

The Ohio State University  
Assessment of Pyridate + Mesotrione in Roundup Ready Corn

Trial ID: 18TOUGHMES      Location: Western Branch G-6      Trial Year: 2018  
Protocol ID: 18TOUGHMES      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** °: 39.85937      N  
**Longitude of LL Corner** °: 83.6742      W  
**Altitude of LL Corner, Unit:** 1089.00 FT

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

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

**Crop Description**

**Crop 1:** ZEAMX      Zea mays      Corn  
**Variety:** SCS1125YHR  
**Description:** Seed Consultants RR/LL 112

**Planting Rate, Unit:** 32097 S/A  
**Depth, Unit:** 2 IN  
**Row Spacing, Unit:** 30 in  
**Rows per Plot:** 4  
**Soil Temperature, Unit:** 58 F  
**Soil Moisture:** SLIWET slightly wet, moist  
**Seed Bed:** CLODDY cloddy

**Planting Date:** Apr-29-2018  
**Planting Method:** PLANTD planted  
**Planting Equipment:** FPP finger pickup planter  
**Emergence Date:** May-10-2018

**Pest Description**

**Pest 1 Type:** W      **Code:** AMBTR Ambrosia trifida  
**Common Name:** Giant ragweed

**Pest 2 Type:** W      **Code:** CHEAL Chenopodium album  
**Common Name:** common lambsquarters

**Pest 3 Type:** W      **Code:** ABUTH Abutilon theophrasti  
**Common Name:** velvetleaf

**Pest 4 Type:** W      **Code:** IPOHE Ipomoea hederacea  
**Common Name:** ivy-leaf morning glory

**Site and Design**

**Treated Plot Width:** 6.67 FT  
**Treated Plot Length:** 30 FT  
**Treated Plot Area:** 200.1 FT<sup>2</sup>      **Treatments:** 14  
**Replications:** 3

**Site Type:** FIELD field  
**Experimental Unit:** 1 PLOT plot  
**Tillage Type:** CONTIL conventional-till  
**Study Design:** RACOBL Randomized Complete Block (RCB)

**No. Previous Crop Year**

1. Soybean      2017

**Soil Description**

**Description Name:** G-6  
**% Sand:** 33      **% 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

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#### Application Description

	A	B	C
<b>Application Date:</b>	May-1-2018	May-24-2018	May-29-2018
<b>Appl. Start Time:</b>	7:15 AM	8:45 AM	11:30 AM
<b>Appl. Stop Time:</b>	7:20 AM	9:00 AM	11:45 AM
<b>Application Method:</b>	SPRAY	SPRAY	SPRAY
<b>Application Timing:</b>	PRE	V2-V4	V6-V8
<b>Application Placement:</b>	BROSOI	BROFOL	BROFOL
<b>Applied By:</b>	Reeb	Ackley,Lamb	Ackley,Lamb
<b>Air Temperature, Unit:</b>	46 F	60 F	81 F
<b>% Relative Humidity:</b>	75	52	63
<b>Wind Velocity, Unit:</b>	1 MPH	2 MPH	12 MPH
<b>Wind Direction:</b>	NNE	N	SE
<b>Dew Presence (Y/N):</b>	N no	N no	N no
<b>Soil Temperature, Unit:</b>	50 F	58 F	81 F
<b>Soil Moisture:</b>	DRY	NORMAL	DRY
<b>% Cloud Cover:</b>	0	5	40
<b>Next Moisture Occurred On:</b>	May-3-2018	May-26-2018	May-31-2018
<b>Time to Next Moisture, Unit:</b>	2 DAY	2 DAY	2 DAY
<b>Moisture 1 Week after Appl.:</b>	1.19 IN	0.53 IN	0.57 IN

#### Crop Stage At Each Application

	A		B		C	
<b>Crop 1 Code, BBCH Scale:</b>	ZEAMX	BCOR	ZEAMX	BCOR	ZEAMX	BCOR
<b>Stage Scale Used:</b>	BBCH		BBCH		BBCH	
<b>Stage Majority, Percent:</b>			14	100	16	95
<b>Stage Minimum, Percent:</b>					15	5
<b>Stage Maximum, Percent:</b>					16	95
<b>Height, Unit:</b>			11.5 IN		20 IN	
<b>Height Minimum, Maximum:</b>			11 12		18 20	

