

The Ohio State University

Glyphosate resistant horseweed burndown programs

Trial ID: 13 NTBURN2
Protocol ID: 13 NTBURN2
Project ID: sulf.soy.13/USHES0Y002

Location: Western Branch
Investigator: Dr. Mark M. Loux
Study Director: Bryan Reeb
Sponsor Contact: Joe Reed, FMC; Dain Bruns, Syngenta

Trial Year: 2013

Crop Description

Crop 1: GLXMA Glycine max
Variety: Asgrow 3533
Description: Round Up Ready

BBCH Scale: BSOY

Planting Date: Apr-27-2013
Planting Method: PLANTD planted
Planting Equipment: PP Plot Planter
Emergence Date: May-17-2013

Planting Rate, Unit: 135000 S/A
Depth, Unit: 0.75 IN
Row Spacing, Unit: 15 IN
Soil Temperature, Unit: 54 F
Soil Moisture: SLIWET slightly wet, moist
Seed Bed: FINTRA fine/trashy

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:** SENGL Senecio glabellus
Common Name: Cressleaf groundsel
- Pest 4 Type:** W **Code:** ERICA Conyza canadensis
Common Name: Canada horseweed
- Pest 5 Type:** W **Code:** CAPBP Capsella bursa-pastoris
Common Name: Shepherd's purse
- Pest 6 Type:** W **Code:** RANAB Ranunculus abortivus
Common Name: Smallflower buttercup
- Pest 7 Type:** W **Code:** ERPSS Erophila sp.
Common Name: Whitlowgrass
- Pest 8 Type:** W **Code:** ERYRE Erysimum repandum
Common Name: Bushy wallflower
- Pest 9 Type:** W **Code:** VERAR Veronica arvensis
Common Name: Corn speedwell
- Pest10 Type:** W **Code:** TAROF Taraxacum officinale
Common Name: Common dandelion
- Pest11 Type:** W **Code:** AMBEL Ambrosia artemisiifolia
Common Name: Common ragweed
- Pest12 Type:** W **Code:** AMBTR Ambrosia trifida
Common Name: Giant ragweed
- Pest13 Type:** W **Code:** CHEAL Chenopodium album
Common Name: Common lambsquarters
- Pest14 Type:** W **Code:** SETFA Setaria faberi
Common Name: Giant foxtail

Site and Design

Treated Plot Width: 10 FT
Treated Plot Length: 30 FT
Treated Plot Area: 300 FT2
Treatments: 12
Replications: 3

Site Type: FIELD field
Experimental Unit: 1 PLOT plot
Tillage Type: NOTILL no-till
Study Design: RACOB� 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

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Application Description

	A	B	C
Application Date:	Apr-15-2013	Apr-27-2013	May-30-2013
Appl. Start Time:	1:45 PM	12:15 PM	8:00 AM
Appl. Stop Time:	2:00 PM	12:50 PM	
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	14 EPP	ATPL	POST
Application Placement:	BROSOI	BROSOI	BROFOL
Applied By:	DOBBELS	REEB	REEB
Air Temperature, Unit:	66.3 F	65 F	72.5 F
% Relative Humidity:	59	42	69.1
Wind Velocity, Unit:	6 MPH	6.5 MPH	4.9 MPH
Wind Direction:	SSE	E	SSW
Dew Presence (Y/N):	N no	N no	N no
Soil Temperature, Unit:	53 F	54 F	66 F
Soil Moisture:	SLIWET	SLIWET	MOIST
% Cloud Cover:	80	50	30
Next Moisture Occurred On:	Apr-16-2013	Apr-28-2013	May-31-2013

Crop Stage At Each Application

	A	B	C
Crop 1 Code, BBCH Scale:	GLXMA	BSOY	GLXMA BSOY
Stage Scale Used:			BBCH
Stage Majority, Percent:			12
Stage Minimum, Percent:			12
Stage Maximum, Percent:			13

