

The Ohio State University

2018/CORN/AUTHORITY/SULFENTRAZONE/FALL PROGRAMS/
 Trial ID: 18FALLCORN Location: Trial Year: 2018
 Protocol ID: Investigator: Dr. Mark M. Loux
 Project ID: Study Director:
 Sponsor Contact:

General Trial Information

Investigator: Dr. Mark M. Loux

Trial Location

City: South Charleston **Country:** USA United States
State/Prov.: Ohio
Postal Code: 45368 **Climate Zone:** USWARM US Warm Continental

Latitude of LL Corner °: 39.85863 N
Longitude of LL Corner °: 83.67132 W
Altitude of LL Corner, Unit: 1089.00 FT

Conducted Under GLP: No
Conducted Under GEP: No

Investigator: Dr. Mark M. Loux
Organization: The Ohio State University
Address: 2021 Coffey Road
City+State/Prov: Columbus, Ohio
Postal Code: 43210
Country: USA United States

Crop 1: ZEAMX Zea mays
Variety: DKC61-54RIB
Description: Dekalb 111 day RR/LL

Crop Description

Planting Date: Apr-29-2018
Planting Method: PLANTD planted
Planting Equipment: FPP finger pickup planter
Emergence Date: May-10-2018
Harvest Date: Oct-2-2018
Harvested Width, Unit: 5 FT
Harvested Length, Unit: 30 FT
Harvest Equipment: Massey 8 XP
% Standard Moisture: 15
Moisture Meter: Mirrus by Harvest Master
Weighing Equipment: Mirrus by Harvest Master

Planting Rate, Unit: 32097 S/A
Depth, Unit: 2 IN
Row Spacing, Unit: 30 IN

Soil Temperature, Unit: 58 F
Soil Moisture: SLIWET slightly wet, moist
Seed Bed: MEDTRA medium/trashy

Pest Description

Pest 1 Type: W **Code:** LAMPU Lamium purpureum
Common Name: Purple deadnettle

Pest 2 Type: W **Code:** STEME Stellaria media
Common Name: Common chickweed

Pest 3 Type: W **Code:** VERAG Veronica agrestis
Common Name: Field speedwell

Pest 4 Type: W **Code:** AMBTR Ambrosia trifida
Common Name: Giant ragweed

Pest 5 Type: W **Code:** SETFA Setaria faberi
Common Name: Giant foxtail

Pest 6 Type: W **Code:** ABUTH Abutilon theophrasti
Common Name: velvetleaf

Pest 7 Type: W **Code:** XANST Xanthium strumarium
Common Name: Common cocklebur

Pest 8 Type: W **Code:** ECHCG Echinochloa crus-galli
Common Name: Common barnyard grass

Pest 9 Type: W **Code:** CHEAL Chenopodium album
Common Name: common lambsquarters

Site and Design

Treated Plot Width: 10 FT
Treated Plot Length: 30 FT
Treated Plot Area: 300 FT² **Treatments:** 16
Replications: 3

Site Type: FIELD field
Experimental Unit: 1 PLOT plot
Tillage Type: NOTILL no-till
Study Design: RACOB L Randomized Complete Block (RCB)

No. Previous Crop Year
 1. Soybean 2017

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Soil Description

Description Name: F-10 W
% Sand: 31 **% OM:** 1.6 **Texture:** L loam
% Silt: 54 **pH:** 6.5 **Soil Name:** Crosby
% Clay: 15 **CEC:** 11.8 **Fert. Level:** G good
Soil Drainage: G good

Analyzed By:
 Spectrum Analytic 11-27-17

Application Description

	A	B	C
Application Date:	Nov-9-2017	Apr-30-2018	May-16-2018
Appl. Start Time:	10:00 AM	10:00 AM	10:45 AM
Appl. Stop Time:	10:15 AM	10:15 AM	11:00 AM
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	FALL	PRE	EPO
Application Placement:	BROFOL	BROFOL	BROFOL
Applied By:	Dobbels	Loux	Dobbels
Air Temperature, Unit:	46 F	60 F	66 F
% Relative Humidity:	68	35	77
Wind Velocity, Unit:	7 MPH	5 MPH	3 MPH
Wind Direction:	WSW	SW	NE
Dew Presence (Y/N):	N no	N no	Y yes
Soil Temperature, Unit:	41 F	50 F	66 F
Soil Moisture:	WET	SLIWET	SLIWET
% Cloud Cover:	0	30	100
Next Moisture Occurred On:	Nov-12-2017	May-3-2018	May-18-2018
Time to Next Moisture, Unit:	3 DAY	3 DAY	2 DAY
Moisture 1 Week after Appl.:	0.45 IN	0.71 IN	1.41 IN

