

The Ohio State University

Moccason MTZ soybean broadleaf/grass weed control  
 Trial ID: 18 E3PRPOST Location: G-8 East End Trial Year: 2018  
 Protocol ID: 18 E3PRPOST Investigator: Dr. Mark M. Loux  
 Project ID: Mocz-06-US-OH-1847TLE Study Director: Bryan Reeb  
 Sponsor Contact: Tony Estes, UPI

**General Trial Information**

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

**Discipline:** H herbicide  
**Initiation Date:** Apr-30-2018

**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 °:** 39.85802 N  
**Longitude of LL Corner °:** 83.6769 W  
**Altitude of LL Corner, Unit:** 1088.00 FT

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

**Contacts**

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

**Cooperator/Landowner**

**Cooperator:** Tony Estes  
**Organization:** UPI  
**E-mail:** tony.estes@uniphos.com

**Crop Description**

**Crop 1:** GLXMA Glycine max Soybean  
**Variety:** Enlist 29E16L7 **BBCH Scale:** BSOY  
**Description:** Enlist E3

**Planting Date:** Apr-30-2018  
**Planting Method:** PLANTD planted  
**Planting Equipment:** FE field equipment  
**Emergence Date:** May-11-2018

**Planting Rate, Unit:** 139500 S/A  
**Depth, Unit:** 1.25 IN  
**Row Spacing, Unit:** 15 IN  
**Soil Temperature, Unit:** 60 F  
**Soil Moisture:** NORMAL normal, adequate  
**Seed Bed:** MEDTRA medium/trashy

**Pest Description**

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

**Pest 2 Type:** W **Code:** RANAB *Ranunculus abortivus*  
**Common Name:** Smallflower buttercup

**Pest 3 Type:** W **Code:** CAPBP *Capsella bursa-pastoris*  
**Common Name:** Shepherd's purse

**Pest 4 Type:** W **Code:** TAROF *Taraxacum officinale*  
**Common Name:** Dandelion

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

**Pest 6 Type:** W **Code:** ECHCG *Echinochloa crus-galli*  
**Common Name:** Common barnyard grass

**Pest 7 Type:** W **Code:** AMBTR *Ambrosia trifida*  
**Common Name:** Giant ragweed

**Pest 8 Type:** W **Code:** CHEAL *Chenopodium album*  
**Common Name:** common lambsquarters

**Pest 9 Type:** W **Code:** ABUTH *Abutilon theophrasti*  
**Common Name:** velvetleaf

**Pest10 Type:** W **Code:** TAROF *Taraxacum officinale*  
**Common Name:** Dandelion

**Pest11 Type:** W **Code:** ERICA *Erigeron canadensis*  
**Common Name:** Canada horseweed

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**Site and Design**

Treated Plot Width: 6.67 FT  
 Treated Plot Length: 30 FT  
 Treated Plot Area: 200.1 FT<sup>2</sup> Treatments: 4  
 Replications: 3

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

**No. Previous Crop Year**

1. Soybeans 2017

**Soil Description**

Description Name: G-8  
 % Sand: 27 % OM: 2.4 Texture: SICL silty clay loam  
 % Silt: 47 pH: 6.2 Soil Name: Crosby Silt Loam  
 % Clay: 17 CEC: 13.4 Fert. Level: G good  
 Soil Drainage: F fair

**Analyzed By:****Application Description**

	A	B
Application Date:	Apr-30-2018	Jun-6-2018
Appl. Start Time:	1:00 PM	11:30 AM
Appl. Stop Time:	1:20 PM	11:45 AM
Interval to Prev. Appl., Unit:		37 DAYS
Application Method:	SPRAY	SPRAY
Application Timing:	ATPLAN	2-4" WEEDS
Application Placement:	BROSOL	BROFOL
Applied By:		Fisher
Air Temperature, Unit:	64 F	71 F
% Relative Humidity:	25	55
Wind Velocity, Unit:	4 MPH	6 MPH
Wind Direction:	SW	S
Dew Presence (Y/N):	N no	N no
Soil Temperature, Unit:	60 F	71 F
Soil Moisture:	NORMAL	DRY
% Cloud Cover:	20	90
Next Moisture Occurred On:	May-3-2018	Jun-8-2018
Time to Next Moisture, Unit:	3 DAY	2 DAY
Moisture 1 Week after Appl.:	0.71 IN	1.1 IN

