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Laudis and various deposition aids in corn

Trial ID: 09S-THP-CTC-04 Protocol ID: 09S-THP-CTC-04
 Location: Throckmorton Study Director: Paul Marquardt/Melissa Kruger
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact: Dave Lamore

General Trial Information

Study Director: Paul Marquardt/Melissa Kruger **Title:** Research Associate
Investigator: Dr. Bill Johnson **Title:** Professor

Discipline: H herbicide
Trial Status: F one-year/final
Initiation Date: 5/22/09 **Planned Completion Date:** 7/27/09

Trial Location

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

Objectives:

Laudis and Various deposition aids in corn

Personnel

Study Director: Paul Marquardt/Melissa Kruger **Title:** Research Associate
Affiliation: Purdue University
Address: 915 W. State Street, Department of Botany & Plant Path.
Location: West Lafayette, IN
Postal Code: 47907
Investigator: Dr. Bill Johnson **Title:** Professor
Affiliation: Purdue University
Address: 915 W. State Street, Department of Botany & Plant Path.
Location: West Lafayette, IN
Postal Code: 47907

Crop Description

Crop 1: ZEAMX Zea mays Corn
Variety: Pioneer 33W84 **Description:** Roundup Ready/Liberty Link
BBCH Scale: BCOR **Planting Date:** 5/22/09
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:** 72 F
Emergence Date: 5/27/09

Pest Description

Pest 1 Type: W **Code:** AMBTR *Ambrosia trifida*
Common Name: Giant ragweed

Pest 2 Type: W **Code:** SETFA *Setaria faberi*
Common Name: Giant foxtail

Pest 3 Type: W **Code:** AMARE *Amaranthus retroflexus*
Common Name: Redroot pigweed

Pest 4 Type: W **Code:** ABUTH *Abutilon theophrasti*
Common Name: Velvetleaf

Pest 5 Type: W **Code:** IPOHE *Ipomoea hederacea*
Common Name: Ivyleaf morningglory

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)

Field Prep./Maintenance:

Field cultivation and disc 1 day before planting.

Soil Description

Description Name: Silty Loam
% OM: 3.1 **Texture:** SIL silt loam
pH: 6.2 **Soil Name:** Toronto-Millbrook
CEC: 13.3

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Application Description

	A
Application Date:	6/15/09
Time of Day:	10:30 AM
Application Method:	SPRAY
Application Timing:	MIPOWE
Application Placement:	BANT
Applied By:	AR
Air Temperature, Unit:	74 F
% Relative Humidity:	60
Wind Velocity, Unit:	4 MPH
Wind Direction:	SW
Dew Presence (Y/N):	N no
Soil Temperature, Unit:	68 F
Soil Moisture:	SLIWET
% Cloud Cover:	80
Next Rain Occurred On:	6/16/09

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	ZEAMX BCOR
Stage Scale Used:	BBCH
Stage Majority, Percent:	V4 90
Stage Minimum, Percent:	V3 10
Stage Maximum, Percent:	V4 90
Height, Unit:	18 IN
Height Minimum, Maximum:	12 18

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Pest Stage At Each Application	
	A
Pest 1 Code, Type, Scale:	AMBTR W
Stage Majority, Percent:	32 50
Stage Minimum, Percent:	31 20
Stage Maximum, Percent:	34 30
Height, Unit:	6 IN
Height Minimum, Maximum:	1 6
Density, Unit:	15 YD2
Pest 2 Code, Type, Scale:	SETFA W
Stage Majority, Percent:	13 50
Stage Minimum, Percent:	12 20
Stage Maximum, Percent:	15 30
Height, Unit:	4 IN
Height Minimum, Maximum:	2 8
Density, Unit:	100 YD2
Pest 3 Code, Type, Scale:	AMARE W
Stage Majority, Percent:	33 50
Stage Minimum, Percent:	31 20
Stage Maximum, Percent:	35 30
Height, Unit:	5 IN
Height Minimum, Maximum:	2 5
Density, Unit:	20 YD2
Pest 4 Code, Type, Scale:	ABUTH W
Stage Majority, Percent:	12 50
Stage Minimum, Percent:	11 20
Stage Maximum, Percent:	14 30
Height, Unit:	5 IN
Height Minimum, Maximum:	2 5
Density, Unit:	1.5 YD2
Pest 5 Code, Type, Scale:	IPOHE W
Stage Majority, Percent:	11 50
Stage Minimum, Percent:	10 20
Stage Maximum, Percent:	12 30
Height, Unit:	3 IN
Height Minimum, Maximum:	1 3
Density, Unit:	1.5 YD2