Crop Stage At Each Application

	A	B	C
Crop 1 Code, BBCH Scale:	ZEAMX BCOR	ZEAMX BCOR	ZEAMX BCOR
Stage Scale Used:			BBCH
Stage Majority, Percent:			12 100
Height, Unit:			5.5 IN
Height Minimum, Maximum:			4 6

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Pest Stage At Each Application

	A	B	C
Pest 1 Code, Type, Scale:	LAMPU W	LAMPU W	LAMPU W
Stage Majority, Percent:	14	80	
Stage Minimum, Percent:	14	80	
Stage Maximum, Percent:	16	20	
Diameter, Unit:	0.25	IN	
Height, Unit:	0.25	IN	
Height Minimum, Maximum:	0.25	0.5	
Density, Unit:	18	M2	
Pest 2 Code, Type, Scale:	STEME W	STEME W	STEME W
Stage Majority, Percent:	18	90	
Stage Minimum, Percent:	18	90	
Stage Maximum, Percent:	19	10	
Diameter, Unit:	0.25	IN	
Height, Unit:	0.25	IN	
Height Minimum, Maximum:	0.25	0.25	
Density, Unit:	8	M2	
Pest 3 Code, Type, Scale:	VERAG W	VERAG W	VERAG W
Stage Majority, Percent:	19	100	19 100
Diameter, Unit:	1	IN	5 IN
Height, Unit:	2	IN	3.5 IN
Height Minimum, Maximum:	1	2	2 4.5
Density, Unit:	0.33	M2	0.33 M2
Pest 4 Code, Type, Scale:	AMBTR W	AMBTR W	AMBTR W
Stage Majority, Percent:	12	100	14 100
Diameter, Unit:			7 IN
Height, Unit:	1	IN	5 IN
Height Minimum, Maximum:	0.5	2	1.5 10.5
Density, Unit:	3	M2	5 m2
Pest 5 Code, Type, Scale:	SETFA W	SETFA W	SETFA W
Stage Majority, Percent:			13 100
Diameter, Unit:			4.5 IN
Height, Unit:			2 IN
Height Minimum, Maximum:			2 4.5
Density, Unit:			115 m2
Pest 6 Code, Type, Scale:	ABUTH W	ABUTH W	ABUTH W
Stage Majority, Percent:			11 100
Diameter, Unit:			2 IN
Height, Unit:			1 IN
Height Minimum, Maximum:			0.5 1
Pest 7 Code, Type, Scale:	XANST W	XANST W	XANST W
Stage Majority, Percent:			11 100
Diameter, Unit:			5 IN
Height, Unit:			1.5 IN
Height Minimum, Maximum:			0.5 1.5
Pest 8 Code, Type, Scale:	ECHCG W	ECHCG W	ECHCG W
Density, Unit:			63 m2
Pest 9 Code, Type, Scale:	CHEAL W	CHEAL W	CHEAL W
Density, Unit:			1 m2

Application Equipment

	A	B	C
Appl. Equipment:	10' AI XR	10' AI XR	10' AI XR
Equipment Type:	SPRBAC	SPRBAC	SPRBAC
Operation Pressure, Unit:	46 PSI	42 PSI	46 PSI
Nozzle Type:	AI XR	AI XR	AI XR
Nozzle Size:	110015	110015	110015
Nozzle Spacing, Unit:	18 IN	18 IN	18 IN
Boom Length, Unit:	10 FT	10 FT	10 FT
Boom Height, Unit:	20 IN	20 IN	20 IN
Ground Speed, Unit:	3 MPH	3 MPH	3 MPH
Carrier:	WATER	WATER	WATER
Spray Volume, Unit:	15 GPA	15 GPA	15 GPA
Mix Size, Unit:	2 L	2 L	2 L
Propellant:	CO2	COMCO2	CO2

