

Purdue University

Evaluate the effectiveness of Callisto, Laudis and Impact alone and tank mixed with atrazine and/or glyphosate on various weed species.

Trial ID: 08S-THP-CTC-10 Protocol ID: 08S-THP-CTC-10
 Location: Throckmorton Study Director: Melissa Kruger
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact:

General Trial Information

Study Director: Melissa Kruger **Title:** Lab Technician VII
Investigator: Dr. William G. Johnson **Title:** Associate Professor

Discipline: H herbicide
Trial Status: F one-year/final
Initiation Date: 4/22/2008 **Planned Completion Date:** 7/9/2008

Trial Location

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

Objectives:

The objective of the study is to evaluate the effectiveness of Callisto, Laudis and Impact alone and tank mixed with atrazine and/or glyphosate on various weed species.

Personnel

Study Director: Melissa Kruger **Title:** Lab Technician VII
Affiliation: Purdue University
Address: 915 W. State St.
Location: West Lafayette, IN USA
Postal Code: 47907 **E-mail:** mmkruger@purdue.edu
Phone No.: 765-494-4621
Investigator: Dr. William G. Johnson **Title:** Associate Professor
Affiliation: Purdue University
Address: 915 W. State St.
Location: West Lafayette, IN USA
Postal Code: 47907 **E-mail:** wj@purdue.edu
Phone No.: 765-494-4656

Cooperator/Landowner

Cooperator: Southeast Purdue Ag Center
Organization: Purdue University
Address 1: 4425 E Co Rd 350 N
Address 2: PO Box 216 **Phone No.:** 812-458-6977
City: Butlerville **Fax No.:** 812-458-6979
State/Prov: IN
Postal Code: 47223
Country: USA

Crop Description

Crop 1: ZEAMX Zea mays Corn
Variety: DKC 60-18 **Description:** JD7200; RR2/YGPL
BBCH Scale: BCOR **Planting Date:** 4/22/2008
Planting Method: DIRDRI direct drilled **Rate, Unit:** 32000 S/A
Depth, Unit: 2 IN
Row Spacing, Unit: 30 IN
Soil Temperature, Unit: 78 F
Soil Moisture: MOIST **Emergence Date:** 5/5/2008

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:** CHEAL *Chenopodium album*
Common Name: Common lambsquarters

Site and Design

Plot Width, Unit: 10 FT **Site Type:** FIELD field
Plot Length, Unit: 30 FT
Plot Area, Unit: 300 FT2 **Tillage Type:** CONTIL conventional-till
Replications: 4 **Study Design:** FACTOR Factorial
Untreated Arrangement: INCLUDED single control randomized in each block

Maintenance

No.	Date	Maintenance Treatment Name	Rate	Rate Unit
1.	4/22/2008	UAN 28%	50	GAL/A

Field Prep./Maintenance:

□ 50 gal/acre of UAN 28% applied on 4/ 22/08 which was then incorporated in.

Field was chisel plowed in fall.

Field was disked once and then field cultivated on 4/22/08.

Soil Description

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

Analyzed By:

□ A&L Great Lakes Laboratories, INc. Report #: F04048-0006

Additional Measured Elements

Element	Quantity	Unit
P	53	ppm
K	208	ppm
Mg	325	ppm
Ca	1100	ppm

Moisture and Weather Conditions

Closest Weather Station: On research farm **Distance, Unit:** 0.5 MI

Comment:

Rainfall:
4/23-4/30: 0.24 in
5/1-5/7: 0.14 in
5/8-5/14: 1 in

Application Description

A	
Application Date:	6/10/2008
Time of Day:	8:30 PM
Application Method:	SPRAY
Application Timing:	POSPOS
Application Placement:	BROFOL
Applied By:	VMD MK
Air Temperature, Unit:	78 F
% Relative Humidity:	67
Wind Velocity, Unit:	1 MPH
Wind Direction:	W
Dew Presence (Y/N):	N no
Soil Temperature, Unit:	77 F
Soil Moisture:	MOIST
% Cloud Cover:	0

Crop Stage At Each Application

A	
Crop 1 Code, BBCH Scale:	ZEAMX BCOR

Stage Scale Used:	BBCH
Stage Majority, Percent:	V5
Stage Minimum, Percent:	V4
Stage Maximum, Percent:	V5
Height, Unit:	11 in
Height Minimum, Maximum:	10 12

Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale:	SETFA W
Stage Majority, Percent:	2 LF
Stage Minimum, Percent:	1 LF
Stage Maximum, Percent:	3 LF
Height, Unit:	10 IN
Height Minimum, Maximum:	8 12
Density, Unit:	125 FT2
Pest 2 Code, Type, Scale:	AMBTR W
Stage Majority, Percent:	4 NODE
Stage Minimum, Percent:	3 NODE
Stage Maximum, Percent:	5 NODE
Height, Unit:	20 IN
Height Minimum, Maximum:	10 30
Density, Unit:	15 YD2
Pest 3 Code, Type, Scale:	CHEAL W
Stage Majority, Percent:	9 LF
Height, Unit:	10 IN
Height Minimum, Maximum:	8 12
Density, Unit:	7 YD2

Application Equipment

	A
Appl. Equipment:	CO2 Backpack
Operating Pressure, Unit:	17 PSI
Nozzle Type:	Flat Fan
Nozzle Size:	XR11002
Nozzle Spacing, Unit:	15 IN
Nozzles/Row:	8
Boom Length, Unit:	10 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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Pest Type		W Weed	W Weed	W Weed		W Weed				
Pest Code		SETFA	AMBTR	CHEAL		SETFA				
Pest Scientific Name		Setaria faberi	Ambrosia trifi>	Chenopodium al>		Setaria faberi				
Pest Name		Giant foxtail	Giant ragweed	Common lambsqu>		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	DKC 60-18	DKC 60-18	DKC 60-18	DKC 60-18	DKC 60-18	DKC 60-18				
Description	JD 7200; RR2/Y>	JD 7200; RR2/Y>	JD 7200; RR2/Y>	JD 7200; RR2/Y>	JD 7200; RR2/Y>	JD 7200; RR2/Y>				
Part Rated	PLOT C	PLOT P	PLOT P	PLOT P	PLOT C	PLOT P				
Rating Date	6/23/2008	6/23/2008	6/23/2008	6/23/2008	7/9/2008	7/9/2008				
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO				
Rating Unit	%	%	%	%	%	%				
Number of Subsamples	1	1	1	1	1	1				
Crop Stage Majority	V7	V7	V7	V7	V12	V12				
Crop Stage Minimum/Maximum					60-70"	60-70"				
Pest Stage Minimum/Maximum		24-36"	36-54"	24-42"		3-4'				
Pest Density, Unit		25 FT2	15 YD2	7 YD2		250 YD2				
Footnote Number	1				1					
Assessed By	GK	GK	GK	GK	CB GK	CB GK				
Days After First/Last Applic.	13 13	13 13	13 13	13 13	29 29	29 29				
Trt-Eval Interval	13 DA-A	13 DA-A	13 DA-A	13 DA-A	29 DA-A	29 DA-A				
Plant-Eval Interval	62 DP-1	62 DP-1	62 DP-1	62 DP-1	78 DP-1	78 DP-1				
Days After Emergence	49 DE-	49 DE-	49 DE-	49 DE-	65 DE-	65 DE-				
Trt No.	Treatment	Rate	Unit	Appl Code	1	2	3	4	5	6
1	NO Pigment Inhibitor NO Atrazine NO Touchdown				0.0 a	0.0 c	0.0 d	0.0 d	0.0 a	0.0 e
2	NO Pigment Inhibitor NO Atrazine Touchdown Total Ammonium Sulfate	0.38 lb ae/a	A		0.0 a	99.5 a	92.0 ab	92.5 a	0.0 a	97.3 a
3	NO Pigment Inhibitor Atrazine COC Ammonium Sulfate NO Touchdown	0.5 lb ai/a 1 % v/v 8.5 lb/100 gal	A A A		0.0 a	20.0 c	68.8 b	67.5 bc	0.0 a	27.5 c
4	NO Pigment Inhibitor Atrazine COC Ammonium Sulfate Touchdown Total	0.5 lb ai/a 1 % v/v 8.5 lb/100 gal 0.38 lb ae/a	A A A A		2.5 a	97.5 a	88.8 ab	91.0 a	0.0 a	96.0 a
5	Callisto COC Ammonium Sulfate NO Atrazine NO Touchdown	0.094 lb ai/a 1 % v/v 8.5 lb/100 gal	A A A		0.0 a	8.8 c	78.8 ab	81.3 ab	0.0 a	6.3 de
6	Callisto COC Ammonium Sulfate NO Atrazine Touchdown Total	0.094 lb ai/a 1 % v/v 8.5 lb/100 gal 0.38 lb ae/a	A A A A		5.0 a	97.5 a	91.3 ab	96.3 a	0.0 a	95.5 a

