

# Purdue University Weed Science

## 2012/CORN/ANTHEM/ANTHEM ATZ/EAST

Trial ID: 13S-PIP-CTC-04      Location: PPAC      Trial Year: 2013  
 Protocol ID: 13S-PIP-CTC-04      Investigator: Dr. Bill Johnson  
 Project ID:      Study Director: Joe Ikley  
                                  Sponsor Contact: Joe Reed

### General Trial Information

**Study Director:** Joe Ikley      **Title:** Research Associate  
**Investigator:** Dr. Bill Johnson      **Title:** Professor

**Discipline:** H herbicide  
**Trial Status:** F one-year/final  
**Initiation Date:** 5/7/2013  
**Completion Date:** 10/28/2013

### Trial Location

**City:** Wanatah      **Country:** USA United States  
**State/Prov.:** Indiana  
**Postal Code:** 46390

### Contacts

**Study Director:** Joe Ikley      **Title:** Research Associate  
**Organization:** Purdue University  
**Address:** 915 West State Street      **Phone No.:** 765-494-0891  
**City+State/Prov:** West Lafayette      **Mobile No.:** 410-596-9091  
**Postal Code:** 47907      **E-mail:** jikley@purdue.edu

**Investigator:** Dr. Bill Johnson      **Title:** Professor  
**Organization:** Purdue University  
**Address:** 915 West State Street      **Phone No.:** 765-494-4656  
**City+State/Prov:** West Lafayette      **Mobile No.:** 765-404-9801  
**Postal Code:** 47907      **E-mail:** wgj@purdue.edu

### Cooperator/Landowner

**Cooperator:** Jon Leuck      **Role:** Farm Manager  
**Organization:** Pinney-Purdue Agricultural Center      **Org. Type:** University  
**Address 1:** 11402 County Line Road  
**City:** Wanatah      **Phone No.:** 765-479-3759  
**State/Prov:** IN      **Fax No.:** 219-733-2379  
**Postal Code:** 46390      **Mobile No.:** 765-479-3759  
**Country:** USA      United States      **E-mail:** leuckj@purdue.edu

### Crop Description

**Crop 1:** ZEAMX      Zea mays      **Corn**  
**Variety:** P0832AMX  
**Description:** RR/LL

**Planting Rate, Unit:** 32000      S/A  
**Depth, Unit:** 1.5      IN  
**Row Spacing, Unit:** 30      IN  
**Spacing Within Row, Unit:** 6      IN

**Soil Temperature, Unit:** 64      F  
**Soil Moisture:** SLIWET slightly wet, moist

**Planting Date:** 5/7/2013  
**Planting Method:** DIRDRI direct drilled  
**Planting Equipment:** FPP Finger Pickup Planter

**Harvest Date:** 10/28/2013  
**Harvested Width, Unit:** 5      FT  
**Harvested Length, Unit:** 25      FT  
**Harvest Equipment:** Gleaner F3  
**% Standard Moisture:** 15.5  
**Moisture Meter:** Harvest Master  
**Weighing Equipment:** Harvest Master

### Pest Description

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

### Site and Design

**Treated Plot Width:** 10 FT  
**Treated Plot Length:** 30 FT  
**Treated Plot Area:** 300 FT<sup>2</sup>      **Treatments:** 15  
**Replications:** 4

**Site Type:** FIELD field  
**Experimental Unit:** 1 PLOT plot  
**Tillage Type:** CONTIL conventional-till  
**Study Design:** RAOBL Randomized Complete Block (RCB)

**Comment:** SIDE-DRESSED 150 # N AS 28-0-0 ON 6/6/2013

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Description Name: Pinney M2		Soil Description	
% OM: 2.2	Texture: SL	sandy loam	
pH: 6.3	Soil Name: Tracy Sandy Loam		
CEC: 6	Soil Drainage: E	excellent	

Application Description		
	A	B
Application Date:	5/7/2013	6/4/2013
Appl. Start Time:	12:00	10:30
Appl. Stop Time:	12:30 PM	11:45 AM
Application Method:	SPRAY	SPRAY
Application Timing:	PREPRE	POSPOS
Application Placement:	SOIL	BROADC
Applied By:	Legleiter	Spaunhorst
Air Temperature, Unit:	77 F	73 F
% Relative Humidity:	47	50
Wind Velocity, Unit:	4.5 MPH	2.5 MPH
Wind Direction:	NNE	SE
Dew Presence (Y/N):	N no	N no
Soil Temperature, Unit:	64 F	64 F
Soil Moisture:	SLIWET	SLIWET
% Cloud Cover:	30	20
Next Moisture Occurred On:	5/9/2013	
Time to Next Moisture, Unit:	48 HR	

Crop Stage At Each Application		
	A	B
Crop 1 Code, BBCH Scale:	ZEAMX BCOR	ZEAMX BCOR
Stage Scale Used:	BBCH	BBCH
Stage Majority, Percent:	00	33

Pest Stage At Each Application		
	A	B
Pest 1 Code, Type, Scale:	AMBTR W	AMBTR W
Stage Majority, Percent:	00	12
Stage Minimum, Percent:		11
Stage Maximum, Percent:		14
Height, Unit:		1.25 IN
Height Minimum, Maximum:		0.75 2
Density, Unit:		10 YD2

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Application Equipment		
	A	B
<b>Appl. Equipment:</b>	CO2 Backpack	CO2 Backpack
<b>Equipment Type:</b>	SPRBAC	SPRBAC
<b>Operation Pressure, Unit:</b>	17 PSI	17 PSI
<b>Nozzle Type:</b>	Flat Fan	Flat Fan
<b>Nozzle Size:</b>	XR11002	XR11002
<b>Nozzle Spacing, Unit:</b>	15 IN	15 IN
<b>Nozzles/Row:</b>	8	8
<b>Boom Length, Unit:</b>	10 FT	10 FT
<b>Boom Height, Unit:</b>	17 IN	18 IN
<b>Ground Speed, Unit:</b>	3 MPH	3 MPH
<b>Carrier:</b>	H2O	H2O
<b>Water Hardness (ppm CaCO3):</b>	150	150
<b>Spray Volume, Unit:</b>	15 GAL/AC	15 GAL/AC
<b>Mix Size, Unit:</b>	1.8 Liters	1.8 Liters
<b>Propellant:</b>	CO2	CO2
<b>Tank Mix (Y/N):</b>	N no	N no

Trial Comments

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## 2012/CORN/ANTHEM/ANTHEM ATZ/EAST

Trial ID: 13S-PIP-CTC-04      Location: PPAC      Trial Year: 2013  
 Protocol ID: 13S-PIP-CTC-04      Investigator: Dr. Bill Johnson  
 Project ID:      Study Director: Joe Ikley  
    Sponsor Contact: Joe Reed

