

# Purdue University

## Evaluate HPPD herbicide interaction with Counter insecticide in corn

Trial ID: 13S-THP-CTC-16      Protocol ID: 13S-THP-CTC-16  
 Location: Throckmorton      Study Director:  
 Project ID: 13C04I056      Investigator: Dr. Bill Johnson  
 Sponsor Contact: Amvac - Rich Porter

### General Trial Information

**Study Director:** Bill Johnson  
**Investigator:** Dr. Bill Johnson    **Title:** Professor  
  
**Discipline:** H herbicide  
**Trial Status:** E established  
**Initiation Date:** Mar-30-2013    **Planned Completion Date:** Nov-1-2013

### Trial Location

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

### Objectives:

Evaluate Impact and Callisto applied at 1X and 2X use rates postemergence following Counter 20G at 1X and 2X use rates at planting for interaction. Compare to Force 3G treatment with post applications of Impact and Callisto.

### Personnel

**Study Director:** Bill Johnson  
**Investigator:** Dr. Bill Johnson      **Title:** Professor  
**Affiliation:** Purdue University  
**Address:** 915 W State Street  
**Location:** West Lafayette, IN, USA  
**Postal Code:** 47907      **E-mail:** wj@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:** ZEAMX    Zea mays      Corn  
**Variety:** DEKALB DKC61-21      **Description:** RR/LL  
**BBCH Scale:** BCOR      **Planting Date:** May-21-2013  
**Planting Method:** SEEDED    seeded      **Rate, Unit:** 28000 S/A  
**Depth, Unit:** 1.5    IN  
**Row Spacing, Unit:** 30    IN  
  
**Soil Moisture:** DRY      dry      **Soil Temperature, Unit:** 69    F

### Pest Description

**Establishment Method/Description:** Crop tolerance only

### Site and Design

**Plot Width, Unit:** 10 FT  
**Plot Length, Unit:** 30 FT      **Site Type:** FIELD    field  
**Plot Area, Unit:** 300 FT2      **Experimental Unit:** 1    PLOT plot  
**Replications:** 4      **Tillage Type:** CONTIL    conventional-till  
**Study Design:** RACOB    Randomized Complete Block (RCB)  
**Untreated Arrangement:** INCLUDED    single control randomized in each block

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## Maintenance

No.	Date	Rate	Rate Unit
1.	May-17-2013	3	QT/A

Comment: HARNESS XTRA 5.6

## Soil Description

Description Name: TPAC - Field 4B  
 % OM: 2.9 Texture: SIL silt loam  
 pH: 6.2 Soil Name: Toronto-Millbrook  
 CEC: 13.3

## Application Description

	A	B
Application Date:		Jun-14-2013
Time of Day:		10 AM
Application Method:	SEEAPO	SPRAY
Application Timing:	ATPLAN	POEMCR
Application Placement:	INFURR	BROFOL
Applied By:		MW
Air Temperature, Unit:		72 F
% Relative Humidity:		66
Wind Velocity, Unit:		3 MPH
Wind Direction:		N
Dew Presence (Y/N):		N no
Soil Temperature, Unit:		68 F
Soil Moisture:		SLIWET
% Cloud Cover:		5

## Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	ZEAMX BCOR	ZEAMX BCOR
Stage Scale Used:	BBCH	BBCH
Stage Majority, Percent:	V3	V3
Stage Minimum, Percent:	V3	V3
Stage Maximum, Percent:	V4	V4

## Application Equipment

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

Date	By	Notes
Jul-15-2013		Lodging due to high winds

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Jul-25-2013

Lodging due to high winds

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## Evaluate HPPD herbicide interaction with Counter insecticide in corn

Trial ID: 13S-THP-CTC-16      Protocol ID: 13S-THP-CTC-16  
 Location: Throckmorton      Study Director:  
 Project ID: 13C04I056      Investigator: Dr. Bill Johnson  
 Sponsor Contact: Amvac - Rich Porter

Reps: 4      Plots: 10 by 30 feet  
 Spray vol: 20 gal/ac      Mix size: 2.5 liters (min 2.0856)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Appl Description	Spray Volume	Volume Unit	Amt Product to Measure	Rep 1	2	3	4
1	Untreated Check							A					101	205	705	801
	Untreated Check							B								
2	Untreated							A					201	505	601	905
	Callisto	4 LBA/GAL	SC		3.0 fl oz/a		POEMCR B	V3-V4		15 GAL/AC		3.906 ml/mx				
	AAtrex	4 LBA/GAL	F		1.0 pt/a		POEMCR B	V3-V4		15 GAL/AC		20.83 ml/mx				
	COC	100 %	SL		1.0 % v/v		POEMCR B	V3-V4		15 GAL/AC		25.0 ml/mx				
	UAN 28%	100 %	SL		2.5 % v/v		POEMCR B	V3-V4		15 GAL/AC		62.49 ml/mx				
3	Untreated							A					301	305	701	805
	Callisto	4 LBA/GAL	SC		6.0 fl oz/a		POEMCR B	V3-V4		15 GAL/AC		7.812 ml/mx				
	AAtrex	4 LBA/GAL	F		2.0 pt/a		POEMCR B	V3-V4		15 GAL/AC		41.66 ml/mx				
	COC	100 %	SL		1.0 % v/v		POEMCR B	V3-V4		15 GAL/AC		25.0 ml/mx				
	UAN 28%	100 %	SL		2.5 % v/v		POEMCR B	V3-V4		15 GAL/AC		62.49 ml/mx				
4	Untreated							A					401	405	901	1005
	Impact	2.8 LBA/GAL	SC		1.0 fl oz/a		POEMCR B	V3-V4		15 GAL/AC		1.302 ml/mx				
	AAtrex	4 LBA/GAL	F		1.0 pt/a		POEMCR B	V3-V4		15 GAL/AC		20.83 ml/mx				
	MSO	100 %	SL		1.0 % v/v		POEMCR B	V3-V4		15 GAL/AC		25.0 ml/mx				
	UAN 28%	100 %	SL		2.5 % v/v		POEMCR B	V3-V4		15 GAL/AC		62.49 ml/mx				
5	Untreated							A					105	501	605	1001
	Impact	2.8 LBA/GAL	SC		2.0 fl oz/a		POEMCR B	V3-V4		15 GAL/AC		2.604 ml/mx				
	AAtrex	4 LBA/GAL	F		2.0 pt/a		POEMCR B	V3-V4		15 GAL/AC		41.66 ml/mx				
	MSO	100 %	SL		1.0 % v/v		POEMCR B	V3-V4		15 GAL/AC		25.0 ml/mx				
	UAN 28%	100 %	SL		2.5 % v/v		POEMCR B	V3-V4		15 GAL/AC		62.49 ml/mx				
6	COUNTER	20 %AW/W	G		6.0 oz wt/1000 row-ft		ATPLAN	A	In-furrow			5.103 g/1 row/1 plot	102	208	602	1008
	Untreated							B								
7	COUNTER	20 %AW/W	G		6.0 oz wt/1000 row-ft		ATPLAN	A	In-furrow			5.103 g/1 row/1 plot	202	308	808	1002
	Callisto	4 LBA/GAL	SC		3.0 fl oz/a		POEMCR B	V3-V4		15 GAL/AC		3.906 ml/mx				
	AAtrex	4 LBA/GAL	F		1.0 pt/a		POEMCR B	V3-V4		15 GAL/AC		20.83 ml/mx				
	COC	100 %	SL		1.0 % v/v		POEMCR B	V3-V4		15 GAL/AC		25.0 ml/mx				
	UAN 28%	100 %	SL		2.5 % v/v		POEMCR B	V3-V4		15 GAL/AC		62.49 ml/mx				
8	COUNTER	20 %AW/W	G		6.0 oz wt/1000 row-ft		ATPLAN	A	In-furrow			5.103 g/1 row/1 plot	108	302	608	702
	Callisto	4 LBA/GAL	SC		6.0 fl oz/a		POEMCR B	V3-V4		15 GAL/AC		7.812 ml/mx				
	AAtrex	4 LBA/GAL	F		2.0 pt/a		POEMCR B	V3-V4		15 GAL/AC		41.66 ml/mx				
	COC	100 %	SL		1.0 % v/v		POEMCR B	V3-V4		15 GAL/AC		25.0 ml/mx				
	UAN 28%	100 %	SL		2.5 % v/v		POEMCR B	V3-V4		15 GAL/AC		62.49 ml/mx				
9	COUNTER	20 %AW/W	G		6.0 oz wt/1000 row-ft		ATPLAN	A	In-furrow			5.103 g/1 row/1 plot	402	508	802	908
	Impact	2.8 LBA/GAL	SC		1.0 fl oz/a		POEMCR B	V3-V4		15 GAL/AC		1.302 ml/mx				
	AAtrex	4 LBA/GAL	F		1.0 pt/a		POEMCR B	V3-V4		15 GAL/AC		20.83 ml/mx				
	MSO	100 %	SL		1.0 % v/v		POEMCR B	V3-V4		15 GAL/AC		25.0 ml/mx				
	UAN 28%	100 %	SL		2.5 % v/v		POEMCR B	V3-V4		15 GAL/AC		62.49 ml/mx				
10	COUNTER	20 %AW/W	G		6.0 oz wt/1000 row-ft		ATPLAN	A	In-furrow			5.103 g/1 row/1 plot	408	502	708	902
	Impact	2.8 LBA/GAL	SC		2.0 fl oz/a		POEMCR B	V3-V4		15 GAL/AC		2.604 ml/mx				
	AAtrex	4 LBA/GAL	F		2.0 pt/a		POEMCR B	V3-V4		15 GAL/AC		41.66 ml/mx				
	MSO	100 %	SL		1.0 % v/v		POEMCR B	V3-V4		15 GAL/AC		25.0 ml/mx				
	UAN 28%	100 %	SL		2.5 % v/v		POEMCR B	V3-V4		15 GAL/AC		62.49 ml/mx				
11	COUNTER	20 %AW/W	G		12.0 oz wt/1000 row-ft		ATPLAN	A	In-furrow			10.21 g/1 row/1 plot	103	107	603	607
	Untreated							B								
12	COUNTER	20 %AW/W	G		12.0 oz wt/1000 row-ft		ATPLAN	A	In-furrow			10.21 g/1 row/1 plot	203	207	803	807
	Callisto	4 LBA/GAL	SC		3.0 fl oz/a		POEMCR B	V3-V4		15 GAL/AC		3.906 ml/mx				
	AAtrex	4 LBA/GAL	F		1.0 pt/a		POEMCR B	V3-V4		15 GAL/AC		20.83 ml/mx				
	COC	100 %	SL		1.0 % v/v		POEMCR B	V3-V4		15 GAL/AC		25.0 ml/mx				
	UAN 28%	100 %	SL		2.5 % v/v		POEMCR B	V3-V4		15 GAL/AC		62.49 ml/mx				

