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RR corn - Residual foundation control

Trial ID: 10S-THP-CTC-92 Protocol ID: 10S-THP-CTC-92
 Location: Throckmorton Study Director: White/Marquardt
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact: Dow

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: 5-14-2010

Trial Location

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

Objectives:

RR corn - Residual foundation control.

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

Crop Description

Crop 1: ZEAMD Zea mays indentata Dent corn
Variety: Dekalb DKC 61-19 **Description:** RR/VT3
BBCH Scale: BCOR **Planting Date:** 5-28-2010
Row Spacing, Unit: 30 IN
Soil Temperature, Unit: 73 F
Soil Moisture: DRY dry **Emergence Date:** 6-3-2010

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:** IPOHE *Ipomoea hederacea*
Common Name: Ivyleaf morningglory

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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	
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Soil Description

Description Name: TPAC -Field 4A
% OM: 3.1 **Texture:** SIL silt loam
pH: 6 **Soil Name:** Toronto-Millbrook
CEC: 11.1

Application Description

	A	B	C
Application Date:	5-28-2010	6-10-2010	6-25-2010
Time of Day:	8 AM	7:34-7:44	8:15 AM
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	ATPLAN	EAPOWE	MIPOWE
Application Placement:	FOLIAR	FOLIAR	FOLIAR
Applied By:	MH	MH	MH
Air Temperature, Unit:	68 F	66 F	74 F
% Relative Humidity:	59	78.6	70
Wind Velocity, Unit:	4.3 MPH	2.6 MPH	1 MPH
Wind Direction:	SW	SE	S
Dew Presence (Y/N):	N no	Y yes	Y yes
Soil Temperature, Unit:	73 F	64 F	70 F
Soil Moisture:	DRY	WET	WET
% Cloud Cover:	20	5	0

Crop Stage At Each Application

	A	B	C
Crop 1 Code, BBCH Scale:	ZEAMD BCOR	ZEAMD BCOR	ZEAMD BCOR
Stage Scale Used:		BBCH	BBCH
Stage Majority, Percent:		V2	V6
Height, Unit:		3 IN	19 IN
Height Minimum, Maximum:		2 4	17 21

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Pest Stage At Each Application			
	A	B	C
Pest 1 Code, Type, Scale:	SETFA W	SETFA W	SETFA W
Height, Unit:		0.75 IN	7 IN
Height Minimum, Maximum:		0.5 1	4 10
Density, Unit:		10 YD2	75 YD2
Pest 2 Code, Type, Scale:	AMBTR W	AMBTR W	AMBTR W
Height, Unit:		0.75 IN	8.5 IN
Height Minimum, Maximum:		0.5 1	7 12
Density, Unit:		6 YD2	6 YD2
Pest 3 Code, Type, Scale:	IPOHE W	IPOHE W	IPOHE W
Height, Unit:			4 IN
Height Minimum, Maximum:			1 7
Density, Unit:			5 YD2

Application Equipment			
	A	B	C
Appl. Equipment:	CO2 Backpack	CO2 Backpack	CO2 Backpack
Operating Pressure, Unit:	17 PSI	17 PSI	17 PSI
Nozzle Type:	Flat Fan	Flat Fan	Flat Fan
Nozzle Size:	XR11002	XR11002	XR11002
Nozzle Spacing, Unit:	15 IN	15 IN	15 IN
Nozzles/Row:	6	6	6
Boom Length, Unit:	7.5 FT	7.5 FT	7.5 FT
Boom Height, Unit:	18 IN	18 IN	18 IN
Ground Speed, Unit:	3 MPH	3 MPH	3 MPH
Carrier:	MEIGS	MEIGS	MEIGS
Water Hardness (ppm CaCO3):	150	150	150
Spray Volume, Unit:	15 GAL/AC	15 GAL/AC	15 GAL/AC
Mix Size, Unit:	1.8 Liters	1.8 Liters	1.8 Liters
Propellant:	CO2	CO2	CO2
Tank Mix (Y/N):	N no	N no	N no

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Trial ID: 10S-THP-CTC-92 Protocol ID: 10S-THP-CTC-92
 Location: Throckmorton Study Director: White/Marquardt
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact: Dow