Reps: 4      Plots: 10 by 30 feet  
 Spray vol: 15 gal/ac      Mix size: 1.8 liters (min 1.5642)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate	Unit	Other Rate	Other Unit	Appl Code	Amt Product to Measure	Rep 1	2	3	4
1	Untreated Check										101	305	605	903
2	ANTHEM	2.15 LB/GAL		SE	150 g ai/ha		8 fl oz/a		A	7.459 ml/mx	102	506	601	806
	CADET	0.91 LB/GAL		EC	7.2 g ai/ha		0.9 oz/a		B	0.8458 ml/mx				
	ROUNDUP POWERMAX	5.5 LB/GAL		SL	1060 g ae/ha		22 fl oz/a		B	20.6 ml/mx				
	N-Pak AMS	3.4 LBA/GAL		SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx				
3	ANTHEM ATZ	4.5 LB/GAL		SE	1260 g ai/ha		32 fl oz/a		A	29.93 ml/mx	103	405	604	904
	CADET	0.91 LB/GAL		EC	7.2 g ai/ha		0.9 oz/a		B	0.8458 ml/mx				
	ROUNDUP POWERMAX	5.5 LB/GAL		SL	1060 g ae/ha		22 fl oz/a		B	20.6 ml/mx				
	N-Pak AMS	3.4 LBA/GAL		SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx				
4	ANTHEM ATZ	4.5 LB/GAL		SE	1260 g ai/ha		32 fl oz/a		A	29.93 ml/mx	104	402	701	902
	AATREX NINE-O	90 %W/W		WG	504 g ai/ha		0.5 lb/a		A	7.184 g/mx				
	CADET	0.91 LB/GAL		EC	7.2 g ai/ha		0.9 oz/a		B	0.8458 ml/mx				
	ROUNDUP POWERMAX	5.5 LB/GAL		SL	1060 g ae/ha		22 fl oz/a		B	20.6 ml/mx				
	N-Pak AMS	3.4 LBA/GAL		SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx				
5	ANTHEM ATZ	4.5 LB/GAL		SE	1260 g ai/ha		32 fl oz/a		A	29.93 ml/mx	105	406	801	906
	AATREX NINE-O	90 %W/W		WG	504 g ai/ha		0.5 lb/a		B	7.184 g/mx				
	CADET	0.91 LB/GAL		EC	7.2 g ai/ha		0.9 oz/a		B	0.8458 ml/mx				
	ROUNDUP POWERMAX	5.5 LB/GAL		SL	1060 g ae/ha		22 fl oz/a		B	20.6 ml/mx				
	N-Pak AMS	3.4 LBA/GAL		SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx				
6	ANTHEM F9387-1	2.15 LB/GAL		SE	151 g ai/ha		8 fl oz/a		A	7.508 ml/mx	106	504	603	1004
	ROUNDUP POWERMAX	4 LB/GAL		SC	105 g ai/ha		3 oz/a		B	2.806 ml/mx				
	N-Pak AMS	5.5 LB/GAL		SL	1060 g ae/ha		22 fl oz/a		B	20.6 ml/mx				
		3.4 LBA/GAL		SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx				
7	ANTHEM ATZ F9387-1	4.5 LB/GAL		SE	1260 g ai/ha		32 fl oz/a		A	29.93 ml/mx	201	501	703	1005
	ROUNDUP POWERMAX	4 LB/GAL		SC	105 g ai/ha		3 fl oz/a		B	2.806 ml/mx				
	N-Pak AMS	5.5 LB/GAL		SL	1060 g ae/ha		22 fl oz/a		B	20.6 ml/mx				
		3.4 LBA/GAL		SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx				
8	ANTHEM ATZ SHARPEN	4.5 LB/GAL		SE	1260 g ai/ha		32 fl oz/a		A	29.93 ml/mx	202	505	704	1001
	MSO	2.85 LB/GAL		SC	50 g ai/ha		2 fl oz/a		A	1.876 ml/mx				
	ROUNDUP POWERMAX	100 %		L	0.417 % v/v		8 fl oz/a		A	7.506 ml/mx				
	N-Pak AMS	5.5 LB/GAL		SL	1060 g ae/ha		22 fl oz/a		B	20.6 ml/mx				
		3.4 LBA/GAL		SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx				
9	VERDICT MSO	5.57 LB/GAL		EC	684 g ai/ha		14 oz/a		A	13.13 ml/mx	203	404	802	805
	ROUNDUP POWERMAX	100 %		L	0.417 % v/v		8 fl oz/a		A	7.506 ml/mx				
	N-Pak AMS	5.5 LB/GAL		SL	1060 g ae/ha		22 fl oz/a		B	20.6 ml/mx				
		3.4 LBA/GAL		SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx				
10	BICEP LITE II MAGNUM	6 LB/GAL		SC	3200 g ai/ha		1.9 qt/a		A	57.02 ml/mx	204	502	705	804
	CALLISTO	4 LB/GAL		SC	105 g ai/ha		3 oz/a		B	2.806 ml/mx				
	ROUNDUP POWERMAX	5.5 LB/GAL		SL	1060 g ae/ha		22 fl oz/a		B	20.6 ml/mx				
	N-Pak AMS	3.4 LBA/GAL		SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx				
11	LUMAX	3.96 LB/GAL		SE	2780 g ai/ha		2.5 qt/a		A	75.05 ml/mx	205	503	803	1002
	ROUNDUP POWERMAX	5.5 LB/GAL		SL	1060 g ae/ha		22 fl oz/a		B	20.6 ml/mx				
	N-Pak AMS	3.4 LBA/GAL		SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx				
12	ANTHEM ATZ HORNET	4.5 LB/GAL		SE	1260 g ai/ha		32 fl oz/a		A	29.93 ml/mx	206	304	602	901
	ROUNDUP POWERMAX	78.5 %W/W		WDG	165 g ai/ha		3 oz/a		A	2.696 g/mx				
	N-Pak AMS	5.5 LB/GAL		SL	1060 g ae/ha		22 fl oz/a		B	20.6 ml/mx				
		3.4 LBA/GAL		SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx				
13	SURESTART	4.25 LB/GAL		SE	1190 g ai/ha		2 pt/a		A	29.93 ml/mx	301	401	706	905
	ROUNDUP POWERMAX	5.5 LB/GAL		SL	1060 g ae/ha		22 fl oz/a		B	20.6 ml/mx				
	N-Pak AMS	3.4 LBA/GAL		SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx				
14	Untreated Check										302	306	702	1003
15	Untreated Check										303	403	606	1006

