

The Ohio State University

AMS alternatives with Touchdown Hi-Tech + 2,4-D for weed control

Trial ID: 13 BAREWIN2 Location: Western Branch Trial Year: 2013
 Protocol ID: 13 BAREWIN2 Investigator: Dr. Mark M. Loux
 Project ID: 13 BAREWIN2 Study Director: Bryan Reeb
 Sponsor Contact: John Smith, Winfield Solutions

Pest Description

- Pest 1 Type:** W **Code:** SETFA *Setaria faberi*
Common Name: Giant foxtail
- Pest 2 Type:** W **Code:** AMBTR *Ambrosia trifida*
Common Name: Giant ragweed
- Pest 3 Type:** W **Code:** AMARE *Amaranthus retroflexus*
Common Name: Redroot pigweed
- Pest 4 Type:** W **Code:** CHEAL *Chenopodium album*
Common Name: Common lambsquarters
- Pest 5 Type:** W **Code:** IPOHE *Ipomoea hederacea*
Common Name: Ivyleaf morningglory

Site and Design

Treated Plot Width: 6.67 FT **Site Type:** FIELD field
Treated Plot Length: 30 FT **Experimental Unit:** 1 PLOT plot
Treated Plot Area: 200.1 FT2 **Treatments:** 10 **Tillage Type:** CONTIL conventional-till
Replications: 4 **Study Design:** RACOB Randomized Complete Block (RCB)

Soil Description

Description Name: E-1
 % OM: 3.6 **Texture:** SICL silty clay loam
 pH: 6.8 **Soil Name:** Kokomo
 CEC: 24.6 **Fert. Level:** G good
 Soil Drainage: G good

Application Description

A

Application Date: Jun-20-2013
Appl. Start Time: 8:45 AM
Application Method: SPRAY
Application Timing: POST
Application Placement: BROFOL
Applied By: JOHNSON
Air Temperature, Unit: 71 F
% Relative Humidity: 65
Wind Velocity, Unit: 3 MPH
Wind Direction: ESE
Dew Presence (Y/N): N no
Soil Temperature, Unit: 64 F
Soil Moisture: MOIST
% Cloud Cover: 30
Next Moisture Occurred On: Jun-26-2013

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Pest Stage At Each Application

A

Pest 1 Code, Type, Scale: SETFA W
Stage Majority, Percent: 14 100
Height, Unit: 7 IN
Height Minimum, Maximum: 7 9
Density, Unit: 192 M2

Pest 2 Code, Type, Scale: AMBTR W
Stage Majority, Percent: 19 100
Height, Unit: 6 IN
Height Minimum, Maximum: 6 10
Density, Unit: 12 M2

Pest 3 Code, Type, Scale: AMARE W
Stage Majority, Percent: 19 75
Stage Minimum, Percent: 14 25
Stage Maximum, Percent: 19 75
Height, Unit: 1 IN
Height Minimum, Maximum: 1 5
Density, Unit: 136 M2

Pest 4 Code, Type, Scale: CHEAL W
Stage Majority, Percent: 19 100
Height, Unit: 5 IN
Height Minimum, Maximum: 5 5
Density, Unit: 24 M2

Pest 5 Code, Type, Scale: IPOHE W
Stage Majority, Percent: 14 100
Height, Unit: 3 IN
Height Minimum, Maximum: 3 3
Density, Unit: 8 M2

Application Equipment

A

Appl. Equipment: Backpack
Equipment Type: SPRBAC
Operation Pressure, Unit: 44 PSI
Nozzle Type: XR
Nozzle Size: 8001
Nozzle Spacing, Unit: 18 IN
Boom Length, Unit: 6 FT
Boom Height, Unit: 18 IN
Ground Speed, Unit: 3 MPH
Carrier: WATER
Spray Volume, Unit: 10 gal/ac
Mix Size, Unit: 1 Liters
Propellant: COMCO2