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Reps: 4

Plots: 10 by 30 feet

Spray vol: 20 gal/ac

Mix size: 2.5 liters (min 2.0856)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate Unit	Growth Stage	Appl Code	Appl Description	Spray Volume	Volume Unit	Amt Product to Measure	Rep 1	2	3	4
13	COUNTER	20 %AW/W	G		12.0 oz wt/1000 row-ft	ATPLAN	A	In-furrow			10.21 g/1 row/1 plot	303	407	703	907
	Callisto	4 LBA/GAL	SC		6.0 fl oz/a	POEMCR	B	V3-V4	15 GAL/AC	7.812 ml/mx					
	AAtrex	4 LBA/GAL	F		2.0 pt/a	POEMCR	B	V3-V4	15 GAL/AC	41.66 ml/mx					
	COC	100 %	SL		1.0 % v/v	POEMCR	B	V3-V4	15 GAL/AC	25.0 ml/mx					
	UAN 28%	100 %	SL		2.5 % v/v	POEMCR	B	V3-V4	15 GAL/AC	62.49 ml/mx					
14	COUNTER	20 %AW/W	G		12.0 oz wt/1000 row-ft	ATPLAN	A	In-furrow			10.21 g/1 row/1 plot	403	507	707	1003
	Impact	2.8 LBA/GAL	SC		1.0 fl oz/a	POEMCR	B	V3-V4	15 GAL/AC	1.302 ml/mx					
	AAtrex	4 LBA/GAL	F		1.0 pt/a	POEMCR	B	V3-V4	15 GAL/AC	20.83 ml/mx					
	MSO	100 %	SL		1.0 % v/v	POEMCR	B	V3-V4	15 GAL/AC	25.0 ml/mx					
	UAN 28%	100 %	SL		2.5 % v/v	POEMCR	B	V3-V4	15 GAL/AC	62.49 ml/mx					
15	COUNTER	20 %AW/W	G		12.0 oz wt/1000 row-ft	ATPLAN	A	In-furrow			10.21 g/1 row/1 plot	307	503	903	1007
	Impact	2.8 LBA/GAL	SC		2.0 fl oz/a	POEMCR	B	V3-V4	15 GAL/AC	2.604 ml/mx					
	AAtrex	4 LBA/GAL	F		2.0 pt/a	POEMCR	B	V3-V4	15 GAL/AC	41.66 ml/mx					
	MSO	100 %	SL		1.0 % v/v	POEMCR	B	V3-V4	15 GAL/AC	25.0 ml/mx					
	UAN 28%	100 %	SL		2.5 % v/v	POEMCR	B	V3-V4	15 GAL/AC	62.49 ml/mx					
16	FORCE Untreated	3 %AW/W	G		4.0 oz wt/1000 row-ft	ATPLAN	A B	In-furrow			3.402 g/1 row/1 plot	104	106	1004	1006
17	FORCE	3 %AW/W	G		4.0 oz wt/1000 row-ft	ATPLAN	A	In-furrow			3.402 g/1 row/1 plot	204	406	704	706
	Callisto	4 LBA/GAL	SC		3.0 fl oz/a	POEMCR	B	V3-V4	15 GAL/AC	3.906 ml/mx					
	AAtrex	4 LBA/GAL	F		1.0 pt/a	POEMCR	B	V3-V4	15 GAL/AC	20.83 ml/mx					
	COC	100 %	SL		1.0 % v/v	POEMCR	B	V3-V4	15 GAL/AC	25.0 ml/mx					
	UAN 28%	100 %	SL		2.5 % v/v	POEMCR	B	V3-V4	15 GAL/AC	62.49 ml/mx					
18	FORCE	3 %AW/W	G		4.0 oz wt/1000 row-ft	ATPLAN	A	In-furrow			3.402 g/1 row/1 plot	206	304	606	904
	Callisto	4 LBA/GAL	SC		6.0 fl oz/a	POEMCR	B	V3-V4	15 GAL/AC	7.812 ml/mx					
	AAtrex	4 LBA/GAL	F		2.0 pt/a	POEMCR	B	V3-V4	15 GAL/AC	41.66 ml/mx					
	COC	100 %	SL		1.0 % v/v	POEMCR	B	V3-V4	15 GAL/AC	25.0 ml/mx					
	UAN 28%	100 %	SL		2.5 % v/v	POEMCR	B	V3-V4	15 GAL/AC	62.49 ml/mx					
19	FORCE	3 %AW/W	G		4.0 oz wt/1000 row-ft	ATPLAN	A	In-furrow			3.402 g/1 row/1 plot	404	506	804	806
	Impact	2.8 LBA/GAL	SC		1.0 fl oz/a	POEMCR	B	V3-V4	15 GAL/AC	1.302 ml/mx					
	AAtrex	4 LBA/GAL	F		1.0 pt/a	POEMCR	B	V3-V4	15 GAL/AC	20.83 ml/mx					
	MSO	100 %	SL		1.0 % v/v	POEMCR	B	V3-V4	15 GAL/AC	25.0 ml/mx					
	UAN 28%	100 %	SL		2.5 % v/v	POEMCR	B	V3-V4	15 GAL/AC	62.49 ml/mx					
20	FORCE	3 %AW/W	G		4.0 oz wt/1000 row-ft	ATPLAN	A	In-furrow			3.402 g/1 row/1 plot	306	504	604	906
	Impact	2.8 LBA/GAL	SC		2.0 fl oz/a	POEMCR	B	V3-V4	15 GAL/AC	2.604 ml/mx					
	AAtrex	4 LBA/GAL	F		2.0 pt/a	POEMCR	B	V3-V4	15 GAL/AC	41.66 ml/mx					
	MSO	100 %	SL		1.0 % v/v	POEMCR	B	V3-V4	15 GAL/AC	25.0 ml/mx					
	UAN 28%	100 %	SL		2.5 % v/v	POEMCR	B	V3-V4	15 GAL/AC	62.49 ml/mx					

Sort Order: Treatment

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## Evaluate HPPD herbicide interaction with Counter insecticide in corn

Trial ID: 13S-THP-CTC-16      Protocol ID: 13S-THP-CTC-16  
 Location: Throckmorton      Study Director:  
 Project ID: 13C04I056      Investigator: Dr. Bill Johnson  
 Sponsor Contact: Amvac - Rich Porter

Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn	Corn	Corn
Part Rated	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -
Rating Date	Jun-11-2013	Jun-21-2013	Jun-21-2013	Jun-21-2013	Jun-27-2013	Jun-27-2013	Jun-27-2013	Jul-15-2013
Rating Type	COUPLA	PHYBLE	PHYNEC	PHYLMA	PHYBLE	PHYNEC	PHYLMA	PHYBLE
Rating Unit	/10 FT	%	%	%	%	%	%	%
Number of Subsamples	2	1	1	1	1	1	1	1
Crop Stage Majority		V5	V5	V5	V5	V5	V5	V7
Assessed By	BM	MW						
Rating Timing	V2-V3							
Days After First/Last Applic.	- 7	- 7	- 7	- 7	- 13	- 13	- 13	- 31
Trt-Eval Interval	7 DA-B	7 DAT	14 DAT	28 DAT	13 DA-B	13 DA-B	13 DA-B	31 DA-B
Plant-Eval Interval	21 DP-1	31 DP-1	31 DP-1	31 DP-1	37 DP-1	37 DP-1	37 DP-1	55 DP-1
Trt Treatment	Rate	Appl						
No. Name	Rate Unit	Code Plot	1	2	3	4	5	6
1 Untreated Check		A 101	16.00	0.0	0.0	0.0	0.0	0.0
Untreated Check		B 205	17.50	0.0	0.0	0.0	0.0	0.0
		801	16.50	0.0	0.0	0.0	0.0	0.0
		705	16.00	0.0	0.0	0.0	0.0	0.0
		Mean =	16.50	0.0	0.0	0.0	0.0	0.0
2 Untreated		A 201	16.00	5.0	0.0	0.0	3.0	0.0
Callisto	3.0 fl oz/a	B 505	15.00	5.0	3.0	0.0	3.0	0.0
AAtrex	1.0 pt/a	B 601	17.50	5.0	0.0	0.0	3.0	0.0
COC	1.0 % v/v	B 905	16.50	7.0	0.0	3.0	3.0	0.0
UAN 28%	2.5 % v/v	B						
		Mean =	16.25	5.5	0.8	0.8	3.0	0.8
3 Untreated		A 301	16.00	3.0	5.0	0.0	3.0	3.0
Callisto	6.0 fl oz/a	B 305	15.50	10.0	0.0	0.0	5.0	0.0
AAtrex	2.0 pt/a	B 701	16.50	7.0	0.0	0.0	3.0	0.0
COC	1.0 % v/v	B 805	15.50	10.0	0.0	0.0	3.0	0.0
UAN 28%	2.5 % v/v	B						
		Mean =	15.88	7.5	1.3	0.0	3.5	0.8
4 Untreated		A 401	15.00	0.0	0.0	0.0	0.0	0.0
Impact	1.0 fl oz/a	B 405	15.00	3.0	3.0	0.0	0.0	0.0
AAtrex	1.0 pt/a	B 901	15.00	0.0	0.0	0.0	0.0	0.0
MSO	1.0 % v/v	B 1005	16.50	5.0	0.0	0.0	3.0	0.0
UAN 28%	2.5 % v/v	B						
		Mean =	15.38	2.0	0.8	0.0	0.8	0.0
5 Untreated		A 501	15.50	0.0	7.0	0.0	3.0	5.0
Impact	2.0 fl oz/a	B 105	14.00	3.0	5.0	0.0	0.0	0.0
AAtrex	2.0 pt/a	B 1001	17.00	3.0	5.0	0.0	0.0	3.0
MSO	1.0 % v/v	B 605	17.50	5.0	0.0	0.0	3.0	0.0
UAN 28%	2.5 % v/v	B						
		Mean =	16.00	2.8	4.3	0.0	1.5	2.0
6 COUNTER	6.0 oz wt/1000 row-ft	A 102	16.50	0.0	3.0	0.0	0.0	0.0
Untreated		B 208	16.00	0.0	0.0	0.0	0.0	0.0
		602	15.50	0.0	0.0	0.0	0.0	0.0
		1008	16.50	0.0	0.0	0.0	0.0	0.0
		Mean =	16.13	0.0	0.8	0.0	0.0	0.0

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				ZEAMX							
				BCOR							
				Zea mays							
				Corn							
				PLANT -							
				Jun-11-2013	Jun-21-2013	Jun-21-2013	Jun-21-2013	Jun-27-2013	Jun-27-2013	Jun-27-2013	Jul-15-2013
				COUPLA	PHYBLE	PHYNEC	PHYLMA	PHYBLE	PHYNEC	PHYLMA	PHYBLE
				/10 FT	%	%	%	%	%	%	%
				2	1	1	1	1	1	1	1
					V5	V5	V5	V5	V5	V5	V7
				BM	MW						
				V2-V3							
				- 7	- 7	- 7	- 7	- 13	- 13	- 13	- 31
				7 DA-B	7 DAT	14 DAT	28 DAT	13 DA-B	13 DA-B	13 DA-B	31 DA-B
				21 DP-1	31 DP-1	31 DP-1	31 DP-1	37 DP-1	37 DP-1	37 DP-1	55 DP-1
Trt No.	Treatment Name	Rate	Appl Code Plot	1	2	3	4	5	6	7	8
7	COUNTER	6.0 oz wt/1000 row-ft	A 202	15.00	7.0	0.0	10.0	3.0	0.0	0.0	0.0
	Callisto	3.0 fl oz/a	B 308	16.00	3.0	0.0	7.0	0.0	0.0	0.0	0.0
	AAtrex	1.0 pt/a	B 1002	14.50	5.0	3.0	5.0	0.0	3.0	0.0	0.0
	COC	1.0 % v/v	B 808	16.50	5.0	0.0	7.0	3.0	0.0	3.0	0.0
	UAN 28%	2.5 % v/v	B								
			Mean =	15.50	5.0	0.8	7.3	1.5	0.8	0.8	0.0
8	COUNTER	6.0 oz wt/1000 row-ft	A 302	17.00	30.0	3.0	0.0	20.0	5.0	0.0	7.0
	Callisto	6.0 fl oz/a	B 108	16.50	25.0	5.0	0.0	15.0	0.0	0.0	5.0
	AAtrex	2.0 pt/a	B 702	15.50	12.0	3.0	0.0	7.0	5.0	0.0	3.0
	COC	1.0 % v/v	B 608	16.50	25.0	5.0	0.0	20.0	3.0	0.0	5.0
	UAN 28%	2.5 % v/v	B								
			Mean =	16.38	23.0	4.0	0.0	15.5	3.3	0.0	5.0
9	COUNTER	6.0 oz wt/1000 row-ft	A 402	16.00	0.0	5.0	0.0	0.0	3.0	0.0	0.0
	Impact	1.0 fl oz/a	B 508	16.50	0.0	3.0	0.0	0.0	5.0	0.0	0.0
	AAtrex	1.0 pt/a	B 802	15.50	0.0	5.0	0.0	0.0	5.0	0.0	0.0
	MSO	1.0 % v/v	B 908	16.50	0.0	5.0	0.0	0.0	5.0	0.0	0.0
	UAN 28%	2.5 % v/v	B								
			Mean =	16.13	0.0	4.5	0.0	0.0	4.5	0.0	0.0
10	COUNTER	6.0 oz wt/1000 row-ft	A 502	15.50	7.0	7.0	0.0	5.0	5.0	0.0	0.0
	Impact	2.0 fl oz/a	B 408	17.00	5.0	3.0	0.0	0.0	3.0	0.0	0.0
	AAtrex	2.0 pt/a	B 902	16.50	0.0	15.0	0.0	0.0	10.0	0.0	0.0
	MSO	1.0 % v/v	B 708	17.00	7.0	5.0	0.0	3.0	5.0	0.0	0.0
	UAN 28%	2.5 % v/v	B								
			Mean =	16.50	4.8	7.5	0.0	2.0	5.8	0.0	0.0
11	COUNTER	12.0 oz wt/1000 row-ft	A 103	14.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Untreated		B 107	15.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			603	16.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			607	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			Mean =	15.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	COUNTER	12.0 oz wt/1000 row-ft	A 203	14.00	15.0	3.0	0.0	7.0	0.0	0.0	0.0
	Callisto	3.0 fl oz/a	B 207	16.00	20.0	5.0	0.0	10.0	0.0	0.0	3.0
	AAtrex	1.0 pt/a	B 803	16.00	17.0	0.0	0.0	7.0	3.0	0.0	5.0
	COC	1.0 % v/v	B 807	16.00	25.0	3.0	0.0	7.0	3.0	0.0	5.0
	UAN 28%	2.5 % v/v	B								
			Mean =	15.50	19.3	2.8	0.0	7.8	1.5	0.0	3.3