Sort Order: Replicate 1

Product quantities required for listed treatments and applications of trials included in this table:

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Reps: 4

Plots: 10 by 30 feet

Spray vol: 15 gal/ac

Mix size: 1.8 liters (min 1.5642)

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
14.967	ml	ANTHEM	2.15	SE	
3.383	ml	CADET	.91	EC	
247.244	ml	ROUNDUP POWERMAX	5.5	SL	
540.000	ml	N-Pak AMS	3.4	SL	
179.602	ml	ANTHEM ATZ	4.5	SE	
14.368	g	AATREX NINE-O	90	WG	
5.613	ml	F9387-1	4	SC	
1.876	ml	SHARPEN	2.85	SC	
15.012	ml	MSO	100	L	
13.128	ml	VERDICT	5.57	EC	
57.016	ml	BICEP LITE II MAGNUM	6	SC	
2.806	ml	CALLISTO	4	SC	
75.050	ml	LUMAX	3.96	SE	
2.696	g	HORNET	78.5	WDG	
29.934	ml	SURESTART	4.25	SE	

\* 'Per area' calculations based on spray volume= 15 gal/ac, mix size= 1.8 liters (mix size basis).

\* 'Per volume' calculations use spray volume= 15 gal/ac, mix size= 1.8 liters.

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## 2012/CORN/ANTHEM/ANTHEM ATZ/EAST

Trial ID: 13S-PIP-CTC-04 Location: PPAC Trial Year: 2013  
 Protocol ID: 13S-PIP-CTC-04 Investigator: Dr. Bill Johnson  
 Project ID: Study Director: Joe Ikley  
 Sponsor Contact: Joe Reed

Pest Type				W Weed AMBTR		W Weed AMBTR		W Weed AMBTR	
Pest Code				Ambrosia trifi>		Ambrosia trifi>		Ambrosia trifi>	
Pest Scientific Name				Giant ragweed		Giant ragweed		Giant ragweed	
Pest Name									
Crop Code	ZEAMX				ZEAMX			ZEAMX	
BBCH Scale	BCOR				BCOR			BCOR	
Crop Scientific Name	Zea mays				Zea mays			Zea mays	
Crop Name	Corn				Corn			Corn	
Part Rated	PLOT C			PLOT P	PLOT C			PLOT C	
Rating Date	5/22/2013			5/22/2013	6/4/2013			6/11/2013	
Rating Type	PHYGEN			CONTRO	PHYGEN			CONTRO	
Rating Unit	%			%	%			%	
Sample Size, Unit	1 PLOT			1 PLOT	1 PLOT			1 PLOT	
Days After First/Last Applic.	15 15			15 15	28 28			35 7	
Trt-Eval Interval	15 DA-A			15 DA-A	0 DA-B			7 DA-B	
ARM Action Codes	P			P	P			P	
Number of Decimals	0			0	0			0	
Trt Treatment	Rate	Appl							
No. Name	Rate Unit Code Plot			1	2	3	4	5	6
1 Untreated Check			101	0	0	0	0	0	0
			305	0	0	0	0	0	0
			605	0	0	0	0	0	0
			903	0	0	0	0	0	0
			Mean =	0	0	0	0	0	0
2 ANTHEM	150 g ai/ha A		102	0	70	0	50	5	65
CADET	7.2 g ai/ha B		506	0	80	0	75	5	80
ROUNDUP POWERMAX	1060 g ae/ha B		601	0	75*	0	63*	5	73*
N-Pak AMS	2.5 % v/v B		806	0	75*	0	63*	5	73*
			Mean =	0	75	0	63	5	73
3 ANTHEM ATZ	1260 g ai/ha A		103	0	30	0	50	5	70
CADET	7.2 g ai/ha B		405	0	65	0	80	5	95
ROUNDUP POWERMAX	1060 g ae/ha B		604	0	48*	0	65*	5	83*
N-Pak AMS	2.5 % v/v B		904	0	48*	0	65*	5	83*
			Mean =	0	48	0	65	5	83
4 ANTHEM ATZ	1260 g ai/ha A		104	0	50	0	50	5	80
AATREX NINE-O	504 g ai/ha A		402	0	85	0	95	5	95
CADET	7.2 g ai/ha B		701	0	68*	0	73*	5	88*
ROUNDUP POWERMAX	1060 g ae/ha B		902	0	68*	0	73*	5	88*
N-Pak AMS	2.5 % v/v B								
			Mean =	0	68	0	73	5	88
5 ANTHEM ATZ	1260 g ai/ha A		105	0	60	0	35	5	90
AATREX NINE-O	504 g ai/ha B		406	0	50	0	70	5	85
CADET	7.2 g ai/ha B		801	5	55*	0	53*	5	88*
ROUNDUP POWERMAX	1060 g ae/ha B		906	0	55*	0	53*	5	88*
N-Pak AMS	2.5 % v/v B								
			Mean =	1	55	0	53	5	88
6 ANTHEM	151 g ai/ha A		106	0	50	0	15	5	85
F9387-1	105 g ai/ha B		504	0	90	0	85	5	85
ROUNDUP POWERMAX	1060 g ae/ha B		603	0	70*	5	50*	5	85*
N-Pak AMS	2.5 % v/v B		1004	5	70*	0	50*	5	85*
			Mean =	1	70	1	50	5	85
7 ANTHEM ATZ	1260 g ai/ha A		201	0	90	0	80	5	85
F9387-1	105 g ai/ha B		501	0	95	0	95	5	100
ROUNDUP POWERMAX	1060 g ae/ha B		703	0	93*	0	88*	5	93*
N-Pak AMS	2.5 % v/v B		1005	5	93*	5	88*	5	93*
			Mean =	1	93	1	88	5	93
8 ANTHEM ATZ	1260 g ai/ha A		202	0	100	0	95	0	100
SHARPEN	50 g ai/ha A		505	0	100	0	95	0	100
MSO	0.417 % v/v A		704	0	100*	0	95*	0	100*
ROUNDUP POWERMAX	1060 g ae/ha B		1001	0	100*	0	95*	0	100*
N-Pak AMS	2.5 % v/v B								
			Mean =	0	100	0	95	0	100

