

# The Ohio State University

## Multiple MOA programs in No-Till soybeans

Trial ID: 16 MULTIMOA  
 Protocol ID: 16 MULTIMOA  
 Project ID: Trcr-06-US-OH-16-09TLE

Location: Western Branch Trial Year: 2016  
 Investigator: Dr. Mark M. Loux  
 Study Director: Bryan Reeb  
 Sponsor Contact: Tony Estes, UPI

### General Trial Information

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

**Latitude of LL Corner °:** 39.85884 N  
**Longitude of LL Corner °:** 83.67305 W  
**Altitude of LL Corner, Unit:** 1090.00 FT

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

### Contacts

**Study Director:** Bryan Reeb

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

### Crop Description

**Crop 1:** GLXMA Glycine max Soybean  
**Variety:** CZ 3383RY  
**Description:** Credenze Roundup Ready

**BBCH Scale:** BSOY

**Planting Rate, Unit:** 175000 S/A  
**Depth, Unit:** 1.5 IN  
**Row Spacing, Unit:** 15 IN  
**Soil Moisture:** SLIDRY slightly dry  
**Seed Bed:** FINTRA fine/trashy

**Planting Date:** 4-25-2016  
**Planting Method:** PLANTD planted  
**Planting Equipment:** PP Plot Planter  
**Emergence Date:** 5-11-2016

### Pest Description

- Pest 1 Type:** W **Code:** ERYRE *Erysimum repandum*  
**Common Name:** Bushy wallflower
- Pest 2 Type:** W **Code:** LAMPU *Lamium purpureum*  
**Common Name:** Purple deadnettel
- Pest 3 Type:** W **Code:** RANAB *Ranunculus abortivus*  
**Common Name:** Smallflower buttercup
- Pest 4 Type:** W **Code:** LEPCA *Lepidium campestre*  
**Common Name:** Field pepperweed
- Pest 5 Type:** W **Code:** ERICA *Conyza canadensis*  
**Common Name:** Canada horseweed
- Pest 6 Type:** W **Code:** SENGL *Senecio glabellus*  
**Common Name:** Cressleaf groundsel
- Pest 7 Type:** W **Code:** VERAG *Veronica agrestis*  
**Common Name:** Field speedwell
- Pest 8 Type:** W **Code:** CAPBP *Capsella bursa-pastoris*  
**Common Name:** Shepherd's purse
- Pest 9 Type:** W **Code:** AMBTR *Ambrosia trifida*  
**Common Name:** Giant ragweed
- Pest10 Type:** W **Code:** SETFA *Setaria faberi*  
**Common Name:** Giant foxtail
- Pest11 Type:** W **Code:** CHEAL *Chenopodium album*  
**Common Name:** Common lambsquarters
- Pest12 Type:** W **Code:** AMARE *Amaranthus retroflexus*  
**Common Name:** Redroot pigweed
- Pest13 Type:** W

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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> Replications: 3  
 Treatments: 10

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

### Soil Description

Description Name: F-9 West  
 % OM: 2  
 pH: 6.2  
 CEC: 9.7

Texture: SICL silty clay loam  
 Soil Name: Kokomo  
 Fert. Level: G good  
 Soil Drainage: G good

### Application Description

	A	B	C
Application Date:	4-20-2016	4-26-2016	5-31-2016
Appl. Start Time:	9:00 AM	9:00 AM	1:00 PM
Appl. Stop Time:	9:30 AM	9:30 AM	1:30 PM
Interval to Prev. Appl., Unit:	6 DAYS	6 DAYS	35 DAYS
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	7 EPP	ATPL	POST 1-3"WDS
Application Placement:	BROSOI	BROSOI	BROFOL
Applied By:	ACKLEY	LAMB	BOLTE
Air Temperature, Unit:	55 F	69.8 F	87 F
% Relative Humidity:	42	60	36
Wind Velocity, Unit:	8.3 MPH	9 MPH	0.5 MPH
Wind Direction:	EAST	W	S
Dew Presence (Y/N):	N no	N no	N no
Soil Temperature, Unit:	50 F	58 F	72 F
Soil Moisture:	DRY	DRY	MOIST
% Cloud Cover:	30	15	10
Next Moisture Occurred On:	4-21-2016	4-28-2016	6-4-2016
Time to Next Moisture, Unit:	1 DAY	2 DAYS	4 DAYS

### Crop Stage At Each Application

	A	B	C
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:			BBCH
Stage Majority, Percent:			12 100
Height, Unit:			3 IN
Height Minimum, Maximum:			1 3

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### Pest Stage At Each Application