#### Pest Stage At Each Application

	A		B		C	
<b>Pest 1 Code, Type, Scale:</b>	AMBTR	W	AMBTR	W	AMBTR	W
<b>Stage Majority, Percent:</b>	16	100	18	100		
<b>Height, Unit:</b>	6	IN	12	IN		
<b>Height Minimum, Maximum:</b>	4	10	6	19		
<b>Density, Unit:</b>	47	M2	47	m2		
<b>Pest 2 Code, Type, Scale:</b>	CHEAL	W	CHEAL	W	CHEAL	W
<b>Stage Majority, Percent:</b>	16	100	16	100		
<b>Height, Unit:</b>	1.5	IN	2	IN		
<b>Height Minimum, Maximum:</b>	1.5	2	1.5	3		
<b>Density, Unit:</b>	3	M2	3	M2		
<b>Pest 3 Code, Type, Scale:</b>	ABUTH	W	ABUTH	W	ABUTH	W
<b>Stage Majority, Percent:</b>	14	100	15	100		
<b>Height, Unit:</b>	2	IN	3.5	IN		
<b>Height Minimum, Maximum:</b>	1.5	3	3	5		
<b>Density, Unit:</b>	1	M2	1	M2		
<b>Pest 4 Code, Type, Scale:</b>	IPOHE	W	IPOHE	W	IPOHE	W
<b>Stage Majority, Percent:</b>	12	100	13	100		
<b>Height, Unit:</b>	2	IN	3	IN		
<b>Height Minimum, Maximum:</b>	1	2.5	2	4.5		
<b>Density, Unit:</b>	0.33	M2	0.33	M2		

#### Application Equipment

	A	B	C
<b>Appl. Equipment:</b>	Tractor	6 foot AIXR	6 foot AIXR
<b>Equipment Type:</b>	TRMOSP	SPRBAC	SPRBAC
<b>Operation Pressure, Unit:</b>	32 PSI	42 PSI	42 PSI
<b>Nozzle Type:</b>	AI	AIXR	AIXR
<b>Nozzle Size:</b>	11002	110015	110015
<b>Nozzle Spacing, Unit:</b>	20 IN	18 IN	18 IN
<b>Boom Length, Unit:</b>	10 FT	6.67 FT	6.67 FT
<b>Boom Height, Unit:</b>	20 IN	20 IN	20 IN
<b>Ground Speed, Unit:</b>	3.8 MPH	3 MPH	3 MPH
<b>Carrier:</b>	WATER	WATER	WATER
<b>Spray Volume, Unit:</b>	20 GPA	15 GPA	15 GPA
<b>Mix Size, Unit:</b>	20 GAL	1 L	1 L
<b>Propellant:</b>	PUMROL	COMCO2	COMCO2

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Trial ID: 18TOUGHMES Location: Western Branch G-6 Trial Year: 2018  
 Protocol ID: 18TOUGHMES Investigator: Dr. Mark M. Loux  
 Project ID: Study Director:  
 Sponsor Contact:

Pest Type					W Weed SETFA Giant foxtail	W Weed AMBTR Giant common ragweed	W Weed CHEAL lambsq>
Pest Code							
Pest Name							
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX			
Crop Name	Corn	Corn	Corn	Corn			
Rating Date	May-30-2018	Jun-7-2018	Jun-7-2018	Jun-7-2018	Jun-7-2018	Jun-7-2018	Jun-7-2018
Rating Type	PHYLMA	PHYSTU	PHYNEC	PHYCHL	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1	1
Days After First/Last Applic.	29 1	37 9	37 9	37 9	37 9	37 9	37 9
Trt-Eval Interval	6 DA-A	9 DA-C	9 DA-C	9 DA-C	14 DA-B	14 DA-B	14 DA-B
Days After Emergence	20 DE-1	28 DE-1	28 DE-1	28 DE-1	28 DE-1	28 DE-1	28 DE-1
Number of Decimals	0	0	0	0	0	0	0

