART II 4.25 SC	14.8 oz ai/a	1.75 pt/a		A	55.5 a	21.7 a	266.3 a
	AMSOL	2.5 % v/v	2.5 % v/v		B			
	RESICORE 3.29 SC	16.4 oz ai/a	1.25 qt/a		B			
	ROUNDUP POWERMAX 5.5 SL	18.3 oz ai/a	26.6 fl oz/a		B			
8	HARNESS XTRA 5.6L	40.4 oz ai/a	1.8 qt/a		A	53.8 ab	21.3 a	259.9 ab
	AMSOL	2.5 % v/v	2.5 % v/v		B			
	LAUDIS 3.5 SC	1.31 oz ai/a	3 fl oz/a		B			
	ROUNDUP POWERMAX 5.5 SL	18.3 oz ai/a	26.6 fl oz/a		B			
	SUPERB HC	0.5 % v/v	0.5 % v/v		B			
9	VERDICT 5.57 EC	9.7 oz ai/a	14 fl oz/a		A	54.3 ab	21.2 a	262.2 a
	AMSOL	2.5 % v/v	2.5 % v/v		B			
	ARMEZON PRO	13.4 oz ai/a	20 fl oz/a		B			
	ROUNDUP POWERMAX 5.5 SL	18.3 oz ai/a	26.6 fl oz/a		B			
10	CORVUS 2.63 SC	1.1 oz ai/a	3.33 fl oz/a		A	53.0 ab	21.3 a	255.9 ab
	AMSOL	2.5 % v/v	2.5 % v/v		B			
	DIFLEXX DUO 1.53 SC	6.1 oz ai/a	32 fl oz/a		B			
	ROUNDUP POWERMAX 5.5 SL	18.3 oz ae/a	26.6 fl oz/a		B			
11	CORVUS 2.63 SC	1.1 oz ai/a	3.33 fl oz/a		A	53.4 ab	21.6 a	256.8 ab
	AMSOL	2.5 % v/v	2.5 % v/v		B			
	HARNESS MAX 3.85 SC	19.3 oz ai/a	40 fl oz/a		B			
	ROUNDUP POWERMAX 5.5 SL	18.3 oz ae/a	26.6 fl oz/a		B			

# 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: 20ACURONGT Location: Trial Year: 2020  
 Protocol ID: HBI008A4-2020US Investigator: Dr. Mark M. Loux  
 Master Protocol ID: Study Director:  
 Conducted Under GEP: No Sponsor Contact:  
 Trial Origin:

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	Pioneer P1197AM	Pioneer P1197AM	Pioneer P1197AM
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
Data Entry Date	Oct-19-2020	Oct-19-2020	
Days After First/Last Applic.	175 127	175 127	175 127
Trt-Eval Interval			
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 Treatment No. Name	Rate Rate Unit	Other Other Rate Rate Unit	Appl Code	18*	19*	20*
12 BALANCE FLEXX 2 SC	1 oz ai/a	4 fl oz/a	A	55.5 a	21.3 a	268.3 a
AMSOL	2.5 % v/v	2.5 % v/v	B			
HARNESS MAX 3.85 SC	19.3 oz ai/a	40 fl oz/a	B			
ROUNDUP POWERMAX 5.5 SL	18.3 oz ae/a	26.6 fl oz/a	B			
LSD P=.05				5.00	0.71	23.16
Standard Deviation				3.47	0.49	16.10
CV				7.02	2.32	6.74
Grand Mean				49.50	21.31	238.77
Levene's F				0.747	0.242	0.72
Levene's Prob(F)				0.687	0.992	0.712
Rank X2				.	.	.
P(Rank X2)				.	.	.
Skewness				-2.6842*	-0.908*	-2.7315*
Kurtosis				6.5424*	3.6446*	6.7192*
Replicate F				7.823	15.588	6.659
Replicate Prob(F)				0.0004	0.0001	0.0012
Treatment F				68.689	2.110	74.153
Treatment Prob(F)				0.0001	0.0482	0.0001

# 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: 20ACURONGT      Location:      Trial Year: 2020  
 Protocol ID: HBI008A4-2020US      Investigator: Dr. Mark M. Loux  
 Master Protocol ID:      Study Director:  
 Conducted Under GEP: No      Sponsor Contact:  
    Trial Origin:

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      Pioneer P1197AM  
 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  
 Data Entry Date      Oct-19-2020  
 Days After First/Last Applic.      175 127  
 Trt-Eval Interval  
 Plant-Eval Interval      175 DP-1  
 Days After Emergence      153 DE-1  
 ARM Action Codes  
 Number of Decimals      1