Application Equipment	
	A
Appl. Equipment:	CO2 BACKPACK
Equipment Type:	SPRBAC
Operating Pressure, Unit:	17 psi
Nozzle Type:	FLAT FAN
Nozzle Size:	XR11002
Nozzle Spacing, Unit:	15 IN
Nozzles/Row:	6
Boom Length, Unit:	7.5 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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 Location: Throckmorton Study Director: Paul Marquardt/Melissa Kruger
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact: Dave Lamore

Pest Type		W Weed SETFA	W Weed AMBTR	W Weed IPOSS		W Weed SETFA
Pest Code		Setaria faberi	Ambrosia trifid	Ipomoea sp.		Setaria faberi
Pest Scientific Name						
Pest Name		Giant foxtail	Giant ragweed	Morning glory		Giant foxtail
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	P33W84	P33W84	P33W84	P33W84	P33W84	P33W84
Description					V8-V10	V8-V10
Part Rated	PLATOT C	PLATOT P	PLATOT P	PLATOT P	PLATOT C	PLATOT C
Rating Date	6/23/09	6/23/09	6/23/09	6/23/09	7/13/09	7/13/09
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	PHYGEN	PHYGEN
Rating Unit	percent	percent	percent	percent	percent	percent
Number of Subsamples	1	1	1	1	1	1
Crop Stage Majority	12-30"	12-30"	12-30"	12-30"	6-8'	6-8'
Crop Stage Scale	V5	V5	V5	V5	V5	V5
Pest Stage Majority		0-12"	0-18"	0-12"		12-36"
Pest Density, Unit		12.5FT2	3.5 YD2	3 YD2		12.5FT2
Assessed By	MK	MK	MK	MK	MK/CS	MK/CS
Days After First/Last Applic.	8 8	8 8	8 8	8 8	28 28	28 28
Trt-Eval Interval	8 DA-A	8 DA-A	8 DA-A	8 DA-A	8 DA-A	8 DA-A
Plant-Eval Interval	32 DP-1	32 DP-1	32 DP-1	32 DP-1	52 DP-1	52 DP-1
Days After Emergence	27 DE-	27 DE-	27 DE-	27 DE-	47 DE-	47 DE-
Trt Treatment	Rate	Rate	Rate	Rate	Rate	Rate
No. Name	Unit	Unit	Unit	Unit	Unit	Unit
Code						
1 UNTREATED	0.0 a	0.0 c	0.0 b	0.0 b	0.0 a	0.0 b
2 Laudis	0.082 lb ai/a	92.0 ab	98.3 a	100.0 a	0.0 a	96.8 a
Atrazine	0.5 lb ai/a					
MSO Concentrate	1 % v/v					
Ammonium Sulfate	1.28 lb ai/a					
3 Impact	0.0164 lb ai/a	99.5 a	99.3 a	100.0 a	0.0 a	98.5 a
Atrazine	0.5 lb ai/a					
MSO Concentrate	1 % v/v					
Ammonium Sulfate	1.28 lb ai/a					
4 Capreno	0.00656 lb ai/a	95.3 ab	99.3 a	100.0 a	0.0 a	97.5 a
Atrazine	0.5 lb ai/a					
MSO Concentrate	1 % v/v					
Ammonium Sulfate	1.28 lb ai/a					
5 Laudis	0.082 lb ai/a	92.0 ab	99.3 a	100.0 a	0.0 a	96.3 a
Atrazine	0.5 lb ai/a					
MSO Concentrate	1 % v/v					
Compadre	1 pt/100 gal					
Ammonium Sulfate	1.28 lb ai/a					
6 Laudis	0.082 lb ai/a	94.8 ab	99.5 a	100.0 a	0.0 a	96.3 a
Atrazine	0.5 lb ai/a					
MSO Concentrate	1 % v/v					
Interlock	4 oz/a					
Ammonium Sulfate	1.28 lb ai/a					
7 Laudis	0.082 lb ai/a	94.3 ab	99.8 a	100.0 a	0.0 a	95.5 a
Atrazine	0.5 lb ai/a					
MSO Concentrate	1 % v/v					
Doubledown	3 oz/100 gal					
Ammonium Sulfate	1.28 lb ai/a					
8 Laudis	0.082 lb ai/a	91.5 ab	99.5 a	100.0 a	0.0 a	95.3 a
Atrazine	0.5 lb ai/a					
MSO Concentrate	1 % v/v					
Array	9 lb/100 gal					
9 Laudis	0.082 lb ai/a	87.5 b	99.0 a	100.0 a	0.0 a	95.0 a
Atrazine	0.5 lb ai/a					
MSO Concentrate	1 % v/v					
Gardian	2 qt/100 gal					
Ammonium Sulfate	1.28 lb ai/a					

