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Zidua effectiveness in a one pass system

Trial ID: 11S-PIP-CTC-02 Protocol ID: 11S-PIP-CTC-02
 Location: PPAC Study Director: Paul Marquardt
 Project ID: 11S-PIP-CTC-02 Investigator: Dr. Bill Johnson
 Sponsor Contact: Gery Welker

General Trial Information

Study Director: Paul Marquardt **Title:** Research Associate
Investigator: Dr. Bill Johnson **Title:** Professor

Discipline: H herbicide
Trial Status: E established
Initiation Date: 3-15-2011

Trial Location

City: Butleville
State/Prov.: IN
Postal Code: 47223
Country: USA

Personnel

Study Director: Paul Marquardt **Title:** Research Associate
Affiliation: Purdue University
Address: 915 W. State Street
Location: West Lafayette, IN
Postal Code: 47907 **E-mail:** pmarquar@purdue.edu
Phone No.: 765-494-0891 **Mobile No.:** 765-409-6369
Investigator: Dr. Bill Johnson **Title:** Professor
Affiliation: Purdue University
Address: 915 W. State Street
Location: West Lafayette, IN
Postal Code: 47907 **E-mail:** wgi@purdue.edu
Phone No.: 765-494-4656 **Mobile No.:** 765-404-9801

Cooperator/Landowner

Cooperator: Jon Leuck **Role:** Director
Organization: Pinney Purdue Agricultural Center **Org. Type:** University
Address 1: 11402 S. County Line Rd.
City: Wanatah **Phone No.:** 219-733-2379
State/Prov.: IN **Mobile No.:** 765-479-3759
Postal Code: 46390 **E-mail:** leuckj@purdue.edu
Country: USA United States

Crop Description

Crop 1: ZEAMX Zea mays Com
Variety: Pioneer 33W84 **Description:** Roundup Ready/Liberty Link
BCH Scale: BCOR **Planting Date:** 5-9-2011
Planting Method: DIRDRI direct drilled **Rate, Unit:** 32000 S/A
Depth, Unit: 2 IN
Row Spacing, Unit: 30 IN **Spacing Within Row, Unit:** 6 IN
Seed Bed: FINE fine **Soil Temperature, Unit:** 60 F
Soil Moisture: DRY dry **Emergence Date:** 5-15-2011
Harvest Date: 10-7-2011 **Harvest Equipment:** 1987 Gleaner F3
Harvested Width, Unit: 10 FT **Harvested Length, Unit:** 25 FT
% Standard Moisture: 15.5 **Moisture Meter:** Carter 4" Blade
Weighing Equipment: Harvestmaster 400

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Site and Design	
Plot Width, Unit: 10 FT Plot Length, Unit: 30 FT Plot Area, Unit: 300 FT ² 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: PPAC-Field M1	
% Sand: 40 % Silt: 40 % Clay: 20	% OM: 2 pH: 6.5 CEC: 6.3
Texture: SL sandy loam Fert. Level: P poor Soil Drainage: E excellent	

Application Description	
	A
Application Date:	5-9-2011
Time of Day:	10 AM
Application Method:	SPRAY
Application Timing:	ATPLAN
Application Placement:	SOIL
Applied By:	JR
Air Temperature, Unit:	76 F
% Relative Humidity:	46
Wind Velocity, Unit:	5 MPH
Wind Direction:	SE
Dew Presence (Y/N):	N no
Soil Temperature, Unit:	60 F
Soil Moisture:	DRY
% Cloud Cover:	70

Crop Stage At Each Application	
	A
Crop 1 Code, BBCH Scale:	ZEAMX BCOR
Stage Scale Used:	BBCH
Stage Majority, Percent:	00 100

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Application Equipment

	A
Appl. Equipment:	CO2 Backpack
Equipment Type:	SPRBAC
Operation Pressure, Unit:	17 PSI
Nozzle Type:	Flat Fan
Nozzle Size:	XR11002
Nozzle Spacing, Unit:	15 IN
Nozzles/Row:	8
Boom Length, Unit:	10 FT
Boom Height, Unit:	18 IN
Ground Speed, Unit:	3 MPH
Carrier:	H2O
Water Hardness (ppm CaCO3):	150
Spray Volume, Unit:	15 GAL/AC
Mix Size, Unit:	1.8 Liters
Propellant:	CO2
Tank Mix (Y/N):	N no

