

# Ohio State University Horticulture and Crop Science

## Evaluate tank-mix and timing for improved marestail control with Kixor; and Linuron burndown treatments

Title No. 2:  
 Trial ID: 11NTS2      Protocol ID: 11NTS2  
 Location:              Study Director: Bryan Reeb  
 Project ID: 11NTS2    Investigator: Dr. Mark M. Loux  
                                  Sponsor Contact: Caren Judge, BASF

### General Trial Information

**Study Director:** Bryan Reeb      **Title:** Research Technician  
**Investigator:** Dr. Mark M. Loux    **Title:** Professor

### Trial Location

**City:** South Charleston      **Latitude of LL Corner °:** 39.85849 N  
**State/Prov.:** Ohio              **Longitude of LL Corner °:** -83.66886 W  
**Postal Code:** 45368  
**Country:** USA

### Crop Description

**Crop 1:** GLXMA Glycine max      Soybean  
**Variety:** AG 3631              **Description:** Round up Ready  
**BBCH Scale:** BSOY              **Planting Date:** 6/15/11  
**Planting Method:** SEEDED seeded      **Rate, Unit:** 197000 S/A  
**Depth, Unit:** 0.75 IN  
**Row Spacing, Unit:** 15 IN  
**Seed Bed:** CLODDY cloddy  
**Soil Moisture:** NO-TIL

### Pest Description

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

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

**Pest 3 Type:** W    **Code:** TAROF Taraxacum officinale  
**Common Name:** Common dandelion

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

**Pest 5 Type:** W    **Code:** ERICA Conyza canadensis  
**Common Name:** Canada horseweed

**Pest 6 Type:** W    **Code:** CHEAL Chenopodium album  
**Common Name:** Common lambsquarters

**Pest 7 Type:** W    **Code:** RANAB Ranunculus abortivus  
**Common Name:** Smallflower buttercup

**Pest 8 Type:** W    **Code:** ERICA Conyza canadensis  
**Common Name:** Canada horseweed

### Site and Design

**Plot Width, Unit:** 6.67 FT              **Site Type:** FIELD field  
**Plot Length, Unit:** 30 FT              **Experimental Unit:** 1 PLOT plot  
**Plot Area, Unit:** 200.1 FT2              **Tillage Type:** NOTILL no-till  
**Replications:** 3                      **Study Design:** RACOB L Randomized Complete Block (RCB)  
**Untreated Arrangement:** INCLUDED single control randomized in each block

### Soil Description

**Description Name:** ENT W-6  
**% OM:** 2.6              **Texture:** SICL silty clay loam  
**pH:** 7.1                  **Soil Name:** Kokomo  
**CEC:** 17.8              **Fert. Level:** G good  
**Soil Drainage:** G good

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## Application Description

	A	B	C
Application Date:	6/9/11	6/15/11	7/21/11
Time of Day:	8:30 AM	9:15 AM	11:00 A.M
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	7 EPP	ATPL	
Application Placement:	BROFOL	BROFOL	BROFOL
Air Temperature, Unit:	81 F	63.4 F	90 F
% Relative Humidity:	58	70	69
Wind Velocity, Unit:	2.5 MPH	8.0 MPH	6 MPH
Wind Direction:	SW	ESE	W
Dew Presence (Y/N):	N no	N no	N no
Soil Temperature, Unit:			79 F
Soil Moisture:	DRY	BRY	MOIST
% Cloud Cover:	5	90	15
Next Rain Occurred On:	6/10/11	7/2/11	7/24/11

## 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:			14
Stage Maximum, Percent:			15
Height, Unit:			12 IN
Height Minimum, Maximum:			12 13

## Pest Stage At Each Application

	A	B	C
Pest 1 Code, Type, Scale:	LAMPU W	LAMPU W	LAMPU W
Stage Majority, Percent:	65 100		
Height, Unit:	3 IN		
Pest 2 Code, Type, Scale:	STEME W	STEME W	STEME W
Stage Majority, Percent:	65 100		
Height, Unit:	3 IN		
Pest 3 Code, Type, Scale:	TAROF W	TAROF W	TAROF W
Stage Majority, Percent:	65 100	67 100	
Diameter, Unit:	12 IN	12 IN	
Pest 4 Code, Type, Scale:	AMBTR W	AMBTR W	AMBTR W
Stage Majority, Percent:	19 100	19 100	19 100
Height, Unit:	18 IN	14 IN	12 IN
Height Minimum, Maximum:	15 20	10 14	12 12
Density, Unit:	4 M2	4 M2	4 M2
Pest 5 Code, Type, Scale:	ERICA W	ERICA W	ERICA W
Stage Majority, Percent:	19 100	15 100	
Diameter, Unit:	3 IN	2 IN	
Height, Unit:	3 IN	1 2	10 IN
Height Minimum, Maximum:			4 12
Density, Unit:	93.33 M2	93.33 M2	93.33 M2
Pest 6 Code, Type, Scale:	CHEAL W	CHEAL W	CHEAL W
Stage Majority, Percent:	14 100		
Height, Unit:	1 IN		
Pest 7 Code, Type, Scale:	RANAB W	RANAB W	RANAB W
Stage Majority, Percent:		18 100	
Height, Unit:		4 IN	
Height Minimum, Maximum:		3 4	
Pest 8 Code, Type, Scale:	ERICA W	ERICA W	ERICA W
Stage Majority, Percent:		30 100	
Height, Unit:		7 IN	
Height Minimum, Maximum:		4 7	

