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Postemergence programs for corn.

Trial ID: 10S-THP-CTC-53 Protocol ID: 10S-THP-CTC-53
 Location: Throckmorton Study Director: White/Marquardt
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact: Bayer & Syngenta

General Trial Information

Study Director: Paul Marquardt/Mike White **Title:** Research Associate
Investigator: Dr. William G. Johnson **Title:** Professor

Discipline: H herbicide
Trial Status: E established
Initiation Date: 3-12-2010

Trial Location

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

Personnel

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

Affiliation: Purdue University
Address: 915 W. State St., Botany and Plant Pathology
Location: West Lafayette, IN

Postal Code: 47907 **E-mail:** pmarquar@purdue.edu

Phone No.: 765-494-4621 **Mobile No.:** 765-409-6369

Investigator: Dr. William G. Johnson **Title:** Professor

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

Postal Code: 47907 **E-mail:** wgj@purdue.edu

Phone No.: 765-494-4656

Cooperator/Landowner

Cooperator: Throckmorton Purdue Ag Center

Role: Purdue Ag Center

Organization: Purdue University

Address 1: 8343 US 231 S

Phone No.: 765-538-3422

Fax No.: 765-538-3423

City: Lafayette

State/Prov.: IN

Postal Code: 47909

E-mail: jayyoung@purdue.edu

Country: US

Crop Description

Crop 1: ZEAMX Zea mays Corn

Variety: PIONEER 33W84

Description: Roundup Ready/ Liberty Link

BBCH Scale: BCOR

Planting Date: 4-15-2010

Rate, Unit: 32000 S/A

Depth, Unit: 1.5 IN

Row Spacing, Unit: 30 IN

Seed Bed: MEDIUM

medium

Soil Temperature, Unit: 60

F

Soil Moisture: DRY

dry

Emergence Date: 4-27-2010

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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:** ABUTH *Abutilon theophrasti*
Common Name: Velvetleaf

Pest 4 Type: W **Code:** CHEAL *Chenopodium album*
Common Name: Common lambsquarters

Pest 5 Type: W **Code:** THLSS *Thlaspi* sp.
Common Name: Pennycress

Pest 6 Type: W **Code:** TAROF *Taraxacum officinale*
Common Name: Common dandelion

Site and Design

Plot Width, Unit: 10 FT **Site Type:** FIELD field
Plot Length, Unit: 30 FT **Experimental Unit:** 1 PLOT plot
Plot Area, Unit: 300 FT² **Tillage Type:** CONTIL conventional-till
Replications: 4 **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 **Texture:** SIL silt loam
pH: 6 **Soil Name:** Toronto-Millbrook
CEC: 11.1

Application Description

	A	B
Application Date:	5-18-2010	6-1-2010
Time of Day:	7:30-8 AM	11 AM
Application Method:	SPRAY	SPRAY
Application Timing:	MIPOWE	LOPOWE
Application Placement:	FOLIAR	FOLIAR
Applied By:	MH	MH
Air Temperature, Unit:	60 F	69 F
% Relative Humidity:	75	86
Wind Velocity, Unit:	5 MPH	1.5 MPH
Wind Direction:	N	NE
Dew Presence (Y/N):	Y yes	Y yes
Soil Temperature, Unit:	58 F	70 F
Soil Moisture:	WET	WET
% Cloud Cover:	10	100

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Crop Stage At Each Application		
	A	B
Crop 1 Code, BBCH Scale:	ZEAMX BCOR	ZEAMX BCOR
Stage Scale Used:	BBCH	BBCH
Stage Majority, Percent:	V4 75	V5
Stage Minimum, Percent:	V3 25	
Stage Maximum, Percent:	V4	
Height, Unit:	5 IN	12 IN
Height Minimum, Maximum:	4 6	