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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:	65	100	65	100		
Diameter, Unit:	3.5	IN	3.5	IN		
Height, Unit:	1.5	IN	4.5	IN		
Height Minimum, Maximum:	1	3	3	5		
Density, Unit:	33.2	M2				
Pest 2 Code, Type, Scale:	STEME	W	STEME	W	STEME	W
Stage Majority, Percent:	65	100	65	100		
Diameter, Unit:	4	IN	9	IN		
Height, Unit:	0.75	IN	1.5	IN		
Height Minimum, Maximum:	0.5	1	1	2		
Density, Unit:	29.2	M2				
Pest 3 Code, Type, Scale:	SENGL	W	SENGL	W	SENGL	W
Stage Majority, Percent:	19	100	19	100	67	100
Diameter, Unit:	4	IN	4	IN		
Height, Unit:	4	IN	6	IN	10	IN
Height Minimum, Maximum:	3	5	4	6	10	15
Density, Unit:	4	M2				
Pest 4 Code, Type, Scale:	ERICA	W	ERICA	W	ERICA	W
Stage Majority, Percent:	19	100	19	100	19	100
Diameter, Unit:	1.5	IN	2.5	IN		
Height, Unit:	1	IN	2	IN	6	IN
Height Minimum, Maximum:	0.5	1.5	1	2	6	10
Density, Unit:	41.2	M2				
Pest 5 Code, Type, Scale:	CAPBP	W	CAPBP	W	CAPBP	W
Stage Majority, Percent:	65	100	65	100		
Diameter, Unit:	3.5	IN	3.5	IN		
Height, Unit:	6	IN	9	IN		
Height Minimum, Maximum:	5	8	7	9		
Density, Unit:	4	M2				
Pest 6 Code, Type, Scale:	RANAB	W	RANAB	W	RANAB	W
Stage Majority, Percent:	12	100	65	100		
Diameter, Unit:	1	IN	3	IN		
Height, Unit:	1	IN	3	IN		
Height Minimum, Maximum:	1	1.5	2	4		
Pest 7 Code, Type, Scale:	ERPSS	W	ERPSS	W	ERPSS	W
Stage Majority, Percent:	65	100				
Diameter, Unit:	1.5	IN				
Height, Unit:	1.5	IN				
Height Minimum, Maximum:	1	2				
Pest 8 Code, Type, Scale:	ERYRE	W	ERYRE	W	ERYRE	W
Density, Unit:	10.6	M2				
Pest 9 Code, Type, Scale:	VERAR	W	VERAR	W	VERAR	W
Stage Majority, Percent:					67	100
Height, Unit:					3	IN
Height Minimum, Maximum:					3	4
Density, Unit:	16	M2				
Pest10 Code, Type, Scale:	TAROF	W	TAROF	W	TAROF	W
Density, Unit:	1.3	M2				
Pest11 Code, Type, Scale:	AMBEL	W	AMBEL	W	AMBEL	W
Stage Majority, Percent:					18	100
Height, Unit:					2	IN
Height Minimum, Maximum:					2	3
Pest12 Code, Type, Scale:	AMBTR	W	AMBTR	W	AMBTR	W
Stage Majority, Percent:					19	100
Height, Unit:					4	IN
Height Minimum, Maximum:					4	9
Pest13 Code, Type, Scale:	CHEAL	W	CHEAL	W	CHEAL	W
Stage Majority, Percent:					19	100
Height, Unit:					2	IN
Height Minimum, Maximum:					2	5
Pest14 Code, Type, Scale:	SETFA	W	SETFA	W	SETFA	W
Stage Majority, Percent:					13	100
Height, Unit:					4	IN
Height Minimum, Maximum:					4	5

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Application Equipment

	A	B	C
Appl. Equipment:	Backpack	Backpack	Backpack
Equipment Type:	SPRBAC	SPRBAC	SPRBAC
Operation Pressure, Unit:	48 PSI	48 PSI	48 PSI
Nozzle Type:	AIXR	AIXR	AIXR
Nozzle Size:	110015	110015	110015
Nozzle Spacing, Unit:	18 IN	18 IN	18 IN
Boom Length, Unit:	6 FT	6 FT	6 FT
Boom Height, Unit:	18 IN	18 IN	18 IN
Ground Speed, Unit:	3 MPH	3 MPH	3 MPH
Carrier:	WATER	WATER	WATER
Spray Volume, Unit:	15 gal/ac	15 gal/ac	15 gal/ac
Mix Size, Unit:	1 Liters	1 Liters	1 Liters
Propellant:	COMCO2	COMCO2	COMCO2

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Pest Code	STEME	LAMPU	CAPBP	RANAB	ERICA	ERPSS	TAROF
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
Rating Date	Apr-26-2013	Apr-26-2013	Apr-26-2013	Apr-26-2013	Apr-26-2013	Apr-26-2013	Apr-26-2013
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%	%
Days After First/Last Applic.	11 11	11 11	11 11	11 11	11 11	11 11	11 11
Plant-Eval Interval	-1 DP-1	-1 DP-1	-1 DP-1	-1 DP-1	-1 DP-1	-1 DP-1	-1 DP-1
Days After Emergence	-21 DE-1	-21 DE-1	-21 DE-1	-21 DE-1	-21 DE-1	-21 DE-1	-21 DE-1