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Trt	Treatment	Appl	20*	21*	22*	23*
No.	Name	Code				
	Pest Type					
	Pest Code					
	Pest Scientific Name					
	Pest Name					
	Crop Code		ZEAMX	ZEAMX	ZEAMX	ZEAMX
	BBCH Scale		BCOR	BCOR	BCOR	BCOR
	Crop Scientific Name		Zea mays	Zea mays	Zea mays	Zea mays
	Crop Name		Corn	Corn	Corn	Corn
	Rating Date		Oct-2-2018	Oct-2-2018	Oct-2-2018	Oct-2-2018
	Rating Type		WEIGHT	MOICON	YIELD	WEITES
	Rating Unit		LBS	%	BU	LBS/BU
	Sample Size, Unit		2 ROW	1 QT	1 A	1 QT
	Collection Basis, Unit		1 PLOT	1 PLOT	1 PLOT	1 PLOT
	Number of Subsamples		1	1	1	1
	Days After First/Last Applic.		327 139	327 139	327 139	327 139
	Trt-Eval Interval					
	Plant-Eval Interval		156 DP-1	156 DP-1	156 DP-1	156 DP-1
	Days After Emergence		145 DE-1	145 DE-1	145 DE-1	145 DE-1
	ARM Action Codes				TY1	
	Number of Decimals		1	1	1	1
1	UNTREATED		5.3 e	20.6 -	23.9 e	49.7 -
2	AUTHORITY MTZ	A	47.7 abc	21.1 -	230.6 abc	53.6 -
	2 Weedmaster	A				
	2 Roundup Powermax	A				
	2 COC	A				
	2 N-PAK AMS	A				
	2 Anthem Maxx	C				
	2 AAtrex	C				
	2 Roundup Powermax	C				
	2 COC	C				
	2 N PAK AMS	C				
3	Authority MTZ	A	50.4 a	19.0 -	249.7 a	55.7 -
	3 WEEDMASTER	A				
	3 ROUNDUP POWERMAX	A				
	3 COC	A				
	3 N PAK AMS	A				
	3 ANTHEM MAXX	B				
	3 AATREX	B				
	3 ROUNDUP POWERMAX	B				
	3 COC	B				
	3 N-PAK AMS	B				
4	AUTHORITY MTZ	A	46.9 abc	20.3 -	228.7 abc	54.1 -
	4 WEEDMASTER	A				
	4 ROUNDUP POWERMAX	A				
	4 COC	A				
	4 N PAK AMS	A				
	4 Anthem Maxx	B				
	4 Callisto	B				
	4 AATREX	B				
	4 ROUNDUP POWERMAX	B				
	4 COC	B				
	4 N PAK AMS	B				

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
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Pest Type					
Pest Code					
Pest Scientific Name					
Pest Name					
Crop Code		ZEAMX	ZEAMX	ZEAMX	ZEAMX
BBCH Scale		BCOR	BCOR	BCOR	BCOR
Crop Scientific Name		Zea mays	Zea mays	Zea mays	Zea mays
Crop Name		Corn	Corn	Corn	Corn
Rating Date		Oct-2-2018	Oct-2-2018	Oct-2-2018	Oct-2-2018
Rating Type		WEIGHT	MOICON	YIELD	WEITES
Rating Unit		LBS	%	BU	LBS/BU
Sample Size, Unit		2 ROW	1 QT	1 A	1 QT
Collection Basis, Unit		1 PLOT	1 PLOT	1 PLOT	1 PLOT
Number of Subsamples		1	1	1	1
Days After First/Last Applic.		327 139	327 139	327 139	327 139
Trt-Eval Interval					
Plant-Eval Interval		156 DP-1	156 DP-1	156 DP-1	156 DP-1
Days After Emergence		145 DE-1	145 DE-1	145 DE-1	145 DE-1
ARM Action Codes				TY1	
Number of Decimals		1	1	1	1

