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Demonstrate Zidua Effectiveness in enhancing the Verdict one-pass system compared to commercial standards

Trial ID: 11S-SEP-NTC-13 Protocol ID: 11S-SEP-NTC-13
 Location: SEPAC Study Director: Paul Marquardt
 Project ID: 11S-SEP-NTC-13 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: 5-12-2011

Trial Location

City: Butteville
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:** wji@purdue.edu
Phone No.: 765-494-4656 **Mobile No.:** 765-404-9801

Cooperator/Landowner

Cooperator: Don Biehle **Role:** Director
Organization: Southeast Purdue Agricultural Center **Org. Type:** University
Address 1: 4425 E. CR 350 N
City: Butteville **Phone No.:** 812-458-6977
State/Prov.: IN **Fax No.:** 812-458-6979
Postal Code: 47223 **Mobile No.:** 812-592-8426
Country: USA **E-mail:** biehled@purdue.edu
 United States

Crop Description

Crop 1: ZEAMX Zea mays Corn
Description: Roundup Ready
BBCH Scale: BCOR **Planting Date:** 6-8-2011
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: MEDIUM medium **Soil Temperature, Unit:** 75 F
Soil Moisture: MOIST **Emergence Date:** 6-8-2011
Harvest Date: 10-26-2011 **Harvest Equipment:** John Deere 3300
Harvested Width, Unit: 7.5 FT **Harvested Length, Unit:** 25 FT
Moisture Meter: CARTER 3" BLADE
Weighing Equipment: Harvestmaster

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Plot Width, Unit: 10 FT		Site and Design	
Plot Length, Unit: 30 FT	Site Type: FIELD	field	
Plot Area, Unit: 300 FT ²	Experimental Unit: 1	PLOT	plot
Replications: 4	Tillage Type: NOTILL	no-till	
	Study Design: RACOB	Randomized Complete Block (RCB)	
	Untreated Arrangement: INCLUDED	single control randomized in each block	

Maintenance		
No.	Date	Maintenance Treatment Name
1.	5-5-2011	BURNDOWN

Field Prep./Maintenance:
22 oz PowerMax and 1.0 lb 2,4-D Burndown applied on 5-5-11

Soil Description	
Description Name: SEPAC-Field U4	
% OM: 1.8	Texture: SIL silt loam
pH: 5.6	Soil Name: Avonburg
CEC: 6.7	Fert. Level: G good
	Soil Drainage: P poor

Application Description	
	A
Application Date:	6-3-2011
Time of Day:	10 AM
Application Method:	SPRAY
Application Timing:	ATPLAN
Application Placement:	BAND
Applied By:	JR
Air Temperature, Unit:	75 F
% Relative Humidity:	62
Wind Velocity, Unit:	4 MPH
Wind Direction:	SE
Dew Presence (Y/N):	N no
Soil Temperature, Unit:	75 F
Soil Moisture:	MOIST
% Cloud Cover:	90