Trt No.	Treatment Name	Rate	Unit	Appl Code	1*	2*	3*	4*	5*	6*	7*
1	UTC				0 -	0 -	0 -	0 -	100 -	0	0 b
2	Dual II Magnum	1.27 lb ai/a	A		1 -	0 -	0 -	0 -	100 -	83 ab	100 a
	Roundup PowerMax	1.13 lb ae/a	B								
	Aatrex	1.2 lb ai/a	B								
	N Pak AMS	2.5 % v/v	B								
3	Dual II Magnum	1.27 lb ai/a	A		1 -	0 -	0 -	0 -	100 -	68 bc	100 a
	Tough	0.312 lb ai/a	B								
	Aatrex	1.2 lb ai/a	B								
	N Pak AMS	2.5 % v/v	B								
4	Dual II Magnum	1.27 lb ai/a	A		0 -	0 -	1 -	0 -	100 -	57 c	100 a
	Roundup PowerMax	1.13 lb ae/a	C								
	Aatrex	1.2 lb ai/a	C								
	N Pak AMS	2.5 % v/v	C								
5	Dual II Magnum	1.27 lb ai/a	A		0 -	0 -	0 -	0 -	100 -	67 bc	100 a
	Roundup PowerMax	1.13 lb ae/a	C								
	Tough	0.312 lb ai/a	C								
	Aatrex	1.2 lb ai/a	C								
	N Pak AMS	2.5 % v/v	C								
6	Dual II Magnum	1.27 lb ai/a	A		1 -	0 -	0 -	0 -	100 -	73 abc	100 a
	Roundup PowerMax	1.13 lb ae/a	B								
	Callisto	0.094 lb ai/a	B								
	N Pak AMS	2.5 % v/v	B								
7	Dual II Magnum	1.27 lb ai/a	A		1 -	0 -	0 -	0 -	100 -	82 ab	100 a
	Roundup PowerMax	1.13 lb ae/a	B								
	Tough	0.313 lb ai/a	B								
	Callisto	0.094 lb ai/a	B								
	N Pak AMS	2.5 % v/v	B								
8	Dual II Magnum	1.27 lb ai/a	A		0 -	0 -	1 -	0 -	100 -	68 bc	100 a
	Roundup PowerMax	1.13 lb ae/a	C								
	Callisto	0.094 lb ai/a	C								
	N Pak AMS	2.5 % v/v	C								
9	Dual II Magnum	1.27 lb ai/a	A		0 -	0 -	1 -	0 -	100 -	67 bc	100 a
	Roundup PowerMax	1.13 lb ae/a	C								
	Tough	0.313 lb ai/a	C								
	Callisto	0.094 lb ai/a	C								
	N Pak AMS	2.5 % v/v	C								
10	Dual II Magnum	1.27 lb ai/a	A		0 -	0 -	0 -	0 -	100 -	86 ab	100 a
	Roundup PowerMax	1.13 lb ae/a	B								
	Callisto	0.094 lb ai/a	B								
	Aatrex	1.2 lb ai/a	B								
	N Pak AMS	2.5 % v/v	B								
11	Dual II Magnum	1.27 lb ai/a	A		1 -	0 -	0 -	0 -	100 -	90 ab	100 a
	Roundup PowerMax	1.13 lb ae/a	B								
	Tough	0.313 lb ai/a	B								
	Callisto	0.094 lb ai/a	B								
	Aatrex	1.2 lb ai/a	B								
	N Pak AMS	2.5 % v/v	B								

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.  
 \* Adjusted means  
 Excluded replicate 2 in column 4  
 Could not calculate LSD (% mean diff) for columns 2,4,5,10,12,16,20 because error mean square = 0.

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 Project ID: Study Director:  
 Sponsor Contact:

Pest Type					W Weed	W Weed	W Weed
Pest Code					SETFA	AMBTR	CHEAL
Pest Name					Giant foxtail	Giant common ragweed	lambsq>
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX			
Crop Name	Corn	Corn	Corn	Corn			
Rating Date	May-30-2018	Jun-7-2018	Jun-7-2018	Jun-7-2018	Jun-7-2018	Jun-7-2018	Jun-7-2018
Rating Type	PHYLMA	PHYSTU	PHYNEC	PHYCHL	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1	1
Days After First/Last Applic.	29 1	37 9	37 9	37 9	37 9	37 9	37 9
Trt-Eval Interval	6 DA-A	9 DA-C	9 DA-C	9 DA-C	14 DA-B	14 DA-B	14 DA-B
Days After Emergence	20 DE-1	28 DE-1	28 DE-1	28 DE-1	28 DE-1	28 DE-1	28 DE-1
Number of Decimals	0	0	0	0	0	0	0

Trt No.	Treatment Name	Rate	Unit	Appl Code	1*	2*	3*	4*	5*	6*	7*
12	Dual II Magnum	1.27	lb ai/a	A	0 -	0 -	1 -	0 -	100 -	95 a	100 a
	Roundup PowerMax	1.13	lb ae/a	C							
	Callisto	0.094	lb ai/a	C							
	Aatrex	1.2	lb ai/a	C							
	N Pak AMS	2.5	% v/v	C							
13	Dual II Magnum	1.27	lb ai/a	A	0 -	0 -	1 -	0 -	100 -	94 a	99 a
	Roundup PowerMax	1.13	lb ae/a	C							
	Tough	0.313	lb ai/a	C							
	Callisto	0.094	lb ai/a	C							
	Aatrex	1.2	lb ai/a	C							
	N Pak AMS	2.5	% v/v	C							
14	Dual II Magnum	1.27	lb ai/a	A	0 -	0 -	0 -	0 -	100 -	96 a	100 a
	Roundup PowerMax	1.13	lb ae/a	C							
	Tough	0.39	lb ai/a	C							
	Callisto	0.094	lb ai/a	C							
	Aatrex	1.2	lb ai/a	C							
	N Pak AMS	2.5	% v/v	C							
	LSD P=.05				1.3	.	1.4	.	.	14.2	0.5
	Standard Deviation				0.8	0.0	0.9	0.0	0.0	8.4	0.3
	CV				213.01	0.0	257.1	0.0	0.0	10.69	0.33
	Levene's F				1.179	0.00	0.708		0.00	0.342	1.00
	Levene's Prob(F)				0.343	.	0.74	.	.	0.973	0.477
	Skewness				2.2885*	.	2.3323*	.	.	-0.2363	-3.4519*
	Kurtosis				4.2519*	.	4.0734*	.	.	-0.7749	10.412*
	Replicate F				1.975	0.000	0.616	0.000	0.000	3.863	1.000
	Replicate Prob(F)				0.1591	1.0000	0.5478	1.0000	1.0000	0.0351	0.3816
	Treatment F				1.370	0.000	0.978	0.000	0.000	7.127	22477.925
	Treatment Prob(F)				0.2386	1.0000	0.4971	1.0000	1.0000	0.0001	0.0001