	A	B	C
<b>Pest 1 Code, Type, Scale:</b>	ERYRE W	ERYRE W	ERYRE W
<b>Stage Majority, Percent:</b>	65 100		
<b>Height, Unit:</b>	12 IN		
<b>Height Minimum, Maximum:</b>	10 12		
<b>Density, Unit:</b>	3 m2		
<b>Pest 2 Code, Type, Scale:</b>	LAMPU W	LAMPU W	LAMPU W
<b>Stage Majority, Percent:</b>	67 100		
<b>Height, Unit:</b>	7 IN		
<b>Height Minimum, Maximum:</b>	6 8		
<b>Density, Unit:</b>	4 m2		
<b>Pest 3 Code, Type, Scale:</b>	RANAB W	RANAB W	RANAB W
<b>Stage Majority, Percent:</b>	65 100		
<b>Height, Unit:</b>	7 IN		
<b>Height Minimum, Maximum:</b>	6 8		
<b>Density, Unit:</b>	5.3 m2		
<b>Pest 4 Code, Type, Scale:</b>	LEPCA W	LEPCA W	LEPCA W
<b>Stage Majority, Percent:</b>	65 100		
<b>Height, Unit:</b>	12 IN		
<b>Height Minimum, Maximum:</b>	10 12		
<b>Density, Unit:</b>	4 m2		
<b>Pest 5 Code, Type, Scale:</b>	ERICA W	ERICA W	ERICA W
<b>Stage Majority, Percent:</b>	19 100		19 100
<b>Diameter, Unit:</b>	2 IN		2 IN
<b>Height, Unit:</b>	1 IN		2 IN
<b>Height Minimum, Maximum:</b>	0.5 2		2 3
<b>Density, Unit:</b>	6.6 m2		
<b>Pest 6 Code, Type, Scale:</b>	SENGL W	SENGL W	SENGL W
<b>Stage Majority, Percent:</b>	60 100		
<b>Height, Unit:</b>	10 IN		
<b>Height Minimum, Maximum:</b>	10 12		
<b>Density, Unit:</b>	5.3 m2		
<b>Pest 7 Code, Type, Scale:</b>	VERAG W	VERAG W	VERAG W
<b>Stage Majority, Percent:</b>	19 100		
<b>Diameter, Unit:</b>	3 IN		
<b>Height, Unit:</b>	1 IN		
<b>Height Minimum, Maximum:</b>	1 2		
<b>Density, Unit:</b>	8 m2		
<b>Pest 8 Code, Type, Scale:</b>	CAPBP W	CAPBP W	CAPBP W
<b>Stage Majority, Percent:</b>	65 100		
<b>Height, Unit:</b>	10 IN		
<b>Height Minimum, Maximum:</b>	10 12		
<b>Density, Unit:</b>	3 m2		
<b>Pest 9 Code, Type, Scale:</b>	AMBTR W	AMBTR W	AMBTR W
<b>Stage Majority, Percent:</b>	14 100		16 100
<b>Height, Unit:</b>	1 IN		3 IN
<b>Height Minimum, Maximum:</b>	1 2		2 5
<b>Density, Unit:</b>	9.3 m2		
<b>Pest10 Code, Type, Scale:</b>	SETFA W	SETFA W	SETFA W
<b>Stage Majority, Percent:</b>			13 100
<b>Height, Unit:</b>			3 IN
<b>Height Minimum, Maximum:</b>			2 5
<b>Pest11 Code, Type, Scale:</b>	CHEAL W	CHEAL W	CHEAL W
<b>Stage Majority, Percent:</b>			16 100
<b>Height, Unit:</b>			2 IN
<b>Height Minimum, Maximum:</b>			1 2
<b>Pest12 Code, Type, Scale:</b>	AMARE W	AMARE W	AMARE W
<b>Stage Majority, Percent:</b>			12 100
<b>Height, Unit:</b>			1 IN
<b>Height Minimum, Maximum:</b>			0.5 1.5
<b>Pest13 Code, Type, Scale:</b>	W	W	W

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### Application Equipment

	A	B	C
<b>Appl. Equipment:</b>	6' BACKPACK	6' BACKPACK	10' BACKPACK
<b>Equipment Type:</b>	BACCAI	BACCAI	BACCAI
<b>Operation Pressure, Unit:</b>	44 PSI	44 PSI	44 PSI
<b>Nozzle Type:</b>	AIXR	AIXR	AIXR
<b>Nozzle Size:</b>	11015	11015	11015
<b>Nozzle Spacing, Unit:</b>	18 IN	18 IN	18 IN
<b>Nozzles/Row:</b>	4	4	6
<b>Boom Length, Unit:</b>	6.67 FT	6.67 FT	10 FT
<b>Boom Height, Unit:</b>	20 IN	20 IN	20 IN
<b>Ground Speed, Unit:</b>	3 MPH	3 MPH	3 MPH
<b>Carrier:</b>	WATER	WATER	WATER
<b>Spray Volume, Unit:</b>	15 gal/ac	15 gal/ac	15 gal/ac
<b>Mix Size, Unit:</b>	1 liters	1 liters	2 liters
<b>Propellant:</b>	COMCO2	COMCO2	COMCO2