Trt No.	Treatment Name	Rate	Other Rate	Other Rate	Appl Unit Code	21*
1	UNTREATED CHECK					55.1 c
2	BICEP II MAGNUM	35.3 oz ai/a	1.6 qt/a		A	56.9 ab
	AMSOL	2.5 % v/v	2.5 % v/v		B	
	NIS	0.25 % v/v	0.25 % v/v		B	
	ACURON GT	32.3 oz ai/a	3.75 pt/a		B	

# 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: 20ACURONGT      Location:      Trial Year: 2020  
 Protocol ID: HBI008A4-2020US      Investigator: Dr. Mark M. Loux

Master Protocol ID:      Study Director:  
 Sponsor Contact:

Conducted Under GEP: No

Trial Origin:

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      Pioneer P1197AM  
 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  
 Data Entry Date      Oct-19-2020  
 Days After First/Last Applic.      175 127  
 Trt-Eval Interval  
 Plant-Eval Interval      175 DP-1  
 Days After Emergence      153 DE-1  
 ARM Action Codes  
 Number of Decimals      1

Trt No.	Treatment Name	Rate	Other Rate	Other Rate	Appl Unit Code	21*
3	LEXAR EZ 3.7 ZC	26.7 oz ai/a	1.8 qt/a		A	56.5 ab
	AMSOL	2.5 % v/v	2.5 % v/v		B	
	NIS	0.25 % v/v	0.25 % v/v		B	
4	ACURON GT	32.3 oz ai/a	3.75 pt/a		B	
	SURESTART II 4.25 SC	14.8 oz ai/a	1.75 pt/a		A	56.6 ab
	AMSOL	2.5 % v/v	2.5 % v/v		B	
5	NIS	0.25 % v/v	0.25 % v/v		B	
	ACURON GT	32.3 oz ai/a	3.75 pt/a		B	
	HARNESS XTRA 5.6L	40.4 oz ai/a	1.8 qt/a		A	57.1 ab
6	AMSOL	2.5 % v/v	2.5 % v/v		B	
	NIS	0.25 % v/v	0.25 % v/v		B	
	ACURON GT	32.3 oz ai/a	3.75 pt/a		B	
7	VERDICT 5.57 EC	9.7 oz ai/a	14 fl oz/a		A	56.5 ab
	AMSOL	2.5 % v/v	2.5 % v/v		B	
	NIS	0.25 % v/v	0.25 % v/v		B	
8	ACURON GT	32.3 oz ai/a	3.75 pt/a		B	
	SURESTART II 4.25 SC	14.8 oz ai/a	1.75 pt/a		A	56.4 b
	AMSOL	2.5 % v/v	2.5 % v/v		B	
9	RESICORE 3.29 SC	16.4 oz ai/a	1.25 qt/a		B	
	ROUNDUP POWERMAX 5.5 SL	18.3 oz ai/a	26.6 fl oz/a		B	
	HARNESS XTRA 5.6L	40.4 oz ai/a	1.8 qt/a		A	56.5 ab
10	AMSOL	2.5 % v/v	2.5 % v/v		B	
	LAUDIS 3.5 SC	1.31 oz ai/a	3 fl oz/a		B	
	ROUNDUP POWERMAX 5.5 SL	18.3 oz ai/a	26.6 fl oz/a		B	
11	SUPERB HC	0.5 % v/v	0.5 % v/v		B	
	VERDICT 5.57 EC	9.7 oz ai/a	14 fl oz/a		A	57.3 a
	AMSOL	2.5 % v/v	2.5 % v/v		B	
12	ARMEZON PRO	13.4 oz ai/a	20 fl oz/a		B	
	ROUNDUP POWERMAX 5.5 SL	18.3 oz ai/a	26.6 fl oz/a		B	
	CORVUS 2.63 SC	1.1 oz ai/a	3.33 fl oz/a		A	56.9 ab
13	AMSOL	2.5 % v/v	2.5 % v/v		B	
	DIFLEXX DUO 1.53 SC	6.1 oz ai/a	32 fl oz/a		B	
	ROUNDUP POWERMAX 5.5 SL	18.3 oz ae/a	26.6 fl oz/a		B	
14	CORVUS 2.63 SC	1.1 oz ai/a	3.33 fl oz/a		A	56.7 ab
	AMSOL	2.5 % v/v	2.5 % v/v		B	
	HARNESS MAX 3.85 SC	19.3 oz ai/a	40 fl oz/a		B	
15	ROUNDUP POWERMAX 5.5 SL	18.3 oz ae/a	26.6 fl oz/a		B	



# 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: 20ACURONGT	Location:	Trial Year: 2020
Protocol ID: HBI008A4-2020US	Investigator: Dr. Mark M. Loux	
Master Protocol ID:	Study Director:	
Conducted Under GEP: No	Sponsor Contact:	
	Trial Origin:	

Crop ID Code

1, ZEAMD, BCOR, Zea mays indentata, Dent corn, Pioneer P1197AM = 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\*[18]\*(100-[19])/84.5