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				ZEAMX								
				BCOR								
				Zea mays								
				Corn								
				PLANT -								
				Jun-11-2013	Jun-21-2013	Jun-21-2013	Jun-21-2013	Jun-27-2013	Jun-27-2013	Jun-27-2013	Jul-15-2013	
				COUPLA	PHYBLE	PHYNEC	PHYLMA	PHYBLE	PHYNEC	PHYLMA	PHYBLE	
				/10 FT	%	%	%	%	%	%	%	
				2	1	1	1	1	1	1	1	
					V5	V5	V5	V5	V5	V5	V7	
				BM	MW							
				V2-V3								
				- 7	- 7	- 7	- 7	- 13	- 13	- 13	- 31	
				7 DA-B	7 DAT	14 DAT	28 DAT	13 DA-B	13 DA-B	13 DA-B	31 DA-B	
				21 DP-1	31 DP-1	31 DP-1	31 DP-1	37 DP-1	37 DP-1	37 DP-1	55 DP-1	
Trt No.	Treatment Name	Rate	Appl Code	Plot	1	2	3	4	5	6	7	8
13	COUNTER	12.0 oz wt/1000 row-ft	A	303	17.00	25.0	5.0	0.0	10.0	0.0	0.0	5.0
	Callisto	6.0 fl oz/a	B	407	14.00	30.0	7.0	0.0	15.0	5.0	0.0	5.0
	AAtrex	2.0 pt/a	B	703	15.50	20.0	0.0	0.0	10.0	5.0	0.0	5.0
	COC	1.0 % v/v	B	907	16.00	30.0	5.0	0.0	20.0	5.0	0.0	5.0
	UAN 28%	2.5 % v/v	B									
				Mean =	15.63	26.3	4.3	0.0	13.8	3.8	0.0	5.0
14	COUNTER	12.0 oz wt/1000 row-ft	A	403	17.00	7.0	5.0	10.0	5.0	5.0	10.0	0.0
	Impact	1.0 fl oz/a	B	507	15.00	10.0	0.0	15.0	5.0	0.0	0.0	0.0
	AAtrex	1.0 pt/a	B	1003	16.00	13.0	5.0	20.0	10.0	0.0	10.0	0.0
	MSO	1.0 % v/v	B	707	15.50	10.0	5.0	20.0	7.0	0.0	15.0	3.0
	UAN 28%	2.5 % v/v	B									
				Mean =	15.88	10.0	3.8	16.3	6.8	1.3	8.8	0.8
15	COUNTER	12.0 oz wt/1000 row-ft	A	503	16.50	7.0	5.0	0.0	3.0	7.0	0.0	0.0
	Impact	2.0 fl oz/a	B	307	16.00	5.0	5.0	5.0	0.0	0.0	0.0	0.0
	AAtrex	2.0 pt/a	B	903	16.50	7.0	5.0	0.0	3.0	0.0	0.0	0.0
	MSO	1.0 % v/v	B	1007	15.50	7.0	5.0	0.0	3.0	0.0	0.0	0.0
	UAN 28%	2.5 % v/v	B									
				Mean =	16.13	6.5	5.0	1.3	2.3	1.8	0.0	0.0
16	FORCE	4.0 oz wt/1000 row-ft	A	104	18.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Untreated		B	106	14.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
				1004	16.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
				1006	15.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
				Mean =	16.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	FORCE	4.0 oz wt/1000 row-ft	A	204	16.50	10.0	5.0	0.0	3.0	0.0	0.0	0.0
	Callisto	3.0 fl oz/a	B	406	15.50	10.0	5.0	0.0	5.0	3.0	0.0	0.0
	AAtrex	1.0 pt/a	B	704	14.50	0.0	5.0	0.0	0.0	3.0	0.0	0.0
	COC	1.0 % v/v	B	706	17.50	7.0	10.0	0.0	3.0	7.0	0.0	0.0
	UAN 28%	2.5 % v/v	B									
				Mean =	16.00	6.8	6.3	0.0	2.8	3.3	0.0	0.0
18	FORCE	4.0 oz wt/1000 row-ft	A	304	15.50	17.0	0.0	0.0	7.0	0.0	0.0	5.0
	Callisto	6.0 fl oz/a	B	206	17.00	15.0	5.0	0.0	10.0	0.0	0.0	3.0
	AAtrex	2.0 pt/a	B	904	16.50	13.0	3.0	0.0	7.0	0.0	0.0	0.0
	COC	1.0 % v/v	B	606	17.00	15.0	0.0	0.0	10.0	3.0	0.0	5.0
	UAN 28%	2.5 % v/v	B									
				Mean =	16.50	15.0	2.0	0.0	8.5	0.8	0.0	3.3

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				ZEAMX							
				BCOR							
				Zea mays							
				Corn							
				PLANT -							
				Jun-11-2013	Jun-21-2013	Jun-21-2013	Jun-21-2013	Jun-27-2013	Jun-27-2013	Jun-27-2013	Jul-15-2013
				COUPLA	PHYBLE	PHYNEC	PHYLMA	PHYBLE	PHYNEC	PHYLMA	PHYBLE
				/10 FT	%	%	%	%	%	%	%
				2	1	1	1	1	1	1	1
					V5	V5	V5	V5	V5	V5	V7
				BM	MW						
				V2-V3							
				- 7	- 7	- 7	- 7	- 13	- 13	- 13	- 31
				7 DA-B	7 DAT	14 DAT	28 DAT	13 DA-B	13 DA-B	13 DA-B	31 DA-B
				21 DP-1	31 DP-1	31 DP-1	31 DP-1	37 DP-1	37 DP-1	37 DP-1	55 DP-1
Trt No.	Treatment Name	Rate Unit	Appl Code Plot	1	2	3	4	5	6	7	8
19	FORCE	4.0 oz wt/1000 row-ft	A 404	17.00	0.0	5.0	0.0	0.0	5.0	0.0	0.0
	Impact	1.0 fl oz/a	B 506	15.50	3.0	3.0	0.0	0.0	0.0	0.0	0.0
	AAtrex	1.0 pt/a	B 804	17.00	0.0	7.0	0.0	0.0	5.0	0.0	0.0
	MSO	1.0 % v/v	B 806	14.00	3.0	3.0	0.0	3.0	0.0	0.0	0.0
	UAN 28%	2.5 % v/v	B								
			Mean =	15.88	1.5	4.5	0.0	0.8	2.5	0.0	0.0
20	FORCE	4.0 oz wt/1000 row-ft	A 504	17.00	3.0	0.0	0.0	3.0	3.0	0.0	0.0
	Impact	2.0 fl oz/a	B 306	15.50	3.0	0.0	3.0	0.0	0.0	0.0	0.0
	AAtrex	2.0 pt/a	B 604	17.50	0.0	10.0	0.0	0.0	7.0	0.0	0.0
	MSO	1.0 % v/v	B 906	16.00	7.0	3.0	0.0	0.0	0.0	0.0	0.0
	UAN 28%	2.5 % v/v	B								
			Mean =	16.50	3.3	3.3	0.8	0.8	2.5	0.0	0.0