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	LAMPU	SENGL	ERYRE	ERICA	AMBTR
Pest Scientific Name	Lamium purpure>	Senecio glabel>	Erysimum repa>	Conyza canad>	Ambrosia trifi>
Pest Name	Purple deadnet>	Cressleaf grou>	Bushy wallflow>	Canada horsewe>	Giant ragweed
Rating Date	5-12-2016	5-12-2016	5-12-2016	5-12-2016	5-12-2016

Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
SE Group No.	1	2	3	4	5
Days After First/Last Applic.	22 16	22 16	22 16	22 16	22 16
Plant-Eval Interval	17 DP-1	17 DP-1	17 DP-1	17 DP-1	17 DP-1
Days After Emergence	1 DE-1	1 DE-1	1 DE-1	1 DE-1	1 DE-1

Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit Code	1*	2*	3*	4*	5*
1	Gramoxone SL	3 pt/a		A	91.7 b	93.3 a	100.0 a	75.0 c	81.7 b
	NIS	0.3 pt/a		A					
	N-pak ams	1.8 qt/a		A					
2	Gramoxone SL	3 pt/a		A	100.0 a	96.7 a	100.0 a	100.0 a	90.0 ab
	Tricor	0.376 pt/a		A					
	NIS	0.3 pt/a		A					
	N-pak ams	1.8 qt/a		A					
	Tricor	0.56 pt/a		B					
	Satellite Hydrocap	2 pt/a		B					
	Roundup Power Max	32 oz/a		C					
	Ultra Blazer	1.5 pt/a		C					
	Dual II Magnum	21.8 oz/a		C					
	N-pak ams	1.8 qt/a		C					
3	Gramoxone SL	3 pt/a		A	100.0 a	96.7 a	100.0 a	100.0 a	96.7 a
	NIS	0.3 pt/a		A					
	N-pak ams	1.8 qt/a		A					
	Tricor	0.75 pt/a		B					
	Satellite Hydrocap	2 pt/a		B					
	Roundup Power Max	32 oz/a		C					
	Ultra Blazer	1.5 pt/a		C					
	Dual II Magnum	21.8 oz/a		C					
	N-pak ams	1.8 qt/a		C					
4	Gramoxone SL	3 pt/a		A	100.0 a	93.3 a	100.0 a	93.3 b	90.0 ab
	NIS	0.3 pt/a		A					
	N-pak ams	1.8 qt/a		A					
	Tricor	0.75 pt/a		B					
	Satellite Hydrocap	2 pt/a		B					
	Roundup Power Max	32 oz/a		C					
	Ultra Blazer	1.5 pt/a		C					
	N-pak ams	1.8 qt/a		C					

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Pest Scientific Name	Lamium purpure>	Senecio glabel>	Erysimum repa>	Conyza canad>	Ambrosia trifi>
Pest Name	Purple deadnet>	Cressleaf grou>	Bushy wallflow>	Canada horsewe>	Giant ragweed
Rating Date	5-12-2016	5-12-2016	5-12-2016	5-12-2016	5-12-2016
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
SE Group No.	1	2	3	4	5
Days After First/Last Applic.	22 16	22 16	22 16	22 16	22 16
Plant-Eval Interval	17 DP-1	17 DP-1	17 DP-1	17 DP-1	17 DP-1
Days After Emergence	1 DE-1	1 DE-1	1 DE-1	1 DE-1	1 DE-1

Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit Code	1*	2*	3*	4*	5*
5	Gramoxone SL	3 pt/a		A	100.0 a	98.3 a	100.0 a	100.0 a	95.0 a
	Boundary	2 pt/a		A					
	NIS	0.3 pt/a		A					
	N-pak ams	1.8 qt/a		A					
	Authority MAXX	6 oz/a		B					
	Roundup Power Max	32 oz/a		C					
	Select Max	9 oz/a		C					
	NIS	0.15 qt/a		C					
	N-pak ams	1.8 qt/a		C					
6	Gramoxone SL	3 pt/a		A	100.0 a	99.3 a	100.0 a	100.0 a	97.7 a
	Authority MAXX	6 oz/a		A					
	NIS	0.3 pt/a		A					
	N-pak ams	1.8 qt/a		A					
	Tricor	0.75 pt/a		B					
	Satellite Hydrocap	2 pt/a		B					
	Roundup Power Max	32 oz/a		C					
	N-pak ams	1.8 qt/a		C					
7	Gramoxone SL	3 pt/a		A	100.0 a	80.0 b	100.0 a	100.0 a	88.3 ab
	Sharpen	1 oz/a		A					
	MSO	0.6 qt/a		A					
	N-pak ams	1.8 qt/a		A					
	Tricor	0.75 pt/a		B					
	Satellite Hydrocap	2 pt/a		B					
	Roundup Power Max	32 oz/a		C					
	Flexstar	1 pt/a		C					
	MSO	0.6 qt/a		C					
	N-pak ams	1.8 qt/a		C					
8	Roundup Weathermax	32 oz/a		A	100.0 a	91.7 a	100.0 a	100.0 a	91.7 ab
	2,4-D Ester	1 pt/a		A					
	Tricor	1.25 pt/a		A					
	N-pak ams	1.8 qt/a		A					
	Roundup Power Max	32 oz/a		C					
	Select Max	9 oz/a		C					
	NIS	0.15 qt/a		C					
	N-pak ams	1.8 qt/a		C					
9	Roundup Weathermax	32 oz/a		A	100.0 a	100.0 a	100.0 a	100.0 a	86.7 ab
	2,4-D Ester	1 pt/a		A					
	Tricor	1.25 pt/a		A					
	Sharpen	1 oz/a		A					
	MSO	0.6 qt/a		A					
	N-pak ams	1.8 qt/a		A					
	Roundup Power Max	32 oz/a		C					
	Select Max	9 oz/a		C					
	NIS	0.15 qt/a		C					
	N-pak ams	1.8 qt/a		C					