## Application Equipment

	A	B	C
Appl. Equipment:	Backpack		
Equipment Type:	SPRBAC		
Operating Pressure, Unit:	44 PSI		
Nozzle Type:	DG		
Nozzle Size:	11002		
Nozzle Spacing, Unit:	18 IN		
Boom Length, Unit:	10 FT		
Boom Height, Unit:	18 IN		
Ground Speed, Unit:	3 MPH		
Carrier:	WATER		
Spray Volume, Unit:	15 gal/ac		
Mix Size, Unit:	0.5 gallons		
Propellant:	COMCO2		

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## Evaluate tank-mix and timing for improved marestalk control with Kixor; and Linuron burndown treatments

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 Location: Study Director: Bryan Reeb  
 Project ID: 11NTS2 Investigator: Dr. Mark M. Loux  
 Sponsor Contact: Caren Judge, BASF

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	AMBTR	VERAG	ERICA	AMBTR	VERAG
Pest Scientific Name	Ambrosia trifi>	Veronica agres>	Conyza canaden>	Ambrosia trifi>	Veronica agres>
Pest Name	Giant ragweed	Field speedwell	Canada horsewe>	Giant ragweed	Field speedwell
Rating Date	6/15/11	6/15/11	6/15/11	6/23/11	6/23/11
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Days After First/Last Applic.	6 6	6 6	6 6	14 8	14 8
Trt-Eval Interval	6 DA-A	6 DA-A	6 DA-A	14 DA-A	14 DA-A
Plant-Eval Interval	0 DP-1	0 DP-1	0 DP-1	8 DP-1	8 DP-1
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Other Rate	Other Rate	Appl Unit Code	1	2	3	4	5
1	Roundup Power Max	4.5	22 oz/a		A	43	63	43	90	100
	1 2,4-D Ester	4	1 pt/a		A					
	1 NIS	100	0.15 qt/a		A					
	1 N-pak ams	100	3 qt/a		A					
2	Sharpen	2.85	1 oz/a		A	83	73	83	95	100
	2 Roundup Power Max	4.5	22 oz/a		A					
	2 MSO	100	0.6 qt/a		A					
	2 N-pak ams	100	3 qt/a		A					
3	Sharpen	2.85	1.5 oz/a		A	85	72	75	100	100
	3 Roundup Power Max	4.5	22 oz/a		A					
	3 MSO	100	0.6 qt/a		A					
	3 N-pak ams	100	3 qt/a		A					
4	Verdict	5.57	5 oz/a		A	90	70	85	100	100
	4 Roundup Power Max	4.5	22 oz/a		A					
	4 MSO	100	0.6 qt/a		A					
	4 N-pak ams	100	3 qt/a		A					
5	Sharpen	2.85	1 oz/a		A	85	63	72	100	100
	5 Roundup Power Max	4.5	22 oz/a		A					
	5 2,4-D Ester	4	1 pt/a		A					
	5 MSO	100	0.6 qt/a		A					
	5 N-pak ams	100	3 qt/a		A					
6	Valor XLT @ 3.0 oz					75	67	47	100	100
	6 Valor SX	51	1.76 oz/a		A					
	6 Classic	25	1.24 oz/a		A					
	6 Roundup Power Max	4.5	22 oz/a		A					
	6 2,4-D Ester	4	1 pt/a		A					
	6 MSO	100	0.6 qt/a		A					
	6 N-pak ams	100	3 qt/a		A					
7	Sharpen	2.85	1 oz/a		B	0	0	0	100	100
	7 Roundup Power Max	4.5	22 oz/a		B					
	7 MSO	100	0.6 qt/a		B					
	7 N-pak ams	100	3 qt/a		B					
8	Sharpen	2.85	1.5 oz/a		B	0	0	0	99	100
	8 Roundup Power Max	4.5	22 oz/a		B					
	8 MSO	100	0.6 qt/a		B					
	8 N-pak ams	100	3 qt/a		B					
9	Verdict	5.57	5 oz/a		B	0	0	0	100	100
	9 Roundup Power Max	4.5	22 oz/a		B					
	9 MSO	100	0.6 qt/a		B					
	9 N-pak ams	100	3 qt/a		B					
10	Authority First	70	3 oz/a		B	0	0	0	88	100
	10 Roundup Power Max	4.5	22 oz/a		B					