**Crop Stage At Each Application**

	A	B
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:		BBCH
Stage Majority, Percent:		15 100
Height, Unit:		7.5 IN
Height Minimum, Maximum:		6 8

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## Pest Stage At Each Application

	A	B
<b>Pest 1 Code, Type, Scale:</b>	LAMPU W	LAMPU W
<b>Stage Majority, Percent:</b>	65	100
<b>Height, Unit:</b>	4 IN	
<b>Height Minimum, Maximum:</b>	3	6
<b>Pest 2 Code, Type, Scale:</b>	RANAB W	RANAB W
<b>Stage Majority, Percent:</b>	65	100
<b>Diameter, Unit:</b>	4 IN	
<b>Height, Unit:</b>	5 IN	
<b>Height Minimum, Maximum:</b>	4	6
<b>Pest 3 Code, Type, Scale:</b>	CAPBP W	CAPBP W
<b>Stage Majority, Percent:</b>	65	100
<b>Diameter, Unit:</b>	7 IN	
<b>Height, Unit:</b>	5 IN	
<b>Height Minimum, Maximum:</b>	5	6
<b>Pest 4 Code, Type, Scale:</b>	TAROF W	TAROF W
<b>Stage Majority, Percent:</b>	65	100
<b>Diameter, Unit:</b>	7.5 IN	
<b>Height, Unit:</b>	3.5 IN	
<b>Height Minimum, Maximum:</b>	3	4
<b>Pest 5 Code, Type, Scale:</b>	SETFA W	SETFA W
<b>Stage Majority, Percent:</b>		15 100
<b>Height, Unit:</b>		14 IN
<b>Height Minimum, Maximum:</b>		12 16
<b>Pest 6 Code, Type, Scale:</b>	ECHCG W	ECHCG W
<b>Stage Majority, Percent:</b>		23 100
<b>Height, Unit:</b>		8 IN
<b>Height Minimum, Maximum:</b>		8 10
<b>Pest 7 Code, Type, Scale:</b>	AMBTR W	AMBTR W
<b>Stage Majority, Percent:</b>		19 100
<b>Height, Unit:</b>		10 IN
<b>Height Minimum, Maximum:</b>		10 12
<b>Pest 8 Code, Type, Scale:</b>	CHEAL W	CHEAL W
<b>Stage Majority, Percent:</b>		19 100
<b>Height, Unit:</b>		6 IN
<b>Height Minimum, Maximum:</b>		5 10
<b>Pest 9 Code, Type, Scale:</b>	ABUTH W	ABUTH W
<b>Stage Majority, Percent:</b>		18 100
<b>Height, Unit:</b>		10 IN
<b>Height Minimum, Maximum:</b>		8 16
<b>Pest 10 Code, Type, Scale:</b>	TAROF W	TAROF W
<b>Stage Majority, Percent:</b>		19 100
<b>Height, Unit:</b>		4 IN
<b>Height Minimum, Maximum:</b>		4 6
<b>Pest 11 Code, Type, Scale:</b>	ERICA W	ERICA W

## Application Equipment

	A	B
<b>Appl. Equipment:</b>	6' BACKPACK	6' BACKPACK
<b>Equipment Type:</b>	BACCAI	BACCAI
<b>Operation Pressure, Unit:</b>	44 PSI	48 PSI
<b>Nozzle Type:</b>	AIXR	AIXR
<b>Nozzle Size:</b>	11015	11015
<b>Nozzle Spacing, Unit:</b>	18 IN	18 IN
<b>Nozzles/Row:</b>	4	4
<b>Boom Length, Unit:</b>	6.67 FT	6.67 FT
<b>Boom Height, Unit:</b>	20 IN	20 IN
<b>Ground Speed, Unit:</b>	3 MPH	3 MPH
<b>Carrier:</b>	WATER	WATER
<b>Spray Volume, Unit:</b>	15 gal/ac	15 gal/ac
<b>Mix Size, Unit:</b>	1 L	1 L
<b>Propellant:</b>	COMCO2	COMCO2

Date	By	Notes
Apr-30-2018	Dobbels	overlay burndown of Enlist Duo
Jun-6-2018	Fisher	Stage 19 ERICA in check, Avg 12", 8-12"

