

Ohio State University Horticulture and Crop Science

Performance of Impact and Glyphosate on glyphosate resistant giant ragweed

Title No. 2:
Trial ID: 10IMPACTGR Protocol ID: 10-TPZ-H-116
Location: CLARKSBURG Study Director: Anthony F. Dobbels
Project ID: Investigator: Dr. Mark M. Loux
Sponsor Contact: Bill O'Neal, AMVAC

General Trial Information

Study Director: Anthony F. Dobbels **Title:** Research Specialist
Investigator: Dr. Mark M. Loux **Title:** Professor

Trial Location

City: Clarksburg **Latitude of LL Corner °:** 39.5318 N
State/Prov.: Ohio **Longitude of LL Corner °:** 83.17503 W
Postal Code: 43115 **Altitude of LL Corner, Unit:** 874.00 FT
Country: USA

Personnel

Study Director: Anthony F. Dobbels **Title:** Research Specialist
Affiliation: The Ohio State University
Address: 7721 South Charleston Pike
Location: South Charleston OH
Postal Code: 45368 **E-mail:** dobbels.1@osu.edu
Investigator: Dr. Mark M. Loux **Title:** Professor
Affiliation: The Ohio State University
Address: 222 Kottman Hall, 2021 Coffey Road
Location: Columbus OH
Postal Code: 43210 **E-mail:** loux.1@osu.edu

Crop Description

Crop 1: ZEAMX Zea mays Corn
Variety: SEED CONSULTANTS SC 11HQ38
BBCH Scale: BCOR
Planting Method: SEEDED seeded
Depth, Unit: 1 IN
Row Spacing, Unit: 30 IN
Seed Bed: CONTIL
Soil Moisture: NORMAL normal
Description: RR/LL
Planting Date: 4/20/10
Rate, Unit: 32000 S/A
Soil Temperature, Unit: 54 F
Emergence Date: 5/3/10

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
Description: glyphosate resistant

Site and Design

Plot Width, Unit: 10 FT
Plot Length, Unit: 30 FT
Plot Area, Unit: 300 FT²
Replications: 4
Site Type: FIELD field
Experimental Unit: 1 PLOT plot
Tillage Type: CONTIL conventional-till
Study Design: RACOB� Randomized Complete Block (RCB)
Untreated Arrangement: INCLUDED single control randomized in each block

Soil Description

Description Name: Clarksburg
% Sand: 24.5 **% OM:** 2.9
% Silt: 48.9 **pH:** 6.8
% Clay: 26.6 **CEC:** 11.7
Texture: SICL silty clay loam
Soil Name: Kokomo
Fert. Level: G good
Soil Drainage: G good

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Application Description

A

Application Date: 5/27/10
Time of Day: 9:00 A.M.
Application Method: SPRAY
Application Timing: POST
Application Placement: BROFOL
Applied By: Dobbels
Air Temperature, Unit: 81 F
% Relative Humidity: 81
Wind Velocity, Unit: 0.5 MPH
Wind Direction: SW
Dew Presence (Y/N): N no
Soil Temperature, Unit: 68 F
Soil Moisture: ABONOR
% Cloud Cover: 10
Next Rain Occurred On: 5/31/10

Crop Stage At Each Application

A

Crop 1 Code, BBCH Scale: ZEAMX BCOR
Stage Scale Used: BBCH
Stage Majority, Percent: 15 100
Height, Unit: 7 IN
Height Minimum, Maximum: 7 9

Pest Stage At Each Application

A

Pest 1 Code, Type, Scale: SETFA W
Stage Majority, Percent: 13 100
Height, Unit: 2 IN
Height Minimum, Maximum: 1 3
Density, Unit: 12 M2
Pest 2 Code, Type, Scale: AMBTR W
Stage Majority, Percent: 14 100
Height, Unit: 6 IN
Height Minimum, Maximum: 4 8
Density, Unit: 4 M2