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed					
Pest Code	AMBTR	VERAG	ERICA	AMBTR	VERAG					
Pest Scientific Name	Ambrosia trifi>	Veronica agres>	Conyza canaden>	Ambrosia trifi>	Veronica agres>					
Pest Name	Giant ragweed	Field speedwell	Canada horsewe>	Giant ragweed	Field speedwell					
Rating Date	6/15/11	6/15/11	6/15/11	6/23/11	6/23/11					
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO					
Rating Unit	%	%	%	%	%					
Number of Subsamples	1	1	1	1	1					
Days After First/Last Applic.	6 6	6 6	6 6	14 8	14 8					
Trt-Eval Interval	6 DA-A	6 DA-A	6 DA-A	14 DA-A	14 DA-A					
Plant-Eval Interval	0 DP-1	0 DP-1	0 DP-1	8 DP-1	8 DP-1					
Number of Decimals	0	0	0	0	0					
Trt Treatment No. Name	Form Conc	Other Rate	Other Rate	Unit Code	Appl Code	1	2	3	4	5
10 MSO	100	0.6 qt/a		B						
10 N-pak ams	100	3 qt/a		B						
11 Lorox	4	32 oz/a		B		0	0	0	93	100
11 Ignite	2.34	16 oz/a		B						
11 N-pak ams	100	3 qt/a		B						
12 Lorox	4	32 oz/a		B		0	0	0	98	100
12 Ignite	2.34	22 oz/a		B						
12 N-pak ams	100	3 qt/a		B						
13 Lorox	4	16 oz/a		B		0	0	0	98	100
13 Ignite	2.34	22 oz/a		B						
13 N-pak ams	100	3 qt/a		B						
14 Lorox	4	32 oz/a		B		0	0	0	100	100
14 Gramoxone Inteon	2	2 pt/a		B						
14 N-pak ams	100	3 qt/a		B						
14 COC	100	0.6 qt/a		B						
LSD (P=.05)						6.9	9.0	9.1	6.6	0.0
Standard Deviation						4.1	5.4	5.4	3.9	0.0
CV						12.46	18.46	18.73	4.04	0.0
Bartlett's X2						2.225	5.537	3.828	10.336	0.0
P(Bartlett's X2)						0.694	0.236	0.574	0.111	.
Replicate F						4.263	2.239	2.616	3.663	0.000
Replicate Prob(F)						0.0250	0.1268	0.0922	0.0397	1.0000
Treatment F						297.390	127.161	135.789	3.150	0.000
Treatment Prob(F)						0.0001	0.0001	0.0001	0.0062	1.0000

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	AMBTR	ERICA	AMBTR	ERICA
Pest Scientific Name	Conyza canadensis> Ambrosia trifida>		Conyza canadensis> Ambrosia trifida>		Conyza canadensis>
Pest Name	Canada horseweed> Giant ragweed		Canada horseweed> Giant ragweed		Canada horseweed>
Rating Date	6/23/11	7/20/11	7/20/11	8/17/11	8/17/11
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Days After First/Last Applic.	14 8	41 35	41 35	69 27	69 27
Trt-Eval Interval	14 DA-A	-1 DA-C	-1 DA-C	27 DA-C	27 DA-C
Plant-Eval Interval	8 DP-1	35 DP-1	35 DP-1	63 DP-1	63 DP-1
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Other Rate	Other Rate	Appl Unit	Code	6	7	8	9	10
1	Roundup Power Max	4.5	22 oz/a		A		37	90	33	100	53
1	2,4-D Ester	4	1 pt/a		A						
1	NIS	100	0.15 qt/a		A						
1	N-pak ams	100	3 qt/a		A						
2	Sharpen	2.85	1 oz/a		A		77	90	63	100	60
2	Roundup Power Max	4.5	22 oz/a		A						
2	MSO	100	0.6 qt/a		A						
2	N-pak ams	100	3 qt/a		A						
3	Sharpen	2.85	1.5 oz/a		A		53	63	47	100	53
3	Roundup Power Max	4.5	22 oz/a		A						
3	MSO	100	0.6 qt/a		A						
3	N-pak ams	100	3 qt/a		A						
4	Verdict	5.57	5 oz/a		A		93	73	77	100	78
4	Roundup Power Max	4.5	22 oz/a		A						
4	MSO	100	0.6 qt/a		A						
4	N-pak ams	100	3 qt/a		A						
5	Sharpen	2.85	1 oz/a		A		87	100	72	100	73
5	Roundup Power Max	4.5	22 oz/a		A						
5	2,4-D Ester	4	1 pt/a		A						
5	MSO	100	0.6 qt/a		A						
5	N-pak ams	100	3 qt/a		A						
6	Valor XLT @ 3.0 oz						60	99	65	100	75
6	Valor SX	51	1.76 oz/a		A						
6	Classic	25	1.24 oz/a		A						
6	Roundup Power Max	4.5	22 oz/a		A						
6	2,4-D Ester	4	1 pt/a		A						
6	MSO	100	0.6 qt/a		A						
6	N-pak ams	100	3 qt/a		A						
7	Sharpen	2.85	1 oz/a		B		83	99	62	100	68
7	Roundup Power Max	4.5	22 oz/a		B						
7	MSO	100	0.6 qt/a		B						
7	N-pak ams	100	3 qt/a		B						
8	Sharpen	2.85	1.5 oz/a		B		92	66	58	100	77
8	Roundup Power Max	4.5	22 oz/a		B						
8	MSO	100	0.6 qt/a		B						
8	N-pak ams	100	3 qt/a		B						
9	Verdict	5.57	5 oz/a		B		83		57	100	68
9	Roundup Power Max	4.5	22 oz/a		B						
9	MSO	100	0.6 qt/a		B						
9	N-pak ams	100	3 qt/a		B						
10	Authority First	70	3 oz/a		B		50	88	77	100	85
10	Roundup Power Max	4.5	22 oz/a		B						