# Purdue University Weed Science

Pest Type			W Weed				W Weed			
Pest Code			AMBTR				AMBTR			
Pest Scientific Name			Ambrosia trifi>				Ambrosia trifi>			
Pest Name			Giant ragweed				Giant ragweed			
Crop Code	ZEAMX				ZEAMX				ZEAMX	
BBCH Scale	BCOR				BCOR				BCOR	
Crop Scientific Name	Zea mays				Zea mays				Zea mays	
Crop Name	Corn				Corn				Corn	
Part Rated	PLOT C		PLOT P		PLOT C		PLOT P		PLOT C	
Rating Date	5/22/2013		5/22/2013		6/4/2013		6/4/2013		6/11/2013	
Rating Type	PHYGEN		CONTRO		PHYGEN		CONTRO		PHYGEN	
Rating Unit	%		%		%		%		%	
Sample Size, Unit	1	PLOT	1	PLOT	1	PLOT	1	PLOT	1	PLOT
Days After First/Last Applic.	15	15	15	15	28	28	28	28	35	7
Trt-Eval Interval	15 DA-A		15 DA-A		0 DA-B		0 DA-B		7 DA-B	
ARM Action Codes	P		P		P		P		P	
Number of Decimals	0		0		0		0		0	
Trt Treatment	Rate	Appl								
No. Name	Rate	Unit	Code	Plot	1	2	3	4	5	6
9 VERDICT	684 g ai/ha	A		203	0	100	5	100	0	95
MSO	0.417 % v/v	A		404	0	100	0	100	0	100
ROUNDUP POWERMAX	1060 g ae/ha	B		802	0	100*	5	100*	0	98*
N-Pak AMS	2.5 % v/v	B		805	0	100*	0	100*	0	98*
				Mean =	0	100	3	100	0	98
10 BICEP LITE II MAGNUM	3200 g ai/ha	A		204	0	80	0	65	0	80
CALLISTO	105 g ai/ha	B		502	5	90	0	90	0	100
ROUNDUP POWERMAX	1060 g ae/ha	B		705	0	85*	5	78*	0	90*
N-Pak AMS	2.5 % v/v	B		804	0	85*	0	78*	0	90*
				Mean =	1	85	1	78	0	90
11 LUMAX	2780 g ai/ha	A		205	0	90	0	90	0	100
ROUNDUP POWERMAX	1060 g ae/ha	B		503	0	100	0	100	0	100
N-Pak AMS	2.5 % v/v	B		803	0	95*	0	95*	0	100*
				1002	0	95*	0	95*	0	100*
				Mean =	0	95	0	95	0	100
12 ANTHEM ATZ	1260 g ai/ha	A		206	0	90	0	85	0	95
HORNET	165 g ai/ha	A		304	0	100	0	95	0	95
ROUNDUP POWERMAX	1060 g ae/ha	B		602	10	95*	5	90*	0	95*
N-Pak AMS	2.5 % v/v	B		901	10	95*	10	90*	5	95*
				Mean =	5	95	4	90	1	95
13 SURESTART	1190 g ai/ha	A		301	0	95	0	95	0	95
ROUNDUP POWERMAX	1060 g ae/ha	B		401	0	100	0	95	0	100
N-Pak AMS	2.5 % v/v	B		706	0	98*	0	95*	0	98*
				905	5	98*	10	95*	5	98*
				Mean =	1	98	3	95	1	98
14 Untreated Check				302	0	0	0	0	0	0
				306	0	0	0	0	0	0
				702	0	0*	0	0*	0	0
				1003	0	0*	0	0*	0	0
				Mean =	0	0	0	0	0	0
15 Untreated Check				303	0	0	0	0	0	0
				403	0	0	0	0	0	0
				606	0	0*	0	0*	0	0
				1006	0	0*	0	0*	0	0
				Mean =	0	0	0	0	0	0

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Pest Type				W Weed AMBTR Ambrosia trifi> Giant ragweed		W Weed AMBTR Ambrosia trifi> Giant ragweed		W Weed AMBTR Ambrosia trifi> Giant ragweed		W Weed AMBTR Ambrosia trifi> Giant ragweed	
Pest Code											
Pest Scientific Name											
Pest Name											
Crop Code											
BBCH Scale											
Crop Scientific Name											
Crop Name											
Part Rated											
Rating Date											
Rating Type											
Rating Unit											
Sample Size, Unit											
Days After First/Last Applic.											
Trt-Eval Interval											
ARM Action Codes											
Number of Decimals											
Trt Treatment	Rate	Appl		7	8	9	10	11	12		
No. Name	Rate	Unit	Code Plot								
1 Untreated Check			101	0	0	0	0	0	6.7		
			305	0	0	0	0	0	4.6		
			605	0	0	0	0	0	23.3		
			903	0	0	0	0	0	38.1		
			Mean =	0	0	0	0	0	18.2		
2 ANTHEM	150 g ai/ha	A	102	0	85	0	80	80	36.8		
CADET	7.2 g ai/ha	B	506	0	95	0	100	100	39.2		
ROUNDUP POWERMAX	1060 g ae/ha	B	601	0	90*	0	90*	90*	36.5		
N-Pak AMS	2.5 % v/v	B	806	0	90*	0	90*	90*	34.6		
			Mean =	0	90	0	90	90	36.8		
3 ANTHEM ATZ	1260 g ai/ha	A	103	0	85	0	75	80	34.7		
CADET	7.2 g ai/ha	B	405	0	85	0	80	85	37.3		
ROUNDUP POWERMAX	1060 g ae/ha	B	604	0	85*	0	78*	83*	37.4		
N-Pak AMS	2.5 % v/v	B	904	0	85*	0	78*	83*	38.8		
			Mean =	0	85	0	78	83	37.0		
4 ANTHEM ATZ	1260 g ai/ha	A	104	0	90	0	85	80	32.5		
AATREX NINE-O	504 g ai/ha	A	402	0	85	0	90	80	36.2		
CADET	7.2 g ai/ha	B	701	0	88*	0	88*	80*	34.9		
ROUNDUP POWERMAX	1060 g ae/ha	B	902	0	88*	0	88*	80*	37.4		
N-Pak AMS	2.5 % v/v	B									
			Mean =	0	88	0	88	80	35.2		
5 ANTHEM ATZ	1260 g ai/ha	A	105	0	90	0	85	90	31.9		
AATREX NINE-O	504 g ai/ha	B	406	0	90	0	80	80	35.5		
CADET	7.2 g ai/ha	B	801	0	90*	0	83*	85*	37.8		
ROUNDUP POWERMAX	1060 g ae/ha	B	906	0	90*	0	83*	85*	37.7		
N-Pak AMS	2.5 % v/v	B									
			Mean =	0	90	0	83	85	35.7		
6 ANTHEM	151 g ai/ha	A	106	0	100	0	90	90	29.8		
F9387-1	105 g ai/ha	B	504	0	100	0	100	100	38.0		
ROUNDUP POWERMAX	1060 g ae/ha	B	603	0	100*	0	95*	95*	36.3		
N-Pak AMS	2.5 % v/v	B	1004	0	100*	0	95*	95*	28.2		
			Mean =	0	100	0	95	95	33.1		
7 ANTHEM ATZ	1260 g ai/ha	A	201	0	95	0	90	85	40.4		
F9387-1	105 g ai/ha	B	501	0	95	0	95	95	34.8		
ROUNDUP POWERMAX	1060 g ae/ha	B	703	0	95*	0	93*	90*	36.1		
N-Pak AMS	2.5 % v/v	B	1005	0	95*	0	93*	90*	26.5		
			Mean =	0	95	0	93	90	34.5		
8 ANTHEM ATZ	1260 g ai/ha	A	202	0	90	0	80	80	40.6		
SHARPEN	50 g ai/ha	A	505	0	100	0	95	95	37.7		
MSO	0.417 % v/v	A	704	0	95*	0	88*	88*	37.9		
ROUNDUP POWERMAX	1060 g ae/ha	B	1001	0	95*	0	88*	88*	29.1		
N-Pak AMS	2.5 % v/v	B									
			Mean =	0	95	0	88	88	36.3		