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	W Weed	W Weed	W Weed	W Weed		
Pest Code		SETFA	XANST	SOLPT	GGGAN	XANST		
Pest Scientific Name		Setaria faberi	Xanthium strum>	Solanum pty can>	Annual grasses	Xanthium strum>		
Pest Name		Giant fox tail	Common cockleb>	Eastern black >	Annual grasses	Common cockleb>		
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn	Corn	Corn
Crop Variety	P33W84	P33W84	P33W84	P33W84	P33W84	P33W84	P33W84	P33W84
Description	6-10 IN							
Rating Date	6-24-2011	6-29-2011	6-29-2011	6-29-2011	7-26-2011	7-26-2011	10-26-2011	10-26-2011
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	YIELD	MOISTURE
Rating Unit	%	%	%	%	%	%	LB	%
Number of Subsamples	1	1	1	1	1	1	1	1
Crop Stage Majority	V3	V4	V4	V4	V12	V12		
Pest Stage Majority		3-8 IN	2-12 IN	2-6 IN	48 IN	24-36 IN		
Pest Density, Unit		40 YD2	5 YD2	2.5 YD2	40 YD2	5 YD2		
Assessed By	PM	RH	RH	RH	RH	RH	PM	
Days After First/Last Applic.	21 21	26 26	26 26	26 26	53 53	53 53	145 145	145 145
Trt-Eval Interval	21 DA-A	26 DA-A	26 DA-A	26 DA-A	53 DA-A	53 DA-A	145 DA-A	145 DA-A
Plant-Eval Interval	16 DP-1	21 DP-1	21 DP-1	21 DP-1	48 DP-1	48 DP-1	140 DP-1	140 DP-1
Days After Emergence	16 DE-	21 DE-	21 DE-	21 DE-	48 DE-	48 DE-	140 DE	140 DE
ARM Action Codes								
Number of Decimals								
Trt Treatment	Rate Appl							
No. Name	Rate Unit Code	1	2	3	4	5	6	7
1 UNTREATED		0.0 a	0.0 b	0.0 b	0.0 b	0.0 b	0.0 b	11.030 b
2 Verdict	730 g ai/ha A	0.0 a	92.8 a	99.5 a	100.0 a	72.5 a	90.0 a	41.190 a
3 Verdict	730 g ai/ha A	0.0 a	98.5 a	95.8 a	100.0 a	83.0 a	91.8 a	48.490 a
Zidua	59.5 g ai/ha A							30.30 a
4 Guardsman Max	2800 g ai/ha A	0.0 a	97.8 a	100.0 a	100.0 a	80.8 a	100.0 a	48.919 a
Sharpen	75 g ai/ha A							27.98 a
5 Verdict	730 g ai/ha A	0.0 a	95.3 a	99.5 a	100.0 a	75.0 a	95.0 a	36.276 a
Outlook	295 g ai/ha A							31.08 a
6 Lexar	2600 g ai/ha A	0.0 a	95.8 a	87.5 a	100.0 a	81.8 a	90.0 a	43.158 a
LSD (P=.05)		0.00	4.18	9.24	0.00	13.29	13.47	9.8674
Standard Deviation		0.00	2.78	6.13	0.00	8.82	8.94	6.4041
CV		0.0	3.47	7.63	0.0	13.47	11.49	16.77
Bartlett's X2		0.0	11.064	20.876	0.0	2.161	2.429	2.837
P(Bartlett's X2)		.	0.026*	0.001*	.	0.706	0.488	0.725
Replicate F		0.000	3.127	1.988	0.000	7.023	1.659	8.987
Replicate Prob(F)		1.0000	0.0572	0.1591	1.0000	0.0036	0.2183	0.0021
Treatment F		0.000	798.899	167.430	0.000	53.796	73.402	19.432
Treatment Prob(F)		1.0000	0.0001	0.0001	1.0000	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, Student-New man-Keuls)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Pest Type					
Pest Code					
Pest Scientific Name					
Pest Name					
Crop Code	ZEAMX				
BBCH Scale	BCOR				
Crop Scientific Name	Zea mays				
Crop Name	Corn				
Crop Variety	P33W84				
Description					
Rating Date	10-26-2011				
Rating Type	YIELD				
Rating Unit	BU				
Number of Subsamples	1				
Crop Stage Majority					
Pest Stage Majority					
Pest Density, Unit					
Assessed By	PM				
Days After First/Last Applic.	145 145				
Trt-Eval Interval	145 DA-A				
Plant-Eval Interval	140 DP-1				
Days After Emergence	140 DE				
ARM Action Codes	TY1				
Number of Decimals	1				
Trt No.	Treatment Name	Rate	Appl Unit	Code	
1	UNTREATED				39.2 c
2	Verdict	730 g ai/ha	A		147.6 ab
3	Verdict Zidua	730 g ai/ha 59.5 g ai/ha	A A		166.5 ab
4	Guardsman Max Sharpen	2800 g ai/ha 75 g ai/ha	A A		174.5 a
5	Verdict Outlook	730 g ai/ha 295 g ai/ha	A A		123.9 b
6	Lexar	2600 g ai/ha	A		148.7 ab
LSD (P=.05)					33.11
Standard Deviation					21.49
CV					16.1
Bartlett's X2					2.464
P(Bartlett's X2)					0.782
Replicate F					14.821
Replicate Prob(F)					0.0002
Treatment F					21.105
Treatment Prob(F)					0.0001

Means followed by same letter do not significantly differ (P=.05, Student-New man-Keuls)
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Pest Type

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

Pest Code

SETFA, Setaria faberi, = US
 XANST, Xanthium strumarium, = US
 SOLPT, Solanum pty canthum, = US
 GGGAN, Annual grasses, = US

Crop Code

ZEAMX, BCOR, Zea mays, = US

Rating Type

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

Rating Unit

% = percent
 LB = pound
 BU = bushel

YD2 = per square yard

Plant-Eval Interval

16 DP-1 = 1 ZEAMX 6-8-2011
 21 DP-1 = 1 ZEAMX 6-8-2011
 48 DP-1 = 1 ZEAMX 6-8-2011
 140 DP-1 = 1 ZEAMX 6-8-2011

ARM Action Codes

TY1 = $4.148571 * [7] * (100 - [8]) / 84.5$