

Purdue University

Pre/Post Herbicide Programs for RR Corn in the Midwest.

Trial ID: 11S-THP-CTC-17 Protocol ID: 11S-THP-CTC-117
 Location: Throckmorton Study Director: White/Marquardt
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact: Monsanto - John Willis

General Trial Information

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

Discipline: H herbicide
Trial Status: E established
Initiation Date: 4-9-2011

Trial Location

City: Lafayette
State/Prov.: IN
Postal Code: 47909
Country: USA

Personnel

Study Director: White/Marquardt **Title:** Research Associate

Affiliation: Purdue University
Address: 915 W State Street
Location: West Lafayette, IN, USA

Postal Code: 47907 **E-mail:** mdwhite@purdue.edu
Phone No.: 765-494-0891

Investigator: Dr. Bill Johnson **Title:** Professor

Affiliation: Purdue University
Address: 915 W State Street
Location: West Lafayette, IN, USA

Postal Code: 47907 **E-mail:** wji@purdue.edu
Phone No.: 765-494-4656 **Mobile No.:** 765-404-9801

Cooperator/Landowner

Cooperator: Throckmorton Purdue Ag Center **Role:** Purdue Ag Center

Organization: Purdue University
Address 1: 8343 US 231 S

City: Lafayette **Phone No.:** 765-538-3422
State/Prov.: IN **Fax No.:** 765-538-3423
Postal Code: 47909 **E-mail:** jayyoung@purdue.edu
Country: USA United States

Crop Description

Crop 1: ZEAMD Zea mays indentata Dent corn

Variety: Pioneer 33W84 **Description:** HXX, LL, RR2
BBCH Scale: BCOR **Planting Date:** 5-13-2011
Planting Method: PLANTD planted **Rate, Unit:** 34000 S/A

Depth, Unit: 1.5 IN
Row Spacing, Unit: 30 IN

Emergence Date: 6-22-2011

Pest Description

Pest 1 Type: W **Code:** SETFA *Setaria faberi*

Common Name: Giant foxtail

Pest 2 Type: W **Code:** IPOHE *Ipomoea hederacea*

Common Name: Ivyleaf morningglory

Pest 3 Type: W **Code:** ABUTH *Abutilon theophrasti*

Common Name: Velvetleaf

Pest 4 Type: W **Code:** AMBTR *Ambrosia trifida*

Common Name: Giant ragweed

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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: RACOB1 Randomized Complete Block (RCB) Untreated Arrangement: INCLUDED single control randomized in each block

Soil Description
Description Name: TPAC - Field 4B % OM: 2.9 Texture: SIL silt loam pH: 6.2 Soil Name: Toronto-Millbrook CEC: 13.3

Application Description				
	A	B	C	D
Application Date:	5-13-2010	6-6-2011	6-14-2011	6-21-2011
Time of Day:		2:30-2:50	10 AM	
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	ATPLAN	EAPOWE	MIPOCR	POSPOS
Application Placement:	FOLIAR	FOLIAR	FOLIAR	FOLIAR
Applied By:	MW	MW	MW	MH
Air Temperature, Unit:	68 F	88 F	70 F	72 F
% Relative Humidity:	62	53	65	72
Wind Velocity, Unit:	3.6 MPH	4.5 MPH	3.2 MPH	7 MPH
Wind Direction:	E	SE	N	S
Dew Presence (Y/N):	Y yes	N no	N no	Y yes
Soil Temperature, Unit:	70 F	87 F	68 F	
Soil Moisture:	DRY	SLIWET	DRY	WET
% Cloud Cover:	65	10	68	40

Crop Stage At Each Application				
	A	B	C	D
Crop 1 Code, BBCH Scale:	ZEAMD BCOR	ZEAMD BCOR	ZEAMD BCOR	ZEAMD BCOR
Stage Scale Used:			BBCH	BBCH
Stage Majority, Percent:			V5	V6
Height, Unit:		5.5 IN	10 IN	
Height Minimum, Maximum:		4 7		

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Pest Stage At Each Application				
	A	B	C	D
Pest 1 Code, Type, Scale:	SETFA W	SETFA W	SETFA W	SETFA W
Height, Unit:		3.5 IN	6 IN	10 IN
Height Minimum, Maximum:		1 6		
Density, Unit:		65 YD2	15 YD2	
Pest 2 Code, Type, Scale:	IPOHE W	IPOHE W	IPOHE W	IPOHE W
Height, Unit:		1.5 IN		4 IN
Height Minimum, Maximum:		1 2		
Density, Unit:		4 YD2		
Pest 3 Code, Type, Scale:	ABUTH W	ABUTH W	ABUTH W	ABUTH W
Height, Unit:		2 IN		8 IN
Height Minimum, Maximum:		1 3		
Density, Unit:		4 YD2		
Pest 4 Code, Type, Scale:	AMBTR W	AMBTR W	AMBTR W	AMBTR W
Height, Unit:		3.5 IN	10 IN	18 IN
Height Minimum, Maximum:		2 5		
Density, Unit:		3 YD2	4 YD2	