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	LAMPU	SENGL	ERYRE	ERICA	AMBTR			
Pest Scientific Name	Lamium purpure>	Senecio glabel>	Erysimum repa>	Conyza canad>	Ambrosia trifi>			
Pest Name	Purple deadnet>	Cressleaf grou>	Bushy wallflow>	Canada horsewe>	Giant ragweed			
Rating Date	5-12-2016	5-12-2016	5-12-2016	5-12-2016	5-12-2016			
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO			
Rating Unit	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1			
SE Group No.	1	2	3	4	5			
Days After First/Last Applic.	22 16	22 16	22 16	22 16	22 16			
Plant-Eval Interval	17 DP-1	17 DP-1	17 DP-1	17 DP-1	17 DP-1			
Days After Emergence	1 DE-1	1 DE-1	1 DE-1	1 DE-1	1 DE-1			
Trt Treatment No. Name	Other Rate	Other Rate	Appl Unit Code	1*	2*	3*	4*	5*
10 UTC				0.0 c	0.0 c	0.0 b	0.0 d	0.0 c
LSD P=.05				1.57	10.84	.	6.58	13.30
Standard Deviation				0.91	6.32	0.00	3.84	7.76
CV				1.02	7.44	0.0	4.42	9.49
Bartlett's X2				0.0	10.082	0.0	1.232	11.095
P(Bartlett's X2)				.	0.184	.	0.267	0.196
Skewness				-2.7714*	-2.5046*	-2.8091*	-2.4782*	-2.439*
Kurtosis				6.1664*	5.1438*	6.3081*	4.9714*	4.9189*
Replicate F				1.000	0.416	0.000	1.755	1.357
Replicate Prob(F)				0.3874	0.6657	1.0000	0.2013	0.2825
Treatment F				3558.334	69.339	0.000	202.321	42.318
Treatment Prob(F)				0.0001	0.0001	1.0000	0.0001	0.0001

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Pest Code	SETFA	CHEAL	ERICA	SENGL	SETFA	AMBTR				
Pest Scientific Name	Setaria faberi	Chenopodium al>	Conyza canad>	Senecio glabel>	Setaria faberi	Ambrosia trifi>				
Pest Name	Giant foxtail	Common lambsqu>	Canada horsewe>	Cressleaf grou>	Giant foxtail	Giant ragweed				
Rating Date	5-12-2016	5-12-2016	5-26-2016	5-26-2016	5-26-2016	5-26-2016				
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO				
Rating Unit	%	%	%	%	%	%				
Number of Subsamples	1	1	1	1	1	1				
SE Group No.	6	7	8	9	10	11				
Days After First/Last Applic.	22 16	22 16	36 30	36 30	36 30	36 30				
Plant-Eval Interval	17 DP-1	17 DP-1	31 DP-1	31 DP-1	31 DP-1	31 DP-1				
Days After Emergence	1 DE-1	1 DE-1	15 DE-1	15 DE-1	15 DE-1	15 DE-1				
Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit Code	6*	7*	8*	9*	10*	11*
1	Gramoxone SL	3 pt/a		A	80.0 c	91.7 b	43.3 b	83.3 a	0.0 e	6.7 c
	NIS	0.3 pt/a		A						
	N-pak ams	1.8 qt/a		A						
2	Gramoxone SL	3 pt/a		A	100.0 a	100.0 a	91.7 a	83.3 a	61.7 cd	53.3 ab
	Tricor	0.376 pt/a		A						
	NIS	0.3 pt/a		A						
	N-pak ams	1.8 qt/a		A						
	Tricor	0.56 pt/a		B						
	Satellite Hydrocap	2 pt/a		B						
	Roundup Power Max	32 oz/a		C						
	Ultra Blazer	1.5 pt/a		C						
	Dual II Magnum	21.8 oz/a		C						
	N-pak ams	1.8 qt/a		C						
3	Gramoxone SL	3 pt/a		A	100.0 a	100.0 a	100.0 a	93.3 a	78.3 bc	80.0 a
	NIS	0.3 pt/a		A						
	N-pak ams	1.8 qt/a		A						
	Tricor	0.75 pt/a		B						
	Satellite Hydrocap	2 pt/a		B						
	Roundup Power Max	32 oz/a		C						
	Ultra Blazer	1.5 pt/a		C						
	Dual II Magnum	21.8 oz/a		C						
	N-pak ams	1.8 qt/a		C						
4	Gramoxone SL	3 pt/a		A	95.0 ab	100.0 a	90.0 a	93.3 a	70.0 cd	43.3 b
	NIS	0.3 pt/a		A						
	N-pak ams	1.8 qt/a		A						
	Tricor	0.75 pt/a		B						
	Satellite Hydrocap	2 pt/a		B						
	Roundup Power Max	32 oz/a		C						
	Ultra Blazer	1.5 pt/a		C						
	N-pak ams	1.8 qt/a		C						