Application Equipment

A

Appl. Equipment: BACKPACK
Equipment Type: SPRBAC
Operating Pressure, Unit: 53 PSI
Nozzle Type: TEEJET DG
Nozzle Size: 11002
Nozzle Spacing, Unit: 18 IN
Boom Length, Unit: 10 FT
Boom Height, Unit: 20 IN
Ground Speed, Unit: 3 MPH
Carrier: WATER
Spray Volume, Unit: 20 GPA
Mix Size, Unit: 3 Liters
Propellant: CO2

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Pest Code				SETFA	AMBTR	CHEAL	HIBTR	SETFA	AMBTR	CHEAL					
Crop Code	ZEAMX	ZEAMX													
Rating Date	6/2/10	6/10/10		6/10/10	6/10/10	6/10/10	6/10/10	6/22/10	6/22/10	6/22/10					
Rating Type	PHYGEN	PHYGEN		CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO					
Rating Unit	%	%		%	%	%	%	%	%	%					
Trt-Eval Interval	6 DA-A	14 DA-A		14 DA-A	14 DA-A	14 DA-A	14 DA-A	26 DA-A	26 DA-A	26 DA-A					
Plant-Eval Interval	43 DP-1	51 DP-1		51 DP-1	51 DP-1	51 DP-1	51 DP-1	63 DP-1	63 DP-1	63 DP-1					
Days After Emergence	30 DE-	38 DE-		38 DE-	38 DE-	38 DE-	38 DE-	50 DE-	50 DE-	50 DE-					
Trt No.	Treatment Name	Form Conc	Other Rate	Other Rate	Appl Unit	Code	1	2	3	4	5	6	7	8	9
1	Untreated						0	0	0	0	0	0	0	0	0
2	Impact	2.8	0.75 oz/a		A		0	0	97	90	100	100	90	82	100
	2 Atrazine	4	1 pt/a												
	2 MSO	100	0.8 qt/a												
	2 N-PAK AMS	100	2 qt/a												
3	Impact	2.8	1 oz/a		A		0	0	98	94	100	100	97	87	100
	3 Atrazine	4	1 pt/a												
	3 MSO	100	0.8 qt/a												
	3 N-PAK AMS	100	2 qt/a												
4	Roundup PowerMax	4.5	22 oz/a		A		0	0	93	63	100	100	88	56	100
	4 N-PAK AMS	100	2 qt/a												
5	Impact	2.8	0.5 oz/a		A		0	0	100	97	100	100	96	86	100
	5 Roundup PowerMax	4.5	22 oz/a												
	5 Atrazine	4	1 pt/a												
	5 N-PAK AMS	100	2 qt/a												
6	Impact	2.8	0.5 oz/a		A		0	0	95	98	100	100	92	80	100
	6 Roundup PowerMax	4.5	22 oz/a												
	6 Atrazine	4	1 pt/a												
	6 MSO	100	0.8 qt/a												
	6 N-PAK AMS	100	2 qt/a												
7	Impact	2.8	0.75 oz/a		A		0	0	97	70	100	100	92	83	100
	7 Roundup PowerMax	4.5	22 oz/a												
	7 N-PAK AMS	100	2 qt/a												
8	Impact	2.8	0.75 oz/a		A		0	0	98	80	100	100	97	75	100
	8 Roundup PowerMax	4.5	22 oz/a												
	8 Atrazine	4	1 pt/a												
	8 N-PAK AMS	100	2 qt/a												
9	Impact	2.8	1 oz/a		A		0	0	100	85	100	100	95	83	100
	9 Roundup PowerMax	4.5	11 oz/a												
	9 Atrazine	4	1 pt/a												
	9 N-PAK AMS	100	2 qt/a												
10	Status	56	2.5 oz/a		A		0	0	93	83	100	100	90	73	100
	10 Roundup PowerMax	4.5	22 oz/a												
	10 N-PAK AMS	100	2 qt/a												
11	Callisto	4	2.5 oz/a		A		0	0	100	88	100	100	100	90	100
	11 Roundup PowerMax	4.5	22 oz/a												
	11 Atrazine	4	1 pt/a												
	11 N-PAK AMS	100	2 qt/a												
12	Laudis	3.5	2 oz/a		A		0	0	98	94	100	100	96	91	100
	12 Roundup PowerMax	4.5	22 oz/a												
	12 Atrazine	4	1 pt/a												
	12 N-PAK AMS	100	2 qt/a												
13	Cadet	10	0.6 oz/a		A		0	0	89	55	100	100	81	60	100