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Pest Type		W Weed	W Weed	W Weed		W Weed		
Pest Code		SETFA	AMBTR	IPOSS		SETFA		
Pest Scientific Name		Setaria faberi	Ambrosia trifida	Ipomoea sp.		Setaria faberi		
Pest Name		Giant foxtail	Giant ragweed	Morning glory		Giant foxtail		
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	P33W84	P33W84	P33W84	P33W84	P33W84	P33W84		
Description					V8-V10	V8-V10		
Part Rated	PLATOT C	PLATOT P	PLATOT P	PLATOT P	PLATOT C	PLATOT C		
Rating Date	6/23/09	6/23/09	6/23/09	6/23/09	7/13/09	7/13/09		
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	PHYGEN	PHYGEN		
Rating Unit	percent	percent	percent	percent	percent	percent		
Number of Subsamples	1	1	1	1	1	1		
Crop Stage Majority	12-30"	12-30"	12-30"	12-30"	6-8"	6-8"		
Crop Stage Scale	V5	V5	V5	V5	V5	V5		
Pest Stage Majority		0-12"	0-18"	0-12"		12-36"		
Pest Density, Unit		12.5FT2	3.5 YD2	3 YD2		12.5FT2		
Assessed By	MK	MK	MK	MK	MK/CS	MK/CS		
Days After First/Last Applic.	8 8	8 8	8 8	8 8	28 28	28 28		
Trt-Eval Interval	8 DA-A	8 DA-A	8 DA-A	8 DA-A	8 DA-A	8 DA-A		
Plant-Eval Interval	32 DP-1	32 DP-1	32 DP-1	32 DP-1	52 DP-1	52 DP-1		
Days After Emergence	27 DE-	27 DE-	27 DE-	27 DE-	47 DE-	47 DE-		
Trt No.	1	2	3	4	5	6		
Treatment Name								
Rate								
Unit								
Appl Code								
10 Laudis	0.082 lb ai/a	A	5.3 a	94.0 ab	99.3 a	100.0 a	0.0 a	95.3 a
Atrazine	0.5 lb ai/a	A						
MSO Concentrate	1 % v/v	A						
Border EG	10 oz/100 gal	A						
Ammonium Sulfate	1.28 lb ai/a	A						
LSD (P=.05)	3.46	5.17	1.06	0.00	0.00	2.72		
Standard Deviation	2.38	3.57	0.73	0.00	0.00	1.87		
CV	65.28	4.24	0.81	0.0	0.0	2.16		
Bartlett's X2	9.918	10.679	17.31	0.0	0.0	6.266		
P(Bartlett's X2)	0.128	0.221	0.016*	.	.	0.617		
Replicate F	0.687	2.152	3.902	0.000	0.000	12.700		
Replicate Prob(F)	0.5679	0.1169	0.0195	1.0000	1.0000	0.0001		
Treatment F	2.703	277.638	7436.623	0.000	0.000	1055.957		
Treatment Prob(F)	0.0220	0.0001	0.0001	1.0000	1.0000	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.