Pest Type	W Weed SETFA	W Weed IPOHE	W Weed ABUTH	W Weed AMBTR	W Weed AMARE	W Weed CHEAL		
Pest Code	Setaria faberi	Ipomoea hederata	Abutilon theop	Ambrosia trifi	Amaranthus ret	Chenopodium al		
Pest Scientific Name	Giant foxtail	Ivyleaf mornin	Velvetleaf	Giant ragweed	Redroot pigweed	Common lambsqu		
Pest Name								
Crop Code								
BBCH Scale								
Crop Scientific Name								
Crop Name								
Crop Variety								
Description								
Rating Date	6-18-2010	6-18-2010	6-18-2010	6-18-2010	6-18-2010	6-18-2010		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit								
Number of Subsamples	1	1	1	1	1	1		
Crop Stage Majority	V4							
Pest Stage Majority	3"	2"	1"	4"	1"	1"		
Pest Density, Unit	250 YD2	4 YD2	2 YD2	2 YD2	100 YD2	5 YD2		
Assessed By	MW	MW	MW	MW	MW	MW		
Trt Treatment	Rate	Appl						
No. Name	Rate Unit	Code	1	2	3	4	5	6
1 Untreated Check			0.0 e	0.0 c	0.0 b	0.0 d	0.0 b	0.0 c
2 SureStart (4.25 SC)	0.93 lb ai/a	A	92.5 cd	53.8 ab	77.0 a	89.5 ab	98.0 a	99.0 a
Durango DMA (4 SL)	0.75 lb ae/a	C						
AMS - Liquid	17 lb ai/100 gal	C						
3 SureStart (4.25 SC)	1.33 lb ai/a	A	96.0 abc	37.3 bc	58.8 a	61.3 c	99.0 a	99.0 a
Durango DMA (4 SL)	0.75 lb ae/a	C						
AMS - Liquid	17 lb ai/100 gal	C						
4 SureStart (4.25 SC)	1.33 lb ai/a	A	96.5 abc	40.0 bc	84.5 a	87.0 ab	99.0 a	99.0 a
Atrazine	1 lb ai/a	A						
Durango DMA (4 SL)	0.75 lb ae/a	C						
AMS - Liquid	17 lb ai/100 gal	C						
5 Harness Xtra 5.6 (5.6 SC)	2.1 lb ai/a	A	94.8 bc	46.0 bc	49.5 a	66.3 bc	99.0 a	99.0 a
Durango DMA (4 SL)	0.75 lb ae/a	C						
AMS - Liquid	17 lb ai/100 gal	C						
6 Lexar (3.7 SC)	2.08 lb ai/a	A	90.0 d	0.0 c	0.0 b	0.0 d	98.5 a	94.5 b
Durango DMA (4 SL)	0.75 lb ae/a	C						
AMS - Liquid	17 lb ai/100 gal	C						
7 SureStart (4.25 SC)	0.93 lb ai/a	B	99.0 a	86.3 ab	97.0 a	97.5 a	99.0 a	99.0 a
Durango DMA (4 SL)	0.75 lb ae/a	B						
AMS - Liquid	17 lb ai/100 gal	B						
8 Lexar (3.7 SC)	2.08 lb ai/a	B	99.0 a	86.3 ab	98.0 a	92.5 ab	99.0 a	99.0 a
Durango DMA (4 SL)	0.75 lb ae/a	B						
AMS - Liquid	17 lb ai/100 gal	B						
9 Harness Xtra 5.6 (5.6 SC)	2.1 lb ai/a	B	98.5 ab	99.0 a	98.5 a	96.5 a	99.0 a	99.0 a
Durango DMA (4 SL)	0.75 lb ae/a	B						
AMS - Liquid	17 lb ai/100 gal	B						