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Pest Code	ZEAMX		SETFA	AMBTR	CHEAL	HIBTR	SETFA	AMBTR	CHEAL					
Crop Code	ZEAMX	ZEAMX												
Rating Date	6/2/10	6/10/10	6/10/10	6/10/10	6/10/10	6/10/10	6/22/10	6/22/10	6/22/10					
Rating Type	PHYGEN	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO					
Rating Unit	%	%	%	%	%	%	%	%	%					
Trt-Eval Interval	6 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	26 DA-A	26 DA-A	26 DA-A					
Plant-Eval Interval	43 DP-1	51 DP-1	51 DP-1	51 DP-1	51 DP-1	51 DP-1	63 DP-1	63 DP-1	63 DP-1					
Days After Emergence	30 DE-	38 DE-	38 DE-	38 DE-	38 DE-	38 DE-	50 DE-	50 DE-	50 DE-					
Trt No.	Treatment Name	Form Conc	Other Rate	Other Rate	Appl Unit Code	1	2	3	4	5	6	7	8	9
13	Roundup PowerMax	4.5	22 oz/a											
	13 N-PAK AMS	100	2 qt/a											
14	Callisto Xtra	2.7	20 oz/a		A	0	0	100	94	100	100	100	94	100
	14 Roundup PowerMax	4.5	22 oz/a											
	14 N-PAK AMS	100	2 qt/a											
LSD (P=.05)		0.0	0.0	6.3		17.8		0.0	0.0	9.6	21.9		0.1	
Standard Deviation		0.0	0.0	4.4		12.4		0.0	0.0	6.7	15.2		0.0	
CV		0.0	0.0	4.9		16.0		0.0	0.0	7.71	20.43		0.05	
Bartlett's X2		0.0	0.0	25.629		19.094		0.0	0.0	20.976	21.078		0.0	
P(Bartlett's X2)		.	.	0.001*		0.086		.	.	0.021*	0.049*		.	
Replicate F		0.000	0.000	15.519		5.263		0.000	0.000	12.515	4.293		0.000	
Replicate Prob(F)		1.0000	1.0000	0.0001		0.0041		1.0000	1.0000	0.0001	0.0111		1.0000	
Treatment F		0.000	0.000	140.272		17.341		0.000	0.000	58.089	10.028	1251312.500		
Treatment Prob(F)		1.0000	1.0000	0.0001		0.0001		1.0000	1.0000	0.0001	0.0001		0.0001	