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Pest Type	W Weed	W Weed		W Weed	W Weed				
Pest Code	AMBTR	IPOSS		SETFA	AMBTR				
Pest Scientific Name	Ambrosia trifi>	Ipomoea sp.		Setaria faberi	Ambrosia trifi>				
Pest Name	Giant ragweed	Morning glory		Giant foxtail	Giant ragweed				
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX				
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR				
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays				
Crop Name	Corn	Corn	Corn	Corn	Corn				
Crop Variety	P33W84	P33W84	P33W84	P33W84	P33W84				
Description	V8-V10	V8-V10	BLISTER	BLISTER	BLISTER				
Part Rated	PLATOT C	PLATOT C	PLATOT C	PLATOT C	PLATOT C				
Rating Date	7/13/09	7/13/09	7/31/09	7/31/09	7/31/09				
Rating Type	PHYGEN	PHYGEN	PHYGEN	PHYGEN	PHYGEN				
Rating Unit	percent	percent	percent	percent	percent				
Number of Subsamples	1	1	1	1	1				
Crop Stage Majority	6-8'	6-8'	10-12'	10-12'	10-12'				
Crop Stage Scale	V5	V5							
Pest Stage Majority	12-80"	4-30"		2"-60"	12"-10'				
Pest Density, Unit	5 YD2	3 YD2		80 YD2	10 YD2				
Assessed By	MK/CS	MK/CS	PM	PM	PM				
Days After First/Last Applic.	28 28	28 28	46 46	46 46	46 46				
Trt-Eval Interval	8 DA-A	8 DA-A	8 DA-A	8 DA-A	8 DA-A				
Plant-Eval Interval	52 DP-1	52 DP-1	70 DP-1	70 DP-1	70 DP-1				
Days After Emergence	47 DE-	47 DE-	65 DE-	65 DE-	65 DE-				
Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	7	8	9	10	11
1	UNTREATED				0.0 b	0.0 b	0.0 a	0.0 b	0.0 b
2	Laudis	0.082 lb ai/a	A		99.0 a	99.8 a	0.0 a	96.8 a	99.5 a
	Atrazine	0.5 lb ai/a	A						
	MSO Concentrate	1 % v/v	A						
	Ammonium Sulfate	1.28 lb ai/a	A						
3	Impact	0.0164 lb ai/a	A		99.3 a	98.8 a	0.0 a	98.8 a	97.5 a
	Atrazine	0.5 lb ai/a	A						
	MSO Concentrate	1 % v/v	A						
	Ammonium Sulfate	1.28 lb ai/a	A						
4	Capreno	0.00656 lb ai/a	A		99.0 a	100.0 a	0.0 a	98.0 a	99.5 a
	Atrazine	0.5 lb ai/a	A						
	MSO Concentrate	1 % v/v	A						
	Ammonium Sulfate	1.28 lb ai/a	A						
5	Laudis	0.082 lb ai/a	A		99.5 a	99.8 a	0.0 a	96.0 a	99.5 a
	Atrazine	0.5 lb ai/a	A						
	MSO Concentrate	1 % v/v	A						
	Compadre	1 pt/100 gal	A						
	Ammonium Sulfate	1.28 lb ai/a	A						
6	Laudis	0.082 lb ai/a	A		99.3 a	99.8 a	0.0 a	98.0 a	99.0 a
	Atrazine	0.5 lb ai/a	A						
	MSO Concentrate	1 % v/v	A						
	Interlock	4 oz/a	A						
	Ammonium Sulfate	1.28 lb ai/a	A						
7	Laudis	0.082 lb ai/a	A		99.0 a	99.5 a	0.0 a	97.5 a	98.8 a
	Atrazine	0.5 lb ai/a	A						
	MSO Concentrate	1 % v/v	A						
	Doubledown	3 oz/100 gal	A						
	Ammonium Sulfate	1.28 lb ai/a	A						
8	Laudis	0.082 lb ai/a	A		99.3 a	100.0 a	0.0 a	96.0 a	98.8 a
	Atrazine	0.5 lb ai/a	A						
	MSO Concentrate	1 % v/v	A						
	Array	9 lb/100 gal	A						
9	Laudis	0.082 lb ai/a	A		99.8 a	99.8 a	0.0 a	97.3 a	99.5 a
	Atrazine	0.5 lb ai/a	A						
	MSO Concentrate	1 % v/v	A						
	Gardian	2 qt/100 gal	A						
	Ammonium Sulfate	1.28 lb ai/a	A						