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Trt	Treatment	Rate	Appl							
No.	Name	Rate Unit	Code Plot	9	10	11	12	13	14	15
	Crop Code			ZEAMX						
	BBCH Scale			BCOR						
	Crop Scientific Name			Zea mays						
	Crop Name			Corn						
	Part Rated			PLANT -	PLANT -					
	Rating Date			Jul-15-2013	Jul-15-2013	Jul-25-2013	Jul-25-2013	Jul-25-2013	Oct-18-2013	Oct-18-2013
	Rating Type			PHYSTU	LODGIN	LODGIN	PHYCHL	PHYSTU	MOICON	YIELD
	Rating Unit			%	%	%	%	%	%	bu/ac
	Number of Subsamples			1	1	1	1	1	1	1
	Crop Stage Majority			V7	V7					
	Assessed By			MW	MW					
	Rating Timing									
	Days After First/Last Applic.			- 31	- 31	- 41	- 41	- 41	- 126	- 126
	Trt-Eval Interval			31 DA-B	31 DA-B	41 DA-B	41 DA-B	41 DA-B	126 DA-B	126 DA-B
	Plant-Eval Interval			55 DP-1	55 DP-1	65 DP-1	65 DP-1	65 DP-1	150 DP-1	150 DP-1
1	Untreated Check		A 101	0.0	0.0	5.0	0.0	0.0	19.60	254.30
	Untreated Check		B 205	0.0	10.0	15.0	0.0	0.0	21.80	268.80
			801	0.0	5.0	5.0	0.0	0.0	20.20	258.50
			705	0.0	5.0	10.0	0.0	0.0	21.30	273.10
			Mean =	0.0	5.0	8.8	0.0	0.0	20.73	263.68
2	Untreated		A 201	0.0	17.0	10.0	0.0	0.0	21.00	262.20
	Callisto 3.0 fl oz/a		B 505	0.0	7.0	10.0	0.0	0.0	21.90	275.80
	AAtrex 1.0 pt/a		B 601	3.0	7.0	20.0	0.0	3.0	20.80	239.50
	COC 1.0 % v/v		B 905	3.0	10.0	10.0	0.0	0.0	21.60	236.90
	UAN 28% 2.5 % v/v		B							
			Mean =	1.5	10.3	12.5	0.0	0.8	21.33	253.60
3	Untreated		A 301	0.0	7.0	15.0	0.0	0.0	21.00	227.60
	Callisto 6.0 fl oz/a		B 305	0.0	7.0	5.0	0.0	0.0	21.10	215.20
	AAtrex 2.0 pt/a		B 701	0.0	7.0	15.0	0.0	0.0	21.40	236.90
	COC 1.0 % v/v		B 805	0.0	15.0	25.0	0.0	0.0	21.40	226.80
	UAN 28% 2.5 % v/v		B							
			Mean =	0.0	9.0	15.0	0.0	0.0	21.23	226.63
4	Untreated		A 401	0.0	3.0	5.0	0.0	3.0	22.00	226.30
	Impact 1.0 fl oz/a		B 405	5.0	5.0	15.0	0.0	5.0	21.30	199.70
	AAtrex 1.0 pt/a		B 901	0.0	5.0	3.0	0.0	0.0	19.40	244.30
	MSO 1.0 % v/v		B 1005	0.0	3.0	3.0	0.0	0.0	19.70	236.80
	UAN 28% 2.5 % v/v		B							
			Mean =	1.3	4.0	6.5	0.0	2.0	20.60	226.78
5	Untreated		A 501	0.0	5.0	10.0	0.0	0.0	22.50	228.40
	Impact 2.0 fl oz/a		B 105	7.0	20.0	5.0	0.0	0.0	22.10	243.50
	AAtrex 2.0 pt/a		B 1001	0.0	10.0	15.0	0.0	0.0	20.00	284.80
	MSO 1.0 % v/v		B 605	0.0	5.0	3.0	0.0	0.0	21.10	229.00
	UAN 28% 2.5 % v/v		B							
			Mean =	1.8	10.0	8.3	0.0	0.0	21.43	246.43
6	COUNTER	6.0 oz wt/1000 row-ft	A 102	3.0	0.0	0.0	0.0	0.0	23.10	236.40
	Untreated		B 208	0.0	3.0	10.0	0.0	0.0	21.20	272.10
			602	5.0	20.0	15.0	0.0	3.0	22.10	237.60
			1008	7.0	10.0	20.0	0.0	5.0	19.70	224.70
			Mean =	3.8	8.3	11.3	0.0	2.0	21.53	242.70

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				ZEAMX							
				BCOR							
				Zea mays							
				Corn							
				PLANT -							
				Jul-15-2013	Jul-15-2013	Jul-25-2013	Jul-25-2013	Jul-25-2013	Oct-18-2013	Oct-18-2013	
				PHYSTU	LODGIN	LODGIN	PHYCHL	PHYSTU	MOICON	YIELD	
				%	%	%	%	%	%	bu/ac	
				1	1	1	1	1	1	1	
				V7							
				MW							
				- 31	- 31	- 41	- 41	- 41	- 126	- 126	
				31 DA-B	31 DA-B	41 DA-B	41 DA-B	41 DA-B	126 DA-B	126 DA-B	
				55 DP-1	55 DP-1	65 DP-1	65 DP-1	65 DP-1	150 DP-1	150 DP-1	
Trt No.	Treatment Name	Rate	Appl Code	Plot	9	10	11	12	13	14	15
		Rate Unit									
7	COUNTER	6.0 oz wt/1000 row-ft	A	202	10.0	7.0	10.0	0.0	5.0	22.50	218.60
	Callisto	3.0 fl oz/a	B	308	0.0	5.0	5.0	0.0	0.0	22.20	216.70
	AAtrex	1.0 pt/a	B	1002	3.0	15.0	10.0	0.0	0.0	20.90	249.60
	COC	1.0 % v/v	B	808	3.0	7.0	7.0	0.0	0.0	20.90	245.30
	UAN 28%	2.5 % v/v	B								
				Mean =	4.0	8.5	8.0	0.0	1.3	21.63	232.55
8	COUNTER	6.0 oz wt/1000 row-ft	A	302	10.0	10.0	5.0	0.0	0.0	21.90	243.80
	Callisto	6.0 fl oz/a	B	108	5.0	7.0	5.0	3.0	5.0	21.70	220.60
	AAtrex	2.0 pt/a	B	702	3.0	10.0	10.0	0.0	5.0	21.60	242.90
	COC	1.0 % v/v	B	608	3.0	7.0	13.0	0.0	0.0	21.20	245.30
	UAN 28%	2.5 % v/v	B								
				Mean =	5.3	8.5	8.3	0.8	2.5	21.60	238.15
9	COUNTER	6.0 oz wt/1000 row-ft	A	402	5.0	5.0	7.0	0.0	5.0	21.20	235.80
	Impact	1.0 fl oz/a	B	508	0.0	5.0	5.0	0.0	0.0	20.50	280.40
	AAtrex	1.0 pt/a	B	802	0.0	5.0	5.0	0.0	0.0	21.10	246.70
	MSO	1.0 % v/v	B	908	0.0	7.0	13.0	0.0	0.0	20.80	232.90
	UAN 28%	2.5 % v/v	B								
				Mean =	1.3	5.5	7.5	0.0	1.3	20.90	248.95
10	COUNTER	6.0 oz wt/1000 row-ft	A	502	3.0	5.0	7.0	0.0	0.0	22.30	220.10
	Impact	2.0 fl oz/a	B	408	3.0	10.0	17.0	0.0	7.0	21.70	269.20
	AAtrex	2.0 pt/a	B	902	5.0	7.0	10.0	0.0	3.0	20.20	255.60
	MSO	1.0 % v/v	B	708	0.0	5.0	13.0	0.0	3.0	21.60	223.20
	UAN 28%	2.5 % v/v	B								
				Mean =	2.8	6.8	11.8	0.0	3.3	21.45	242.03
11	COUNTER	12.0 oz wt/1000 row-ft	A	103	0.0	5.0	5.0	0.0	0.0	22.00	198.50
	Untreated		B	107	0.0	15.0	7.0	0.0	0.0	22.90	243.10
				603	0.0	10.0	15.0	0.0	0.0	21.80	222.10
				607	0.0	0.0	3.0	0.0	0.0	22.20	263.60
				Mean =	0.0	7.5	7.5	0.0	0.0	22.23	231.83
12	COUNTER	12.0 oz wt/1000 row-ft	A	203	0.0	10.0	7.0	0.0	0.0	21.70	268.50
	Callisto	3.0 fl oz/a	B	207	3.0	7.0	15.0	0.0	0.0	22.20	239.60
	AAtrex	1.0 pt/a	B	803	0.0	7.0	13.0	0.0	0.0	22.10	204.10
	COC	1.0 % v/v	B	807	0.0	15.0	15.0	0.0	5.0	22.20	234.50
	UAN 28%	2.5 % v/v	B								
				Mean =	0.8	9.8	12.5	0.0	1.3	22.05	236.68