Pest Stage At Each Application		
	A	B
Pest 1 Code, Type, Scale:	SETFA W	SETFA W
Stage Majority, Percent:	45 100	
Height, Unit:	2.5 IN	5 IN
Height Minimum, Maximum:	1 4	2 8
Density, Unit:	25 FT2	100 YD2
Pest 2 Code, Type, Scale:	AMBTR W	AMBTR W
Stage Majority, Percent:	45 100	
Height, Unit:	10.5 IN	6 IN
Height Minimum, Maximum:	1 10	6 6
Density, Unit:	5.5 YD2	7 YD2
Pest 3 Code, Type, Scale:	ABUTH W	ABUTH W
Stage Majority, Percent:	45 100	
Height, Unit:	1.5 IN	4.5 IN
Height Minimum, Maximum:	1 2	1 8
Density, Unit:	2 YD2	7 YD2
Pest 4 Code, Type, Scale:	CHEAL W	CHEAL W
Stage Majority, Percent:	45 100	
Height, Unit:	1.5 IN	1.75 IN
Height Minimum, Maximum:	1 2	0.5 3
Density, Unit:	3 YD2	8 YD2
Pest 5 Code, Type, Scale:	THLSS W	THLSS W
Stage Majority, Percent:	45 100	
Height, Unit:	0.5 IN	
Height Minimum, Maximum:	1 1	
Density, Unit:	2 YD2	
Pest 6 Code, Type, Scale:	TAROF W	TAROF W
Height, Unit:		5 IN
Height Minimum, Maximum:		2 8
Density, Unit:		18 YD2

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

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Pest Type		W Weed	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code		SETFA	AMBTR	ABUTH	CHEAL	AMARE	SETFA			
Pest Scientific Name		Setaria faberi	Ambrosia trifi>	Abutilon theop>	Chenopodium al>	Amaranthus ret>	Setaria faberi			
Pest Name		Giant foxtail	Giant ragweed	Velvetleaf	Common lambsqu>	Redroot pigweed	Giant foxtail			
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										
Description										
Rating Date	5-24-2010	5-26-2010	5-26-2010	5-26-2010	5-26-2010	5-26-2010	6-4-2010			
Rating Type	PHYCHL	SPOTS	FLASH				CONTRO			
Rating Unit							%			
Number of Subsamples	1	1	1	1	1	1	1			
Crop Stage Majority	V4-8"	V4	V4	V4	V4	V4	V6-21"			
Pest Stage Majority		1-6"	2-14"	1-4"	1-3"	1-2"	12"			
Pest Density, Unit		200 YD2	7 YD2	6 YD2	5 YD2	6 YD2	200 YD2			
Assessed By	MW	MW	MW	MW	MW	MW	MW			
Trt Treatment	Rate	Appl								
No. Name	Rate	Unit	Code	1	2	3	4	5	6	7
10 Roundup PowerMax 4.5 SL AMS - Liquid	0.77 lb ae/a 8.5 lb ai/100 gal B	B		0.0 a	0.0 a	1.3 a				30.0 b
LSD (P=.05)				1.74	2.43	1.54	.	.	.	7.67
Standard Deviation				1.20	1.67	1.06	.	.	.	5.29
CV				217.68	115.33	184.46	.	.	.	6.88
Bartlett's X2				1.091	3.479	1.111	.	.	.	28.535
P(Bartlett's X2)				0.58	0.747	0.774	.	.	.	0.001*
Replicate F				1.000	5.543	3.222				0.655
Replicate Prob(F)				0.4079	0.0043	0.0383				0.5870
Treatment F				2.395	2.539	2.422				160.985
Treatment Prob(F)				0.0383	0.0295	0.0365				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: US; phytotoxicity - chlorosis; V4-8"; MW
Column 2: Weed or volunteer crop; US; US; SPOTS; V4; 1-6"; per square yard; MW
Column 3: Weed or volunteer crop; US; US; FLASH; V4; 2-14"; per square yard; MW
Column 4: Weed or volunteer crop; US; US; V4; 1-4"; per square yard; MW
Column 5: Weed or volunteer crop; US; US; V4; 1-3"; per square yard; MW
Column 6: Weed or volunteer crop; US; US; V4; 1-2"; per square yard; MW
Column 7: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; V6-21"; 12"; per square yard; MW
Column 8: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; V6-21"; 18"; per square yard; MW
Column 9: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; V6-21"; 8"; per square yard; MW
Column 10: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; V6-21"; 6"; per square yard; MW
Column 11: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; V6-21"; 6"; per square yard; MW
Column 12: US; phytotoxicity - stunting; percent; V7-32"; MW
Column 13: US; phytotoxicity - chlorosis; percent; V7; MW
Column 14: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; V8; 24"; per square yard; MW
Column 15: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; V8; 38"; per square yard; MW
Column 16: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; V8; 24"; per square yard; MW
Column 17: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; V8; 30"; per square yard; MW
Column 18: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; V8; MW
Column 19: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; R1- SILK; 40"; per square yard; MW
Column 20: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; R1; 96"; per square yard; MW
Column 21: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; R1; 36"; per square yard; MW
Column 22: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; R1; 30"; per square yard; MW
Column 23: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; R1; MW
Column 24: US; yield; bushel 56 lb
Column 25: US; moisture content; percent

