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Ignite, Laudis, and various deposition aids in corn

Trial ID: 09S-THP-CTC-05 Protocol ID: 09S-THP-CTC-05
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:** 7/13/09

Trial Location

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

Objectives:
Ignite, 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 **E-mail:** pmarquar@purdue.edu
Phone No.: 765-494-4621 **Mobile No.:** 765-409-6369
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 **E-mail:** wgj@purdue.edu
Phone No.: 765-494-4656

Cooperator/Landowner

Cooperator: Throckmorton Purdue Ag Center **Role:** Farm Manager
Organization: Purdue University
Address 1: 8343 US 231 South
Phone No.: 765-538-3422
City: Lafayette **Fax No.:** 765-538-3423
State/Prov: Indiana
Postal Code: 47909 **E-mail:** jayyoung@purdue.edu
Country: USA United States

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:** 67 F
Soil Moisture: SLIWET slightly wet **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:** ABUTH Abutilon theophrasti
Common Name: Velvetleaf

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

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:** RACOBL Randomized Complete Block (RCB)

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Trial Initiation Comments:
Planter used: 4 row John Deere Max Emerge 2

Field Prep./Maintenance:
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:** Tornonto-Millbrook
CEC: 13.3

Application Description

	A
Application Date:	6/15/09
Time of Day:	11 AM
Application Method:	SPRAY
Application Timing:	MIPOWE
Application Placement:	BANT
Applied By:	AR
Air Temperature, Unit:	79 F
% Relative Humidity:	52
Wind Velocity, Unit:	2.5 MPH
Wind Direction:	SW
Dew Presence (Y/N):	N no
Soil Temperature, Unit:	67 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:	V3 100
Stage Minimum, Percent:	V3 100
Stage Maximum, Percent:	V3 100
Height, Unit:	18 IN
Height Minimum, Maximum:	10 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:	10 20
Stage Maximum, Percent:	34 30
Height, Unit:	6 IN
Height Minimum, Maximum:	1 6
Density, Unit:	7.5 YD2
Pest 2 Code, Type, Scale:	SETFA W
Stage Majority, Percent:	12 50
Stage Minimum, Percent:	11 20
Stage Maximum, Percent:	14 30
Height, Unit:	5 IN
Height Minimum, Maximum:	1 5
Density, Unit:	75 YD2
Pest 3 Code, Type, Scale:	ABUTH W
Stage Majority, Percent:	12 50
Stage Minimum, Percent:	11 20
Stage Maximum, Percent:	14 30
Height, Unit:	3 IN
Height Minimum, Maximum:	1 3
Density, Unit:	1.5 YD2
Pest 4 Code, Type, Scale:	CHEAL 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:	H20
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

Trt No	Treatment Application Comment
6	Precipitate in the bottle while spraying...could not mix in but was able to spray the treatment on plots 201,302,604,801.