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Pest Name	Giant foxtail	Common lambsqu>	Canada horsewe>	Cressleaf grou>	Giant foxtail	Giant ragweed				
Rating Date	5-12-2016	5-12-2016	5-26-2016	5-26-2016	5-26-2016	5-26-2016				
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO				
Rating Unit	%	%	%	%	%	%				
Number of Subsamples	1	1	1	1	1	1				
SE Group No.	6	7	8	9	10	11				
Days After First/Last Applic.	22 16	22 16	36 30	36 30	36 30	36 30				
Plant-Eval Interval	17 DP-1	17 DP-1	31 DP-1	31 DP-1	31 DP-1	31 DP-1				
Days After Emergence	1 DE-1	1 DE-1	15 DE-1	15 DE-1	15 DE-1	15 DE-1				
Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit Code	6*	7*	8*	9*	10*	11*
5	Gramoxone SL	3 pt/a		A	100.0 a	100.0 a	100.0 a	100.0 a	100.0 a	61.7 ab
	Boundary	2 pt/a		A						
	NIS	0.3 pt/a		A						
	N-pak ams	1.8 qt/a		A						
	Authority MAXX	6 oz/a		B						
	Roundup Power Max	32 oz/a		C						
	Select Max	9 oz/a		C						
	NIS	0.15 qt/a		C						
	N-pak ams	1.8 qt/a		C						
6	Gramoxone SL	3 pt/a		A	100.0 a	100.0 a	96.7 a	100.0 a	96.0 ab	86.7 a
	Authority MAXX	6 oz/a		A						
	NIS	0.3 pt/a		A						
	N-pak ams	1.8 qt/a		A						
	Tricor	0.75 pt/a		B						
	Satellite Hydrocap	2 pt/a		B						
	Roundup Power Max	32 oz/a		C						
	N-pak ams	1.8 qt/a		C						
7	Gramoxone SL	3 pt/a		A	90.0 b	100.0 a	100.0 a	95.0 a	65.0 cd	56.7 ab
	Sharpen	1 oz/a		A						
	MSO	0.6 qt/a		A						
	N-pak ams	1.8 qt/a		A						
	Tricor	0.75 pt/a		B						
	Satellite Hydrocap	2 pt/a		B						
	Roundup Power Max	32 oz/a		C						
	Flexstar	1 pt/a		C						
	MSO	0.6 qt/a		C						
	N-pak ams	1.8 qt/a		C						
8	Roundup Weathermax	32 oz/a		A	90.0 b	100.0 a	96.7 a	100.0 a	56.7 d	53.3 ab
	2,4-D Ester	1 pt/a		A						
	Tricor	1.25 pt/a		A						
	N-pak ams	1.8 qt/a		A						
	Roundup Power Max	32 oz/a		C						
	Select Max	9 oz/a		C						
	NIS	0.15 qt/a		C						
	N-pak ams	1.8 qt/a		C						
9	Roundup Weathermax	32 oz/a		A	98.3 ab	100.0 a	100.0 a	100.0 a	70.0 cd	60.0 ab
	2,4-D Ester	1 pt/a		A						
	Tricor	1.25 pt/a		A						
	Sharpen	1 oz/a		A						
	MSO	0.6 qt/a		A						
	N-pak ams	1.8 qt/a		A						
	Roundup Power Max	32 oz/a		C						
	Select Max	9 oz/a		C						
	NIS	0.15 qt/a		C						
	N-pak ams	1.8 qt/a		C						





# The Ohio State University

## Multiple MOA programs in No-Till soybeans

Trial ID: 16 MULTIMOA  
 Protocol ID: 16 MULTIMOA  
 Project ID: Trcr-06-US-OH-16-09TLE

Location: Western Branch Trial Year: 2016  
 Investigator: Dr. Mark M. Loux  
 Study Director: Bryan Reeb  
 Sponsor Contact: Tony Estes, UPI