Trt No.	Treatment Name	Other Rate	Other Rate	Growth Unit	Appl Stage	Code	1	2	3	4	5	6	7
1	UTC						0	0	0	0	0	0	0
2	Authority MTZ	5.5 oz/a		ATPL	B		0	0	0	0	0	0	0
2	Gramoxone Inteon	24 oz/a		ATPL	B								
2	COC	0.6 qt/a		ATPL	B								
2	N-pak ams	2.25 qt/a		ATPL	B								
2	Anthem	6 oz/a		POST	C								
2	Classic	0.75 oz/a		POST	C								
2	Roundup Power Max	32 oz/a		POST	C								
2	N-pak ams	2.25 qt/a		POST	C								
3	Authority MTZ	5.5 oz/a		ATPL	B		0	0	0	0	0	0	0
3	Gramoxone Inteon	32 oz/a		ATPL	B								
3	COC	0.6 qt/a		ATPL	B								
3	N-pak ams	2.25 qt/a		ATPL	B								
3	Anthem	6 oz/a		POST	C								
3	Classic	0.75 oz/a		POST	C								
3	Roundup Power Max	32 oz/a		POST	C								
3	N-pak ams	2.25 qt/a		POST	C								
4	Spartan	2.4 oz/a		ATPL	B		0	0	0	0	0	0	0
4	Sencor DF	5 oz/a		ATPL	B								
4	Gramoxone Inteon	24 oz/a		ATPL	B								
4	COC	0.6 qt/a		ATPL	B								
4	N-pak ams	2.25 qt/a		ATPL	B								
4	Anthem	6 oz/a		POST	C								
4	Classic	0.75 oz/a		POST	C								
4	Roundup Power Max	32 oz/a		POST	C								
4	N-pak ams	2.25 qt/a		POST	C								
5	Spartan	2.4 oz/a		ATPL	B		0	0	0	0	0	0	0
5	Sencor DF	5 oz/a		ATPL	B								
5	Gramoxone Inteon	32 oz/a		ATPL	B								
5	COC	0.6 qt/a		ATPL	B								
5	N-pak ams	2.25 qt/a		ATPL	B								
5	Anthem	6 oz/a		POST	C								
5	Classic	0.75 oz/a		POST	C								
5	Roundup Power Max	32 oz/a		POST	C								
5	N-pak ams	2.25 qt/a		POST	C								
6	Spartan	1.6 oz/a		ATPL	B		0	0	0	0	0	0	0
6	Sencor DF	5 oz/a		ATPL	B								
6	Gramoxone Inteon	24 oz/a		ATPL	B								
6	COC	0.6 qt/a		ATPL	B								
6	N-pak ams	2.25 qt/a		ATPL	B								
6	Anthem	6 oz/a		POST	C								
6	Classic	0.75 oz/a		POST	C								
6	Roundup Power Max	32 oz/a		POST	C								
6	N-pak ams	2.25 qt/a		POST	C								

t=Mean descriptions are reported in transformed data units, and are not de-transformed.
 Missing data estimates are included in columns: Yates=7,11,14,15,16,17,18,19

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Rating Date	Apr-26-2013	Apr-26-2013	Apr-26-2013	Apr-26-2013	Apr-26-2013	Apr-26-2013	Apr-26-2013
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%	%
Days After First/Last Applic.	11 11	11 11	11 11	11 11	11 11	11 11	11 11
Plant-Eval Interval	-1 DP-1	-1 DP-1	-1 DP-1	-1 DP-1	-1 DP-1	-1 DP-1	-1 DP-1
Days After Emergence	-21 DE-1	-21 DE-1	-21 DE-1	-21 DE-1	-21 DE-1	-21 DE-1	-21 DE-1

Trt No.	Treatment Name	Other Rate	Other Unit	Growth Stage	Appl Code	1	2	3	4	5	6	7
7	Spartan	1.6 oz/a		ATPL	B	0	0	0	0	0	0	0
7	Sencor DF	5 oz/a		ATPL	B							
7	Gramoxone Inteon	32 oz/a		ATPL	B							
7	COC	0.6 qt/a		ATPL	B							
7	N-pak ams	2.25 qt/a		ATPL	B							
7	Anthem	6 oz/a		POST	C							
7	Classic	0.75 oz/a		POST	C							
7	Roundup Power Max	32 oz/a		POST	C							
7	N-pak ams	2.25 qt/a		POST	C							
8	Boundary	1.75 pt/a		14 EPP	A	87	100	100	93	77	100	48
8	2,4-D Ester	1 pt/a		14 EPP	A							
8	Sencor DF	3.2 oz/a		14 EPP	A							
8	Touchdown Total	24 oz/a		14 EPP	A							
8	N-pak ams	3 qt/a		14 EPP	A							
8	Touchdown Total	36 oz/a		POST	C							
8	N-pak ams	3 qt/a		POST	C							
9	Boundary	1.75 pt/a		14 EPP	A	87	100	100	100	75	100	48
9	2,4-D Ester	1 pt/a		14 EPP	A							
9	Authority MTZ	5.33 oz/a		14 EPP	A							
9	Touchdown Total	24 oz/a		14 EPP	A							
9	N-pak ams	3 qt/a		14 EPP	A							
9	Touchdown Total	36 oz/a		POST	C							
9	N-pak ams	3 qt/a		POST	C							
10	Boundary	1.75 pt/a		14 EPP	A	90	100	100	92	78	100	53
10	2,4-D Ester	1 pt/a		14 EPP	A							
10	Sencor DF	3.2 oz/a		14 EPP	A							
10	Touchdown Total	24 oz/a		14 EPP	A							
10	N-pak ams	3 qt/a		14 EPP	A							
10	Flexstar GT 3.5	4 pt/a		POST	C							
10	N-pak ams	3 qt/a		POST	C							
11	Boundary	1.75 pt/a		14 EPP	A	100	100	100	100	98	100	63
11	2,4-D Ester	1 pt/a		14 EPP	A							
11	Sencor DF	3.2 oz/a		14 EPP	A							
11	Gramoxone Inteon	3 pt/a		14 EPP	A							
11	COC	0.6 qt/a		14 EPP	A							
11	N-pak ams	3 qt/a		14 EPP	A							
11	Flexstar GT 3.5	4 pt/a		POST	C							
11	N-pak ams	3 qt/a		POST	C							