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	SETFA	IPOHE	ABUTH	AMBTR	AMARE	CHEAL			
Pest Scientific Name	Setaria faberi	Ipomoea hederata	Abutilon theop	Ambrosia trifi	Amaranthus ret	Chenopodium al			
Pest Name	Giant foxtail	Ivyleaf mornin	Velvetleaf	Giant ragweed	Redroot pigweed	Common lambsqu			
Crop Code									
BBCH Scale									
Crop Scientific Name									
Crop Name									
Crop Variety									
Description									
Rating Date	6-18-2010	6-18-2010	6-18-2010	6-18-2010	6-18-2010	6-18-2010			
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO			
Rating Unit									
Number of Subsamples	1	1	1	1	1	1			
Crop Stage Majority	V4								
Pest Stage Majority	3"	2"	1"	4"	1"	1"			
Pest Density, Unit	250 YD2	4 YD2	2 YD2	2 YD2	100 YD2	5 YD2			
Assessed By	MW	MW	MW	MW	MW	MW			
Trt	Treatment	Rate	Appl						
No.	Name	Rate Unit	Code	1	2	3	4	5	6
10	Durango DMA (4 SL)	0.75 lb ae/a	B	92.5 cd	86.0 ab	98.0 a	91.0 ab	98.0 a	96.5 ab
	AMS - Liquid	17 lb ai/100 gal	B						
	Durango DMA (4 SL)	0.75 lb ae/a	C						
	AMS - Liquid	17 lb ai/100 gal	C						
LSD (P=.05)				2.84	35.11	32.41	19.19	1.36	2.51
Standard Deviation				1.95	24.20	22.34	13.23	0.93	1.73
CV				2.28	45.28	33.78	19.41	1.05	1.96
Bartlett's X2				6.637	12.782	55.762	32.022	1.525	2.552
P(Bartlett's X2)				0.249	0.047*	0.001*	0.001*	0.467	0.11
Replicate F				0.496	2.105	1.216	1.525	1.653	1.222
Replicate Prob(F)				0.6884	0.1230	0.3229	0.2306	0.2015	0.3207
Treatment F				963.656	8.726	12.085	32.854	4468.491	1289.467
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

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.

Column 1: Weed or volunteer crop; US; control / burndown or knockdown; V4; 3"; per square yard; MW
Column 2: Weed or volunteer crop; US; control / burndown or knockdown; 2"; per square yard; MW
Column 3: Weed or volunteer crop; US; control / burndown or knockdown; 1"; per square yard; MW
Column 4: Weed or volunteer crop; US; control / burndown or knockdown; 4"; per square yard; MW
Column 5: Weed or volunteer crop; US; control / burndown or knockdown; 1"; per square yard; MW
Column 6: Weed or volunteer crop; US; control / burndown or knockdown; 1"; per square yard; MW
Column 7: Weed or volunteer crop; US; control / burndown or knockdown; percent; 30"; per square yard; MW
Column 8: Weed or volunteer crop; US; control / burndown or knockdown; percent; 48"; per square yard; MW
Column 9: Weed or volunteer crop; US; control / burndown or knockdown; percent; 18"; per square yard; MW
Column 10: Weed or volunteer crop; US; control / burndown or knockdown; percent; 14"; per square yard; MW
Column 11: Weed or volunteer crop; US; control / burndown or knockdown; percent; 12"; per square yard; MW
Column 12: Weed or volunteer crop; US; control / burndown or knockdown; percent; 18"; per square yard; MW
Column 13: US; phytotoxicity - general / injury; percent; WGJ
Column 14: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 3-51"; per square foot; WGJ
Column 15: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 6-91"; per square meter; WGJ
Column 16: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 2-41"; per square foot; WGJ
Column 17: US; yield; bushel 56 lb
Column 18: US; moisture content; percent
Column 19: US