Trt Treatment No. Name	Appl Code	20*	21*	22*	23*
5 AUTHORITY MTZ	A	50.0 a	19.9 -	244.6 a	53.9 -
5 WEEDMASTER	A				
5 ROUNDUP POWERMAX	A				
5 COC	A				
5 N PAK AMS	A				
5 Anthem Maxx	B				
5 AATREX	B				
5 Callisto	C				
5 AATREX	C				
5 ROUNDUP POWERMAX	C				
5 COC	C				
5 N PAK AMS	C				
5					
6 Crusher	A	51.7 a	20.1 -	251.9 a	55.7 -
6 WEEDMASTER	A				
6 ROUNDUP POWERMAX	A				
6 COC	A				
6 N PAK AMS	A				
6 Anthem Maxx	C				
6 Callisto	C				
6 AATREX	C				
6 ROUNDUP POWERMAX	C				
6 COC	C				
6 N PAK AMS	C				
6					
7 AUTHORITY MTZ	A	48.7 ab	19.4 -	240.0 ab	56.4 -
7 WEEDMASTER	A				
7 ROUNDUP POWERMAX	A				
7 COC	A				
7 N PAK AMS	A				
7 CRUSHER	B				
7 AAtrex	B				
7 Roundup Powermax	B				
7 COC	B				
7 N-PAK AMS	B				
7					

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Trt Treatment No. Name	Appl Code	20*	21*	22*	23*
8 CRUSHER	A	51.0 a	19.1 -	252.1 a	54.7 -
8 WEEDMASTER	A				
8 ROUNDUP POWERMAX	A				
8 COC	A				
8 N PAK AMS	A				
8 Anthem Maxx	C				
8 Callisto	C				
8 AATREX	C				
8 ROUNDUP POWERMAX	C				
8 COC	C				
8 N-PAK AMS	C				
9 AUTHORITY MTZ	A	39.3 cd	18.6 -	195.8 cd	53.5 -
9 WEEDMASTER	A				
9 ROUNDUP POWERMAX	A				
9 N PAK AMS	A				
9 ANTHEM MAXX	B				
9 Balanced Flexx	B				
9 AATREX	B				
9 ROUNDUP POWERMAX	B				
9 COC	B				
9 N-PAK AMS	B				
10 AUTHORITY MTZ	A	51.3 a	19.7 -	251.9 a	54.5 -
10 WEEDMASTER	A				
10 ROUNDUP POWERMAX	A				
10 N PAK AMS	A				
10 ANTHEM MAXX	C				
10 Balanced Flexx	C				
10 AAtrex	C				
10 Roundup Powermax	C				
10 COC	C				
10 N-PAK AMS	C				

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Trt	Treatment No. Name	Appl Code	20*	21*	22*	23*
	11 HARMONY EXTRA XP	A	49.0 ab	19.6 -	240.7 ab	52.7 -
	11 Harmony GT	A				
	11 Express	A				
	11 2,4-D Ester	A				
	11 Roundup Powermax	A				
	11 N-PAK AMS	A				
	11 Anthem Maxx	B				
	11 Callisto	B				
	11 AAtrex	B				
	11 ROUNDUP POWERMAX	B				
	11 COC	B				
	11 N-PAK AMS	B				
	11					
	12 HARMONY EXTRA XP	A	32.6 d	19.0 -	161.1 d	52.9 -
	12 2,4-D LV ESTER	A				
	12 ROUNDUP POWERMAX	A				
	12 N PAK AMS	A				
	12 ANTHEM MAXX	B				
	12 HORNET	B				
	12 AATREX	B				
	12 ROUNDUP POWERMAX	B				
	12 COC	B				
	12 N PAK AMS	B				
	12					
	13 CRUSHER	A	53.0 a	19.5 -	261.2 a	54.6 -
	13 ROUNDUP POWERMAX	A				
	13 WEEDMASTER	A				
	13 COC	A				
	13 N PAK AMS	A				
	13 ANTHEM MAXX	C				
	13 HORNET	C				
	13 AATREX	C				
	13 ROUNDUP POWERMAX	C				
	13 COC	C				
	13 N PAK AMS	C				
	13					