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Pest Type		W Weed					
Pest Code		AMBTR	ABUTH	CHEAL	AMBTR	ABUTH	CHEAL
Pest Scientific Name		Ambrosia trifi>	Abutilon theop>	Chenopodium al>	Ambrosia trifi>	Abutilon theop>	Chenopodium al>
Pest Name		Giant ragweed	Velvetleaf	Common lambsqu>	Giant ragweed	Velvetleaf	Common lambsqu>
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn	Corn
Crop Variety	P33W84	P33W84	P33W84	P33W84	P33W84	P33W84	P33W84
Description		10-15"	10-15"	10-15"	7 ft	7 ft	7 ft
Rating Date	5-23-2011	6-13-2011	6-13-2011	6-13-2011	7-13-2011	7-13-2011	7-13-2011
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1	1
Crop Stage Majority	VC	V5	V5	V5	V12	V12	V12
Pest Stage Majority		1-8 IN	1-3 IN	1-2 IN	12-60 IN	4-36 IN	4-24 IN
Pest Density, Unit		6.5 YD2	2.5 YD2	2.5 YD2	10 YD2	3 YD2	3 YD2
Assessed By	PM	JR/RH	JR/RH	JR/RH	PM	PM	PM
Days After First/Last Applic.	14 14	35 35	35 35	35 35	65 65	65 65	65 65
Trt-Eval Interval	14 DA-A	35 DA-A	35 DA-A	35 DA-A	65 DA-A	65 DA-A	65 DA-A
Plant-Eval Interval	14 DP-1	35 DP-1	35 DP-1	35 DP-1	65 DP-1	65 DP-1	65 DP-1
Days After Emergence	8 DE-1	29 DE-	29 DE-	29 DE-	59 DE-	59 DE-	59 DE-
ARM Action Codes							
Number of Decimals							
Trt Treatment	Rate Appl						
No. Name	Rate Unit Code	1	2	3	4	5	6
1 UNTREATED		0.0 a	0.0 b	0.0 c	0.0 b	0.0 b	0.0 b
2 Zidua	119 g ai/ha A	0.0 a	76.3 a	90.5 ab	100.0 a	83.7 a	98.5 a
AAtrex	1400 g ai/ha A						
3 Zidua	119 g ai/ha A	0.0 a	90.3 a	96.3 ab	100.0 a	77.3 a	100.0 a
AAtrex	1400 g ai/ha A						
Sharpen	50 g ai/ha A						
4 Zidua	89 g ai/ha A	0.0 a	94.3 a	100.0 a	100.0 a	91.3 a	99.8 a
AAtrex	1400 g ai/ha A						
Verdict	490 g ai/ha A						
5 Lexar	3100 g ai/ha A	0.0 a	79.3 a	88.8 b	95.0 a	79.8 a	91.8 a
6 Bicep II Magnum	3860 g ai/ha A	0.0 a	87.0 a	94.3 ab	100.0 a	70.8 a	87.5 a

Means followed by same letter do not significantly differ (P=0.05, Student-Newman-Keuls)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Pest Type		W Weed					
Pest Code		AMBTR	ABUTH	CHEAL	AMBTR	ABUTH	CHEAL
Pest Scientific Name		Ambrosia trifi>	Abutilon theop>	Chenopodium al>	Ambrosia trifi>	Abutilon theop>	Chenopodium al>
Pest Name		Giant ragweed	Velvetleaf	Common lambsqu>	Giant ragweed	Velvetleaf	Common lambsqu>
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn	Corn
Crop Variety	P33W84	P33W84	P33W84	P33W84	P33W84	P33W84	P33W84
Description		10-15"	10-15"	10-15"	7 ft	7 ft	7 ft
Rating Date	5-23-2011	6-13-2011	6-13-2011	6-13-2011	7-13-2011	7-13-2011	7-13-2011
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1	1
Crop Stage Majority	VC	V5	V5	V5	V12	V12	V12
Pest Stage Majority		1-8 IN	1-3 IN	1-2 IN	12-60 IN	4-36 IN	4-24 IN
Pest Density, Unit		6.5 YD2	2.5 YD2	2.5 YD2	10 YD2	3 YD2	3 YD2
Assessed By	PM	JR/RH	JR/RH	JR/RH	PM	PM	PM
Days After First/Last Applic.	14 14	35 35	35 35	35 35	65 65	65 65	65 65
Trt-Eval Interval	14 DA-A	35 DA-A	35 DA-A	35 DA-A	65 DA-A	65 DA-A	65 DA-A
Plant-Eval Interval	14 DP-1	35 DP-1	35 DP-1	35 DP-1	65 DP-1	65 DP-1	65 DP-1
Days After Emergence	8 DE-1	29 DE-	29 DE-	29 DE-	59 DE-	59 DE-	59 DE-
ARM Action Codes							
Number of Decimals							
Trt Treatment	Rate	Appl					
No. Name	Rate Unit	Code	1	2	3	4	5
7 UNTREATED			0.0 a	0.0 b	0.0 c	0.0 b	0.0 b
LSD (P=.05)	0.00		14.93	7.48	5.62	25.45	11.62
Standard Deviation	0.00		10.05	5.03	3.78	16.98	7.79
CV	0.0		16.48	7.5	5.34	29.51	11.42
Bartlett's X2	0.0		5.097	21.19	0.0	4.625	17.428
P(Bartlett's X2)	.		0.277	0.001*	.	0.328	0.001*
Replicate F	0.000		4.756	1.205	1.000	2.168	1.308
Replicate Prob(F)	1.0000		0.0130	0.3363	0.4155	0.1316	0.3041
Treatment F	0.000		70.224	334.166	654.333	21.970	144.549
Treatment Prob(F)	1.0000		0.0001	0.0001	0.0001	0.0001	0.0001