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Rating Date	Apr-26-2013	Apr-26-2013	Apr-26-2013	Apr-26-2013	Apr-26-2013	Apr-26-2013	Apr-26-2013
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%	%
Days After First/Last Applic.	11 11	11 11	11 11	11 11	11 11	11 11	11 11
Plant-Eval Interval	-1 DP-1	-1 DP-1	-1 DP-1	-1 DP-1	-1 DP-1	-1 DP-1	-1 DP-1
Days After Emergence	-21 DE-1	-21 DE-1	-21 DE-1	-21 DE-1	-21 DE-1	-21 DE-1	-21 DE-1

Trt Treatment	Other Rate	Other Rate Unit	Growth Stage	Appl Code	1	2	3	4	5	6	7
12 Boundary	1.75	pt/a	14	EPP A	99	100	100	100	100	100	75
12 Gramoxone Inteon	3	pt/a	14	EPP A							
12 Sharpen	1.5	oz/a	14	EPP A							
12 MSO	0.6	qt/a	14	EPP A							
12 N-pak ams	3	qt/a	14	EPP A							
12 Flexstar GT 3.5	4	pt/a	POST	C							
12 N-pak ams	3	qt/a	POST	C							
LSD (P=.05)	4.0		0.0		0.0	8.6	4.8	0.0	0.2t		
Standard Deviation	2.4		0.0		0.0	5.1	2.8	0.0	0.1t		
CV	6.14		0.0		0.0	12.6	7.96	0.0	13.38		
Bartlett's X2	4.181		0.0		0.0	0.097	2.566	0.0	3.314		
P(Bartlett's X2)	0.243		.		.	0.756	0.463	.	0.507		
Skewness	0.3805		0.3529		0.3529	0.3827	0.4506	0.3529	0.46		
Kurtosis	-1.9283*		-1.9893*		-1.9893*	-1.9328*	-1.7671*	-1.9893*	-1.8537*		
Replicate F	1.135		0.000		0.000	2.168	1.375	0.000	0.723		
Replicate Prob(F)	0.3395		1.0000		1.0000	0.1382	0.2737	1.0000	0.4970		
Treatment F	1224.112		0.000		0.000	289.175	743.149	0.000	256.784		
Treatment Prob(F)	0.0001		1.0000		1.0000	0.0001	0.0001	1.0000	0.0001		

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Pest Code	STEME	LAMPU	CAPBP	SENGL	ERICA	ERPSS	TAROF
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
Rating Date	May-9-2013	May-9-2013	May-9-2013	May-9-2013	May-9-2013	May-9-2013	May-9-2013
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%	%
Days After First/Last Applic.	24 12	24 12	24 12	24 12	24 12	24 12	24 12
Plant-Eval Interval	12 DP-1	12 DP-1	12 DP-1	12 DP-1	12 DP-1	12 DP-1	12 DP-1
Days After Emergence	-8 DE-1	-8 DE-1	-8 DE-1	-8 DE-1	-8 DE-1	-8 DE-1	-8 DE-1

