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Enhanced Preemergence Weed Control in Corn

Trial ID: 12S-THP-CTC-11 Protocol ID: 12S-THP-CTC-11
 Location: Throckmorton Study Director: White/Marquardt
 Project ID: One Pass for Corn Investigator: Dr. Bill Johnson
 Sponsor Contact: BASF- Gery Welker

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: 3-17-2012

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:** 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: Beck's 6175 **Description:** HXX, LL, RR2
BBCH Scale: BCOR **Planting Date:** 4-18-2012
Planting Method: PLANTD planted **Rate, Unit:** 32000 S/A
Depth, Unit: 1.5 IN
Row Spacing, Unit: 30 IN
Seed Bed: COMPAC compacted **Soil Temperature, Unit:** 65 F
Soil Moisture: DRY dry **Emergence Date:** 5-2-2012

Pest Description

Pest 1 Type: W **Code:** AMBTR Ambrosia trifida
Common Name: Giant ragweed
Pest 2 Type: W **Code:** CHEAL Chenopodium album
Common Name: Common lambsquarters
Pest 3 Type: W **Code:** SETFA Setaria faberi
Common Name: Giant foxtail

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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: TPAC -Field 4A
% OM: 3.1
pH: 6
CEC: 11.1

Texture: SIL silt loam
Soil Name: Toronto-Millbrook

Application Description

	A	B
Application Date:	4-18-2012	5-23-2012
Time of Day:		9 AM
Application Method:	SPRAY	SPRAY
Application Timing:	ATPLAN	MIPOCR
Application Placement:	SOIL	FOLIAR
Applied By:	MW	MW
Air Temperature, Unit:	67 F	82 F
% Relative Humidity:	48	40
Wind Velocity, Unit:	4 MPH	2.5 MPH
Wind Direction:	E	SE
Dew Presence (Y/N):	N no	Y yes
Soil Temperature, Unit:	65 F	69 F
Soil Moisture:	DRY	DRY
% Cloud Cover:	10	5

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	ZEAMD BCOR	ZEAMD BCOR
Stage Scale Used:		BBCH
Stage Majority, Percent:		V3
Height, Unit:		13 IN
Height Minimum, Maximum:		10 16

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Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	AMBTR W	AMBTR W
Height, Unit:		5 IN
Height Minimum, Maximum:		2 8
Density, Unit:		27 YD2
Pest 2 Code, Type, Scale:	CHEAL W	CHEAL W
Height, Unit:		3.25 IN
Height Minimum, Maximum:		2 4.5
Density, Unit:		20 YD2
Pest 3 Code, Type, Scale:	SETFA W	SETFA W
Height, Unit:		5.5 IN
Height Minimum, Maximum:		1 10
Density, Unit:		45 YD2

Application Equipment

	A	B
Appl. Equipment:	CO2 FORD	CO2 FORD
Equipment Type:	SPTRMO	SPTRMO
Nozzle Type:	FLAT FAN	FLAT FAN
Nozzle Size:	XR 100 02	XR 100 02
Nozzle Spacing, Unit:	20 IN	20 IN
Nozzles/Row:	6	6
Boom Length, Unit:	10 FT	10 FT
Boom Height, Unit:	20 IN	20 IN
Ground Speed, Unit:	2.1 MPH	2.1 MPH
Carrier:	MEIGS	MEIGS
Spray Volume, Unit:	20 gal/ac	20 gal/ac
Mix Size, Unit:	2.5 liters	2.5 liters
Propellant:	CO2	CO2

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 Sponsor Contact: BASF- Gerry Welker