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

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1	2	3	4	5	6
	Pest Type						W Weed	W Weed	W Weed	W Weed
	Pest Code						AMBTR	SETFA	SETFA	AMBTR
	Pest Scientific Name						Ambrosia trifi>	Setaria faberi	Setaria faberi	Ambrosia trifi>
	Pest Name						Giant ragweed	Giant foxtail	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				P33W84	P33W84	P33W84	P33W84	P33W84	P33W84
	Description					24-48"	24-48"	24-48"	6-8'	6-8'
	Rating Date				6/23/09	6/29/09	6/29/09	6/29/09	7/13/09	7/13/09
	Rating Type				PHYGEN	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit				%	%	%	%	%	%
	Number of Subsamples				1	1	1	1	1	1
	Crop Stage Majority				V5	V9	V9	V9	V10	V10
	Crop Stage Scale				BBCH					
	Pest Stage Majority								12-40"	2-8'
	Pest Stage Minimum/Maximum						12 36			
	Pest Density, Unit						15 YD2	40 YD2	20 YD2	5 YD2
	Assessed By				MK	GK/RH	GK/RH	GK/RH	MK/CS	MK/CS
	Days After First/Last Applic.				8 8	14 14	14 14	14 14	28 28	28 28
	Trt-Eval Interval				8 DA-A	8 DA-A	8 DA-A	14 DA-A	28 DA-A	28 DA-A
	Plant-Eval Interval				32 DP-1	38 DP-1	38 DP-1	38 DP-1	52 DP-1	52 DP-1
	Days After Emergence				27 DE-	33 DE-	33 DE-	33 DE-	47 DE-	47 DE-
1	UNTREATED				0.0 a	0.0 a	0.0 b	0.0 c	0.0 c	0.0 c
2	Ignite 280	450	g ai/ha	A	1.3 a	0.0 a	98.5 a	98.5 a	98.3 a	94.5 b
	Ammonium Sulfate	1680	g ai/ha	A						
3	Laudis	92.1	g ai/ha	A	0.0 a	0.0 a	99.8 a	86.3 b	86.8 b	99.8 a
	MSO Concentrate	1170	g ai/ha	A						
	Ammonium Sulfate	1680	g ai/ha	A						
4	Ignite 280	450	g ai/ha	A	0.8 a	0.0 a	99.8 a	99.3 a	98.5 a	99.0 a
	Laudis	92.1	g ai/ha	A						
	Ammonium Sulfate	1680	g ai/ha	A						
5	Ignite 280	450	g ai/ha	A	2.5 a	0.0 a	100.0 a	99.0 a	98.3 a	99.5 a
	Laudis	92.1	g ai/ha	A						
	Weathergard Complete	700	g ai/ha	A						
6	Ignite 280	450	g ai/ha	A	1.3 a	0.0 a	99.5 a	98.0 a	95.3 a	99.5 a
	Laudis	92.1	g ai/ha	A						
	Array	1510	g ai/ha	A						
7	Ignite 280	450	g ai/ha	A	9.3 a	2.5 a	99.5 a	99.0 a	97.8 a	99.5 a
	Laudis	92.1	g ai/ha	A						
	Class Act NG	1750	g ai/ha	A						
	Interlock	292.3	g ai/ha	A						
8	Ignite 280	450	g ai/ha	A	6.3 a	0.0 a	99.5 a	98.8 a	98.0 a	99.3 a
	Laudis	92.1	g ai/ha	A						
	Gardian Plus	1425	g ai/ha	A						
9	Ignite 280	450	g ai/ha	A	2.3 a	0.0 a	100.0 a	98.8 a	96.8 a	99.8 a
	Laudis	92.1	g ai/ha	A						
	Hel-Fire	375	g ai/ha	A						
10	Ignite 280	450	g ai/ha	A	1.5 a	0.0 a	99.3 a	98.5 a	96.3 a	98.8 a
	Laudis	92.1	g ai/ha	A						
	Border Xtra 8L	1272	g ai/ha	A						

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Pest Type				W Weed	W Weed	W Weed	W Weed
Pest Code				AMBTR	SETFA	SETFA	AMBTR
Pest Scientific Name				Ambrosia trifi>	Setaria faberi	Setaria faberi	Ambrosia trifi>
Pest Name				Giant ragweed	Giant foxtail	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			P33W84	P33W84	P33W84	P33W84	P33W84	P33W84
Description				24-48"	24-48"	24-48"	6-8'	6-8'
Rating Date			6/23/09	6/29/09	6/29/09	6/29/09	7/13/09	7/13/09
Rating Type			PHYGEN	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit			%	%	%	%	%	%
Number of Subsamples			1	1	1	1	1	1
Crop Stage Majority			V5	V9	V9	V9	V10	V10
Crop Stage Scale			BBCH					
Pest Stage Majority							12-40"	2-8'
Pest Stage Minimum/Maximum					12 36			
Pest Density, Unit					15 YD2	40 YD2	20 YD2	5 YD2
Assessed By			MK	GK/RH	GK/RH	GK/RH	MK/CS	MK/CS
Days After First/Last Applic.			8 8	14 14	14 14	14 14	28 28	28 28
Trt-Eval Interval			8 DA-A	8 DA-A	8 DA-A	14 DA-A	28 DA-A	28 DA-A
Plant-Eval Interval			32 DP-1	38 DP-1	38 DP-1	38 DP-1	52 DP-1	52 DP-1
Days After Emergence			27 DE-	33 DE-	33 DE-	33 DE-	47 DE-	47 DE-
Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1	2	3	4	5	6
11	Ignite 280	450	g ai/ha	A	0.8 a	1.3 a	99.3 a	98.0 a	95.0 a	98.0 a
	Laudis	92.1	g ai/ha	A						
	Request	336	g ai/ha	A						
	Grounded	1400	g ai/ha	A						
LSD (P=.05)					6.03	1.61	1.04	2.83	2.53	2.95
Standard Deviation					4.18	1.12	0.72	1.96	1.75	2.04
CV					178.52	327.96	0.8	2.21	2.01	2.28
Bartlett's X2					27.028	0.061	12.154	47.2	21.876	46.441
P(Bartlett's X2)					0.001*	0.805	0.096	0.001*	0.009*	0.001*
Replicate F					0.980	1.667	2.222	1.529	8.903	3.171
Replicate Prob(F)					0.4153	0.1952	0.1060	0.2273	0.0002	0.0385
Treatment F					1.882	2.091	6948.895	911.619	1106.823	851.360
Treatment Prob(F)					0.0883	0.0580	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.