# Purdue University Weed Science

Pest Type	W Weed	W Weed	W Weed	W Weed					
Pest Code	AMBTR	AMBTR	AMBTR	AMBTR					
Pest Scientific Name	Ambrosia trifi>	Ambrosia trifi>	Ambrosia trifi>	Ambrosia trifi>					
Pest Name	Giant ragweed	Giant ragweed	Giant ragweed	Giant ragweed					
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX					
BBCH Scale	BCOR	BCOR	BCOR	BCOR					
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays					
Crop Name	Corn	Corn	Corn	Corn					
Part Rated	PLOT C	PLOT P	PLOT C	PLOT P					
Rating Date	6/18/2013	6/18/2013	7/2/2013	8/6/2013					
Rating Type	PHYGEN	CONTRO	PHYGEN	CONTRO					
Rating Unit	%	%	%	%					
Sample Size, Unit	1 PLOT	1 PLOT	1 PLOT	1 PLOT					
Days After First/Last Applic.	42 14	42 14	56 28	56 28					
Trt-Eval Interval	14 DA-B	14 DA-B	28 DA-B	28 DA-B					
ARM Action Codes	P	P	P	P					
Number of Decimals	0	0	0	0					
Trt Treatment	Rate	Appl							
No. Name	Rate Unit	Code Plot	7	8	9	10	11	12	
9 VERDICT	684 g ai/ha	A 203	0	90	0	85	85	41.5	
MSO	0.417 % v/v	A 404	0	85	0	85	85	38.9	
ROUNDUP POWERMAX	1060 g ae/ha	B 802	0	88*	0	85*	85*	36.1	
N-Pak AMS	2.5 % v/v	B 805	0	88*	0	85*	85*	36.7	
	Mean =		0	88	0	85	85	38.3	
10 BICEP LITE II MAGNUM	3200 g ai/ha	A 204	0	90	0	90	95	42.5	
CALLISTO	105 g ai/ha	B 502	0	95	0	95	99	34.6	
ROUNDUP POWERMAX	1060 g ae/ha	B 705	0	93*	0	93*	97*	37.9	
N-Pak AMS	2.5 % v/v	B 804	0	93*	0	93*	97*	34.0	
	Mean =		0	93	0	93	97	37.2	
11 LUMAX	2780 g ai/ha	A 205	0	90	0	90	90	38.6	
ROUNDUP POWERMAX	1060 g ae/ha	B 503	0	95	0	100	100	46.0	
N-Pak AMS	2.5 % v/v	B 803	0	93*	0	95*	95*	37.8	
	Mean =		0	93*	0	95*	95*	29.4	
	Mean =		0	93	0	95	95	37.9	
12 ANTHEM ATZ	1260 g ai/ha	A 206	0	95	0	90	95	38.5	
HORNET	165 g ai/ha	A 304	0	90	0	85	80	37.1	
ROUNDUP POWERMAX	1060 g ae/ha	B 602	5	93*	5	88*	88*	38.0	
N-Pak AMS	2.5 % v/v	B 901	5	93*	5	88*	88*	36.9	
	Mean =		3	93	3	88	88	37.6	
13 SURESTART	1190 g ai/ha	A 301	0	85	0	80	80	36.0	
ROUNDUP POWERMAX	1060 g ae/ha	B 401	0	90	0	90	90	39.6	
N-Pak AMS	2.5 % v/v	B 706	0	88*	0	85*	85*	39.0	
	Mean =		0	88*	0	85*	85*	37.8	
	Mean =		0	88	0	85	85	38.1	
14 Untreated Check		302	0	0	0	0	0	7.7	
		306	0	0	0	0	0	3.7	
		702	0	0	0	0	0	37.4	
		1003	0	0	0	0	0	29.5	
	Mean =		0	0	0	0	0	19.6	
15 Untreated Check		303	0	0	0	0	0	12.0	
		403	0	0	0	0	0	13.9	
		606	0	0	0	0	0	22.6	
		1006	0	0	0	0	0	27.1	
	Mean =		0	0	0	0	0	18.9	