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed					
Pest Code	CHEAL	SETFA	AMBTR	CHEAL	AMARE					
Pest Scientific Name	Chenopodium al>	Setaria faberi	Ambrosia trifi>	Chenopodium al>	Amaranthus ret>					
Pest Name	Common lambsqu>	Giant foxtail	Giant ragweed	Common lambsqu>	Redroot pigweed					
Rating Date	5-26-2016	6-16-2016	6-16-2016	6-16-2016	6-16-2016					
Rating Type	CONTRO	PHYLMA	CONTRO	CONTRO	CONTRO					
Rating Unit	%	%	%	%	%					
Number of Subsamples	1	1	1	1	1					
SE Group No.	12	13	14	15	17					
Days After First/Last Applic.	36 30	57 16	57 16	57 16	57 16					
Plant-Eval Interval	31 DP-1	52 DP-1	52 DP-1	52 DP-1	52 DP-1					
Days After Emergence	15 DE-1	36 DE1	36 DE-1	36 DE-1	36 DE-1					
Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit Code	12*	13*	14*	15*	16*	17*
1	Gramoxone SL	3 pt/a		A	20.0 c	0.0 d	0.0 d	0.0 c	0.0 c	0.0 c
	NIS	0.3 pt/a		A						
	N-pak ams	1.8 qt/a		A						
2	Gramoxone SL	3 pt/a		A	70.0 b	2.3 b	88.3 ab	81.7 ab	88.3 ab	100.0 a
	Tricor	0.376 pt/a		A						
	NIS	0.3 pt/a		A						
	N-pak ams	1.8 qt/a		A						
	Tricor	0.56 pt/a		B						
	Satellite Hydrocap	2 pt/a		B						
	Roundup Power Max	32 oz/a		C						
	Ultra Blazer	1.5 pt/a		C						
	Dual II Magnum	21.8 oz/a		C						
	N-pak ams	1.8 qt/a		C						
3	Gramoxone SL	3 pt/a		A	83.3 ab	4.0 a	96.7 a	85.0 a	95.0 ab	100.0 a
	NIS	0.3 pt/a		A						
	N-pak ams	1.8 qt/a		A						
	Tricor	0.75 pt/a		B						
	Satellite Hydrocap	2 pt/a		B						
	Roundup Power Max	32 oz/a		C						
	Ultra Blazer	1.5 pt/a		C						
	Dual II Magnum	21.8 oz/a		C						
	N-pak ams	1.8 qt/a		C						
4	Gramoxone SL	3 pt/a		A	86.7 ab	1.3 bc	80.0 bc	71.7 ab	85.0 b	71.7 b
	NIS	0.3 pt/a		A						
	N-pak ams	1.8 qt/a		A						
	Tricor	0.75 pt/a		B						
	Satellite Hydrocap	2 pt/a		B						
	Roundup Power Max	32 oz/a		C						
	Ultra Blazer	1.5 pt/a		C						
	N-pak ams	1.8 qt/a		C						

# The Ohio State University

## Multiple MOA programs in No-Till soybeans

Trial ID: 16 MULTIMOA  
 Protocol ID: 16 MULTIMOA  
 Project ID: Trcr-06-US-OH-16-09TLE

Location: Western Branch Trial Year: 2016  
 Investigator: Dr. Mark M. Loux  
 Study Director: Bryan Reeb  
 Sponsor Contact: Tony Estes, UPI

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed					
Pest Code	CHEAL	SETFA	AMBTR	CHEAL	AMARE					
Pest Scientific Name	Chenopodium al-	Setaria faberi	Ambrosia trifi>	Chenopodium al>	Amaranthus ret>					
Pest Name	Common lambsqu>	Giant foxtail	Giant ragweed	Common lambsqu>	Redroot pigweed					
Rating Date	5-26-2016	6-16-2016	6-16-2016	6-16-2016	6-16-2016					
Rating Type	CONTRO	PHYLMA	CONTRO	CONTRO	CONTRO					
Rating Unit	%	%	%	%	%					
Number of Subsamples	1	1	1	1	1					
SE Group No.	12	13	14	15	17					
Days After First/Last Applic.	36 30	57 16	57 16	57 16	57 16					
Plant-Eval Interval	31 DP-1	52 DP-1	52 DP-1	52 DP-1	52 DP-1					
Days After Emergence	15 DE-1	36 DE1	36 DE-1	36 DE-1	36 DE-1					
Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit Code	12*	13*	14*	15*	16*	17*
5	Gramoxone SL	3 pt/a		A	100.0 a	0.0 d	93.3 a	76.7 ab	100.0 a	100.0 a
	Boundary	2 pt/a		A						
	NIS	0.3 pt/a		A						
	N-pak ams	1.8 qt/a		A						
	Authority MAXX	6 oz/a		B						
	Roundup Power Max	32 oz/a		C						
	Select Max	9 oz/a		C						
	NIS	0.15 qt/a		C						
	N-pak ams	1.8 qt/a		C						
6	Gramoxone SL	3 pt/a		A	100.0 a	0.0 d	90.0 ab	81.7 ab	100.0 a	100.0 a
	Authority MAXX	6 oz/a		A						
	NIS	0.3 pt/a		A						
	N-pak ams	1.8 qt/a		A						
	Tricor	0.75 pt/a		B						
	Satellite Hydrocap	2 pt/a		B						
	Roundup Power Max	32 oz/a		C						
	N-pak ams	1.8 qt/a		C						
7	Gramoxone SL	3 pt/a		A	100.0 a	0.7 cd	73.3 c	71.7 ab	97.7 ab	94.3 a
	Sharpen	1 oz/a		A						
	MSO	0.6 qt/a		A						
	N-pak ams	1.8 qt/a		A						
	Tricor	0.75 pt/a		B						
	Satellite Hydrocap	2 pt/a		B						
	Roundup Power Max	32 oz/a		C						
	Flexstar	1 pt/a		C						
	MSO	0.6 qt/a		C						
	N-pak ams	1.8 qt/a		C						
8	Roundup Weathermax	32 oz/a		A	100.0 a	0.0 d	68.3 c	76.7 ab	96.0 ab	71.7 b
	2,4-D Ester	1 pt/a		A						
	Tricor	1.25 pt/a		A						
	N-pak ams	1.8 qt/a		A						
	Roundup Power Max	32 oz/a		C						
	Select Max	9 oz/a		C						
	NIS	0.15 qt/a		C						
	N-pak ams	1.8 qt/a		C						
9	Roundup Weathermax	32 oz/a		A	100.0 a	0.0 d	78.3 bc	66.7 b	93.3 ab	78.3 b
	2,4-D Ester	1 pt/a		A						
	Tricor	1.25 pt/a		A						
	Sharpen	1 oz/a		A						
	MSO	0.6 qt/a		A						
	N-pak ams	1.8 qt/a		A						
	Roundup Power Max	32 oz/a		C						
	Select Max	9 oz/a		C						
	NIS	0.15 qt/a		C						
	N-pak ams	1.8 qt/a		C						