Pest Type	W Weed	W Weed	W Weed	W Weed			W Weed		
Pest Code	SETFA	AMBTR	CHEAL	ABUTH			AMBTR		
Pest Scientific Name	Setaria faberi	Ambrosia trifida	Chenopodium album	Abutilon theophrasti			Ambrosia trifida		
Pest Name	Giant foxtail	Giant ragweed	Common lambsquarters	Velvetleaf			Giant ragweed		
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		
Rating Date	5-9-2012	5-9-2012	5-9-2012	5-9-2012	5-9-2012	5-9-2012	5-22-2012		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	PHYCHL	PHYLCU	CONTRO		
Rating Unit	%	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1	1		
Crop Stage Majority	3 IN	3 IN	3 IN	3 IN	3 IN	3 IN			
Crop Stage Scale	V1	V1	V1	V1	V1	V1	V4		
Pest Stage Majority	1 IN	2 IN	.5 IN	1 IN			5 IN		
Pest Density, Unit	20 FT2	5 YD2	4 YD2	2 YD2			10 YD2		
Assessed By	MW	MW	MW	MW	MW	MW	MW		
Days After First/Last Applic.	21 21	21 21	21 21	21 21	21 21	21 21	34 34		
Plant-Eval Interval	21 DP-1	21 DP-1	21 DP-1	21 DP-1	21 DP-1	21 DP-1	34 DP-1		
Days After Emergence	7 DE-1	7 DE-1	7 DE-1	7 DE-1	7 DE-1	7 DE-1	20 DE-1		
Trt Treatment	Rate	Appl							
No. Name	Rate Unit	Code	1	2	3	4	5	6	7
1 Untreated Check			0.0 c	0.0 d	0.0 b	0.0 b	0.0 a	0.0 b	0.0 b
2 Zidua (85 WG)	2.13 oz ai/a	A	99.0 a	95.5 a	99.0 a	99.0 a	0.8 a	0.0 b	87.5 a
Sharpen 2.85 SC	1.25 oz ai/a	A							
Atrazine	1.5 lb ai/a	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	B							
AMS - Liquid	8.5 lb ai/100 gal	B							
3 Zidua (85 WG)	2.13 oz ai/a	A	99.0 a	81.3 bc	99.0 a	99.0 a	0.8 a	0.8 b	78.8 a
Sharpen 2.85 SC	1.25 oz ai/a	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	B							
AMS - Liquid	8.5 lb ai/100 gal	B							
4 Verdict (5.57 SC)	12.5 oz ai/a	A	99.0 a	88.0 ab	99.0 a	99.0 a	0.8 a	1.3 ab	80.0 a
Roundup PowerMax 4.5 SL	0.77 lb ae/a	B							
AMS - Liquid	8.5 lb ai/100 gal	B							
5 Verdict (5.57 SC)	12.5 oz ai/a	A	99.0 a	98.5 a	99.0 a	99.0 a	0.8 a	2.8 ab	89.3 a
Atrazine	1.5 lb ai/a	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	B							
AMS - Liquid	8.5 lb ai/100 gal	B							
6 Zidua (85 WG)	2.13 oz ai/a	A	99.0 a	72.5 c	99.0 a	99.0 a	0.8 a	0.0 b	75.0 a
Verdict (5.57 SC)	6.96 oz ai/a	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	B							
AMS - Liquid	8.5 lb ai/100 gal	B							
7 Guardsman Max (5 SC)	1.88 lb ai/a	A	99.0 a	96.8 a	99.0 a	99.0 a	0.0 a	1.5 ab	88.8 a
Sharpen 2.85 SC	0.078 lb ai/a	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	B							
AMS - Liquid	8.5 lb ai/100 gal	B							
8 Lexar (3.7 SC)	3.24 lb ai/a	A	99.0 a	93.8 a	99.0 a	99.0 a	2.5 a	0.0 b	82.5 a
Roundup PowerMax 4.5 SL	0.77 lb ae/a	B							
AMS - Liquid	8.5 lb ai/100 gal	B							