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	ABUTH	IPOHE	SETFA	AMBTR	CHEAL	ABUTH	IPOHE			
Pest Name	velvetleaf	ivy-leaf morri>	Giant foxtail	Giant ragweed	common lambsqu>	velvetleaf	ivy-leaf morri>			
Crop Code										
Crop Name										
Rating Date	Jun-7-2018	Jun-7-2018	Jun-13-2018	Jun-13-2018	Jun-13-2018	Jun-13-2018	Jun-13-2018			
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO			
Rating Unit	%	%	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1	1	1			
Days After First/Last Applic.	37 9	37 9	43 15	43 15	43 15	43 15	43 15			
Trt-Eval Interval	14 DA-B	14 DA-B	15 DA-C	15 DA-C	15 DA-C	15 DA-C	15 DA-C			
Days After Emergence	28 DE-1	28 DE-1	34 DE-1	34 DE-1	34 DE-1	34 DE-1	34 DE-1			
Number of Decimals	0	0	0	0	0	0	0			
Trt Treatment	Rate	Unit	Appl Code	8*	9*	10*	11*	12*	13*	14*
1 UTC				0 c	0 b	99	0 c	0 -	0 c	0 b
2 Dual II Magnum	1.27 lb ai/a	A		100 a	100 a	100 -	78 ab	100 -	100 a	100 a
Roundup PowerMax	1.13 lb ae/a	B								
Aatrex	1.2 lb ai/a	B								
N Pak AMS	2.5 % v/v	B								
3 Dual II Magnum	1.27 lb ai/a	A		88 b	95 a	100 -	62 b	100 -	80 b	88 a
Tough	0.312 lb ai/a	B								
Aatrex	1.2 lb ai/a	B								
N Pak AMS	2.5 % v/v	B								
4 Dual II Magnum	1.27 lb ai/a	A		97 a	100 a	100 -	67 ab	100 -	100 a	90 a
Roundup PowerMax	1.13 lb ae/a	C								
Aatrex	1.2 lb ai/a	C								
N Pak AMS	2.5 % v/v	C								
5 Dual II Magnum	1.27 lb ai/a	A		100 a	93 a	100 -	70 ab	100 -	100 a	97 a
Roundup PowerMax	1.13 lb ae/a	C								
Tough	0.312 lb ai/a	C								
Aatrex	1.2 lb ai/a	C								
N Pak AMS	2.5 % v/v	C								
6 Dual II Magnum	1.27 lb ai/a	A		100 a	93 a	100 -	75 ab	100 -	100 a	90 a
Roundup PowerMax	1.13 lb ae/a	B								
Callisto	0.094 lb ai/a	B								
N Pak AMS	2.5 % v/v	B								
7 Dual II Magnum	1.27 lb ai/a	A		100 a	97 a	100 -	72 ab	100 -	100 a	93 a
Roundup PowerMax	1.13 lb ae/a	B								
Tough	0.313 lb ai/a	B								
Callisto	0.094 lb ai/a	B								
N Pak AMS	2.5 % v/v	B								
8 Dual II Magnum	1.27 lb ai/a	A		100 a	100 a	100 -	77 ab	100 -	100 a	100 a
Roundup PowerMax	1.13 lb ae/a	C								
Callisto	0.094 lb ai/a	C								
N Pak AMS	2.5 % v/v	C								
9 Dual II Magnum	1.27 lb ai/a	A		100 a	83 a	100 -	80 ab	100 -	100 a	90 a
Roundup PowerMax	1.13 lb ae/a	C								
Tough	0.313 lb ai/a	C								
Callisto	0.094 lb ai/a	C								
N Pak AMS	2.5 % v/v	C								
10 Dual II Magnum	1.27 lb ai/a	A		100 a	100 a	100 -	82 ab	100 -	100 a	97 a
Roundup PowerMax	1.13 lb ae/a	B								
Callisto	0.094 lb ai/a	B								
Aatrex	1.2 lb ai/a	B								
N Pak AMS	2.5 % v/v	B								
11 Dual II Magnum	1.27 lb ai/a	A		100 a	100 a	100 -	82 ab	100 -	100 a	100 a
Roundup PowerMax	1.13 lb ae/a	B								
Tough	0.313 lb ai/a	B								
Callisto	0.094 lb ai/a	B								
Aatrex	1.2 lb ai/a	B								
N Pak AMS	2.5 % v/v	B								