# Purdue University Weed Science

Pest Type					
Pest Code					
Pest Scientific Name					
Pest Name					
Crop Code		ZEAMX		ZEAMX	ZEAMX
BBCH Scale		BCOR		BCOR	BCOR
Crop Scientific Name		Zea mays		Zea mays	Zea mays
Crop Name		Corn		Corn	Corn
Part Rated		YIELD C		YIELD C	YIELD C
Rating Date		10/28/2013		10/28/2013	10/28/2013
Rating Type		YIELD		YIELD	YIELD
Rating Unit		bu/ac		kg/ha	kg/ha
Sample Size, Unit		1 PLOT		1 PLOT	1 PLOT
Days After First/Last Applic.		174 146		174 146	174 146
Trt-Eval Interval					
ARM Action Codes				TY1	TY2
Number of Decimals				1	1
Trt No.	Treatment Name	Rate	Unit	Appl Code	Plot
					13
					14
1	Untreated Check				101
					305
					605
					903
				Mean =	
					41.7
					28.8
					146.0
					238.5
					113.8
2	ANTHEM	150 g ai/ha	A		102
	CADET	7.2 g ai/ha	B		506
	ROUNDUP POWERMAX	1060 g ae/ha	B		601
	N-Pak AMS	2.5 % v/v	B		806
				Mean =	
					230.5
					245.3
					228.6
					216.3
					230.2
3	ANTHEM ATZ	1260 g ai/ha	A		103
	CADET	7.2 g ai/ha	B		405
	ROUNDUP POWERMAX	1060 g ae/ha	B		604
	N-Pak AMS	2.5 % v/v	B		904
				Mean =	
					217.3
					233.5
					234.2
					242.6
					231.9
4	ANTHEM ATZ	1260 g ai/ha	A		104
	AATREX NINE-O	504 g ai/ha	A		402
	CADET	7.2 g ai/ha	B		701
	ROUNDUP POWERMAX	1060 g ae/ha	B		902
	N-Pak AMS	2.5 % v/v	B		
				Mean =	
					203.5
					226.4
					218.5
					233.8
					220.6
5	ANTHEM ATZ	1260 g ai/ha	A		105
	AATREX NINE-O	504 g ai/ha	B		406
	CADET	7.2 g ai/ha	B		801
	ROUNDUP POWERMAX	1060 g ae/ha	B		906
	N-Pak AMS	2.5 % v/v	B		
				Mean =	
					199.5
					222.4
					236.6
					235.8
					223.6
6	ANTHEM	151 g ai/ha	A		106
	F9387-1	105 g ai/ha	B		504
	ROUNDUP POWERMAX	1060 g ae/ha	B		603
	N-Pak AMS	2.5 % v/v	B		1004
				Mean =	
					186.7
					237.9
					227.1
					176.3
					207.0
7	ANTHEM ATZ	1260 g ai/ha	A		201
	F9387-1	105 g ai/ha	B		501
	ROUNDUP POWERMAX	1060 g ae/ha	B		703
	N-Pak AMS	2.5 % v/v	B		1005
				Mean =	
					253.1
					218.1
					226.1
					165.8
					215.8
8	ANTHEM ATZ	1260 g ai/ha	A		202
	SHARPEN	50 g ai/ha	A		505
	MSO	0.417 % v/v	A		704
	ROUNDUP POWERMAX	1060 g ae/ha	B		1001
	N-Pak AMS	2.5 % v/v	B		
				Mean =	
					254.4
					235.8
					237.5
					182.0
					227.4

# Purdue University Weed Science

Pest Type						
Pest Code						
Pest Scientific Name						
Pest Name						
Crop Code				ZEAMX	ZEAMX	
BBCH Scale				BCOR	BCOR	
Crop Scientific Name				Zea mays	Zea mays	
Crop Name				Corn	Corn	
Part Rated				YIELD C	YIELD C	
Rating Date				10/28/2013	10/28/2013	
Rating Type				YIELD	YIELD	
Rating Unit				bu/ac	kg/ha	
Sample Size, Unit				1 PLOT	1 PLOT	
Days After First/Last Applic.				174 146	174 146	
Trt-Eval Interval						
ARM Action Codes				TY1	TY2	
Number of Decimals				1	1	
<b>Trt Treatment</b>						
Rate	Rate	Unit	Appl			
No. Name	Rate	Unit	Code Plot	13	14	
9 VERDICT	684 g ai/ha	A	203	260.1	16325.0	
MSO	0.417 % v/v	A	404	243.3	15268.5	
ROUNDUP POWERMAX	1060 g ae/ha	B	802	226.1	14190.8	
N-Pak AMS	2.5 % v/v	B	805	229.4	14402.1	
			Mean =	239.7	15046.6	
10 BICEP LITE II MAGNUM	3200 g ai/ha	A	204	265.8	16684.2	
CALLISTO	105 g ai/ha	B	502	216.7	13599.2	
ROUNDUP POWERMAX	1060 g ae/ha	B	705	237.2	14888.1	
N-Pak AMS	2.5 % v/v	B	804	212.6	13345.6	
			Mean =	233.1	14629.3	
11 LUMAX	2780 g ai/ha	A	205	241.6	15162.8	
ROUNDUP POWERMAX	1060 g ae/ha	B	503	288.0	18078.8	
N-Pak AMS	2.5 % v/v	B	803	236.5	14845.9	
			1002	184.0	11549.5	
			Mean =	237.5	14909.3	
12 ANTHEM ATZ	1260 g ai/ha	A	206	240.9	15120.6	
HORNET	165 g ai/ha	A	304	232.1	14571.2	
ROUNDUP POWERMAX	1060 g ae/ha	B	602	237.9	14930.4	
N-Pak AMS	2.5 % v/v	B	901	231.1	14507.8	
			Mean =	235.5	14782.5	
13 SURESTART	1190 g ai/ha	A	301	225.2	14135.3	
ROUNDUP POWERMAX	1060 g ae/ha	B	401	247.8	15551.3	
N-Pak AMS	2.5 % v/v	B	706	244.3	15331.9	
			905	236.9	14867.0	
			Mean =	238.5	14971.4	
14 Untreated Check			302	48.3	3034.0	
			306	23.4	1470.3	
			702	234.2	14698.0	
			1003	184.7	11591.8	
			Mean =	122.7	7698.5	
15 Untreated Check			303	75.3	4724.4	
			403	87.1	5464.0	
			606	141.6	8887.1	
			1006	169.5	10640.9	
			Mean =	118.4	7429.1	

# Purdue University Weed Science

## 2012/CORN/ANTHEM/ANTHEM ATZ/EAST

Trial ID: 13S-PIP-CTC-04      Location: PPAC      Trial Year: 2013  
 Protocol ID: 13S-PIP-CTC-04      Investigator: Dr. Bill Johnson  
 Project ID:      Study Director: Joe Ikley  
                                  Sponsor Contact: Joe Reed

### Pest Type

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

### Pest Code

AMBTR, Ambrosia trifida, = US

### Crop Code

ZEAMX, BCOR, Zea mays, = US

### Part Rated

PLOT = plot

YIELD = yield

C = Crop is Part Rated

P = Pest is Part Rated

### Rating Type

PHYGEN = phytotoxicity - general / injury

CONTRO = control / burndown or knockdown

YIELD = yield

### Rating Unit

% = percent

lb/plot = pounds per plot

bu/ac = bushels per acre

kg/ha = kilograms per hectare

PLOT = total plot

### ARM Action Codes

P = Rating scale of 0 to 100 (e.g. % control or injury)

TY1 = 6.259679\*[12]

TY2 = 392.908\*[12]

# Purdue University Weed Science

## 2012/CORN/ANTHEM/ANTHEM ATZ/EAST

Trial ID: 13S-PIP-CTC-04      Location: PPAC      Trial Year: 2013  
 Protocol ID: 13S-PIP-CTC-04      Investigator: Dr. Bill Johnson  
 Project ID:      Study Director: Joe Ikley  
 Sponsor Contact: Joe Reed