Pest Type	W Weed	W Weed				
Pest Code	AMBTR	CHEAL				
Pest Scientific Name	Ambrosia trifida	Chenopodium album				
Pest Name	Giant ragweed	Common lambsquarters				
Crop Code	ZEAMX	ZEAMX				
BBCH Scale	BCOR	BCOR				
Crop Scientific Name	Zea mays	Zea mays				
Crop Name	Corn	Corn				
Crop Variety	DKC 60-18	DKC 60-18				
Description	JD 7200; RR2/Y	JD 7200; RR2/Y				
Part Rated	PLOT P	PLOT P				
Rating Date	7/9/2008	7/9/2008				
Rating Type	CONTRO	CONTRO				
Rating Unit	%	%				
Number of Subsamples	1	1				
Crop Stage Majority	V12	V12				
Crop Stage Minimum/Maximum	60-70"	60-70"				
Pest Stage Minimum/Maximum	1-8'	2-5'				
Pest Density, Unit	15 YD2	7 YD2				
Footnote Number						
Assessed By	CB GK	CB GK				
Days After First/Last Applic.	29 29	29 29				
Trt-Eval Interval	29 DA-A	29 DA-A				
Plant-Eval Interval	78 DP-1	78 DP-1				
Days After Emergence	65 DE-	65 DE-				
Trt No.	Treatment Name	Rate	Appl Unit	Code	7	8
7	Callisto	0.094 lb ai/a	A		100.0 a	99.0 a
	COC	1 % v/v	A			
	Ammonium Sulfate	8.5 lb/100 gal	A			
	Atrazine	0.5 lb ai/a	A			
	NO Touchdown					
8	Callisto	0.094 lb ai/a	A		96.3 a	98.0 a
	COC	1 % v/v	A			
	Ammonium Sulfate	8.5 lb/100 gal	A			
	Atrazine	0.5 lb ai/a	A			
	Touchdown Total	0.38 lb ae/a	A			
9	Laudis	0.082 lb ai/a	A		90.0 a	85.8 ab
	COC	1 % v/v	A			
	Ammonium Sulfate	8.5 lb/100 gal	A			
	NO Atrazine					
	NO Touchdown					
10	Laudis	0.082 lb ai/a	A		94.5 a	91.5 ab
	COC	1 % v/v	A			
	Ammonium Sulfate	8.5 lb/100 gal	A			
	NO Atrazine					
	Touchdown Total	0.38 lb ae/a	A			
11	Laudis	0.082 lb ai/a	A		99.8 a	96.0 a
	COC	1 % v/v	A			
	Ammonium Sulfate	8.5 lb/100 gal	A			
	Atrazine	0.5 lb ai/a	A			
	NO Touchdown					
12	Laudis	0.082 lb ai/a	A		97.3 a	98.0 a
	COC	1 % v/v	A			
	Ammonium Sulfate	8.5 lb/100 gal	A			
	Atrazine	0.5 lb ai/a	A			
	Touchdown Total	0.38 lb ae/a	A			
13	Impact	0.0164 lb ai/a	A		92.0 a	80.5 b
	COC	1 % v/v	A			
	Ammonium Sulfate	8.5 lb/100 gal	A			
	NO Atrazine					
	NO Touchdown					