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Pest Type	O Other	W Weed	W Weed	W Weed	O Other	W Weed				
Pest Code		SETFA	ECHCG	ERICA		SETFA				
Pest Scientific Name		Setaria faberi	Echinochloa cr>	Erigeron canad>		Setaria faberi				
Pest Name		Giant foxtail	Common barnyar>	Canada horsewe>		Giant foxtail				
Rating Date	Jun-7-2018	Jun-7-2018	Jun-7-2018	Jun-7-2018	Jun-20-2018	Jun-20-2018				
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO				
Rating Unit	%	%	%	%	%	%				
Number of Subsamples	1	1	1	1	1	1				
Days After First/Last Applic.	38 1	38 1	38 1	38 1	51 14	51 14				
Plant-Eval Interval	38 DP-1	38 DP-1	38 DP-1	38 DP-1	51 DP-1	51 DP-1				
Days After Emergence	27 DE-1	27 DE-1	27 DE-1	27 DE-1	40 DE-1	40 DE-1				
Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit Code	1*	2*	3*	4*	5*	6*
1	UTC				0.0 -	0.0 b	0.0 b	0.0 -	0.0 -	0.0 -
2	Moccasin MTZ	32 oz/a		A	1.7 -	51.7 a	46.7 a	100.0 -	0.0 -	100.0 -
	Interline	32 oz/a		B						
	Enlist One	2 pt/a		B						
	N-pak ams	1.5 qt/a		B						
3	Moccasin MTZ	40 oz/a		A	1.7 -	40.0 a	40.0 a	100.0	0.0 -	100.0
	Interline	32 oz/a		B						
	Enlist One	2 pt/a		B						
	N-pak ams	1.5 qt/a		B						
4	Tripzin ZC	42 oz/a		A	2.0 -	46.7 a	43.3 a	100.0 -	0.0 -	100.0 -
	Interline	32 oz/a		B						
	Enlist One	2 pt/a		B						
	N-pak ams	1.5 qt/a		B						
	LSD P=.05				2.85	34.88	29.22	.	.	.
	Standard Deviation				1.42	17.46	14.62	0.00	0.00	0.00
	CV				106.8	50.49	45.0	0.0	0.0	0.0
	Levene's F				0.60	0.704	0.444	0.00	0.00	0.00
	Levene's Prob(F)				0.633	0.576	0.728	.	.	.
	Skewness				0.1803	0.2677	-0.036	-0.8571	.	-0.8571
	Kurtosis				-2.1696	-0.9165	-1.1706	-1.7143	.	-1.7143
	Replicate F				0.781	2.713	2.455	0.000	0.000	0.000
	Replicate Prob(F)				0.4996	0.1448	0.1664	1.0000	1.0000	1.0000
	Treatment F				1.205	5.456	6.688	0.000	0.000	0.000
	Treatment Prob(F)				0.3852	0.0377	0.0243	1.0000	1.0000	1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)

t=Mean descriptions are reported in transformed data units, and are not de-transformed.

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 4,5,6,8,9,10,11,14,15,16 because error mean square = 0.