Pest Type	Pest Code	W Weed AMBTR Ambrosia trifi> Giant ragweed	W Weed AMBTR Ambrosia trifi> Giant ragweed	W Weed AMBTR Ambrosia trifi> Giant ragweed	W Weed AMBTR Ambrosia trifi> Giant ragweed	W Weed AMBTR Ambrosia trifi> Giant ragweed	W Weed AMBTR Ambrosia trifi> Giant ragweed				
Crop Code	ZEAMX BCOR		ZEAMX BCOR		ZEAMX BCOR		ZEAMX BCOR				
BBCH Scale											
Crop Scientific Name	Zea mays Corn		Zea mays Corn		Zea mays Corn		Zea mays Corn				
Crop Name											
Part Rated	PLOT C	PLOT P	PLOT C	PLOT P	PLOT C	PLOT P	PLOT C				
Rating Date	5/22/2013	5/22/2013	6/4/2013	6/4/2013	6/11/2013	6/11/2013	6/18/2013				
Rating Type	PHYGEN	CONTRO	PHYGEN	CONTRO	PHYGEN	CONTRO	PHYGEN				
Rating Unit	%	%	%	%	%	%	%				
Sample Size, Unit	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT				
Days After First/Last Applic.	15 15	15 15	28 28	28 28	35 7	35 7	42 14				
Trt-Eval Interval	15 DA-A	15 DA-A	0 DA-B	0 DA-B	7 DA-B	7 DA-B	14 DA-B				
ARM Action Codes	P	P	P	P	P	P	P				
Number of Decimals	0	0	0	0	0	0	0				
Trt No.	Treatment Name	Rate	Unit	Appl Code	1	2	3	4	5	6	7
1	Untreated Check				0 a	0 e	0 a	0 c	0 b	0 e	0 b
2	ANTHEM CADET ROUNDUP POWERMAX N-Pak AMS	150 g ai/ha 7.2 g ai/ha 1060 g ae/ha 2.5 % v/v	A B B B		0 a	75 abc	0 a	63 ab	5 a	73 d	0 b
3	ANTHEM ATZ CADET ROUNDUP POWERMAX N-Pak AMS	1260 g ai/ha 7.2 g ai/ha 1060 g ae/ha 2.5 % v/v	A B B B		0 a	48 d	0 a	65 ab	5 a	83 c	0 b
4	ANTHEM ATZ AATREX NINE-O CADET ROUNDUP POWERMAX N-Pak AMS	1260 g ai/ha 504 g ai/ha 7.2 g ai/ha 1060 g ae/ha 2.5 % v/v	A A B B B		0 a	68 bc	0 a	73 ab	5 a	88 abc	0 b
5	ANTHEM ATZ AATREX NINE-O CADET ROUNDUP POWERMAX N-Pak AMS	1260 g ai/ha 504 g ai/ha 7.2 g ai/ha 1060 g ae/ha 2.5 % v/v	A B B B B		1 a	55 cd	0 a	53 b	5 a	88 abc	0 b
6	ANTHEM F9387-1 ROUNDUP POWERMAX N-Pak AMS	151 g ai/ha 105 g ai/ha 1060 g ae/ha 2.5 % v/v	A B B B		1 a	70 bc	1 a	50 b	5 a	85 bc	0 b
7	ANTHEM ATZ F9387-1 ROUNDUP POWERMAX N-Pak AMS	1260 g ai/ha 105 g ai/ha 1060 g ae/ha 2.5 % v/v	A B B B		1 a	93 a	1 a	88 a	5 a	93 abc	0 b
8	ANTHEM ATZ SHARPEN MSO ROUNDUP POWERMAX N-Pak AMS	1260 g ai/ha 50 g ai/ha 0.417 % v/v 1060 g ae/ha 2.5 % v/v	A A A B B		0 a	100 a	0 a	95 a	0 b	100 a	0 b
9	VERDICT MSO ROUNDUP POWERMAX N-Pak AMS	684 g ai/ha 0.417 % v/v 1060 g ae/ha 2.5 % v/v	A A B B		0 a	100 a	3 a	100 a	0 b	98 ab	0 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.  
 Missing data estimates are included in columns: Average=2,4,6,8,10,11

# Purdue University Weed Science

Pest Type			W Weed				W Weed				W Weed	
Pest Code			AMBTR				AMBTR				AMBTR	
Pest Scientific Name			Ambrosia trifi>				Ambrosia trifi>				Ambrosia trifi>	
Pest Name			Giant ragweed				Giant ragweed				Giant ragweed	
Crop Code	ZEAMX				ZEAMX				ZEAMX			
BBCH Scale	BCOR				BCOR				BCOR			
Crop Scientific Name	Zea mays				Zea mays				Zea mays			
Crop Name	Corn				Corn				Corn			
Part Rated	PLOT C		PLOT P		PLOT C		PLOT P		PLOT C		PLOT P	
Rating Date	5/22/2013		5/22/2013		6/4/2013		6/4/2013		6/11/2013		6/11/2013	
Rating Type	PHYGEN		CONTRO		PHYGEN		CONTRO		PHYGEN		CONTRO	
Rating Unit	%		%		%		%		%		%	
Sample Size, Unit	1	PLOT	1	PLOT	1	PLOT	1	PLOT	1	PLOT	1	PLOT
Days After First/Last Applic.	15	15	15	15	28	28	28	28	35	7	35	7
Trt-Eval Interval	15	DA-A	15	DA-A	0	DA-B	0	DA-B	7	DA-B	7	DA-B
ARM Action Codes	P		P		P		P		P		P	
Number of Decimals	0		0		0		0		0		0	
Trt Treatment	Rate	Unit	Appl									
No. Name	Rate	Unit	Code	1	2	3	4	5	6	7		
10 BICEP LITE II MAGNUM	3200 g ai/ha	A	A	1 a	85 ab	1 a	78 ab	0 b	90 abc	0 b		
CALLISTO	105 g ai/ha	B	B									
ROUNDUP POWERMAX	1060 g ae/ha	B	B									
N-Pak AMS	2.5 % v/v	B	B									
11 LUMAX	2780 g ai/ha	A	A	0 a	95 a	0 a	95 a	0 b	100 a	0 b		
ROUNDUP POWERMAX	1060 g ae/ha	B	B									
N-Pak AMS	2.5 % v/v	B	B									
12 ANTHEM ATZ	1260 g ai/ha	A	A	5 a	95 a	4 a	90 a	1 b	95 abc	3 a		
HORNET	165 g ai/ha	A	A									
ROUNDUP POWERMAX	1060 g ae/ha	B	B									
N-Pak AMS	2.5 % v/v	B	B									
13 SURESTART	1190 g ai/ha	A	A	1 a	98 a	3 a	95 a	1 b	98 ab	0 b		
ROUNDUP POWERMAX	1060 g ae/ha	B	B									
N-Pak AMS	2.5 % v/v	B	B									
14 Untreated Check				0 a	0 e	0 a	0 c	0 b	0 e	0 b		
15 Untreated Check				0 a	0 e	0 a	0 c	0 b	0 e	0 b		
LSD (P=.05)	2.9			2.9	16.0	3.1	22.3	1.3	8.5	1.1		
Standard Deviation	2.0			2.0	10.5	2.2	14.7	0.9	5.7	0.7		
CV	267.59			267.59	16.11	259.67	23.38	40.6	7.87	447.21		
Bartlett's X2	4.566			4.566	8.401	3.41	5.196	0.0	4.156	0.0		
P(Bartlett's X2)	0.471			0.471	0.494	0.637	0.736	.	0.762	.		
Skewness	3.1084*			3.1084*	-0.6671	2.8537*	-0.5852	0.276	-0.6325	5.3338*		
Kurtosis	9.3847*			9.3847*	-1.2385	7.803*	-1.3915	-1.9914*	-1.5645*	27.3603*		