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Pest Code		SETFA	AMBTR	CHEAL		SETFA			
Pest Scientific Name		Setaria faberi	Ambrosia trifl>	Chenopodium al>		Setaria faberi			
Pest Name		Giant foxtail	Giant ragweed	Common lambsqu>		Giant foxtail			
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX			
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR			
Crop Scientific Name	Zea mays								
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn			
Crop Variety	DKC 60-18								
Description	JD 7200; RR2/Y>								
Part Rated	PLOT C	PLOT P	PLOT P	PLOT P	PLOT C	PLOT P			
Rating Date	6/23/2008	6/23/2008	6/23/2008	6/23/2008	7/9/2008	7/9/2008			
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO			
Rating Unit	%	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1	1			
Crop Stage Majority	V7	V7	V7	V7	V12	V12			
Crop Stage Minimum/Maximum					60-70"	60-70"			
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Days After First/Last Applic.	13 13	13 13	13 13	13 13	29 29	29 29			
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Plant-Eval Interval	62 DP-1	62 DP-1	62 DP-1	62 DP-1	78 DP-1	78 DP-1			
Days After Emergence	49 DE-	49 DE-	49 DE-	49 DE-	65 DE-	65 DE-			
Trt Treatment	Rate	Appl							
No. Name	Rate	Unit	Code	1	2	3	4	5	6
14 Impact	0.0164	lb ai/a	A	5.0 a	97.0 a	89.3 ab	97.0 a	0.0 a	95.0 a
COC	1	% v/v	A						
Ammonium Sulfate	8.5	lb/100 gal	A						
NO Atrazine									
Touchdown Total	0.38	lb ae/a	A						
15 Impact	0.0164	lb ai/a	A	0.0 a	80.8 ab	92.0 ab	85.8 a	0.8 a	79.3 ab
COC	1	% v/v	A						
Ammonium Sulfate	8.5	lb/100 gal	A						
Atrazine	0.5	lb ai/a	A						
NO Touchdown									
16 Impact	0.0164	lb ai/a	A	0.0 a	99.0 a	96.0 a	95.5 a	0.0 a	97.3 a
COC	1	% v/v	A						
Ammonium Sulfate	8.5	lb/100 gal	A						
Atrazine	0.5	lb ai/a	A						
Touchdown Total	0.38	lb ae/a	A						
17 Non-treated check				0.0 a	0.0 c	0.0 d	0.0 d	0.0 a	0.0 e
LSD (P=.05)				8.04	19.48	14.50	12.07	0.52	15.40
Standard Deviation				5.62	13.63	10.15	8.45	0.36	10.78
CV				424.85	20.96	13.35	10.91	824.62	16.08
Bartlett's X2				5.227	116.143	32.125	19.434	0.0	84.252
P(Bartlett's X2)				0.156	0.001*	0.002*	0.149	.	0.001*
Replicate F				3.767	1.710	5.825	4.101	1.000	3.609
Replicate Prob(F)				0.0165	0.1774	0.0018	0.0114	0.4010	0.0199
Treatment F				1.000	33.105	37.845	54.690	1.000	51.919
Treatment Prob(F)				0.4727	0.0001	0.0001	0.0001	0.4727	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	W Weed			
Pest Code	AMBTR	CHEAL			
Pest Scientific Name	Ambrosia trifi>	Chenopodium ai>			
Pest Name	Giant ragweed	Common lambsqu>			
Crop Code	ZEAMX	ZEAMX			
BBCH Scale	BCOR	BCOR			
Crop Scientific Name	Zea mays	Zea mays			
Crop Name	Corn	Corn			
Crop Variety	DKC 60-18	DKC 60-18			
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Rating Date	7/9/2008	7/9/2008			
Rating Type	CONTRO	CONTRO			
Rating Unit	%	%			
Number of Subsamples	1	1			
Crop Stage Majority	V12	V12			
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Pest Density, Unit	15 YD2	7 YD2			
Footnote Number					
Assessed By	CB GK	CB GK			
Days After First/Last Applic.	29 29	29 29			
Trt-Eval Interval	29 DA-A	29 DA-A			
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Days After Emergence	65 DE-	65 DE-			
Trt No.	Treatment	Rate	Appl Code	7	8
14	Impact	0.0164 lb ai/a	A	91.3 a	98.8 a
	COC	1 % v/v	A		
	Ammonium Sulfate	8.5 lb/100 gal	A		
	NO Atrazine				
	Touchdown Total	0.38 lb ae/a	A		
15	Impact	0.0164 lb ai/a	A	97.0 a	84.5 ab
	COC	1 % v/v	A		
	Ammonium Sulfate	8.5 lb/100 gal	A		
	Atrazine	0.5 lb ai/a	A		
	NO Touchdown				
16	Impact	0.0164 lb ai/a	A	98.0 a	97.3 a
	COC	1 % v/v	A		
	Ammonium Sulfate	8.5 lb/100 gal	A		
	Atrazine	0.5 lb ai/a	A		
	Touchdown Total	0.38 lb ae/a	A		
17	Non-treated check			0.0 c	0.0 d
LSD (P=.05)				13.28	8.86
Standard Deviation				9.29	6.20
CV				11.37	7.71
Bartlett's X2				60.585	44.449
P(Bartlett's X2)				0.001*	0.001*
Replicate F				3.890	3.812
Replicate Prob(F)				0.0144	0.0157
Treatment F				46.285	102.055
Treatment Prob(F)				0.0001	0.0001

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Location: Throckmorton Study Director: Melissa Kruger
Project ID: Investigator: Dr. Bill Johnson
Sponsor Contact:

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

Crop Code

ZEAMX, BCOR, Zea mays, = US

C = Crop is Part Rated

P = Pest is Part Rated

Rating Type

PHYGEN = phytotoxicity - general / injury

CONTRO = control / burndown or knockdown

Rating Unit

% = percent

FT2 = per square foot

YD2 = per square yard

Plant-Eval Interval

62 DP-1 = 1 4/22/2008

78 DP-1 = 1 4/22/2008

Footnote 1: Stunting