# Purdue University

				ZEAMX						
				BCOR						
				Zea mays						
				Corn						
				PLANT -						
				Jul-15-2013	Jul-15-2013	Jul-25-2013	Jul-25-2013	Jul-25-2013	Oct-18-2013	Oct-18-2013
				PHYSTU	LODGIN	LODGIN	PHYCHL	PHYSTU	MOICON	YIELD
				%	%	%	%	%	%	bu/ac
				1	1	1	1	1	1	1
				V7						
				MW						
				- 31	- 31	- 41	- 41	- 41	- 126	- 126
				31 DA-B	31 DA-B	41 DA-B	41 DA-B	41 DA-B	126 DA-B	126 DA-B
				55 DP-1	55 DP-1	65 DP-1	65 DP-1	65 DP-1	150 DP-1	150 DP-1
Trt No.	Treatment Name	Rate	Appl Code	9	10	11	12	13	14	15
		Rate Unit	Plot							
13	COUNTER	12.0 oz wt/1000 row-ft	A 303	5.0	7.0	5.0	0.0	0.0	21.70	201.20
	Callisto	6.0 fl oz/a	B 407	5.0	5.0	5.0	0.0	5.0	22.30	208.00
	AAtrex	2.0 pt/a	B 703	0.0	7.0	13.0	3.0	0.0	20.80	262.20
	COC	1.0 % v/v	B 907	5.0	10.0	20.0	0.0	0.0	20.90	226.10
	UAN 28%	2.5 % v/v	B							
			Mean =	3.8	7.3	10.8	0.8	1.3	21.43	224.38
14	COUNTER	12.0 oz wt/1000 row-ft	A 403	3.0	0.0	5.0	0.0	0.0	21.00	209.30
	Impact	1.0 fl oz/a	B 507	3.0	5.0	10.0	0.0	3.0	21.00	234.30
	AAtrex	1.0 pt/a	B 1003	10.0	10.0	10.0	0.0	5.0	21.30	239.70
	MSO	1.0 % v/v	B 707	5.0	7.0	7.0	0.0	7.0	21.50	206.00
	UAN 28%	2.5 % v/v	B							
			Mean =	5.3	5.5	8.0	0.0	3.8	21.20	222.33
15	COUNTER	12.0 oz wt/1000 row-ft	A 503	0.0	7.0	13.0	0.0	0.0	20.80	254.70
	Impact	2.0 fl oz/a	B 307	5.0	5.0	3.0	0.0	5.0	23.10	245.10
	AAtrex	2.0 pt/a	B 903	0.0	10.0	7.0	0.0	5.0	21.10	240.30
	MSO	1.0 % v/v	B 1007	5.0	7.0	7.0	0.0	0.0	20.80	237.10
	UAN 28%	2.5 % v/v	B							
			Mean =	2.5	7.3	7.5	0.0	2.5	21.45	244.30
16	FORCE	4.0 oz wt/1000 row-ft	A 104	0.0	15.0	10.0	0.0	0.0	22.60	237.30
	Untreated		B 106	0.0	15.0	5.0	0.0	0.0	21.80	247.70
			1004	0.0	3.0	13.0	0.0	5.0	21.10	246.40
			1006	0.0	5.0	5.0	0.0	0.0	20.10	232.50
			Mean =	0.0	9.5	8.3	0.0	1.3	21.40	240.98
17	FORCE	4.0 oz wt/1000 row-ft	A 204	3.0	15.0	20.0	0.0	0.0	21.50	270.70
	Callisto	3.0 fl oz/a	B 406	5.0	10.0	10.0	0.0	10.0	21.60	228.50
	AAtrex	1.0 pt/a	B 704	0.0	7.0	17.0	0.0	0.0	21.10	227.70
	COC	1.0 % v/v	B 706	0.0	15.0	17.0	0.0	5.0	21.10	246.50
	UAN 28%	2.5 % v/v	B							
			Mean =	2.0	11.8	16.0	0.0	3.8	21.33	243.35
18	FORCE	4.0 oz wt/1000 row-ft	A 304	0.0	7.0	7.0	0.0	5.0	22.10	230.10
	Callisto	6.0 fl oz/a	B 206	5.0	7.0	10.0	0.0	3.0	21.70	241.70
	AAtrex	2.0 pt/a	B 904	5.0	10.0	7.0	0.0	0.0	21.30	270.30
	COC	1.0 % v/v	B 606	0.0	0.0	3.0	3.0	3.0	21.60	211.30
	UAN 28%	2.5 % v/v	B							
			Mean =	2.5	6.0	6.8	0.8	2.8	21.68	238.35

# Purdue University

				ZEAMX						
				BCOR						
				Zea mays						
				Corn						
				PLANT -	PLANT -					
				Jul-15-2013	Jul-15-2013	Jul-25-2013	Jul-25-2013	Jul-25-2013	Oct-18-2013	Oct-18-2013
				PHYSTU	LODGIN	LODGIN	PHYCHL	PHYSTU	MOICON	YIELD
				%	%	%	%	%	%	bu/ac
				1	1	1	1	1	1	1
				V7	V7					
				MW	MW					
				- 31	- 31	- 41	- 41	- 41	- 126	- 126
				31 DA-B	31 DA-B	41 DA-B	41 DA-B	41 DA-B	126 DA-B	126 DA-B
				55 DP-1	55 DP-1	65 DP-1	65 DP-1	65 DP-1	150 DP-1	150 DP-1
Trt No.	Treatment Name	Rate Unit	Appl Code Plot	9	10	11	12	13	14	15
19	FORCE	4.0 oz wt/1000 row-ft	A 404	0.0	5.0	7.0	0.0	0.0	21.30	200.80
	Impact	1.0 fl oz/a	B 506	0.0	7.0	7.0	0.0	0.0	21.80	254.30
	AAtrex	1.0 pt/a	B 804	0.0	20.0	30.0	0.0	0.0	20.60	242.60
	MSO	1.0 % v/v	B 806	0.0	10.0	15.0	0.0	3.0	21.70	247.90
	UAN 28%	2.5 % v/v	B							
			Mean =	0.0	10.5	14.8	0.0	0.8	21.35	236.40
20	FORCE	4.0 oz wt/1000 row-ft	A 504	0.0	7.0	20.0	0.0	0.0	20.40	263.10
	Impact	2.0 fl oz/a	B 306	0.0	5.0	5.0	0.0	0.0	21.90	264.30
	AAtrex	2.0 pt/a	B 604	3.0	15.0	10.0	0.0	3.0	21.90	254.10
	MSO	1.0 % v/v	B 906	3.0	13.0	17.0	0.0	3.0	21.60	225.10
	UAN 28%	2.5 % v/v	B							
			Mean =	1.5	10.0	13.0	0.0	1.5	21.45	251.65

# Purdue University

## Evaluate HPPD herbicide interaction with Counter insecticide in corn

Trial ID: 13S-THP-CTC-16      Protocol ID: 13S-THP-CTC-16  
Location: Throckmorton      Study Director:  
Project ID: 13C04I056      Investigator: Dr. Bill Johnson  
Sponsor Contact: Amvac - Rich Porter

### Crop Code

ZEAMX, BCOR, Zea mays, = US

### Part Rated

PLANT = plant

### Rating Type

COUPLA = count - plant / emergence - objective

PHYBLE = phytotoxicity - bleaching

PHYNEC = phytotoxicity - necrosis /burn

PHYLMA = phytotoxicity - leaf malformation

PHYSTU = phytotoxicity - stunting

LODGIN = lodging

PHYCHL = phytotoxicity - chlorosis

MOICON = moisture content

YIELD = yield

### Rating Unit

% = percent

bu/ac = bushels per acre

### Plant-Eval Interval

21 DP-1 = 1 ZEAMX May-21-2013

31 DP-1 = 1 ZEAMX May-21-2013

37 DP-1 = 1 ZEAMX May-21-2013

55 DP-1 = 1 ZEAMX May-21-2013

65 DP-1 = 1 ZEAMX May-21-2013

150 DP-1 = 1 ZEAMX May-21-2013

# Purdue University

## Evaluate HPPD herbicide interaction with Counter insecticide in corn

Trial ID: 13S-THP-CTC-16      Protocol ID: 13S-THP-CTC-16  
 Location: Throckmorton      Study Director:  
 Project ID: 13C04I056      Investigator: Dr. Bill Johnson  
 Sponsor Contact: Amvac - Rich Porter

Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX			
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR			
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays			
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn	Corn	Corn			
Part Rated	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -			
Rating Date	Jun-11-2013	Jun-21-2013	Jun-21-2013	Jun-21-2013	Jun-27-2013	Jun-27-2013	Jun-27-2013	Jul-15-2013			
Rating Type	COUPLA	PHYBLE	PHYNEC	PHYLMA	PHYBLE	PHYNEC	PHYLMA	PHYBLE			
Rating Unit	/10 FT	%	%	%	%	%	%	%			
Number of Subsamples	2	1	1	1	1	1	1	1			
Crop Stage Majority		V5	V5	V5	V5	V5	V5	V7			
Assessed By	BM	MW	MW	MW	MW	MW	MW	MW			
Rating Timing	V2-V3										
Days After First/Last Applic.	- 7	- 7	- 7	- 7	- 13	- 13	- 13	- 31			
Trt-Eval Interval	7 DA-B	7 DAT	14 DAT	28 DAT	13 DA-B	13 DA-B	13 DA-B	31 DA-B			
Plant-Eval Interval	21 DP-1	31 DP-1	31 DP-1	31 DP-1	37 DP-1	37 DP-1	37 DP-1	55 DP-1			
Trt No.	Treatment Name	Rate Unit	Appl Code	1	2	3	4	5	6	7	8
1	Untreated Check		A	16.50 a	0.0 f	0.0 c	0.0 c	0.0 c	0.0 b	0.0 b	0.0 c
	Untreated Check		B								
2	Untreated		A	16.25 a	5.5 def	0.8 bc	0.8 c	3.0 c	0.8 ab	0.0 b	0.0 c
	Callisto	3.0 fl oz/a	B								
	AAtrex	1.0 pt/a	B								
	COC	1.0 % v/v	B								
	UAN 28%	2.5 % v/v	B								
3	Untreated		A	15.88 a	7.5 de	1.3 bc	0.0 c	3.5 c	0.8 ab	0.0 b	0.0 c
	Callisto	6.0 fl oz/a	B								
	AAtrex	2.0 pt/a	B								
	COC	1.0 % v/v	B								
	UAN 28%	2.5 % v/v	B								
4	Untreated		A	15.38 a	2.0 ef	0.8 bc	0.0 c	0.8 c	0.0 b	0.0 b	0.0 c
	Impact	1.0 fl oz/a	B								
	AAtrex	1.0 pt/a	B								
	MSO	1.0 % v/v	B								
	UAN 28%	2.5 % v/v	B								
5	Untreated		A	16.00 a	2.8 ef	4.3 abc	0.0 c	1.5 c	2.0 ab	2.5 b	0.0 c
	Impact	2.0 fl oz/a	B								
	AAtrex	2.0 pt/a	B								
	MSO	1.0 % v/v	B								
	UAN 28%	2.5 % v/v	B								
6	COUNTER	6.0 oz wt/1000 row-ft	A	16.13 a	0.0 f	0.8 bc	0.0 c	0.0 c	0.0 b	0.0 b	0.0 c
	Untreated		B								
7	COUNTER	6.0 oz wt/1000 row-ft	A	15.50 a	5.0 def	0.8 bc	7.3 b	1.5 c	0.8 ab	0.8 b	0.0 c
	Callisto	3.0 fl oz/a	B								
	AAtrex	1.0 pt/a	B								
	COC	1.0 % v/v	B								
	UAN 28%	2.5 % v/v	B								
8	COUNTER	6.0 oz wt/1000 row-ft	A	16.38 a	23.0 ab	4.0 abc	0.0 c	15.5 a	3.3 ab	0.0 b	5.0 a
	Callisto	6.0 fl oz/a	B								
	AAtrex	2.0 pt/a	B								
	COC	1.0 % v/v	B								
	UAN 28%	2.5 % v/v	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.



# Purdue University

	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	
Crop Code	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn	Corn	Corn	Corn	
Part Rated	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -	
Rating Date	Jun-11-2013	Jun-21-2013	Jun-21-2013	Jun-21-2013	Jun-27-2013	Jun-27-2013	Jun-27-2013	Jun-27-2013	Jul-15-2013	
Rating Type	COUPLA	PHYBLE	PHYNEC	PHYLMA	PHYBLE	PHYNEC	PHYLMA	PHYBLE	PHYBLE	
Rating Unit	/10 FT	%	%	%	%	%	%	%	%	
Number of Subsamples	2	1	1	1	1	1	1	1	1	
Crop Stage Majority		V5	V7							
Assessed By	BM	MW								
Rating Timing	V2-V3									
Days After First/Last Applic.	- 7	- 7	- 7	- 7	- 13	- 13	- 13	- 13	- 31	
Trt-Eval Interval	7 DA-B	7 DAT	14 DAT	28 DAT	13 DA-B	13 DA-B	13 DA-B	13 DA-B	31 DA-B	
Plant-Eval Interval	21 DP-1	31 DP-1	31 DP-1	31 DP-1	37 DP-1	37 DP-1	37 DP-1	37 DP-1	55 DP-1	
Trt Treatment	Rate	Appl								
No. Name	Rate Unit	Code	1	2	3	4	5	6	7	8
19 FORCE	4.0 oz wt/1000 row-ft	A	15.88 a	1.5 ef	4.5 abc	0.0 c	0.8 c	2.5 ab	0.0 b	0.0 c
Impact	1.0 fl oz/a	B								
AAtrex	1.0 pt/a	B								
MSO	1.0 % v/v	B								
UAN 28%	2.5 % v/v	B								
20 FORCE	4.0 oz wt/1000 row-ft	A	16.50 a	3.3 ef	3.3 abc	0.8 c	0.8 c	2.5 ab	0.0 b	0.0 c
Impact	2.0 fl oz/a	B								
AAtrex	2.0 pt/a	B								
MSO	1.0 % v/v	B								
UAN 28%	2.5 % v/v	B								
LSD (P=.05)			1.361	3.85	3.39	1.97	2.96	2.85	2.57	1.27
Standard Deviation			0.963	2.73	2.39	1.39	2.09	2.02	1.82	0.89
CV			6.01	39.22	85.14	105.99	58.96	115.36	302.77	103.72
Bartlett's X2			14.976	25.045	18.557	6.126	22.626	9.209	4.737	0.983
P(Bartlett's X2)			0.724	0.034*	0.235	0.19	0.046*	0.817	0.094	0.805
Replicate F			1.073	5.249	0.491	0.592	3.295	2.061	1.253	1.099
Replicate Prob(F)			0.3677	0.0029	0.6902	0.6227	0.0268	0.1155	0.2993	0.3572
Treatment F			0.621	33.827	3.478	30.988	19.185	2.731	4.860	14.946
Treatment Prob(F)			0.8745	0.0001	0.0001	0.0001	0.0001	0.0018	0.0001	0.0001

# Purdue University

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			
Part Rated	PLANT -	PLANT -								
Rating Date	Jul-15-2013	Jul-15-2013	Jul-25-2013	Jul-25-2013	Jul-25-2013	Oct-18-2013	Oct-18-2013			
Rating Type	PHYSTU	LODGIN	LODGIN	PHYCHL	PHYSTU	MOICON	YIELD			
Rating Unit	%	%	%	%	%	%	bu/ac			
Number of Subsamples	1	1	1	1	1	1	1			
Crop Stage Majority	V7	V7								
Assessed By	MW	MW								
Rating Timing										
Days After First/Last Applic.	- 31	- 31	- 41	- 41	- 41	- 126	- 126			
Trt-Eval Interval	31 DA-B	31 DA-B	41 DA-B	41 DA-B	41 DA-B	126 DA-B	126 DA-B			
Plant-Eval Interval	55 DP-1	55 DP-1	65 DP-1	65 DP-1	65 DP-1	150 DP-1	150 DP-1			
Trt No.	Treatment Name	Rate Unit	Appl Code	9	10	11	12	13	14	15
1	Untreated Check		A	0.0 a	5.0 a	8.8 a	0.0 a	0.0 a	20.73 a	263.68 a
	Untreated Check		B							
2	Untreated		A	1.5 a	10.3 a	12.5 a	0.0 a	0.8 a	21.33 a	253.60 a
	Callisto	3.0 fl oz/a	B							
	AAtrex	1.0 pt/a	B							
	COC	1.0 % v/v	B							
	UAN 28%	2.5 % v/v	B							
3	Untreated		A	0.0 a	9.0 a	15.0 a	0.0 a	0.0 a	21.23 a	226.63 a
	Callisto	6.0 fl oz/a	B							
	AAtrex	2.0 pt/a	B							
	COC	1.0 % v/v	B							
	UAN 28%	2.5 % v/v	B							
4	Untreated		A	1.3 a	4.0 a	6.5 a	0.0 a	2.0 a	20.60 a	226.78 a
	Impact	1.0 fl oz/a	B							
	AAtrex	1.0 pt/a	B							
	MSO	1.0 % v/v	B							
	UAN 28%	2.5 % v/v	B							
5	Untreated		A	1.8 a	10.0 a	8.3 a	0.0 a	0.0 a	21.43 a	246.43 a
	Impact	2.0 fl oz/a	B							
	AAtrex	2.0 pt/a	B							
	MSO	1.0 % v/v	B							
	UAN 28%	2.5 % v/v	B							
6	COUNTER	6.0 oz wt/1000 row-ft	A	3.8 a	8.3 a	11.3 a	0.0 a	2.0 a	21.53 a	242.70 a
	Untreated		B							
7	COUNTER	6.0 oz wt/1000 row-ft	A	4.0 a	8.5 a	8.0 a	0.0 a	1.3 a	21.63 a	232.55 a
	Callisto	3.0 fl oz/a	B							
	AAtrex	1.0 pt/a	B							
	COC	1.0 % v/v	B							
	UAN 28%	2.5 % v/v	B							
8	COUNTER	6.0 oz wt/1000 row-ft	A	5.3 a	8.5 a	8.3 a	0.8 a	2.5 a	21.60 a	238.15 a
	Callisto	6.0 fl oz/a	B							
	AAtrex	2.0 pt/a	B							
	COC	1.0 % v/v	B							
	UAN 28%	2.5 % v/v	B							