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	ABUTH	IPOHE	SETFA	AMBTR	CHEAL	ABUTH	IPOHE			
Pest Name	velvetleaf	ivy-leaf morri>	Giant foxtail	Giant ragweed	common lambsqu>	velvetleaf	ivy-leaf morri>			
Crop Code										
Crop Name										
Rating Date	Jun-7-2018	Jun-7-2018	Jun-13-2018	Jun-13-2018	Jun-13-2018	Jun-13-2018	Jun-13-2018			
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO			
Rating Unit	%	%	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1	1	1			
Days After First/Last Applic.	37 9	37 9	43 15	43 15	43 15	43 15	43 15			
Trt-Eval Interval	14 DA-B	14 DA-B	15 DA-C	15 DA-C	15 DA-C	15 DA-C	15 DA-C			
Days After Emergence	28 DE-1	28 DE-1	34 DE-1	34 DE-1	34 DE-1	34 DE-1	34 DE-1			
Number of Decimals	0	0	0	0	0	0	0			
Trt Treatment No. Name	Rate	Rate Unit	Appl Code	8*	9*	10*	11*	12*	13*	14*
12 Dual II Magnum	1.27	lb ai/a	A	100 a	100 a	100 -	87 ab	100 -	100 a	100 a
Roundup PowerMax	1.13	lb ae/a	C							
Callisto	0.094	lb ai/a	C							
Aatrex	1.2	lb ai/a	C							
N Pak AMS	2.5	% v/v	C							
13 Dual II Magnum	1.27	lb ai/a	A	100 a	100 a	100 -	88 ab	100 -	100 a	100 a
Roundup PowerMax	1.13	lb ae/a	C							
Tough	0.313	lb ai/a	C							
Callisto	0.094	lb ai/a	C							
Aatrex	1.2	lb ai/a	C							
N Pak AMS	2.5	% v/v	C							
14 Dual II Magnum	1.27	lb ai/a	A	100 a	97 a	100 -	96 a	100 -	100 a	96 a
Roundup PowerMax	1.13	lb ae/a	C							
Tough	0.39	lb ai/a	C							
Callisto	0.094	lb ai/a	C							
Aatrex	1.2	lb ai/a	C							
N Pak AMS	2.5	% v/v	C							
LSD P=.05				6.0	10.4	.	17.7	.	7.8	13.6
Standard Deviation				3.6	6.2	0.0	10.6	0.0	4.6	8.1
CV				3.92	6.91	0.0	14.6	0.0	5.06	9.17
Levene's F				2.497	1.045	0.00	0.529	0.00	1.00	0.858
Levene's Prob(F)				0.021*	0.44	.	0.887	.	0.477	0.602
Skewness				-3.3086*	-3.0745*	.	-2.0219*	-3.4528*	-3.1631*	-2.9706*
Kurtosis				9.6812*	8.547*	.	4.3756*	10.4158*	8.8709*	8.0929*
Replicate F				1.792	2.329	0.000	1.158	0.000	1.000	0.385
Replicate Prob(F)				0.1867	0.1174	1.0000	0.3298	1.0000	0.3816	0.6842
Treatment F				163.890	53.690	0.000	13.816	0.000	100.923	30.405
Treatment Prob(F)				0.0001	0.0001	1.0000	0.0001	1.0000	0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.  
 \* Adjusted means  
 Excluded replicate 2 in column 4  
 Could not calculate LSD (% mean diff) for columns 2,4,5,10,12,16,20 because error mean square = 0.

The Ohio State University

Assessment of Pyridate + Mesotrione in Roundup Ready Corn

Trial ID: 18TOUGHMES Location: Western Branch G-6 Trial Year: 2018  
 Protocol ID: 18TOUGHMES Investigator: Dr. Mark M. Loux  
 Project ID: Study Director:  
 Sponsor Contact:

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	AMBTR	CHEAL	ABUTH	IPOHE	AMBTR	CHEAL
Pest Name	Giant ragweed	common lambsqu>	velvetleaf	ivy-leaf morri>	Giant ragweed	common lambsqu>
Crop Code						
Crop Name						
Rating Date	Jun-21-2018	Jun-21-2018	Jun-21-2018	Jun-21-2018	Jun-26-2018	Jun-26-2018
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1
Days After First/Last Applic.	51 23	51 23	51 23	51 23	56 28	56 28
Trt-Eval Interval	28 DA-B	28 DA-B	28 DA-B	28 DA-B	28 DA-C	28 DA-C
Days After Emergence	42 DE-1	42 DE-1	42 DE-1	42 DE-1	47 DE-1	47 DE-1
Number of Decimals	0	0	0	0	0	0