Trt No.	Treatment Name	Other Rate	Other Rate Unit	Growth Stage	Appl Code	8	9	10	11	12	13	14
7	Spartan	1.6 oz/a		ATPL	B	96	100	93	100	22	100	47
7	Sencor DF	5 oz/a		ATPL	B							
7	Gramoxone Inteon	32 oz/a		ATPL	B							
7	COC	0.6 qt/a		ATPL	B							
7	N-pak ams	2.25 qt/a		ATPL	B							
7	Anthem	6 oz/a		POST	C							
7	Classic	0.75 oz/a		POST	C							
7	Roundup Power Max	32 oz/a		POST	C							
7	N-pak ams	2.25 qt/a		POST	C							
8	Boundary	1.75 pt/a		14 EPP	A	100	100	100	100	93	100	83
8	2,4-D Ester	1 pt/a		14 EPP	A							
8	Sencor DF	3.2 oz/a		14 EPP	A							
8	Touchdown Total	24 oz/a		14 EPP	A							
8	N-pak ams	3 qt/a		14 EPP	A							
8	Touchdown Total	36 oz/a		POST	C							
8	N-pak ams	3 qt/a		POST	C							
9	Boundary	1.75 pt/a		14 EPP	A	97	100	100	100	96	100	77
9	2,4-D Ester	1 pt/a		14 EPP	A							
9	Authority MTZ	5.33 oz/a		14 EPP	A							
9	Touchdown Total	24 oz/a		14 EPP	A							
9	N-pak ams	3 qt/a		14 EPP	A							
9	Touchdown Total	36 oz/a		POST	C							
9	N-pak ams	3 qt/a		POST	C							
10	Boundary	1.75 pt/a		14 EPP	A	100	100	100	100	96	100	88
10	2,4-D Ester	1 pt/a		14 EPP	A							
10	Sencor DF	3.2 oz/a		14 EPP	A							
10	Touchdown Total	24 oz/a		14 EPP	A							
10	N-pak ams	3 qt/a		14 EPP	A							
10	Flexstar GT 3.5	4 pt/a		POST	C							
10	N-pak ams	3 qt/a		POST	C							
11	Boundary	1.75 pt/a		14 EPP	A	100	100	100	87	96	100	63
11	2,4-D Ester	1 pt/a		14 EPP	A							
11	Sencor DF	3.2 oz/a		14 EPP	A							
11	Gramoxone Inteon	3 pt/a		14 EPP	A							
11	COC	0.6 qt/a		14 EPP	A							
11	N-pak ams	3 qt/a		14 EPP	A							
11	Flexstar GT 3.5	4 pt/a		POST	C							
11	N-pak ams	3 qt/a		POST	C							

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Glyphosate resistant horseweed burndown programs

Trial ID: 13 NTBURN2
Protocol ID: 13 NTBURN2
Project ID: sulf.soy.13/USHES0Y002

Location: Western Branch
Investigator: Dr. Mark M. Loux
Study Director: Bryan Reeb
Sponsor Contact: Joe Reed, FMC; Dain Bruns, Syngenta

Trial Year: 2013

Pest Code	STEME	LAMPU	CAPBP	SENGL	ERICA	ERPSS	TAROF
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
Rating Date	May-9-2013	May-9-2013	May-9-2013	May-9-2013	May-9-2013	May-9-2013	May-9-2013
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%	%
Days After First/Last Applic.	24 12	24 12	24 12	24 12	24 12	24 12	24 12
Plant-Eval Interval	12 DP-1	12 DP-1	12 DP-1	12 DP-1	12 DP-1	12 DP-1	12 DP-1
Days After Emergence	-8 DE-1	-8 DE-1	-8 DE-1	-8 DE-1	-8 DE-1	-8 DE-1	-8 DE-1

Trt No.	Treatment Name	Other Rate	Other Rate Unit	Growth Stage	Appl Code	8	9	10	11	12	13	14
12	Boundary	1.75	pt/a	14	EPP A	100	100	100	100	98	100	73
12	Gramoxone Inteon	3	pt/a	14	EPP A							
12	Sharpen	1.5	oz/a	14	EPP A							
12	MSO	0.6	qt/a	14	EPP A							
12	N-pak ams	3	qt/a	14	EPP A							
12	Flexstar GT 3.5	4	pt/a	POST	C							
12	N-pak ams	3	qt/a	POST	C							
LSD (P=.05)						6.2	0.0	17.7	15.9	30.8t	0.0	25.1
Standard Deviation						3.7	0.0	10.5	9.3	18.2t	0.0	14.8
CV						4.15	0.0	13.44	11.75	43.98	0.0	30.29
Bartlett's X2						5.992	0.0	3.925	5.417	1.597	0.0	16.719
P(Bartlett's X2)						0.424	.	0.56	0.247	0.999	.	0.053
Skewness						-3.0206*	-3.1478*	-1.4973*	-1.8044*	0.2001	-3.1478*	-0.0013
Kurtosis						7.8432*	8.3714*	1.4817	2.659*	-1.5119	8.3714*	-1.3486
Replicate F						2.515	0.000	6.858	3.018	0.236	0.000	1.920
Replicate Prob(F)						0.1039	1.0000	0.0048	0.0727	0.7915	1.0000	0.1714
Treatment F						174.542	0.000	23.836	28.226	10.231	0.000	10.736
Treatment Prob(F)						0.0001	1.0000	0.0001	0.0001	0.0001	1.0000	0.0001

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Location: Western Branch
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Study Director: Bryan Reeb
Sponsor Contact: Joe Reed, FMC; Dain Bruns, Syngenta