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Pest Type	W Weed	W Weed		W Weed	W Weed		
Pest Code	AMBTR	IPOSS		SETFA	AMBTR		
Pest Scientific Name	Ambrosia trifi>	Ipomoea sp.		Setaria faberi	Ambrosia trifi>		
Pest Name	Giant ragweed	Morning glory		Giant foxtail	Giant ragweed		
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX		
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR		
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays		
Crop Name	Corn	Corn	Corn	Corn	Corn		
Crop Variety	P33W84	P33W84	P33W84	P33W84	P33W84		
Description	V8-V10	V8-V10	BLISTER	BLISTER	BLISTER		
Part Rated	PLATOT C	PLATOT C	PLATOT C	PLATOT C	PLATOT C		
Rating Date	7/13/09	7/13/09	7/31/09	7/31/09	7/31/09		
Rating Type	PHYGEN	PHYGEN	PHYGEN	PHYGEN	PHYGEN		
Rating Unit	percent	percent	percent	percent	percent		
Number of Subsamples	1	1	1	1	1		
Crop Stage Majority	6-8'	6-8'	10-12'	10-12'	10-12'		
Crop Stage Scale	V5	V5					
Pest Stage Majority	12-80"	4-30"		2"-60"	12"-10'		
Pest Density, Unit	5 YD2	3 YD2		80 YD2	10 YD2		
Assessed By	MK/CS	MK/CS	PM	PM	PM		
Days After First/Last Applic.	28 28	28 28	46 46	46 46	46 46		
Trt-Eval Interval	8 DA-A	8 DA-A	8 DA-A	8 DA-A	8 DA-A		
Plant-Eval Interval	52 DP-1	52 DP-1	70 DP-1	70 DP-1	70 DP-1		
Days After Emergence	47 DE-	47 DE-	65 DE-	65 DE-	65 DE-		
Trt Treatment							
No. Name	Rate	Rate	Rate	Rate	Rate		
	Unit	Unit	Unit	Unit	Unit		
	Appl	Appl	Appl	Appl	Appl		
	Code	Code	Code	Code	Code		
	7	8	9	10	11		
10 Laudis	0.082 lb ai/a	A	99.0 a	99.8 a	0.0 a	96.5 a	99.0 a
Atrazine	0.5 lb ai/a	A					
MSO Concentrate	1 % v/v	A					
Border EG	10 oz/100 gal	A					
Ammonium Sulfate	1.28 lb ai/a	A					
LSD (P=.05)	1.07	1.29	0.00	2.17	2.27		
Standard Deviation	0.74	0.89	0.00	1.50	1.56		
CV	0.82	0.99	0.0	1.71	1.75		
Bartlett's X2	3.876	19.471	0.0	18.759	12.505		
P(Bartlett's X2)	0.794	0.003*	.	0.016*	0.13		
Replicate F	3.329	0.930	0.000	5.944	2.540		
Replicate Prob(F)	0.0344	0.4399	1.0000	0.0030	0.0774		
Treatment F	7283.096	5037.311	0.000	1691.316	1606.848		
Treatment Prob(F)	0.0001	0.0001	1.0000	0.0001	0.0001		

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Location: Throckmorton Study Director: Paul Marquardt/Melissa Kruger
Project ID: Investigator: Dr. Bill Johnson
Sponsor Contact: Dave Lamore

Pest Type

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

Pest Code

SETFA, Setaria faberi, = US

AMBTR, Ambrosia trifida, = US

IPOSS, Ipomoea sp., = US

Crop Code

ZEAMX, BCOR, Zea mays, = US

Part Rated

PLATOT = plant - total

C = Crop is Part Rated

P = Pest is Part Rated

Rating Type

PHYGEN = phytotoxicity - general / injury

CONTRO = control / burndown or knockdown

FT2 = per square foot

YD2 = per square yard

Plant-Eval Interval

32 DP-1 = 1 5/22/09

52 DP-1 = 1 5/22/09

70 DP-1 = 1 5/22/09