Application Equipment				
	A	B	C	D
Appl. Equipment:	CO2 FORD	CO2 FORD	CO2 FORD	CO2 BKPK
Equipment Type:	SPTRMO	SPTRMO	SPTRMO	SPRBAC
Operation Pressure, Unit:				17 PSI
Nozzle Type:	FLAT FAN	FLAT FAN	FLAT FAN	FLAT FAN
Nozzle Size:	XR 100 02	XR 100 02	XR 100 02	XR 110 02
Nozzle Spacing, Unit:	20 IN	20 IN	20 IN	15 IN
Nozzles/Row:	6	6	6	8
Boom Length, Unit:	10 FT	10 FT	10 FT	10 FT
Boom Height, Unit:	20 IN	20 IN	20 IN	18 IN
Ground Speed, Unit:	2.1 MPH	2.1 MPH	2.1 MPH	3 MPH
Carrier:	MEIGS	MEIGS	MEIGS	H2O
Water Hardness (ppm CaCO3):				150
Spray Volume, Unit:	20 gal/ac	20 gal/ac	20 gal/ac	15 gal/ac
Mix Size, Unit:	2.5 liters	2.5 liters	2.5 liters	1.8 liters
Propellant:	CO2	CO2	CO2	CO2
Tank Mix (Y/N):				N no

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Pest Type	W Weed SETFA	W Weed AMBTR	W Weed AMBTR	W Weed SETFA	W Weed SETFA	W Weed AMBTR	W Weed AMBTR	W Weed SETFA	W Weed SETFA	
Pest Code	Setaria faberi	Ambrosia trif>	Ambrosia trif>	Ambrosia trif>	Ambrosia trif>	Ambrosia trif>	Ambrosia trif>	Ambrosia trif>	Ambrosia trif>	
Pest Scientific Name										
Pest Name	Giant foxtail	Giant ragweed	Giant ragweed	Giant ragweed	Giant ragweed	Giant foxtail	Giant foxtail	Giant foxtail	Giant foxtail	
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	
BBCH Scale	BCOR	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	Zea mays	
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn	Corn	Corn	Corn	
Description	5 IN	6-14-2011	6-14-2011	7-11-2011	86 IN	86 IN	86 IN	86 IN	86 IN	
Rating Date	5-31-2011	6-14-2011	6-14-2011	7-11-2011	7-11-2011	7-11-2011	7-11-2011	10-5-2011	10-5-2011	
Rating Type	COUNT	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO	MOICON	YIELD	
Rating Unit	17 FT	%	%	%	%	%	%	%	bu/ac	
Sample Size, Unit	17 FT									
Number of Subsamples	1	1	1	1	1	1	1	1	1	
Crop Stage Majority	V2	V6	V6	V17	V17	V17	V17	V17	V17	
Pest Stage Majority		6 IN	10 IN		48-72 IN	36-60 IN				
Pest Density, Unit		15 YD2	4 YD2		12.5YD2	35 YF2				
Assessed By	MW	MW	MW	CB	CB	CB	CB	510 106	510 106	
Days After First/Last Applic.	383 383	397 8	397 8	424 20	424 20	424 20	424 20	510 106	510 106	