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	AMBTR	AMARE	CHEAL	ABUTH	SETFA	AMBTR			
Pest Scientific Name	Ambrosia trifi>	Amaranthus ret>	Chenopodium al>	Abutilon theop>	Setaria faberi	Ambrosia trifi>			
Pest Name	Giant ragweed	Redroot pigweed	Common lambsqu>	Velvetleaf	Giant foxtail	Giant ragweed			
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX			
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR			
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays			
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn			
Crop Variety									
Description									
Rating Date	6-17-2010	6-17-2010	6-17-2010	6-17-2010	7-16-2010	7-16-2010			
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO			
Rating Unit	%	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1	1			
Crop Stage Majority	V8	V8	V8	V8	R1- SILK	R1			
Pest Stage Majority	38"	24"	30"		40"	96"			
Pest Density, Unit	10 YD2	5 YD2	6 YD2		80 YD2	7 YD2			
Assessed By	MW	MW	MW	MW	MW	MW			
Trt Treatment	Rate	Appl	15	16	17	18	19	20	
No. Name	Rate	Unit	Code						
1 Untreated Check				0.0 b	0.0 c	0.0 c	0.0 b	0.0 e	0.0 c
2 Capreno (3.45 SL)	0.081 lb ai/a	A		87.3 a	95.8 a	99.0 a	99.0 a	97.0 a	91.0 ab
Roundup PowerMax 4.5 SL	0.387 lb ae/a	A							
COC	1 % v/v	A							
AMS - Liquid	8.5 lb ai/100 gal	A							
3 Halex GT (4.39 SC)	1.98 lb ai/a	A		87.3 a	99.0 a	99.0 a	99.0 a	91.8 ab	91.0 ab
NIS	0.25 % v/v	A							
AMS - Liquid	8.5 lb ai/100 gal	A							
4 Halex GT (4.39 SC)	1.98 lb ai/a	A		93.0 a	99.0 a	99.0 a	99.0 a	96.5 a	96.5 a
Atrazine	0.5 lb ai/a	A							
NIS	0.25 % v/v	A							
AMS - Liquid	8.5 lb ai/100 gal	A							
5 Roundup PowerMax 4.5 SL	0.77 lb ae/a	A		90.0 a	98.0 a	99.0 a	95.5 a	83.8 bc	93.5 ab
Laudis (3.5 SL)	0.0547 lb ai/a	A							
Atrazine	0.5 lb ai/a	A							
AMS - Liquid	8.5 lb ai/100 gal	A							
6 Capreno (3.45 SL)	0.081 lb ai/a	A		90.0 a	96.8 a	99.0 a	95.5 a	97.5 a	94.8 a
Roundup PowerMax 4.5 SL	0.77 lb ae/a	A							
AMS - Liquid	8.5 lb ai/100 gal	A							
7 Status (56 WG)	0.0875 lb ai/a	A		75.0 a	89.8 ab	99.0 a	91.8 a	82.5 c	77.5 ab
Roundup PowerMax 4.5 SL	0.77 lb ae/a	A							
AMS - Liquid	8.5 lb ai/100 gal	A							
8 Roundup PowerMax 4.5 SL	0.77 lb ae/a	A		78.8 a	84.8 b	79.8 b	96.8 a	75.0 d	70.0 b
AMS - Liquid	8.5 lb ai/100 gal	A							
9 Roundup PowerMax 4.5 SL	0.77 lb ae/a	A		83.8 a	94.3 a	97.5 a	94.5 a	87.5 abc	85.0 ab
AMS - Liquid	8.5 lb ai/100 gal	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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Trt No.	Treatment Name	Rate	Unit	Appl Code	21	22	23	24	25
1	Untreated Check				0.0 b	0.0 c	0.0 c	43.63 b	12.20 b
2	Capreno (3.45 SL) Roundup PowerMax 4.5 SL COC AMS - Liquid	0.081 lb ai/a 0.387 lb ae/a 1 % v/v 8.5 lb ai/100 gal	A A A A		99.0 a	99.0 a	95.5 a	169.05 a	14.25 a
3	Halex GT (4.39 SC) NIS AMS - Liquid	1.98 lb ai/a 0.25 % v/v 8.5 lb ai/100 gal	A A A		99.0 a	99.0 a	99.0 a	174.00 a	14.08 a
4	Halex GT (4.39 SC) Atrazine NIS AMS - Liquid	1.98 lb ai/a 0.5 lb ai/a 0.25 % v/v 8.5 lb ai/100 gal	A A A A		99.0 a	99.0 a	99.0 a	183.33 a	14.08 a
5	Roundup PowerMax 4.5 SL Laudis (3.5 SL) Atrazine AMS - Liquid	0.77 lb ae/a 0.0547 lb ai/a 0.5 lb ai/a 8.5 lb ai/100 gal	A A A A		94.5 a	99.0 a	99.0 a	175.85 a	14.03 a
6	Capreno (3.45 SL) Roundup PowerMax 4.5 SL AMS - Liquid	0.081 lb ai/a 0.77 lb ae/a 8.5 lb ai/100 gal	A A A		96.8 a	99.0 a	99.0 a	184.25 a	14.10 a
7	Status (56 WG) Roundup PowerMax 4.5 SL AMS - Liquid	0.0875 lb ai/a 0.77 lb ae/a 8.5 lb ai/100 gal	A A A		96.8 a	99.0 a	89.5 ab	189.10 a	14.45 a
8	Roundup PowerMax 4.5 SL AMS - Liquid	0.77 lb ae/a 8.5 lb ai/100 gal	A A		93.5 a	93.3 b	82.3 b	169.03 a	14.30 a
9	Roundup PowerMax 4.5 SL AMS - Liquid Roundup PowerMax 4.5 SL AMS - Liquid	0.77 lb ae/a 8.5 lb ai/100 gal 0.77 lb ae/a 8.5 lb ai/100 gal	A A B B		97.0 a	99.0 a	97.0 a	189.13 a	14.28 a