Trt No.	Treatment Name	Rate	Unit	Appl Code	15*	16*	17*	18*	19*	20*
1	UTC				0	0 -	0 c	0 b	0	0 -
2	Dual II Magnum	1.27	lb ai/a	A	85 -	100 -	100 a	100 a	83 -	100 -
	Roundup PowerMax	1.13	lb ae/a	B						
	Aatrex	1.2	lb ai/a	B						
	N Pak AMS	2.5	% v/v	B						
3	Dual II Magnum	1.27	lb ai/a	A	67 -	100 -	80 b	80 a	70 -	100 -
	Tough	0.312	lb ai/a	B						
	Aatrex	1.2	lb ai/a	B						
	N Pak AMS	2.5	% v/v	B						
4	Dual II Magnum	1.27	lb ai/a	A	77 -	100 -	97 a	100 a	77 -	100 -
	Roundup PowerMax	1.13	lb ae/a	C						
	Aatrex	1.2	lb ai/a	C						
	N Pak AMS	2.5	% v/v	C						
5	Dual II Magnum	1.27	lb ai/a	A	70 -	100 -	100 a	90 a	77 -	100 -
	Roundup PowerMax	1.13	lb ae/a	C						
	Tough	0.312	lb ai/a	C						
	Aatrex	1.2	lb ai/a	C						
	N Pak AMS	2.5	% v/v	C						
6	Dual II Magnum	1.27	lb ai/a	A	83 -	100 -	100 a	100 a	78 -	100 -
	Roundup PowerMax	1.13	lb ae/a	B						
	Callisto	0.094	lb ai/a	B						
	N Pak AMS	2.5	% v/v	B						
7	Dual II Magnum	1.27	lb ai/a	A	77 -	100 -	100 a	100 a	78 -	100 -
	Roundup PowerMax	1.13	lb ae/a	B						
	Tough	0.313	lb ai/a	B						
	Callisto	0.094	lb ai/a	B						
	N Pak AMS	2.5	% v/v	B						
8	Dual II Magnum	1.27	lb ai/a	A	80 -	100 -	100 a	100 a	83 -	100 -
	Roundup PowerMax	1.13	lb ae/a	C						
	Callisto	0.094	lb ai/a	C						
	N Pak AMS	2.5	% v/v	C						
9	Dual II Magnum	1.27	lb ai/a	A	80 -	100 -	100 a	87 a	83 -	100 -
	Roundup PowerMax	1.13	lb ae/a	C						
	Tough	0.313	lb ai/a	C						
	Callisto	0.094	lb ai/a	C						
	N Pak AMS	2.5	% v/v	C						
10	Dual II Magnum	1.27	lb ai/a	A	87 -	100 -	100 a	100 a	90 -	100 -
	Roundup PowerMax	1.13	lb ae/a	B						
	Callisto	0.094	lb ai/a	B						
	Aatrex	1.2	lb ai/a	B						
	N Pak AMS	2.5	% v/v	B						
11	Dual II Magnum	1.27	lb ai/a	A	87 -	100 -	100 a	100 a	87 -	100 -
	Roundup PowerMax	1.13	lb ae/a	B						
	Tough	0.313	lb ai/a	B						
	Callisto	0.094	lb ai/a	B						
	Aatrex	1.2	lb ai/a	B						
	N Pak AMS	2.5	% v/v	B						

Means followed by same letter or symbol do not significantly differ (P=0.05, Student-Newman-Keuls).  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.  
 \* Adjusted means  
 Excluded replicate 2 in column 4  
 Could not calculate LSD (% mean diff) for columns 2,4,5,10,12,16,20 because error mean square = 0.

## The Ohio State University

## Assessment of Pyridate + Mesotrione in Roundup Ready Corn

Trial ID: 18TOUGHMES Location: Western Branch G-6 Trial Year: 2018  
 Protocol ID: 18TOUGHMES Investigator: Dr. Mark M. Loux  
 Project ID: Study Director:  
 Sponsor Contact:

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	AMBTR	CHEAL	ABUTH	IPOHE	AMBTR	CHEAL			
Pest Name	Giant	common	velvetleaf	ivy-leaf morni>	Giant	common			
Crop Code	ragweed	lambsqu>			ragweed	lambsqu>			
Rating Date	Jun-21-2018	Jun-21-2018	Jun-21-2018	Jun-21-2018	Jun-26-2018	Jun-26-2018			
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO			
Rating Unit	%	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1	1			
Days After First/Last Applic.	51 23	51 23	51 23	51 23	56 28	56 28			
Trt-Eval Interval	28 DA-B	28 DA-B	28 DA-B	28 DA-B	28 DA-C	28 DA-C			
Days After Emergence	42 DE-1	42 DE-1	42 DE-1	42 DE-1	47 DE-1	47 DE-1			
Number of Decimals	0	0	0	0	0	0			
Trt Treatment No. Name	Rate	Rate Unit	Appl Code	15*	16*	17*	18*	19*	20*
12 Dual II Magnum	1.27 lb ai/a	A		88 -	100 -	100 a	100 a	88 -	100 -
Roundup PowerMax	1.13 lb ae/a	C							
Callisto	0.094 lb ai/a	C							
Aatrex	1.2 lb ai/a	C							
N Pak AMS	2.5 % v/v	C							
13 Dual II Magnum	1.27 lb ai/a	A		86 -	100 -	100 a	100 a	86 -	100 -
Roundup PowerMax	1.13 lb ae/a	C							
Tough	0.313 lb ai/a	C							
Callisto	0.094 lb ai/a	C							
Aatrex	1.2 lb ai/a	C							
N Pak AMS	2.5 % v/v	C							
14 Dual II Magnum	1.27 lb ai/a	A		97 -	100 -	100 a	98 a	100 -	100 -
Roundup PowerMax	1.13 lb ae/a	C							
Tough	0.39 lb ai/a	C							
Callisto	0.094 lb ai/a	C							
Aatrex	1.2 lb ai/a	C							
N Pak AMS	2.5 % v/v	C							
LSD P=.05				18.4	.	8.1	15.6	20.5	.
Standard Deviation				10.9	0.0	4.8	9.3	12.2	0.0
CV				13.33	0.0	5.29	10.38	14.65	0.0
Levene's F				0.459	0.00	0.954	0.829	0.294	0.00
Levene's Prob(F)				0.921	.	0.516	0.628	0.985	.
Skewness				-0.4467	-3.4528*	-3.1478*	-2.8358*	-0.1294	-3.4528*
Kurtosis				-0.0372	10.4158*	8.8075*	7.1941*	-0.3591	10.4158*
Replicate F				1.042	0.000	1.331	0.186	1.169	0.000
Replicate Prob(F)				0.3681	1.0000	0.2817	0.8317	0.3279	1.0000
Treatment F				1.667	0.000	92.512	24.464	1.149	0.000
Treatment Prob(F)				0.1386	1.0000	0.0001	0.0001	0.3699	1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

\* Adjusted means

Excluded replicate 2 in column 4

Could not calculate LSD (% mean diff) for columns 2,4,5,10,12,16,20 because error mean square = 0.



The Ohio State University

## Assessment of Pyridate + Mesotrione in Roundup Ready Corn

Trial ID: 18TOUGHMES      Location: Western Branch G-6      Trial Year: 2018  
 Protocol ID: 18TOUGHMES      Investigator: Dr. Mark M. Loux  
 Project ID:      Study Director:  
    Sponsor Contact:

Pest Type	W Weed	W Weed
Pest Code	ABUTH	IPOHE
Pest Name	velvetleaf	ivy-leaf morni>
Crop Code		
Crop Name		
Rating Date	Jun-26-2018	Jun-26-2018
Rating Type	CONTRO	CONTRO
Rating Unit	%	%
Number of Subsamples	1	1
Days After First/Last Applic.	56 28	56 28
Trt-Eval Interval	28 DA-C	28 DA-C
Days After Emergence	47 DE-1	47 DE-1
Number of Decimals	0	0

Trt No.	Treatment Name	Rate	Unit	Appl Code	21*	22*
1	UTC				0 c	0 b
2	Dual II Magnum	1.27 lb ai/a	A		100 a	100 a
	Roundup PowerMax	1.13 lb ae/a	B			
	Aatrex	1.2 lb ai/a	B			
	N Pak AMS	2.5 % v/v	B			
3	Dual II Magnum	1.27 lb ai/a	A		80 b	73 a
	Tough	0.312 lb ai/a	B			
	Aatrex	1.2 lb ai/a	B			
	N Pak AMS	2.5 % v/v	B			
4	Dual II Magnum	1.27 lb ai/a	A		100 a	100 a
	Roundup PowerMax	1.13 lb ae/a	C			
	Aatrex	1.2 lb ai/a	C			
	N Pak AMS	2.5 % v/v	C			
5	Dual II Magnum	1.27 lb ai/a	A		100 a	90 a
	Roundup PowerMax	1.13 lb ae/a	C			
	Tough	0.312 lb ai/a	C			
	Aatrex	1.2 lb ai/a	C			
	N Pak AMS	2.5 % v/v	C			
6	Dual II Magnum	1.27 lb ai/a	A		100 a	93 a
	Roundup PowerMax	1.13 lb ae/a	B			
	Callisto	0.094 lb ai/a	B			
	N Pak AMS	2.5 % v/v	B			
7	Dual II Magnum	1.27 lb ai/a	A		100 a	93 a
	Roundup PowerMax	1.13 lb ae/a	B			
	Tough	0.313 lb ai/a	B			
	Callisto	0.094 lb ai/a	B			
	N Pak AMS	2.5 % v/v	B			
8	Dual II Magnum	1.27 lb ai/a	A		100 a	100 a
	Roundup PowerMax	1.13 lb ae/a	C			
	Callisto	0.094 lb ai/a	C			
	N Pak AMS	2.5 % v/v	C			
9	Dual II Magnum	1.27 lb ai/a	A		100 a	82 a
	Roundup PowerMax	1.13 lb ae/a	C			
	Tough	0.313 lb ai/a	C			
	Callisto	0.094 lb ai/a	C			
	N Pak AMS	2.5 % v/v	C			
10	Dual II Magnum	1.27 lb ai/a	A		100 a	100 a
	Roundup PowerMax	1.13 lb ae/a	B			
	Callisto	0.094 lb ai/a	B			
	Aatrex	1.2 lb ai/a	B			
	N Pak AMS	2.5 % v/v	B			
11	Dual II Magnum	1.27 lb ai/a	A		100 a	100 a
	Roundup PowerMax	1.13 lb ae/a	B			
	Tough	0.313 lb ai/a	B			
	Callisto	0.094 lb ai/a	B			
	Aatrex	1.2 lb ai/a	B			
	N Pak AMS	2.5 % v/v	B			