Trial Year: 2013

Pest Code	VERAR	SETFA	AMBTR	ERICA	SETFA	AMBTR
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
Rating Date	May-9-2013	Jun-7-2013	Jun-7-2013	Jun-7-2013	Jun-21-2013	Jun-21-2013
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%
Days After First/Last Applic.	24 12	53 8	53 8	53 8	67 22	67 22
Plant-Eval Interval	12 DP-1	41 DP-1	41 DP-1	41 DP-1	55 DP-1	55 DP-1
Days After Emergence	-8 DE-1	21 DE-1	21 DE-1	21 DE-1	35 DE-1	35 DE-1

Trt No.	Treatment Name	Other Rate	Other Rate Unit	Growth Stage	Appl Code	15	16	17	18	19	20	21
7	Spartan	1.6 oz/a		ATPL	B	87	9	100	95	50	95	100
7	Sencor DF	5 oz/a		ATPL	B							
7	Gramoxone Inteon	32 oz/a		ATPL	B							
7	COC	0.6 qt/a		ATPL	B							
7	N-pak ams	2.25 qt/a		ATPL	B							
7	Anthem	6 oz/a		POST	C							
7	Classic	0.75 oz/a		POST	C							
7	Roundup Power Max	32 oz/a		POST	C							
7	N-pak ams	2.25 qt/a		POST	C							
8	Boundary	1.75 pt/a		14 EPP	A	100	1	100	97	82	83	93
8	2,4-D Ester	1 pt/a		14 EPP	A							
8	Sencor DF	3.2 oz/a		14 EPP	A							
8	Touchdown Total	24 oz/a		14 EPP	A							
8	N-pak ams	3 qt/a		14 EPP	A							
8	Touchdown Total	36 oz/a		POST	C							
8	N-pak ams	3 qt/a		POST	C							
9	Boundary	1.75 pt/a		14 EPP	A	100	0	100	98	80	67	85
9	2,4-D Ester	1 pt/a		14 EPP	A							
9	Authority MTZ	5.33 oz/a		14 EPP	A							
9	Touchdown Total	24 oz/a		14 EPP	A							
9	N-pak ams	3 qt/a		14 EPP	A							
9	Touchdown Total	36 oz/a		POST	C							
9	N-pak ams	3 qt/a		POST	C							
10	Boundary	1.75 pt/a		14 EPP	A	100	5	100	88	87	93	97
10	2,4-D Ester	1 pt/a		14 EPP	A							
10	Sencor DF	3.2 oz/a		14 EPP	A							
10	Touchdown Total	24 oz/a		14 EPP	A							
10	N-pak ams	3 qt/a		14 EPP	A							
10	Flexstar GT 3.5	4 pt/a		POST	C							
10	N-pak ams	3 qt/a		POST	C							
11	Boundary	1.75 pt/a		14 EPP	A	100	6	100	88	83	82	98
11	2,4-D Ester	1 pt/a		14 EPP	A							
11	Sencor DF	3.2 oz/a		14 EPP	A							
11	Gramoxone Inteon	3 pt/a		14 EPP	A							
11	COC	0.6 qt/a		14 EPP	A							
11	N-pak ams	3 qt/a		14 EPP	A							
11	Flexstar GT 3.5	4 pt/a		POST	C							
11	N-pak ams	3 qt/a		POST	C							

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Glyphosate resistant horseweed burndown programs

Trial ID: 13 NTBURN2
Protocol ID: 13 NTBURN2
Project ID: sulf.soy.13/USHES0Y002

Location: Western Branch
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Study Director: Bryan Reeb
Sponsor Contact: Joe Reed, FMC; Dain Bruns, Syngenta

Trial Year: 2013

Pest Code	VERAR	SETFA	AMBTR	ERICA	SETFA	AMBTR
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
Rating Date	May-9-2013	Jun-7-2013	Jun-7-2013	Jun-7-2013	Jun-21-2013	Jun-21-2013
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%
Days After First/Last Applic.	24 12	53 8	53 8	53 8	67 22	67 22
Plant-Eval Interval	12 DP-1	41 DP-1	41 DP-1	41 DP-1	55 DP-1	55 DP-1
Days After Emergence	-8 DE-1	21 DE-1	21 DE-1	21 DE-1	35 DE-1	35 DE-1