# Purdue University

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		
Part Rated	PLANT -	PLANT -							
Rating Date	Jul-15-2013	Jul-15-2013	Jul-25-2013	Jul-25-2013	Jul-25-2013	Oct-18-2013	Oct-18-2013		
Rating Type	PHYSTU	LODGIN	LODGIN	PHYCHL	PHYSTU	MOICON	YIELD		
Rating Unit	%	%	%	%	%	%	bu/ac		
Number of Subsamples	1	1	1	1	1	1	1		
Crop Stage Majority	V7	V7							
Assessed By	MW	MW							
Rating Timing									
Days After First/Last Applic.	- 31	- 31	- 41	- 41	- 41	- 126	- 126		
Trt-Eval Interval	31 DA-B	31 DA-B	41 DA-B	41 DA-B	41 DA-B	126 DA-B	126 DA-B		
Plant-Eval Interval	55 DP-1	55 DP-1	65 DP-1	65 DP-1	65 DP-1	150 DP-1	150 DP-1		
Trt Treatment	Rate	Appl	9	10	11	12	13	14	15
No. Name	Rate Unit	Code							
9 COUNTER	6.0 oz wt/1000 row-ft	A	1.3 a	5.5 a	7.5 a	0.0 a	1.3 a	20.90 a	248.95 a
Impact	1.0 fl oz/a	B							
AAtrex	1.0 pt/a	B							
MSO	1.0 % v/v	B							
UAN 28%	2.5 % v/v	B							
10 COUNTER	6.0 oz wt/1000 row-ft	A	2.8 a	6.8 a	11.8 a	0.0 a	3.3 a	21.45 a	242.03 a
Impact	2.0 fl oz/a	B							
AAtrex	2.0 pt/a	B							
MSO	1.0 % v/v	B							
UAN 28%	2.5 % v/v	B							
11 COUNTER	12.0 oz wt/1000 row-ft	A	0.0 a	7.5 a	7.5 a	0.0 a	0.0 a	22.23 a	231.83 a
Untreated		B							
12 COUNTER	12.0 oz wt/1000 row-ft	A	0.8 a	9.8 a	12.5 a	0.0 a	1.3 a	22.05 a	236.68 a
Callisto	3.0 fl oz/a	B							
AAtrex	1.0 pt/a	B							
COC	1.0 % v/v	B							
UAN 28%	2.5 % v/v	B							
13 COUNTER	12.0 oz wt/1000 row-ft	A	3.8 a	7.3 a	10.8 a	0.8 a	1.3 a	21.43 a	224.38 a
Callisto	6.0 fl oz/a	B							
AAtrex	2.0 pt/a	B							
COC	1.0 % v/v	B							
UAN 28%	2.5 % v/v	B							
14 COUNTER	12.0 oz wt/1000 row-ft	A	5.3 a	5.5 a	8.0 a	0.0 a	3.8 a	21.20 a	222.33 a
Impact	1.0 fl oz/a	B							
AAtrex	1.0 pt/a	B							
MSO	1.0 % v/v	B							
UAN 28%	2.5 % v/v	B							
15 COUNTER	12.0 oz wt/1000 row-ft	A	2.5 a	7.3 a	7.5 a	0.0 a	2.5 a	21.45 a	244.30 a
Impact	2.0 fl oz/a	B							
AAtrex	2.0 pt/a	B							
MSO	1.0 % v/v	B							
UAN 28%	2.5 % v/v	B							
16 FORCE	4.0 oz wt/1000 row-ft	A	0.0 a	9.5 a	8.3 a	0.0 a	1.3 a	21.40 a	240.98 a
Untreated		B							
17 FORCE	4.0 oz wt/1000 row-ft	A	2.0 a	11.8 a	16.0 a	0.0 a	3.8 a	21.33 a	243.35 a
Callisto	3.0 fl oz/a	B							
AAtrex	1.0 pt/a	B							
COC	1.0 % v/v	B							
UAN 28%	2.5 % v/v	B							
18 FORCE	4.0 oz wt/1000 row-ft	A	2.5 a	6.0 a	6.8 a	0.8 a	2.8 a	21.68 a	238.35 a
Callisto	6.0 fl oz/a	B							
AAtrex	2.0 pt/a	B							
COC	1.0 % v/v	B							
UAN 28%	2.5 % v/v	B							

# Purdue University

	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX				
	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR				
	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays				
	Corn	Corn	Corn	Corn	Corn	Corn	Corn				
Part Rated	PLANT -	PLANT -									
Rating Date	Jul-15-2013	Jul-15-2013	Jul-25-2013	Jul-25-2013	Jul-25-2013	Oct-18-2013	Oct-18-2013				
Rating Type	PHYSTU	LODGIN	LODGIN	PHYCHL	PHYSTU	MOICON	YIELD				
Rating Unit	%	%	%	%	%	%	bu/ac				
Number of Subsamples	1	1	1	1	1	1	1				
Crop Stage Majority	V7	V7									
Assessed By	MW	MW									
Rating Timing											
Days After First/Last Applic.	- 31	- 31	- 41	- 41	- 41	- 126	- 126				
Trt-Eval Interval	31 DA-B	31 DA-B	41 DA-B	41 DA-B	41 DA-B	126 DA-B	126 DA-B				
Plant-Eval Interval	55 DP-1	55 DP-1	65 DP-1	65 DP-1	65 DP-1	150 DP-1	150 DP-1				
Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	9	10	11	12	13	14	15
19	FORCE	4.0 oz wt/1000 row-ft	A		0.0 a	10.5 a	14.8 a	0.0 a	0.8 a	21.35 a	236.40 a
	Impact	1.0 fl oz/a	B								
	AAtrex	1.0 pt/a	B								
	MSO	1.0 % v/v	B								
	UAN 28%	2.5 % v/v	B								
20	FORCE	4.0 oz wt/1000 row-ft	A		1.5 a	10.0 a	13.0 a	0.0 a	1.5 a	21.45 a	251.65 a
	Impact	2.0 fl oz/a	B								
	AAtrex	2.0 pt/a	B								
	MSO	1.0 % v/v	B								
	UAN 28%	2.5 % v/v	B								
LSD (P=.05)					3.46	6.60	7.65	0.84	3.35	1.000	28.001
Standard Deviation					2.44	4.67	5.41	0.59	2.37	0.707	19.800
CV					122.98	58.08	53.39	525.38	149.07	3.31	8.26
Bartlett's X2					6.075	27.722	16.659	0.0	6.93	34.123	15.076
P(Bartlett's X2)					0.965	0.089	0.613	.	0.96	0.018*	0.718
Replicate F					0.236	1.103	2.381	0.322	0.955	5.167	1.588
Replicate Prob(F)					0.8706	0.3553	0.0790	0.8094	0.4205	0.0031	0.2023
Treatment F					1.958	0.818	1.223	0.864	1.035	1.145	1.130
Treatment Prob(F)					0.0266	0.6775	0.2725	0.6250	0.4387	0.3353	0.3485

# Purdue University

## Evaluate HPPD herbicide interaction with Counter insecticide in corn

Trial ID: 13S-THP-CTC-16      Protocol ID: 13S-THP-CTC-16  
Location: Throckmorton      Study Director:  
Project ID: 13C04I056      Investigator: Dr. Bill Johnson  
Sponsor Contact: Amvac - Rich Porter

### Crop Code

ZEAMX, BCOR, Zea mays, = US

### Part Rated

PLANT = plant

### Rating Type

COUPLA = count - plant / emergence - objective

PHYBLE = phytotoxicity - bleaching

PHYNEC = phytotoxicity - necrosis /burn

PHYLMA = phytotoxicity - leaf malformation

PHYSTU = phytotoxicity - stunting

LODGIN = lodging

PHYCHL = phytotoxicity - chlorosis

MOICON = moisture content

YIELD = yield

### Rating Unit

% = percent

bu/ac = bushels per acre

### Plant-Eval Interval

21 DP-1 = 1 ZEAMX May-21-2013

31 DP-1 = 1 ZEAMX May-21-2013

37 DP-1 = 1 ZEAMX May-21-2013

55 DP-1 = 1 ZEAMX May-21-2013

65 DP-1 = 1 ZEAMX May-21-2013

150 DP-1 = 1 ZEAMX May-21-2013