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Pest Type	W Weed	W Weed	W Weed	W Weed	O Other	W Weed				
Pest Code	ECHCG	AMBTR	ERICA	AMARE		SETFA				
Pest Scientific Name	Echinochloa cr>	Ambrosia trifi>	Erigeron canad>	Amaranthus ret>		Setaria faberi				
Pest Name	Common barnyar>	Giant ragweed	Canada horsewe>	Redroot pigweed		Giant foxtail				
Rating Date	Jun-20-2018	Jun-20-2018	Jun-20-2018	Jun-20-2018	Jul-2-2018	Jul-2-2018				
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO				
Rating Unit	%	%	%	%	%	%				
Number of Subsamples	1	1	1	1	1	1				
Days After First/Last Applic.	51 14	51 14	51 14	51 14	63 26	63 26				
Plant-Eval Interval	51 DP-1	51 DP-1	51 DP-1	51 DP-1	63 DP-1	63 DP-1				
Days After Emergence	40 DE-1	40 DE-1	40 DE-1	40 DE-1	52 DE-1	52 DE-1				
Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit Code	7*	8*	9*	10*	11*	12*
1	UTC				0.0 c	0.0 -	0.0 -	0.0 -	0.0 -	0.0 b
2	Moccasin MTZ	32 oz/a		A	88.4 ab	100.0 -	100.0 -	99.3	0.0 -	91.0 a
	Interline	32 oz/a		B						
	Enlist One	2 pt/a		B						
	N-pak ams	1.5 qt/a		B						
3	Moccasin MTZ	40 oz/a		A	85.0 b	100.0	100.0	100.0 -	0.0 -	90.0 a
	Interline	32 oz/a		B						
	Enlist One	2 pt/a		B						
	N-pak ams	1.5 qt/a		B						
4	Tripzin ZC	42 oz/a		A	91.8 a	100.0 -	100.0 -	100.0 -	0.0 -	91.7 a
	Interline	32 oz/a		B						
	Enlist One	2 pt/a		B						
	N-pak ams	1.5 qt/a		B						
	LSD P=.05				3.88 - 4.32	.	.	.	.	9.28
	Standard Deviation				1.86t	0.00	0.00	0.00	0.00	4.65
	CV				3.52t	0.0	0.0	0.0	0.0	6.82
	Levene's F				0.676	0.00	0.00	0.00	0.00	0.986
	Levene's Prob(F)				0.591	.	.	.	.	0.447
	Skewness				-1.2939*	-0.8571	-0.8571	-0.8571	.	-1.2741
	Kurtosis				-0.3574	-1.7143	-1.7143	-1.7143	.	-0.3871
	Replicate F				1.774	0.000	0.000	0.000	0.000	2.853
	Replicate Prob(F)				0.2482	1.0000	1.0000	1.0000	1.0000	0.1346
	Treatment F				1079.723	0.000	0.000	0.000	0.000	287.120
	Treatment Prob(F)				0.0001	1.0000	1.0000	1.0000	1.0000	0.0001

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Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	ECHCG	AMBTR	ERICA	AMARE
Pest Scientific Name	Echinochloa cr>	Ambrosia trifi>	Erigeron canad>	Amaranthus ret>
Pest Name	Common barnyar>	Giant ragweed	Canada horsewe>	Redroot pigweed
Rating Date	Jul-2-2018	Jul-2-2018	Jul-2-2018	Jul-2-2018
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Days After First/Last Applic.	63 26	63 26	63 26	63 26
Plant-Eval Interval	63 DP-1	63 DP-1	63 DP-1	63 DP-1
Days After Emergence	52 DE-1	52 DE-1	52 DE-1	52 DE-1
Trt Treatment	Other	Other	Appl	
No. Name	Rate	Rate	Unit Code	
1 UTC				13*
2 Moccasin MTZ	32 oz/a		A	14*
Interline	32 oz/a		B	15*
Enlist One	2 pt/a		B	16*
N-pak ams	1.5 qt/a		B	
3 Moccasin MTZ	40 oz/a		A	
Interline	32 oz/a		B	
Enlist One	2 pt/a		B	
N-pak ams	1.5 qt/a		B	
4 Tripzin ZC	42 oz/a		A	
Interline	32 oz/a		B	
Enlist One	2 pt/a		B	
N-pak ams	1.5 qt/a		B	
LSD P=.05		14.33		
Standard Deviation		7.17	0.00	0.00
CV		10.92	0.0	0.0
Levene's F		0.849	0.00	0.00
Levene's Prob(F)		0.505	.	.
Skewness		-1.1622	-0.8571	-0.8571
Kurtosis		-0.501	-1.7143	-1.7143
Replicate F		2.339	0.000	0.000
Replicate Prob(F)		0.1774	1.0000	1.0000
Treatment F		113.127	0.000	0.000
Treatment Prob(F)		0.0001	1.0000	1.0000

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Pest Type

O, Other, G-BYRO7, G-OthStg = Other animal or nematode  
W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop

Pest Code

SETFA, Setaria faberi, Giant foxtail = US  
ECHCG, Echinochloa crus-galli, Common barnyard grass = US  
ERICA, Erigeron canadensis, Canada horseweed = US  
AMBTR, Ambrosia trifida, Giant ragweed = US  
AMARE, Amaranthus retroflexus, Redroot pigweed = US

Rating Type

PHYGEN = phytotoxicity - general / injury  
CONTRO = control / burndown or knockdown

Rating Unit

% = percent

Plant-Eval Interval

38 DP-1 = 1 GLXMA Apr-30-2018  
51 DP-1 = 1 GLXMA Apr-30-2018  
63 DP-1 = 1 GLXMA Apr-30-2018