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	ERICA	AMBTR	ERICA	AMBTR	ERICA		
Pest Scientific Name	Conyza canadensis> Ambrosia trifida>		Conyza canadensis> Ambrosia trifida>		Conyza canadensis>		
Pest Name	Canada horseweed> Giant ragweed		Canada horseweed> Giant ragweed		Canada horseweed>		
Rating Date	6/23/11	7/20/11	7/20/11	8/17/11	8/17/11		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1		
Days After First/Last Applic.	14 8	41 35	41 35	69 27	69 27		
Trt-Eval Interval	14 DA-A	-1 DA-C	-1 DA-C	27 DA-C	27 DA-C		
Plant-Eval Interval	8 DP-1	35 DP-1	35 DP-1	63 DP-1	63 DP-1		
Number of Decimals	0	0	0	0	0		
Trt Treatment No. Name	Form Conc	Other Rate	Other Rate	Appl Unit Code			
					6 7 8 9 10		
10 MSO	100	0.6 qt/a		B			
10 N-pak ams	100	3 qt/a		B			
11 Lorox	4	32 oz/a		B	57 57 33 100 37		
11 Ignite	2.34	16 oz/a		B			
11 N-pak ams	100	3 qt/a		B			
12 Lorox	4	32 oz/a		B	82 96 50 100 50		
12 Ignite	2.34	22 oz/a		B			
12 N-pak ams	100	3 qt/a		B			
13 Lorox	4	16 oz/a		B	62 43 100 53		
13 Ignite	2.34	22 oz/a		B			
13 N-pak ams	100	3 qt/a		B			
14 Lorox	4	32 oz/a		B	47 43 100 47		
14 Gramoxone Inteon	2	2 pt/a		B			
14 N-pak ams	100	3 qt/a		B			
14 COC	100	0.6 qt/a		B			
LSD (P=.05)			17.4	29.3	27.9	0.0	18.5
Standard Deviation			10.4	16.4	16.6	0.0	11.0
CV			15.09	19.62	29.79	0.0	17.59
Bartlett's X2			4.722	2.052	13.446	0.0	7.927
P(Bartlett's X2)			0.944	0.842	0.414	.	0.791
Replicate F			0.022	0.245	0.979	0.000	0.826
Replicate Prob(F)			0.9781	0.7867	0.3891	1.0000	0.4489
Treatment F			9.626	2.826	2.298	0.000	4.987
Treatment Prob(F)			0.0001	0.0459	0.0344	1.0000	0.0002

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## Evaluate tank-mix and timing for improved marestalk control with Kixor; and Linuron burndown treatments

Title No. 2:

Trial ID: 11NTS2      Protocol ID: 11NTS2  
Location:              Study Director: Bryan Reeb  
Project ID: 11NTS2    Investigator: Dr. Mark M. Loux  
Sponsor Contact: Caren Judge, BASF

Pest Type

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

Pest Code

AMBTR, Ambrosia trifida, = US  
VERAG, Veronica agrestis, = US  
ERICA, Conyza canadensis, = US

Rating Type

CONTRO = control / burndown or knockdown

Rating Unit

% = percent

Plant-Eval Interval

0 DP-1 = 1 6/15/11  
8 DP-1 = 1 6/15/11  
35 DP-1 = 1 6/15/11  
63 DP-1 = 1 6/15/11