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Pest Type	W Weed SETFA	W Weed AMBTR	W Weed IPOHE	W Weed ABUTH	W Weed CHEAL	W Weed AMARE			
Pest Code	Setaria faberi	Ambrosia trifi>	Ipomoea heder>	Abutilon theop>	Chenopodium al>	Amaranthus ret>			
Pest Scientific Name	Giant foxtail	Giant ragweed	lvyleaf mornin>	Velvetleaf	Common lambsqu>	Redroot pigweed			
Pest Name									
Crop Code							ZEAMX		
BBCH Scale							BCOR		
Crop Scientific Name							Zea mays		
Crop Name							Corn		
Crop Variety									
Description									
Rating Date	7-7-2010	7-7-2010	7-7-2010	7-7-2010	7-7-2010	7-7-2010	7-28-2010		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	PHYGEN		
Rating Unit	%	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1	1		
Crop Stage Majority									
Pest Stage Majority	30"	48"	18"	14"	12"	18"			
Pest Density, Unit	150 YD2	6 YD2	4 YD2	3 YD2	4 YD2	6 YD2			
Assessed By	MW	MW	MW	MW	MW	MW	WGJ		
Trt Treatment	Rate	Appl							
No. Name	Rate Unit	Code	7	8	9	10	11	12	13
1 Untreated Check			0.0 b	0.0 b	0.0 d	0.0 b	0.0 b	0.0 b	0.0 a
2 SureStart (4.25 SC)	0.93 lb ai/a	A	96.8 a	92.3 a	77.0 abc	99.0 a	99.0 a	99.0 a	0.0 a
Durango DMA (4 SL)	0.75 lb ae/a	C							
AMS - Liquid	17 lb ai/100 gal	C							
3 SureStart (4.25 SC)	1.33 lb ai/a	A	99.0 a	92.3 a	65.0 c	99.0 a	99.0 a	99.0 a	0.0 a
Durango DMA (4 SL)	0.75 lb ae/a	C							
AMS - Liquid	17 lb ai/100 gal	C							
4 SureStart (4.25 SC)	1.33 lb ai/a	A	99.0 a	89.0 a	86.0 abc	99.0 a	98.0 a	99.0 a	0.0 a
Atrazine	1 lb ai/a	A							
Durango DMA (4 SL)	0.75 lb ae/a	C							
AMS - Liquid	17 lb ai/100 gal	C							
5 Harness Xtra 5.6 (5.6 SC)	2.1 lb ai/a	A	99.0 a	92.0 a	87.0 abc	96.8 a	99.0 a	99.0 a	0.0 a
Durango DMA (4 SL)	0.75 lb ae/a	C							
AMS - Liquid	17 lb ai/100 gal	C							
6 Lexar (3.7 SC)	2.08 lb ai/a	A	98.5 a	83.8 a	70.0 bc	96.8 a	99.0 a	99.0 a	0.0 a
Durango DMA (4 SL)	0.75 lb ae/a	C							
AMS - Liquid	17 lb ai/100 gal	C							
7 SureStart (4.25 SC)	0.93 lb ai/a	B	98.0 a	95.5 a	93.5 ab	98.5 a	99.0 a	99.0 a	0.0 a
Durango DMA (4 SL)	0.75 lb ae/a	B							
AMS - Liquid	17 lb ai/100 gal	B							
8 Lexar (3.7 SC)	2.08 lb ai/a	B	98.0 a	87.3 a	93.3 ab	99.0 a	96.8 a	99.0 a	0.0 a
Durango DMA (4 SL)	0.75 lb ae/a	B							
AMS - Liquid	17 lb ai/100 gal	B							
9 Harness Xtra 5.6 (5.6 SC)	2.1 lb ai/a	B	97.5 a	88.5 a	98.0 a	99.0 a	99.0 a	99.0 a	0.0 a
Durango DMA (4 SL)	0.75 lb ae/a	B							
AMS - Liquid	17 lb ai/100 gal	B							