Pest Type
W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop
Pest Code
AMBTR, Ambrosia trifida, = US
SETFA, Setaria faberi, = US
ABUTH, Abutilon theophrasti, = US
Crop Code
ZEAMX, BCOR, Zea mays, = US
Rating Type
PHYGEN = phytotoxicity - general / injury
CONTRO = control / burndown or knockdown
Rating Unit
% = percent
Crop Stage Scale
BBCH = BBCH uniform plant stages
Pest Stage Minimum/Maximum
12 = 2 true leaves, leaf pairs or whorls unfolded
36 = 6 visibly extended internode; G□ 6 node stage

YD2 = per square yard
Plant-Eval Interval
32 DP-1 = 1 5/22/09
38 DP-1 = 1 5/22/09
52 DP-1 = 1 5/22/09

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Pest Type				W Weed
Pest Code				ABUTH
Pest Scientific Name				Abutilon theop>
Pest Name				Velvetleaf
Crop Code				ZEAMX
BBCH Scale				BCOR
Crop Scientific Name				Zea mays
Crop Name				Corn
Crop Variety				P33W84
Description				6-8'
Rating Date				7/13/09
Rating Type				CONTRO
Rating Unit				%
Number of Subsamples				1
Crop Stage Majority				V10
Crop Stage Scale				
Pest Stage Majority				4-36"
Pest Stage Minimum/Maximum				
Pest Density, Unit				22 YD2
Assessed By				MK/CS
Days After First/Last Applic.				28 28
Trt-Eval Interval				28 DA-A
Plant-Eval Interval				52 DP-1
Days After Emergence				47 DE-
Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	7
1	UNTREATED				0.0 b
2	Ignite 280	450	g ai/ha	A	99.8 a
	Ammonium Sulfate	1680	g ai/ha	A	
3	Laudis	92.1	g ai/ha	A	100.0 a
	MSO Concentrate	1170	g ai/ha	A	
	Ammonium Sulfate	1680	g ai/ha	A	
4	Ignite 280	450	g ai/ha	A	100.0 a
	Laudis	92.1	g ai/ha	A	
	Ammonium Sulfate	1680	g ai/ha	A	
5	Ignite 280	450	g ai/ha	A	100.0 a
	Laudis	92.1	g ai/ha	A	
	Weathergard Complete	700	g ai/ha	A	
6	Ignite 280	450	g ai/ha	A	100.0 a
	Laudis	92.1	g ai/ha	A	
	Array	1510	g ai/ha	A	
7	Ignite 280	450	g ai/ha	A	99.8 a
	Laudis	92.1	g ai/ha	A	
	Class Act NG	1750	g ai/ha	A	
	Interlock	292.3	g ai/ha	A	
8	Ignite 280	450	g ai/ha	A	100.0 a
	Laudis	92.1	g ai/ha	A	
	Gardian Plus	1425	g ai/ha	A	
9	Ignite 280	450	g ai/ha	A	100.0 a
	Laudis	92.1	g ai/ha	A	
	Hel-Fire	375	g ai/ha	A	
10	Ignite 280	450	g ai/ha	A	99.8 a
	Laudis	92.1	g ai/ha	A	
	Border Xtra 8L	1272	g ai/ha	A	

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Pest Type				W Weed
Pest Code				ABUTH
Pest Scientific Name				Abutilon theop>
Pest Name				Velvetleaf
Crop Code				ZEAMX
BBCH Scale				BCOR
Crop Scientific Name				Zea mays
Crop Name				Corn
Crop Variety				P33W84
Description				6-8'
Rating Date				7/13/09
Rating Type				CONTRO
Rating Unit				%
Number of Subsamples				1
Crop Stage Majority				V10
Crop Stage Scale				
Pest Stage Majority				4-36"
Pest Stage Minimum/Maximum				
Pest Density, Unit				22 YD2
Assessed By				MK/CS
Days After First/Last Applic.				28 28
Trt-Eval Interval				28 DA-A
Plant-Eval Interval				52 DP-1
Days After Emergence				47 DE-
Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	7
11	Ignite 280	450	g ai/ha	A	100.0 a
	Laudis	92.1	g ai/ha	A	
	Request	336	g ai/ha	A	
	Grounded	1400	g ai/ha	A	
LSD (P=.05)					0.39
Standard Deviation					0.27
CV					0.3
Bartlett's X2					0.0
P(Bartlett's X2)					.
Replicate F					0.313
Replicate Prob(F)					0.8162
Treatment F					49925.755
Treatment Prob(F)					0.0001