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Pest Type					
Pest Code					
Pest Scientific Name					
Pest Name					
Crop Code		ZEAMX	ZEAMX	ZEAMX	ZEAMX
BBCH Scale		BCOR	BCOR	BCOR	BCOR
Crop Scientific Name		Zea mays	Zea mays	Zea mays	Zea mays
Crop Name		Corn	Corn	Corn	Corn
Rating Date		Oct-2-2018	Oct-2-2018	Oct-2-2018	Oct-2-2018
Rating Type		WEIGHT	MOICON	YIELD	WEITES
Rating Unit		LBS	%	BU	LBS/BU
Sample Size, Unit		2 ROW	1 QT	1 A	1 QT
Collection Basis, Unit		1 PLOT	1 PLOT	1 PLOT	1 PLOT
Number of Subsamples		1	1	1	1
Days After First/Last Applic.		327 139	327 139	327 139	327 139
Trt-Eval Interval					
Plant-Eval Interval		156 DP-1	156 DP-1	156 DP-1	156 DP-1
Days After Emergence		145 DE-1	145 DE-1	145 DE-1	145 DE-1
ARM Action Codes				TY1	
Number of Decimals		1	1	1	1
Trt Treatment	Appl				
No. Name	Code	20*	21*	22*	23*
14 CRUSHER	A	40.5 bcd	19.8 -	198.1 bcd	52.4 -
14 ROUNDUP POWERMAX	A				
14 N PAK	A				
14 CORVUS	B				
14 ATRAZINE	B				
14 ROUNDUP POWERMAX	B				
14 COC	B				
14 N PAK AMS	B				
14					
15 CRUSHER	A	48.9 ab	19.2 -	241.4 ab	56.1 -
15 ROUNDUP POWERMAX	A				
15 N PAK AMS	A				
15 ACURON	B				
15 ROUNDUP POWERMAX	B				
15 COC	B				
15 N PAK AMS	B				
15					

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	16	CRUSHER	A	48.8 ab	19.0 -	241.4 ab	56.0 -
	16	WEEDMASTER	A				
	16	ROUNDUP POWERMAX	A				
	16	COC	A				
	16	N PAK AMS	A				
	16	ANTHEM MAXX	B				
	16	Callisto	B				
	16	AAtrex	B				
	16	ROUNDUP POWERMAX	C				
	16	Status	C				
	16	AATREX	C				
	16	COC	C				
	16	N PAK AMS	C				
	16						
LSD P=.05				8.05	1.74	38.18	4.59
Standard Deviation				4.76	1.04	22.60	2.76
CV				10.5	5.42	10.1	5.09
Levene's F				1.179	0.582	1.053	0.545
Levene's Prob(F)				0.335	0.867	0.432	0.894
Skewness				-2.0045*	1.0046*	-2.0043*	-1.7583*
Kurtosis				3.6332*	1.0394	3.6621*	3.3856*
Randomized Complete Block (RCB) AIC				313.0485	156.194	464.5369	256.5471
Spatial AIC				SPa 302.7564	SPb 156.1238	SPa 452.2427	SPc 248.5984
Analyzed as				CRD+SPa	CRD+SPb	CRD+SPa	CRD+SPc
Replicate F				0.546	1.570	0.833	0.157
Replicate Prob(F)				0.5864	0.2264	0.4476	0.8556
Treatment F				17.222	1.326	18.738	1.295
Treatment Prob(F)				0.0001	0.2535	0.0001	0.2630

Crop Code

ZEAMX, BCOR, Zea mays, Corn = US

Rating Type

WEIGHT = weight

MOICON = moisture content

YIELD = yield

WEITES = weight - test

Rating Unit

% = percent

BU = bushel

ROW = row

QT = quart

A = acre

PLOT = total plot

Plant-Eval Interval

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156 DP-1 = 1 ZEAMX Apr-29-2018

ARM Action Codes

 $TY1 = 5.185714 * [20] * (100 - [21]) / 85$

SPa = Cubic spatial trend
SPb = Quadratic spatial trend
SPc = Nearest column neighbor