Plant-Eval Interval	18 DP-1	32 DP-1	32 DP-1	59 DP-1	59 DP-1	59 DP-1	59 DP-1	145 DP-1	145 DP-1	
Days After Emergence	-22 DE-1	-8 DE-1	-8 DE-1	19 DE-1	19 DE-1	19 DE-1	19 DE-1	105 DE-1	105 DE-1	
Trt Treatment	Rate	Appl	1	2	3	4	5	6	7	8
No. Name	Rate Unit	Code								
1 Untreated Check			32.3 a	0.0 c	0.0 b	0.0 a	0.0 c	0.0 c	22.200 a	82.95 b
2 Harness Xtra 5.6 (5.6 SC)	2.1 lb ai/a	A	33.0 a	93.5 a	75.0 a	0.0 a	84.5 ab	88.3 ab	20.203 a	147.08 a
3 Harness Xtra 5.6 (5.6 SC)	2.1 lb ai/a	A	33.5 a	95.8 a	78.8 a	0.0 a	99.8 a	100.0 a	20.553 a	160.25 a
Roundup PowerMax 4.5 SL	0.773 lb ae/a	C								
AMS - Liquid	17 lb ai/100 gal	C								
4 Harness Xtra 5.6 (5.6 SC)	3.64 lb ai/a	A	32.3 a	98.0 a	85.8 a	0.0 a	93.0 ab	98.0 a	21.252 a	127.13 a
5 Harness Xtra 5.6 (5.6 SC)	3.64 lb ai/a	A	33.3 a	97.0 a	75.0 a	0.0 a	96.5 a	99.5 a	19.775 a	176.25 a
Roundup PowerMax 4.5 SL	0.773 lb ae/a	C								
AMS - Liquid	17 lb ai/100 gal	C								
6 Atrazine	2 lb ai/a	A	32.8 a	87.5 a	87.0 a	0.0 a	68.8 b	83.8 b	20.235 a	141.48 a
7 Atrazine	2 lb ai/a	A	31.3 a	90.0 a	77.8 a	0.0 a	96.5 a	97.8 a	20.140 a	180.93 a
Roundup PowerMax 4.5 SL	0.773 lb ae/a	C								
AMS - Liquid	17 lb ai/100 gal	C								
8 Verdict (5.57 SC)	0.696 lb ai/a	A	33.5 a	86.3 a	82.0 a	0.0 a	97.0 a	91.3 ab	20.230 a	171.83 a
9 Verdict (5.57 SC)	0.696 lb ai/a	A	34.0 a	90.0 a	60.0 a	0.0 a	98.8 a	98.8 a	19.480 a	153.43 a
Roundup PowerMax 4.5 SL	0.773 lb ae/a	C								
AMS - Liquid	17 lb ai/100 gal	C								
10 Corvus (2.63 SC)	0.115 lb ai/a	A	33.5 a	83.0 a	79.8 a	0.0 a	91.3 ab	92.3 ab	20.498 a	151.78 a
11 Corvus (2.63 SC)	0.115 lb ai/a	A	32.3 a	94.3 a	93.0 a	0.0 a	100.0 a	100.0 a	20.703 a	164.90 a
Roundup PowerMax 4.5 SL	0.773 lb ae/a	C								
AMS - Liquid	17 lb ai/100 gal	C								
12 Balance Flexx (2 SC)	0.078 lb ai/a	A	33.5 a	94.5 a	97.0 a	0.0 a	98.5 a	93.5 ab	20.475 a	167.58 a
13 Balance Flexx (2 SC)	0.078 lb ai/a	A	33.3 a	93.5 a	90.5 a	0.0 a	100.0 a	100.0 a	20.098 a	160.30 a
Roundup PowerMax 4.5 SL	0.773 lb ae/a	C								
AMS - Liquid	17 lb ai/100 gal	C								
14 Guardsman Max (5 SC)	2.5 lb ai/a	A	32.8 a	96.8 a	77.0 a	0.0 a	78.8 ab	99.3 a	19.878 a	141.88 a