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Pest Type	W Weed	W Weed	W Weed					
Pest Code	ABUTH	CHEAL	AMARE					
Pest Scientific Name	Abutilon theop>	Chenopodium al>	Amaranthus ret>					
Pest Name	Velvetleaf	Common lambsqu>	Redroot pigweed					
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMD	ZEAMD			
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR			
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays inden>	Zea mays inden>			
Crop Name	Corn	Corn	Corn	Dent corn	Dent corn			
Crop Variety								
Description								
Rating Date	7-16-2010	7-16-2010	7-16-2010	9-29-2010	9-29-2010			
Rating Type	CONTRO	CONTRO	CONTRO	YIELD	MOICON			
Rating Unit	%	%	%	BU56LB	%			
Number of Subsamples	1	1	1	1	1			
Crop Stage Majority	R1	R1	R1					
Pest Stage Majority	36"	30"						
Pest Density, Unit	2 YD2	4 YD2						
Assessed By	MW	MW	MW					
Trt No.	Treatment	Rate	Appl Code	21	22	23	24	25
10	Roundup PowerMax 4.5 SL AMS - Liquid	0.77 lb ae/a 8.5 lb ai/100 gal B	B	97.0 a	97.0 a	95.5 a	161.50 a	14.25 a
LSD (P=.05)	4.63	3.34	9.91	22.722	0.853			
Standard Deviation	3.19	2.30	6.83	15.660	0.588			
CV	3.66	2.6	7.98	9.56	4.2			
Bartlett's X2	3.109	3.027	18.719	8.041	46.956			
P(Bartlett's X2)	0.683	0.082	0.001*	0.53	0.001*			
Replicate F	0.526	1.140	0.774	3.451	1.682			
Replicate Prob(F)	0.6681	0.3506	0.5189	0.0304	0.1945			
Treatment F	369.891	731.607	80.014	30.507	4.826			
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0001	0.0007			