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Pest Code	HIBTR SETFA AMBTR CHEAL HIBTR									
Crop Code										
Rating Date	6/22/10	7/8/10	7/8/10	7/8/10	7/8/10					
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO					
Rating Unit	%	%	%	%	%					
Trt-Eval Interval	26 DA-A	36 DA-A	36 DA-A	36 DA-A	36 DA-A					
Plant-Eval Interval	63 DP-1	79 DP-1	79 DP-1	79 DP-1	79 DP-1					
Days After Emergence	50 DE-	66 DE-	66 DE-	66 DE-	66 DE-					
Trt No.	Treatment Name	Form Conc	Other Rate	Other Rate	Appl Unit Code	10	11	12	13	14
1	Untreated					0	0	0	0	0
2	Impact	2.8	0.75 oz/a		A	100	88	76	100	100
	2 Atrazine	4	1 pt/a							
	2 MSO	100	0.8 qt/a							
	2 N-PAK AMS	100	2 qt/a							
3	Impact	2.8	1 oz/a		A	100	96	86	100	100
	3 Atrazine	4	1 pt/a							
	3 MSO	100	0.8 qt/a							
	3 N-PAK AMS	100	2 qt/a							
4	Roundup PowerMax	4.5	22 oz/a		A	100	69	55	100	100
	4 N-PAK AMS	100	2 qt/a							
5	Impact	2.8	0.5 oz/a		A	100	95	86	100	100
	5 Roundup PowerMax	4.5	22 oz/a							
	5 Atrazine	4	1 pt/a							
	5 N-PAK AMS	100	2 qt/a							
6	Impact	2.8	0.5 oz/a		A	100	85	76	100	100
	6 Roundup PowerMax	4.5	22 oz/a							
	6 Atrazine	4	1 pt/a							
	6 MSO	100	0.8 qt/a							
	6 N-PAK AMS	100	2 qt/a							
7	Impact	2.8	0.75 oz/a		A	100	89	80	100	100
	7 Roundup PowerMax	4.5	22 oz/a							
	7 N-PAK AMS	100	2 qt/a							
8	Impact	2.8	0.75 oz/a		A	100	93	71	100	100
	8 Roundup PowerMax	4.5	22 oz/a							
	8 Atrazine	4	1 pt/a							
	8 N-PAK AMS	100	2 qt/a							
9	Impact	2.8	1 oz/a		A	100	91	73	100	100
	9 Roundup PowerMax	4.5	11 oz/a							
	9 Atrazine	4	1 pt/a							
	9 N-PAK AMS	100	2 qt/a							
10	Status	56	2.5 oz/a		A	100	83	69	100	100
	10 Roundup PowerMax	4.5	22 oz/a							
	10 N-PAK AMS	100	2 qt/a							
11	Callisto	4	2.5 oz/a		A	100	98	94	100	100
	11 Roundup PowerMax	4.5	22 oz/a							
	11 Atrazine	4	1 pt/a							
	11 N-PAK AMS	100	2 qt/a							
12	Laudis	3.5	2 oz/a		A	100	91	88	100	100
	12 Roundup PowerMax	4.5	22 oz/a							
	12 Atrazine	4	1 pt/a							
	12 N-PAK AMS	100	2 qt/a							
13	Cadet	10	0.6 oz/a		A	100	70	48	100	98

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Pest Code	HIBTR SETFA AMBTR CHEAL HIBTR									
Crop Code										
Rating Date	6/22/10	7/8/10	7/8/10	7/8/10	7/8/10					
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO					
Rating Unit	%	%	%	%	%					
Trt-Eval Interval	26 DA-A	36 DA-A	36 DA-A	36 DA-A	36 DA-A					
Plant-Eval Interval	63 DP-1	79 DP-1	79 DP-1	79 DP-1	79 DP-1					
Days After Emergence	50 DE-	66 DE-	66 DE-	66 DE-	66 DE-					
Trt No.	Treatment Name	Form Conc	Other Rate	Other Rate	Appl Unit Code	10	11	12	13	14
13	Roundup PowerMax	4.5	22 oz/a							
	13 N-PAK AMS	100	2 qt/a							
14	Callisto Xtra	2.7	20 oz/a		A	100	96	91	100	100
	14 Roundup PowerMax	4.5	22 oz/a							
	14 N-PAK AMS	100	2 qt/a							
LSD (P=.05)		0.1	19.1	23.4		0.0	2.0			
Standard Deviation		0.0	13.3	16.4		0.0	1.4			
CV		0.05	16.34	23.08		0.0	1.49			
Bartlett's X2		0.0	23.341	18.199		0.0	0.0			
P(Bartlett's X2)		.	0.016*	0.11		.	.			
Replicate F		0.000	8.762	3.380		0.000	1.533			
Replicate Prob(F)		1.0000	0.0002	0.0286		1.0000	0.2226			
Treatment F		1251312.500	14.205	8.800		0.000	1502.670			
Treatment Prob(F)		0.0001	0.0001	0.0001		1.0000	0.0001			

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Sponsor Contact: Bill O'Neal, AMVAC

Pest Code

SETFA, *Setaria faberi*, = US
AMBTR, *Ambrosia trifida*, = US
CHEAL, *Chenopodium album*, = US
HIBTR, *Hibiscus trionum*, = US

Crop Code

ZEAMX, BCOR, *Zea mays*, = US

Rating Type

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

Rating Unit

% = percent

Plant-Eval Interval

43 DP-1 = 1 4/20/10
51 DP-1 = 1 4/20/10
63 DP-1 = 1 4/20/10
79 DP-1 = 1 4/20/10