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Trt No.	Treatment Name	Rate	Unit	Appl Code	14	15	16	17	18	19
1	Untreated Check				0.0 b	0.0 b	0.0 b	99.90 b	18.38 b	
2	SureStart (4.25 SC) Durango DMA (4 SL) AMS - Liquid	0.93 lb ai/a 0.75 lb ae/a 17 lb ai/100 gal	ai/a ae/a gal	A C C	98.5 a	98.5 a	99.0 a	186.78 a	20.28 a	
3	SureStart (4.25 SC) Durango DMA (4 SL) AMS - Liquid	1.33 lb ai/a 0.75 lb ae/a 17 lb ai/100 gal	ai/a ae/a gal	A C C	99.0 a	99.0 a	99.0 a	206.83 a	20.23 a	
4	SureStart (4.25 SC) Atrazine Durango DMA (4 SL) AMS - Liquid	1.33 lb ai/a 1 lb ai/a 0.75 lb ae/a 17 lb ai/100 gal	ai/a ai/a ae/a gal	A A C C	98.5 a	99.0 a	99.0 a	192.63 a	20.30 a	
5	Harness Xtra 5.6 (5.6 SC) Durango DMA (4 SL) AMS - Liquid	2.1 lb ai/a 0.75 lb ae/a 17 lb ai/100 gal	ai/a ae/a gal	A C C	99.0 a	97.5 a	99.0 a	186.55 a	19.90 a	
6	Lexar (3.7 SC) Durango DMA (4 SL) AMS - Liquid	2.08 lb ai/a 0.75 lb ae/a 17 lb ai/100 gal	ai/a ae/a gal	A C C	99.0 a	94.5 a	99.0 a	190.53 a	20.18 a	
7	SureStart (4.25 SC) Durango DMA (4 SL) AMS - Liquid	0.93 lb ai/a 0.75 lb ae/a 17 lb ai/100 gal	ai/a ae/a gal	B B B	99.0 a	98.5 a	99.0 a	196.05 a	20.08 a	
8	Lexar (3.7 SC) Durango DMA (4 SL) AMS - Liquid	2.08 lb ai/a 0.75 lb ae/a 17 lb ai/100 gal	ai/a ae/a gal	B B B	98.0 a	93.3 a	99.0 a	190.73 a	19.80 a	
9	Harness Xtra 5.6 (5.6 SC) Durango DMA (4 SL) AMS - Liquid	2.1 lb ai/a 0.75 lb ae/a 17 lb ai/100 gal	ai/a ae/a gal	B B B	99.0 a	94.0 a	99.0 a	180.03 a	20.53 a	

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Pest Type	W Weed	W Weed	W Weed			
Pest Code	SETFA	AMBTR	AMASS			
Pest Scientific Name	Setaria faberi	Ambrosia trifi>	Amaranthus sp.			
Pest Name	Giant foxtail	Giant ragweed	Amaranth			
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMD	ZEAMD	ZEAMD
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays inden>	Zea mays inden>	Zea mays inden>
Crop Name	Corn	Corn	Corn	Dent corn	Dent corn	Dent corn
Crop Variety						
Description						
Rating Date	7-28-2010	7-28-2010	7-28-2010	10-4-2010	10-4-2010	
Rating Type	CONTRO	CONTRO	CONTRO	YIELD	MOICON	
Rating Unit	%	%	%	BU56LB	%	
Number of Subsamples	1	1	1	1	1	1
Crop Stage Majority						
Pest Stage Majority	3-51"	6-91"	2-41"			
Pest Density, Unit	5 FT2	2 M2	2 FT2			
Assessed By	WGJ	WGJ	WGJ			
Trt Treatment	Rate	Appl				
No. Name	Rate Unit	Code	14	15	16	17
10 Durango DMA (4 SL)	0.75 lb ae/a	B	99.0 a	98.5 a	99.0 a	201.05 a
AMS - Liquid	17 lb ai/100 gal	B				20.48 a
Durango DMA (4 SL)	0.75 lb ae/a	C				
AMS - Liquid	17 lb ai/100 gal	C				
LSD (P=.05)	0.85	4.92	0.00	17.852	0.755	.
Standard Deviation	0.58	3.39	0.00	12.304	0.520	.
CV	0.66	3.89	0.0	6.72	2.6	.
Bartlett's X2	0.083	20.53	0.0	7.074	8.987	.
P(Bartlett's X2)	0.959	0.002*	.	0.629	0.438	.
Replicate F	0.783	2.399	0.000	1.781	4.390	
Replicate Prob(F)	0.5140	0.0899	1.0000	0.1746	0.0122	
Treatment F	11455.306	328.398	0.000	24.116	5.653	
Treatment Prob(F)	0.0001	0.0001	1.0000	0.0001	0.0002	