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	W Weed	W Weed	W Weed	W Weed			W Weed		
Pest Code	SETFA	AMBTR	CHEAL	ABUTH			AMBTR		
Pest Scientific Name	Setaria faberi	Ambrosia trifida	Chenopodium album	Abutilon theophrasti			Ambrosia trifida		
Pest Name	Giant foxtail	Giant ragweed	Common lambsquarters	Velvetleaf			Giant ragweed		
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		
Rating Date	5-9-2012	5-9-2012	5-9-2012	5-9-2012	5-9-2012	5-9-2012	5-22-2012		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	PHYCHL	PHYLCU	CONTRO		
Rating Unit	%	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1	1		
Crop Stage Majority	3 IN	3 IN	3 IN	3 IN	3 IN	3 IN			
Crop Stage Scale	V1	V1	V1	V1	V1	V1	V4		
Pest Stage Majority	1 IN	2 IN	.5 IN	1 IN			5 IN		
Pest Density, Unit	20 FT2	5 YD2	4 YD2	2 YD2			10 YD2		
Assessed By	MW	MW	MW	MW	MW	MW	MW		
Days After First/Last Applic.	21 21	21 21	21 21	21 21	21 21	21 21	34 34		
Plant-Eval Interval	21 DP-1	21 DP-1	21 DP-1	21 DP-1	21 DP-1	21 DP-1	34 DP-1		
Days After Emergence	7 DE-1	7 DE-1	7 DE-1	7 DE-1	7 DE-1	7 DE-1	20 DE-1		
Trt Treatment	Rate	Rate	Rate	Rate	Rate	Rate	Rate		
No. Name	Rate Unit	Rate Unit	Rate Unit	Rate Unit	Rate Unit	Rate Unit	Rate Unit		
	1	2	3	4	5	6	7		
9 SureStart (4.25 SC)	1.06 lb ai/a	A	99.0 a	73.8 c	99.0 a	99.0 a	2.0 a	1.3 ab	76.3 a
Roundup PowerMax 4.5 SL	0.77 lb ae/a	B							
AMS - Liquid	8.5 lb ai/100 gal	B							
10 Corvus (2.63 SC)	1.84 oz ai/a	A	95.8 b	88.8 ab	99.0 a	99.0 a	2.8 a	4.5 a	82.5 a
Atrazine	1 lb ai/a	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	B							
AMS - Liquid	8.5 lb ai/100 gal	B							
LSD (P=.05)	1.96	9.23	0.00	0.00	2.44	2.45	9.39		
Standard Deviation	1.35	6.36	0.00	0.00	1.68	1.69	6.47		
CV	1.52	8.06	0.0	0.0	152.62	140.55	8.74		
Bartlett's X2	0.0	28.396	0.0	0.0	3.078	1.126	12.373		
P(Bartlett's X2)	.	0.001*	.	.	0.878	0.952	0.135		
Replicate F	1.000	2.739	0.000	0.000	1.585	0.023	5.152		
Replicate Prob(F)	0.4079	0.0628	1.0000	1.0000	0.2161	0.9950	0.0060		
Treatment F	2134.808	84.340	0.000	0.000	1.344	3.023	67.047		
Treatment Prob(F)	0.0001	0.0001	1.0000	1.0000	0.2614	0.0125	0.0001		