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

\* Adjusted means

Excluded replicate 2 in column 4

Could not calculate LSD (% mean diff) for columns 2,4,5,10,12,16,20 because error mean square = 0.

The Ohio State University

## Assessment of Pyridate + Mesotrione in Roundup Ready Corn

Trial ID: 18TOUGHMES      Location: Western Branch G-6      Trial Year: 2018  
 Protocol ID: 18TOUGHMES      Investigator: Dr. Mark M. Loux  
 Project ID:      Study Director:  
                                  Sponsor Contact:

Pest Type	W Weed	W Weed
Pest Code	ABUTH	IPOHE
Pest Name	velvetleaf	ivy-leaf morni>
Crop Code		
Crop Name		
Rating Date	Jun-26-2018	Jun-26-2018
Rating Type	CONTRO	CONTRO
Rating Unit	%	%
Number of Subsamples	1	1
Days After First/Last Applic.	56 28	56 28
Trt-Eval Interval	28 DA-C	28 DA-C
Days After Emergence	47 DE-1	47 DE-1
Number of Decimals	0	0

Trt No.	Treatment Name	Rate	Unit	Appl Code	21*	22*
12	Dual II Magnum	1.27 lb ai/a	A		100 a	97 a
	Roundup PowerMax	1.13 lb ae/a	C			
	Callisto	0.094 lb ai/a	C			
	Aatrex	1.2 lb ai/a	C			
	N Pak AMS	2.5 % v/v	C			
13	Dual II Magnum	1.27 lb ai/a	A		100 a	97 a
	Roundup PowerMax	1.13 lb ae/a	C			
	Tough	0.313 lb ai/a	C			
	Callisto	0.094 lb ai/a	C			
	Aatrex	1.2 lb ai/a	C			
	N Pak AMS	2.5 % v/v	C			
14	Dual II Magnum	1.27 lb ai/a	A		100 a	100 a
	Roundup PowerMax	1.13 lb ae/a	C			
	Tough	0.39 lb ai/a	C			
	Callisto	0.094 lb ai/a	C			
	Aatrex	1.2 lb ai/a	C			
	N Pak AMS	2.5 % v/v	C			
	LSD P=.05				7.8	17.3
	Standard Deviation				4.6	10.3
	CV				5.06	11.79
	Levene's F				1.00	1.115
	Levene's Prob(F)				0.477	0.387
	Skewness				-3.1631*	-2.5832*
	Kurtosis				8.8709*	6.0382*
	Replicate F				1.000	1.325
	Replicate Prob(F)				0.3816	0.2831
	Treatment F				100.923	19.663
	Treatment Prob(F)				0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

\* Adjusted means

Excluded replicate 2 in column 4

Could not calculate LSD (% mean diff) for columns 2,4,5,10,12,16,20 because error mean square = 0.

The Ohio State University

## Assessment of Pyridate + Mesotrione in Roundup Ready Corn

Trial ID: 18TOUGHMES      Location: Western Branch G-6      Trial Year: 2018  
Protocol ID: 18TOUGHMES      Investigator: Dr. Mark M. Loux  
Project ID:      Study Director:  
Sponsor Contact:

Pest Type

W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop

Pest Code

SETFA, Setaria faberi, Giant foxtail = US

AMBTR, Ambrosia trifida, Giant ragweed = US

CHEAL, Chenopodium album, common lambsquarters = US

ABUTH, Abutilon theophrasti, velvetleaf = US

IPOHE, Ipomoea hederacea, ivy-leaf morning glory = US

Crop Code

ZEAMX, BCOR, Zea mays, Corn = US

Rating Type

PHYLMA = phytotoxicity - leaf malformation

PHYSTU = phytotoxicity - stunting

PHYNEC = phytotoxicity - necrosis /burn

PHYCHL = phytotoxicity - chlorosis

CONTRO = control / burndown or knockdown

Rating Unit

% = percent