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Pest Type			
Pest Code			
Pest Scientific Name			
Pest Name			
Crop Code	ZEAMX	ZEAMX	ZEAMX
BBCH Scale	BCOR	BCOR	BCOR
Crop Scientific Name	Zea mays	Zea mays	Zea mays
Crop Name	Corn	Corn	Corn
Crop Variety	P33W84	P33W84	P33W84
Description			
Rating Date	10-7-2011	10-7-2011	10-7-2011
Rating Type	YIELD	MOISTURE	YIELD
Rating Unit	LB	%	BU
Number of Subsamples	1	1	1
Crop Stage Majority			
Pest Stage Majority			
Pest Density, Unit			
Assessed By	PM	PM	PM
Days After First/Last Applic.	151 151	151 151	151 151
Trt-Eval Interval	151 DA-A	151 DA-A	151 DA-A
Plant-Eval Interval	151 DP-1	151 DP-1	151 DP-1
Days After Emergence	145 DE	145 DE	145 DE
ARM Action Codes			TY1
Number of Decimals			1
Trt No.			
Treatment Name			
Rate			
Appl Code			
8			
9			
10			
1 UNTREATED	44.2331015 a	24.0443235 a	124.0 a
2 Zidua AAtrex	119 g ai/ha A 1400 g ai/ha A	59.4491484 a	24.1911569 a 166.3 a
3 Zidua AAtrex Sharpen	119 g ai/ha A 1400 g ai/ha A 50 g ai/ha A	63.9884479 a	24.7216307 a 177.4 a
4 Zidua AAtrex Verdict	89 g ai/ha A 1400 g ai/ha A 490 g ai/ha A	68.0174095 a	24.5952650 a 188.4 a
5 Lexar	3100 g ai/ha A	57.9047147 a	23.6426701 a 163.5 a
6 Bicep II Magnum	3860 g ai/ha A	52.9222312 a	22.8116592 a 150.2 a

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Pest Type			
Pest Code			
Pest Scientific Name			
Pest Name			
Crop Code	ZEAMX	ZEAMX	ZEAMX
BBCH Scale	BCOR	BCOR	BCOR
Crop Scientific Name	Zea mays	Zea mays	Zea mays
Crop Name	Corn	Corn	Corn
Crop Variety	P33W84	P33W84	P33W84
Description			
Rating Date	10-7-2011	10-7-2011	10-7-2011
Rating Type	YIELD	MOISTURE	YIELD
Rating Unit	LB	%	BU
Number of Subsamples	1	1	1
Crop Stage Majority			
Pest Stage Majority			
Pest Density, Unit			
Assessed By	PM	PM	PM
Days After First/Last Applic.	151 151	151 151	151 151
Trt-Eval Interval	151 DA-A	151 DA-A	151 DA-A
Plant-Eval Interval	151 DP-1	151 DP-1	151 DP-1
Days After Emergence	145 DE	145 DE	145 DE
ARM Action Codes			TY1
Number of Decimals			1
Trt Treatment	Rate	Appl	
No. Name	Rate Unit	Code	
	8	9	10
7 UNTREATED	54.7218301 a	23.6398873 a	153.9 a
LSD (P=.05)	17.73860346	2.20509384	47.55
Standard Deviation	11.94011140	1.48428062	32.01
CV	20.83	6.2	19.94
Bartlett's X2	5.754	3.882	5.214
P(Bartlett's X2)	0.451	0.693	0.517
Replicate F	3.260	6.378	4.395
Replicate Prob(F)	0.0457	0.0039	0.0173
Treatment F	1.689	0.776	1.682
Treatment Prob(F)	0.1811	0.5991	0.1829

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Pest Type

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

Pest Code

AMBTR, Ambrosia trifida, = US
 ABUTH, Abutilon theophrasti, = US
 CHEAL, Chenopodium album, = US

Crop Code

ZEAMX, BCOR, Zea mays, = US

Rating Type

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

Rating Unit

% = percent
 LB = pound
 BU = bushel

YD2 = per square yard

Plant-Eval Interval

14 DP-1 = 1 ZEAMX 5-9-2011
 35 DP-1 = 1 ZEAMX 5-9-2011
 65 DP-1 = 1 ZEAMX 5-9-2011
 151 DP-1 = 1 ZEAMX 5-9-2011

ARM Action Codes

TY1 = $3.111428^{*}[8]^{*}(100-[9])/84.5$