Means followed by same letter do not significantly differ (P= .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 Pest Code Pest Scientific Name Pest Name		W Weed SETFA Setaria faberi	W Weed AMBTR Ambrosia trifi>		W Weed AMBTR Ambrosia trifi>	W Weed SETFA Setaria faberi						
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				
Description	5 IN			86 IN	86 IN	86 IN						
Rating Date	5-31-2011	6-14-2011	6-14-2011	7-11-2011	7-11-2011	7-11-2011	10-5-2011	10-5-2011				
Rating Type	COUNT	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO	MOICON	YIELD				
Rating Unit		%	%	%	%	%	%	bu/ac				
Sample Size, Unit	17 FT											
Number of Subsamples	1	1	1	1	1	1	1	1				
Crop Stage Majority	V2	V6	V6	V17	V17	V17						
Pest Stage Majority		6 IN	10 IN		48-72 IN	36-60 IN						
Pest Density, Unit		15 YD2	4 YD2		12.5YD2	35 YF2						
Assessed By	MW	MW	MW	CB	CB	CB						
Days After First/Last Applic.	383 383	397 8	397 8	424 20	424 20	424 20	510 106	510 106				
Plant-Eval Interval	18 DP-1	32 DP-1	32 DP-1	59 DP-1	59 DP-1	59 DP-1	145 DP-1	145 DP-1				
Days After Emergence	-22 DE-1	-8 DE-1	-8 DE-1	19 DE-1	19 DE-1	19 DE-1	105 DE-1	105 DE-1				
Trt No.	Treatment Name	Rate	Unit	Appl Code	1	2	3	4	5	6	7	8
15	Guardsman Max (5 SC) Roundup PowerMax 4.5 SL AMS - Liquid	2.5 0.773 17	lb ai/a lb ae/a lb ai/100 gal	A C C	33.0 a	97.5 a	93.0 a	0.0 a	100.0 a	99.8 a	20.540 a	183.50 a
16	Lumax (3.95 SC)	2.96	lb ai/a	A	32.5 a	95.3 a	94.0 a	0.0 a	98.8 a	95.3 a	20.563 a	168.40 a
17	Lumax (3.95 SC) Roundup PowerMax 4.5 SL AMS - Liquid	2.96 0.773 17	lb ai/a lb ae/a lb ai/100 gal	A C C	32.5 a	91.8 a	92.8 a	0.0 a	100.0 a	100.0 a	20.278 a	166.73 a
18	Harness Xtra 5.6 (5.6 SC) Hornet (85.6 WG)	2.1 0.16	lb ai/a lb ai/a	A A	32.3 a	96.5 a	91.8 a	0.0 a	98.3 a	97.8 a	20.793 a	148.05 a
19	Harness Xtra 5.6 (5.6 SC) Hornet (85.6 WG) Roundup PowerMax 4.5 SL AMS - Liquid	2.1 0.16 0.773 17	lb ai/a lb ai/a lb ae/a lb ai/100 gal	A A C C	31.5 a	94.5 a	86.0 a	0.0 a	99.3 a	99.8 a	20.310 a	161.85 a
20	SureStart (4.25 SC)	1.06	lb ai/a	A	33.8 a	92.3 a	83.8 a	0.0 a	93.0 ab	96.8 a	20.588 a	170.23 a
21	SureStart (4.25 SC) Roundup PowerMax 4.5 SL AMS - Liquid	1.06 0.773 17	lb ai/a lb ae/a lb ai/100 gal	A C C	32.5 a	95.8 a	85.0 a	0.0 a	99.3 a	99.8 a	20.580 a	151.05 a
22	Halex GT (4.39 SC) AMS - Liquid	1.98 17	lb ai/a lb ai/100 gal	B B	31.8 a	99.0 a	86.3 a	0.0 a	99.0 a	99.8 a	19.720 a	153.98 a
23	Roundup PowerMax 4.5 SL AMS - Liquid Roundup PowerMax 4.5 SL AMS - Liquid	0.773 17 0.773 17	lb ae/a lb ai/100 gal lb ae/a lb ai/100 gal	B B D D	32.8 a	98.0 a	72.5 a	0.0 a	99.5 a	99.8 a	20.263 a	162.95 a
24	Roundup PowerMax 4.5 SL AMS - Liquid	0.773 17	lb ae/a lb ai/100 gal	D D	33.5 a	15.0 b	0.0 b	0.0 a	100.0 a	99.8 a	20.370 a	153.03 a
25	Roundup PowerMax 4.5 SL AMS - Liquid	0.773 17	lb ae/a lb ai/100 gal	B B	31.8 a	96.8 a	65.0 a	0.0 a	91.3 ab	88.8 ab	20.108 a	144.43 a
LSD (P=.05)		2.44			2.44	12.77	23.84	0.00	16.38	7.45	1.4821	36.952
Standard Deviation		1.72			1.72	9.03	16.86	0.00	11.58	5.26	1.0480	26.129
CV		5.26			5.26	10.4	22.09	0.0	12.69	5.67	5.14	16.78
Bartlett's X2		20.409			20.409	86.444	61.166	0.0	145.68	123.425	83.839	13.757
P(Bartlett's X2)		0.673			0.673	0.001*	0.001*	.	0.001*	0.001*	0.001*	0.952
Replicate F		1.224			1.224	1.744	3.309	0.000	0.724	0.352	1.796	34.752
Replicate Prob(F)		0.3071			0.3071	0.1656	0.0248	1.0000	0.5412	0.7881	0.1558	0.0001
Treatment F		0.730			0.730	28.975	8.587	0.000	12.496	56.832	1.020	2.382
Treatment Prob(F)		0.8049			0.8049	0.0001	0.0001	1.0000	0.0001	0.0001	0.4550	0.0026

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Protocol ID: 11S-THP-CTC-117

Location: Throckmorton
Project ID:Study Director: White/Marquardt
Investigator: Dr. Bill Johnson

Sponsor Contact: Monsanto - John Willis

Pest Type

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

Pest Code

SETFA, Setaria faberi, = US

AMBTR, Ambrosia trifida, = US

Crop Code

ZEAMX, BCOR, Zea mays, = US

Rating Type

COUNT = count

CONTRO = control / burndown or knockdown

PHYGEN = phytotoxicity - general / injury

MOICON = moisture content

YIELD = yield

Rating Unit

% = percent

bu/ac = bushels per acre

FT = foot

YD2 = per square yard

Plant-Eval Interval

18 DP-1 = 1 ZEAMD 5-13-2011

32 DP-1 = 1 ZEAMD 5-13-2011

59 DP-1 = 1 ZEAMD 5-13-2011

145 DP-1 = 1 ZEAMD 5-13-2011