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed				
Pest Code	SETFA	CHEAL	AMBTR	SETFA	CHEAL				
Pest Scientific Name	Setaria faberi	Chenopodium al>	Ambrosia trifl>	Setaria faberi	Chenopodium al>				
Pest Name	Giant foxtail	Common lambsqu>	Giant ragweed	Giant foxtail	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		
Rating Date	5-22-2012	5-22-2012	6-11-2012	6-11-2012	6-11-2012	9-20-2012	9-20-2012		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	MOICON	YIELD		
Rating Unit	%	%	%	%	%	%	bu/ac		
Number of Subsamples	1	1	1	1	1	1	1		
Crop Stage Majority									
Crop Stage Scale	V4	V4	V6-V7	V6-V7	V6-V7				
Pest Stage Majority	3 IN	2 IN	2-30 IN	1-16 IN	1-12 IN				
Pest Density, Unit	25 FT2	3 FT2	30 M2	60 M2	20 M2				
Assessed By	MW	MW	JS/G	JS/G	JS/G				
Days After First/Last Applic.	34 34	34 34	54 19	54 19	54 19	155 120	155 120		
Plant-Eval Interval	34 DP-1	34 DP-1	54 DP-1	54 DP-1	54 DP-1	155 DP-1	155 DP-1		
Days After Emergence	20 DE-1	20 DE-1	40 DE-1	40 DE-1	40 DE-1	141 DE-1	141 DE-1		
Trt Treatment	Rate	Appl							
No. Name	Rate Unit	Code	8	9	10	11	12	13	14
1 Untreated Check			0.0 b	0.0 c	0.0 b	0.0 b	0.0 b	22.228 a	22.70 b
2 Zidua (85 WG)	2.13 oz ai/a	A	90.0 a	99.0 a	94.0 a	95.0 a	100.0 a	20.205 b	122.85 a
Sharpen 2.85 SC	1.25 oz ai/a	A							
Atrazine	1.5 lb ai/a	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	B							
AMS - Liquid	8.5 lb ai/100 gal	B							
3 Zidua (85 WG)	2.13 oz ai/a	A	94.3 a	96.8 a	88.8 a	98.8 a	97.5 a	20.203 b	115.50 a
Sharpen 2.85 SC	1.25 oz ai/a	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	B							
AMS - Liquid	8.5 lb ai/100 gal	B							
4 Verdict (5.57 SC)	12.5 oz ai/a	A	94.3 a	89.8 b	91.5 a	96.3 a	97.5 a	20.105 b	127.78 a
Roundup PowerMax 4.5 SL	0.77 lb ae/a	B							
AMS - Liquid	8.5 lb ai/100 gal	B							
5 Verdict (5.57 SC)	12.5 oz ai/a	A	94.3 a	99.0 a	95.8 a	100.0 a	100.0 a	20.108 b	106.05 a
Atrazine	1.5 lb ai/a	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	B							
AMS - Liquid	8.5 lb ai/100 gal	B							
6 Zidua (85 WG)	2.13 oz ai/a	A	94.5 a	94.5 a	86.8 a	96.3 a	100.0 a	20.365 b	94.78 a
Verdict (5.57 SC)	6.96 oz ai/a	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	B							
AMS - Liquid	8.5 lb ai/100 gal	B							
7 Guardsman Max (5 SC)	1.88 lb ai/a	A	95.3 a	99.0 a	96.3 a	97.5 a	100.0 a	21.333 ab	122.00 a
Sharpen 2.85 SC	0.078 lb ai/a	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	B							
AMS - Liquid	8.5 lb ai/100 gal	B							
8 Lexar (3.7 SC)	3.24 lb ai/a	A	97.0 a	99.0 a	96.3 a	99.5 a	100.0 a	20.100 b	108.00 a
Roundup PowerMax 4.5 SL	0.77 lb ae/a	B							
AMS - Liquid	8.5 lb ai/100 gal	B							

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Trial ID: 12S-THP-CTC-11 Protocol ID: 12S-THP-CTC-11
 Location: Throckmorton Study Director: White/Marquardt
 Project ID: One Pass for Corn Investigator: Dr. Bill Johnson
 Sponsor Contact: BASF- Gery Welker

Pest Type

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

Pest Code

SETFA, Setaria faberi, = US

AMBTR, Ambrosia trifida, = US

CHEAL, Chenopodium album, = US

ABUTH, Abutilon theophrasti, = US

Crop Code

ZEAMX, BCOR, Zea mays, = US

Rating Type

CONTRO = control / burndown or knockdown

PHYCHL = phytotoxicity - chlorosis

PHYLCU = phytotoxicity - leaf curl

MOICON = moisture content

YIELD = yield

Rating Unit

% = percent

bu/ac = bushels per acre

FT2 = per square foot

YD2 = per square yard

M2 = per square meter

Plant-Eval Interval

21 DP-1 = 1 ZEAMD 4-18-2012

34 DP-1 = 1 ZEAMD 4-18-2012

54 DP-1 = 1 ZEAMD 4-18-2012

155 DP-1 = 1 ZEAMD 4-18-2012