Trt Treatment No. Name	Other Rate	Other Rate Unit	Growth Stage	Appl Code	15	16	17	18	19	20	21
12 Boundary	1.75 pt/a		14 EPP A		100	5	100	90	77	77	87
12 Gramoxone Inteon	3 pt/a		14 EPP A								
12 Sharpen	1.5 oz/a		14 EPP A								
12 MSO	0.6 qt/a		14 EPP A								
12 N-pak ams	3 qt/a		14 EPP A								
12 Flexstar GT 3.5	4 pt/a		POST C								
12 N-pak ams	3 qt/a		POST C								
LSD (P=.05)					24.1	2.8	0.0	6.9	22.0	13.4	12.9
Standard Deviation					14.2	1.7	0.0	4.0	12.9	7.9	7.6
CV					18.41	28.99	0.0	4.62	23.48	9.64	8.63
Bartlett's X2					4.978	6.322	0.0	7.985	7.8	8.795	8.247
P(Bartlett's X2)					0.419	0.611	.	0.334	0.453	0.456	0.083
Skewness					-1.4404*	-0.4718	-3.094*	-2.8956*	-0.0366	-2.2561*	-2.7648*
Kurtosis					0.8946	-1.4133	8.0291*	7.2196*	-0.3178	4.5791*	6.5694*
Replicate F					5.099	0.134	0.000	0.711	1.265	1.679	0.752
Replicate Prob(F)					0.0157	0.8750	1.0000	0.5028	0.3029	0.2095	0.4830
Treatment F					13.157	14.475	0.000	142.849	12.618	37.027	41.407
Treatment Prob(F)					0.0001	0.0001	1.0000	0.0001	0.0001	0.0001	0.0001

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Glyphosate resistant horseweed burndown programs

Trial ID: 13 NTBURN2
Protocol ID: 13 NTBURN2
Project ID: sulf.soy.13/USHES0Y002

Location: Western Branch
Investigator: Dr. Mark M. Loux
Study Director: Bryan Reeb
Sponsor Contact: Joe Reed, FMC; Dain Bruns, Syngenta

Trial Year: 2013

Pest Code ERICA
Crop Code GLXMA
Rating Date Jun-21-2013
Rating Type CONTRO
Rating Unit %
Days After First/Last Applic. 67 22
Plant-Eval Interval 55 DP-1
Days After Emergence 35 DE-1

Trt No.	Treatment Name	Other Rate	Other Rate Unit	Growth Stage	Appl Code	22
1	UTC					0
2	Authority MTZ	5.5 oz/a		ATPL	B	53
2	Gramoxone Inteon	24 oz/a		ATPL	B	
2	COC	0.6 qt/a		ATPL	B	
2	N-pak ams	2.25 qt/a		ATPL	B	
2	Anthem	6 oz/a		POST	C	
2	Classic	0.75 oz/a		POST	C	
2	Roundup Power Max	32 oz/a		POST	C	
2	N-pak ams	2.25 qt/a		POST	C	
3	Authority MTZ	5.5 oz/a		ATPL	B	50
3	Gramoxone Inteon	32 oz/a		ATPL	B	
3	COC	0.6 qt/a		ATPL	B	
3	N-pak ams	2.25 qt/a		ATPL	B	
3	Anthem	6 oz/a		POST	C	
3	Classic	0.75 oz/a		POST	C	
3	Roundup Power Max	32 oz/a		POST	C	
3	N-pak ams	2.25 qt/a		POST	C	
4	Spartan	2.4 oz/a		ATPL	B	50
4	Sencor DF	5 oz/a		ATPL	B	
4	Gramoxone Inteon	24 oz/a		ATPL	B	
4	COC	0.6 qt/a		ATPL	B	
4	N-pak ams	2.25 qt/a		ATPL	B	
4	Anthem	6 oz/a		POST	C	
4	Classic	0.75 oz/a		POST	C	
4	Roundup Power Max	32 oz/a		POST	C	
4	N-pak ams	2.25 qt/a		POST	C	
5	Spartan	2.4 oz/a		ATPL	B	47
5	Sencor DF	5 oz/a		ATPL	B	
5	Gramoxone Inteon	32 oz/a		ATPL	B	
5	COC	0.6 qt/a		ATPL	B	
5	N-pak ams	2.25 qt/a		ATPL	B	
5	Anthem	6 oz/a		POST	C	
5	Classic	0.75 oz/a		POST	C	
5	Roundup Power Max	32 oz/a		POST	C	
5	N-pak ams	2.25 qt/a		POST	C	
6	Spartan	1.6 oz/a		ATPL	B	47
6	Sencor DF	5 oz/a		ATPL	B	
6	Gramoxone Inteon	24 oz/a		ATPL	B	
6	COC	0.6 qt/a		ATPL	B	
6	N-pak ams	2.25 qt/a		ATPL	B	
6	Anthem	6 oz/a		POST	C	
6	Classic	0.75 oz/a		POST	C	
6	Roundup Power Max	32 oz/a		POST	C	
6	N-pak ams	2.25 qt/a		POST	C	

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Trial Year: 2013

Pest Code ERICA
Crop Code GLXMA
Rating Date Jun-21-2013
Rating Type CONTRO
Rating Unit %
Days After First/Last Applic. 67 22
Plant-Eval Interval 55 DP-1
Days After Emergence 35 DE-1