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Pest Code			SETFA	AMBTR	CHEAL	AMARE	SETFA	AMBTR	
Description			BAREGROUND	BAREGROUND	BAREGROUND	BAREGROUND	BAREGROUND	BAREGROUND	
Rating Date			Jul-1-2013	Jul-1-2013	Jul-1-2013	Jul-1-2013	Jul-19-2013	Jul-19-2013	
Rating Type			CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	
Rating Unit			%	%	%	%	%	%	
Days After First/Last Applic.			11 11	11 11	11 11	11 11	29 29	29 29	
Trt-Eval Interval			11 DA-A	11 DA-A	11 DA-A	11 DA-A	29 DA-A	29 DA-A	
Trt No.	Treatment Name	Rate	Appl Code	1	2	3	4	5	6
1	Touchdown Hi-Tech	0.273 lb ae/a	A	71	74	91	69	53	90
1	Rugged 2,4-D	0.25 lb ai/a	A						
2	Touchdown Hi-Tech	0.273 lb ae/a	A	79	78	88	80	53	83
2	Rugged 2,4-D	0.25 lb ai/a	A						
2	N-pak ams	2.5 % v/v	A						
3	Touchdown Hi-Tech	0.273 lb ae/a	A	81	86	89	85	58	70
3	Rugged 2,4-D	0.25 lb ai/a	A						
3	Class Act NG	2.5 % v/v	A						
4	Touchdown Hi-Tech	0.273 lb ae/a	A	78	83	93	78	55	73
4	Rugged 2,4-D	0.25 lb ai/a	A						
4	Class Act NG	1.25 % v/v	A						
5	Touchdown Hi-Tech	0.273 lb ae/a	A	79	78	89	83	55	90
5	Rugged 2,4-D	0.25 lb ai/a	A						
5	AG 08034	2 % v/v	A						
6	Touchdown Hi-Tech	0.273 lb ae/a	A	75	79	88	76	53	86
6	Rugged 2,4-D	0.25 lb ai/a	A						
6	AG 08034	1 % v/v	A						
7	Touchdown Hi-Tech	0.273 lb ae/a	A	75	83	91	71	53	79
7	Rugged 2,4-D	0.25 lb ai/a	A						
7	AG 07043	1 % v/v	A						
8	Touchdown Hi-Tech	0.273 lb ae/a	A	89	83	93	83	63	75
8	Rugged 2,4-D	0.25 lb ai/a	A						
8	AG 11011	1 % v/v	A						
9	Touchdown Hi-Tech	0.273 lb ae/a	A	80	78	93	71	55	79
9	Rugged 2,4-D	0.25 lb ai/a	A						
9	AG 11011	1.25 % v/v	A						
10	UTC			0	0	0	0	0	0
LSD (P=.05)				8.2	7.3	4.5	8.4	7.6	17.1
Standard Deviation				5.7	5.1	3.1	5.7	5.2	11.8
CV				8.02	7.02	3.8	8.26	10.57	16.24
Bartlett's X2				7.538	3.572	5.175	9.645	0.241	7.369
P(Bartlett's X2)				0.48	0.894	0.739	0.291	1.00	0.497
Skewness				-2.4057*	-2.4767*	-2.6377*	-2.1274*	-2.2645*	-1.6224*
Kurtosis				4.7487*	4.9143*	5.5155*	3.9057*	4.2901*	2.0822*
Replicate F				1.058	0.443	13.718	9.708	0.336	5.676
Replicate Prob(F)				0.3833	0.7240	0.0001	0.0002	0.7993	0.0040
Treatment F				79.391	102.278	343.544	76.063	45.553	20.117
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Missing data estimates are included in columns: Yates=2,4,5,6,7,8

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Pest Code		CHEAL	AMARE		
Description		BAREGROUND	BAREGROUND		
Rating Date		Jul-19-2013	Jul-19-2013		
Rating Type		CONTRO	CONTRO		
Rating Unit		%	%		
Days After First/Last Applic.		29 29	29 29		
Trt-Eval Interval		29 DA-A	29 DA-A		
Trt No.	Treatment Name	Rate	Appl Unit Code	7	8
1	Touchdown Hi-Tech	0.273 lb ae/a	A	100	24
1	Rugged 2,4-D	0.25 lb ai/a	A		
2	Touchdown Hi-Tech	0.273 lb ae/a	A	98	48
2	Rugged 2,4-D	0.25 lb ai/a	A		
2	N-pak ams	2.5 % v/v	A		
3	Touchdown Hi-Tech	0.273 lb ae/a	A	95	53
3	Rugged 2,4-D	0.25 lb ai/a	A		
3	Class Act NG	2.5 % v/v	A		
4	Touchdown Hi-Tech	0.273 lb ae/a	A	95	45
4	Rugged 2,4-D	0.25 lb ai/a	A		
4	Class Act NG	1.25 % v/v	A		
5	Touchdown Hi-Tech	0.273 lb ae/a	A	98	45
5	Rugged 2,4-D	0.25 lb ai/a	A		
5	AG 08034	2 % v/v	A		
6	Touchdown Hi-Tech	0.273 lb ae/a	A	98	45
6	Rugged 2,4-D	0.25 lb ai/a	A		
6	AG 08034	1 % v/v	A		
7	Touchdown Hi-Tech	0.273 lb ae/a	A	98	38
7	Rugged 2,4-D	0.25 lb ai/a	A		
7	AG 07043	1 % v/v	A		
8	Touchdown Hi-Tech	0.273 lb ae/a	A	100	48
8	Rugged 2,4-D	0.25 lb ai/a	A		
8	AG 11011	1 % v/v	A		
9	Touchdown Hi-Tech	0.273 lb ae/a	A	96	45
9	Rugged 2,4-D	0.25 lb ai/a	A		
9	AG 11011	1.25 % v/v	A		
10	UTC			0	0
LSD (P=.05)		5.9		14.6	
Standard Deviation		4.0		10.0	
CV		4.6		25.76	
Bartlett's X2		0.858		5.339	
P(Bartlett's X2)		0.99		0.721	
Skewness		-2.6176*		-0.7271	
Kurtosis		5.3422*		0.1079	
Replicate F		5.072		4.518	
Replicate Prob(F)		0.0067		0.0112	
Treatment F		234.402		9.775	
Treatment Prob(F)		0.0001		0.0001	

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Pest Code

SETFA, *Setaria faberi*, = US
AMBTR, *Ambrosia trifida*, = US
CHEAL, *Chenopodium album*, = US
AMARE, *Amaranthus retroflexus*, = US

Rating Type

CONTRO = control / burndown or knockdown

Rating Unit

% = percent