# The Ohio State University

## Multiple MOA programs in No-Till soybeans

Trial ID: 16 MULTIMOA  
 Protocol ID: 16 MULTIMOA  
 Project ID: Trcr-06-US-OH-16-09TLE

Location: Western Branch Trial Year: 2016  
 Investigator: Dr. Mark M. Loux  
 Study Director: Bryan Reeb  
 Sponsor Contact: Tony Estes, UPI

Pest Type	W Weed
Pest Code	ERICA
Pest Scientific Name	Conyza canadens>
Pest Name	Canada horsewe>
Rating Date	6-16-2016
Rating Type	CONTRO
Rating Unit	%
Number of Subsamples	1 1
SE Group No.	18 19
Days After First/Last Applic.	57 16
Plant-Eval Interval	52 DP-1
Days After Emergence	36 DE-1

Trt No.	Treatment Name	Other Rate	Other Rate Unit	Appl Code	18*	19
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1	Gramoxone SL	3 pt/a		A	0.0 c	
	NIS	0.3 pt/a		A		
	N-pak ams	1.8 qt/a		A		
2	Gramoxone SL	3 pt/a		A	88.3 b	
	Tricor	0.376 pt/a		A		
	NIS	0.3 pt/a		A		
	N-pak ams	1.8 qt/a		A		
	Tricor	0.56 pt/a		B		
	Satellite Hydrocap	2 pt/a		B		
	Roundup Power Max	32 oz/a		C		
	Ultra Blazer	1.5 pt/a		C		
	Dual II Magnum	21.8 oz/a		C		
	N-pak ams	1.8 qt/a		C		
3	Gramoxone SL	3 pt/a		A	95.0 ab	
	NIS	0.3 pt/a		A		
	N-pak ams	1.8 qt/a		A		
	Tricor	0.75 pt/a		B		
	Satellite Hydrocap	2 pt/a		B		
	Roundup Power Max	32 oz/a		C		
	Ultra Blazer	1.5 pt/a		C		
	Dual II Magnum	21.8 oz/a		C		
	N-pak ams	1.8 qt/a		C		
4	Gramoxone SL	3 pt/a		A	90.0 b	
	NIS	0.3 pt/a		A		
	N-pak ams	1.8 qt/a		A		
	Tricor	0.75 pt/a		B		
	Satellite Hydrocap	2 pt/a		B		
	Roundup Power Max	32 oz/a		C		
	Ultra Blazer	1.5 pt/a		C		
	N-pak ams	1.8 qt/a		C		

# The Ohio State University

## Multiple MOA programs in No-Till soybeans

Trial ID: 16 MULTIMOA  
 Protocol ID: 16 MULTIMOA  
 Project ID: Trcr-06-US-OH-16-09TLE

Location: Western Branch Trial Year: 2016  
 Investigator: Dr. Mark M. Loux  
 Study Director: Bryan Reeb  
 Sponsor Contact: Tony Estes, UPI

Pest Type W Weed  
 Pest Code ERICA  
 Pest Scientific Name Conyza canadensis  
 Pest Name Canada horseweed  
 Rating Date 6-16-2016  
 Rating Type CONTRO  
 Rating Unit %  
 Number of Subsamples 1 1  
 SE Group No. 18 19  
 Days After First/Last Applic. 57 16  
 Plant-Eval Interval 52 DP-1  
 Days After Emergence 36 DE-1

Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit Code	18*	19
5	Gramoxone SL	3 pt/a		A	100.0 a	
	Boundary	2 pt/a		A		
	NIS	0.3 pt/a		A		
	N-pak ams	1.8 qt/a		A		
	Authority MAXX	6 oz/a		B		
	Roundup Power Max	32 oz/a		C		
	Select Max	9 oz/a		C		
	NIS	0.15 qt/a		C		
	N-pak ams	1.8 qt/a		C		
6	Gramoxone SL	3 pt/a		A	98.3 a	
	Authority MAXX	6 oz/a		A		
	NIS	0.3 pt/a		A		
	N-pak ams	1.8 qt/a		A		
	Tricor	0.75 pt/a		B		
	Satellite Hydrocap	2 pt/a		B		
	Roundup Power Max	32 oz/a		C		
	N-pak ams	1.8 qt/a		C		
7	Gramoxone SL	3 pt/a		A	100.0 a	
	Sharpen	1 oz/a		A		
	MSO	0.6 qt/a		A		
	N-pak ams	1.8 qt/a		A		
	Tricor	0.75 pt/a		B		
	Satellite Hydrocap	2 pt/a		B		
	Roundup Power Max	32 oz/a		C		
	Flexstar	1 pt/a		C		
	MSO	0.6 qt/a		C		
	N-pak ams	1.8 qt/a		C		
8	Roundup Weathermax	32 oz/a		A	100.0 a	
	2,4-D Ester	1 pt/a		A		
	Tricor	1.25 pt/a		A		
	N-pak ams	1.8 qt/a		A		
	Roundup Power Max	32 oz/a		C		
	Select Max	9 oz/a		C		
	NIS	0.15 qt/a		C		
	N-pak ams	1.8 qt/a		C		
9	Roundup Weathermax	32 oz/a		A	100.0 a	
	2,4-D Ester	1 pt/a		A		
	Tricor	1.25 pt/a		A		
	Sharpen	1 oz/a		A		
	MSO	0.6 qt/a		A		
	N-pak ams	1.8 qt/a		A		
	Roundup Power Max	32 oz/a		C		
	Select Max	9 oz/a		C		
	NIS	0.15 qt/a		C		
	N-pak ams	1.8 qt/a		C		

# The Ohio State University

## Multiple MOA programs in No-Till soybeans

Trial ID: 16 MULTIMOA  
 Protocol ID: 16 MULTIMOA  
 Project ID: Trcr-06-US-OH-16-09TLE

Location: Western Branch Trial Year: 2016  
 Investigator: Dr. Mark M. Loux  
 Study Director: Bryan Reeb  
 Sponsor Contact: Tony Estes, UPI

Pest Type	W	Weed		
Pest Code		ERICA		
Pest Scientific Name		Conyza canadensis		
Pest Name		Canada horseweed		
Rating Date		6-16-2016		
Rating Type		CONTRO		
Rating Unit		%		
Number of Subsamples		1 1		
SE Group No.		18 19		
Days After First/Last Applic.		57 16		
Plant-Eval Interval		52 DP-1		
Days After Emergence		36 DE-1		
Trt Treatment	Other	Other	Appl	
No. Name	Rate	Rate	Unit Code	
10 UTC				0.0 c
LSD P=.05				7.79 .
Standard Deviation				4.54 .
CV				5.89 .
Bartlett's X2				3.062 .
P(Bartlett's X2)				0.382 .
Skewness				-1.5066* .
Kurtosis				0.3974 .
Replicate F				1.493
Replicate Prob(F)				0.2512
Treatment F				242.964
Treatment Prob(F)				0.0001

# The Ohio State University

## Multiple MOA programs in No-Till soybeans

Trial ID: 16 MULTIMOA  
Protocol ID: 16 MULTIMOA  
Project ID: Trcr-06-US-OH-16-09TLE

Location: Western Branch Trial Year: 2016  
Investigator: Dr. Mark M. Loux  
Study Director: Bryan Reeb  
Sponsor Contact: Tony Estes, UPI

### Pest Type

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

### Pest Code

LAMPU, Lamium purpureum, = US  
SENGL, Senecio glabellus, = US  
ERYRE, Erysimum repandum, = US  
ERICA, Conyza canadensis, = ERICA, Conyza canadensis,  
AMBTR, Ambrosia trifida, = US  
SETFA, Setaria faberi, = US  
CHEAL, Chenopodium album, = US  
AMARE, Amaranthus retroflexus, = US

### Rating Type

CONTRO = control / burndown or knockdown  
PHYLMA = phytotoxicity - leaf malformation

### Rating Unit

% = percent

### Plant-Eval Interval

17 DP-1 = 1 GLXMA 4-25-2016  
31 DP-1 = 1 GLXMA 4-25-2016  
52 DP-1 = 1 GLXMA 4-25-2016