Trt No.	Treatment Name	Other Rate	Other Rate Unit	Growth Stage	Appl Code	22
7	Spartan	1.6 oz/a		ATPL	B	57
7	Sencor DF	5 oz/a		ATPL	B	
7	Gramoxone Inteon	32 oz/a		ATPL	B	
7	COC	0.6 qt/a		ATPL	B	
7	N-pak ams	2.25 qt/a		ATPL	B	
7	Anthem	6 oz/a		POST	C	
7	Classic	0.75 oz/a		POST	C	
7	Roundup Power Max	32 oz/a		POST	C	
7	N-pak ams	2.25 qt/a		POST	C	
8	Boundary	1.75 pt/a		14 EPP	A	75
8	2,4-D Ester	1 pt/a		14 EPP	A	
8	Sencor DF	3.2 oz/a		14 EPP	A	
8	Touchdown Total	24 oz/a		14 EPP	A	
8	N-pak ams	3 qt/a		14 EPP	A	
8	Touchdown Total	36 oz/a		POST	C	
8	N-pak ams	3 qt/a		POST	C	
9	Boundary	1.75 pt/a		14 EPP	A	75
9	2,4-D Ester	1 pt/a		14 EPP	A	
9	Authority MTZ	5.33 oz/a		14 EPP	A	
9	Touchdown Total	24 oz/a		14 EPP	A	
9	N-pak ams	3 qt/a		14 EPP	A	
9	Touchdown Total	36 oz/a		POST	C	
9	N-pak ams	3 qt/a		POST	C	
10	Boundary	1.75 pt/a		14 EPP	A	68
10	2,4-D Ester	1 pt/a		14 EPP	A	
10	Sencor DF	3.2 oz/a		14 EPP	A	
10	Touchdown Total	24 oz/a		14 EPP	A	
10	N-pak ams	3 qt/a		14 EPP	A	
10	Flexstar GT 3.5	4 pt/a		POST	C	
10	N-pak ams	3 qt/a		POST	C	
11	Boundary	1.75 pt/a		14 EPP	A	67
11	2,4-D Ester	1 pt/a		14 EPP	A	
11	Sencor DF	3.2 oz/a		14 EPP	A	
11	Gramoxone Inteon	3 pt/a		14 EPP	A	
11	COC	0.6 qt/a		14 EPP	A	
11	N-pak ams	3 qt/a		14 EPP	A	
11	Flexstar GT 3.5	4 pt/a		POST	C	
11	N-pak ams	3 qt/a		POST	C	

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Trial ID: 13 NTBURN2
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Study Director: Bryan Reeb
Sponsor Contact: Joe Reed, FMC; Dain Bruns, Syngenta

Trial Year: 2013

Pest Code ERICA
Crop Code GLXMA
Rating Date Jun-21-2013
Rating Type CONTRO
Rating Unit %
Days After First/Last Applic. 67 22
Plant-Eval Interval 55 DP-1
Days After Emergence 35 DE-1

Trt No.	Treatment Name	Other Rate	Other Rate Unit	Growth Stage	Appl Code	
12	Boundary	1.75	pt/a	14 EPP	A	75
12	Gramoxone Inteon	3	pt/a	14 EPP	A	
12	Sharpen	1.5	oz/a	14 EPP	A	
12	MSO	0.6	qt/a	14 EPP	A	
12	N-pak ams	3	qt/a	14 EPP	A	
12	Flexstar GT 3.5	4	pt/a	POST	C	
12	N-pak ams	3	qt/a	POST	C	

LSD (P=.05) 19.2
Standard Deviation 11.3
CV 20.51
Bartlett's X2 8.488
P(Bartlett's X2) 0.581
Skewness -0.8947*
Kurtosis 1.4892

Replicate F 1.448
Replicate Prob(F) 0.2566
Treatment F 10.041
Treatment Prob(F) 0.0001

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Pest Code

STEME, *Stellaria media*, = US
LAMPU, *Lamium purpureum*, = US
CAPBP, *Capsella bursa-pastoris*, = US
RANAB, *Ranunculus abortivus*, = US
ERICA, *Conyza canadensis*, = US
ERPSS, *Erophila sp.*, = US
TAROF, *Taraxacum officinale*, = US
SENGL, *Senecio glabellus*, = US
VERAR, *Veronica arvensis*, = US
SETFA, *Setaria faberi*, = US
AMBTR, *Ambrosia trifida*, = US

Crop Code

GLXMA, BSOY, *Glycine max*, = US

Rating Type

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

Rating Unit

% = percent

Plant-Eval Interval

-1 DP-1 = 1 GLXMA Apr-27-2013
12 DP-1 = 1 GLXMA Apr-27-2013
41 DP-1 = 1 GLXMA Apr-27-2013
55 DP-1 = 1 GLXMA Apr-27-2013