# Purdue University Weed Science

Pest Type	W Weed		W Weed	W Weed				
Pest Code	AMBTR		AMBTR	AMBTR				
Pest Scientific Name	Ambrosia trifi>		Ambrosia trifi>	Ambrosia trifi>				
Pest Name	Giant ragweed		Giant ragweed	Giant ragweed				
Crop Code		ZEAMX			ZEAMX	ZEAMX		
BBCH Scale		BCOR			BCOR	BCOR		
Crop Scientific Name		Zea mays			Zea mays	Zea mays		
Crop Name		Corn			Corn	Corn		
Part Rated	PLOT P	PLOT C	PLOT P	PLOT P	YIELD C	YIELD C		
Rating Date	6/18/2013	7/2/2013	7/2/2013	8/6/2013	10/28/2013	10/28/2013		
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO	YIELD	YIELD		
Rating Unit	%	%	%	%	lb/plot	bu/ac		
Sample Size, Unit	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT		
Days After First/Last Applic.	42 14	56 28	56 28	91 63	174 146	174 146		
Trt-Eval Interval	14 DA-B	28 DA-B	28 DA-B	91 DA-A				
ARM Action Codes	P	P	P	P		TY1		
Number of Decimals	0	0	0	0	1	1		
Trt Treatment	Rate	Appl						
No. Name	Rate Unit	Code	8	9	10	11	12	13
1 Untreated Check			0 d	0 b	0 d	0 c	18.2 b	113.8 b
2 ANTHEM	150 g ai/ha A		90 bc	0 b	90 ab	90 ab	36.8 a	230.2 a
CADET	7.2 g ai/ha B							
ROUNDUP POWERMAX	1060 g ae/ha B							
N-Pak AMS	2.5 % v/v B							
3 ANTHEM ATZ	1260 g ai/ha A		85 c	0 b	78 c	83 ab	37.0 a	231.9 a
CADET	7.2 g ai/ha B							
ROUNDUP POWERMAX	1060 g ae/ha B							
N-Pak AMS	2.5 % v/v B							
4 ANTHEM ATZ	1260 g ai/ha A		88 bc	0 b	88 abc	80 b	35.2 a	220.6 a
AATREX NINE-O	504 g ai/ha A							
CADET	7.2 g ai/ha B							
ROUNDUP POWERMAX	1060 g ae/ha B							
N-Pak AMS	2.5 % v/v B							
5 ANTHEM ATZ	1260 g ai/ha A		90 bc	0 b	83 bc	85 ab	35.7 a	223.6 a
AATREX NINE-O	504 g ai/ha B							
CADET	7.2 g ai/ha B							
ROUNDUP POWERMAX	1060 g ae/ha B							
N-Pak AMS	2.5 % v/v B							
6 ANTHEM	151 g ai/ha A		100 a	0 b	95 a	95 a	33.1 a	207.0 a
F9387-1	105 g ai/ha B							
ROUNDUP POWERMAX	1060 g ae/ha B							
N-Pak AMS	2.5 % v/v B							
7 ANTHEM ATZ	1260 g ai/ha A		95 ab	0 b	93 ab	90 ab	34.5 a	215.8 a
F9387-1	105 g ai/ha B							
ROUNDUP POWERMAX	1060 g ae/ha B							
N-Pak AMS	2.5 % v/v B							
8 ANTHEM ATZ	1260 g ai/ha A		95 ab	0 b	88 abc	88 ab	36.3 a	227.4 a
SHARPEN	50 g ai/ha A							
MSO	0.417 % v/v A							
ROUNDUP POWERMAX	1060 g ae/ha B							
N-Pak AMS	2.5 % v/v B							
9 VERDICT	684 g ai/ha A		88 bc	0 b	85 abc	85 ab	38.3 a	239.7 a
MSO	0.417 % v/v A							
ROUNDUP POWERMAX	1060 g ae/ha B							
N-Pak AMS	2.5 % v/v B							

## Purdue University Weed Science

Pest Type	W Weed	W Weed	W Weed					
Pest Code	AMBTR	AMBTR	AMBTR					
Pest Scientific Name	Ambrosia trifi>	Ambrosia trifi>	Ambrosia trifi>					
Pest Name	Giant ragweed	Giant ragweed	Giant ragweed					
Crop Code		ZEAMX		ZEAMX	ZEAMX			
BBCH Scale		BCOR		BCOR	BCOR			
Crop Scientific Name		Zea mays		Zea mays	Zea mays			
Crop Name		Corn		Corn	Corn			
Part Rated	PLOT P	PLOT C	PLOT P	PLOT P	YIELD C			
Rating Date	6/18/2013	7/2/2013	7/2/2013	8/6/2013	10/28/2013			
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO	YIELD			
Rating Unit	%	%	%	%	lb/plot			
Sample Size, Unit	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT			
Days After First/Last Applic.	42 14	56 28	56 28	91 63	174 146			
Trt-Eval Interval	14 DA-B	28 DA-B	28 DA-B	91 DA-A				
ARM Action Codes	P	P	P	P				
Number of Decimals	0	0	0	0	1			
Trt Treatment	Rate	Appl						
No. Name	Rate Unit	Code	8	9	10	11	12	13
10 BICEP LITE II MAGNUM CALLISTO ROUNDUP POWERMAX N-Pak AMS	3200 g ai/ha 105 g ai/ha 1060 g ae/ha 2.5 % v/v	A B B B	93 b	0 b	93 ab	97 a	37.2 a	233.1 a
11 LUMAX ROUNDUP POWERMAX N-Pak AMS	2780 g ai/ha 1060 g ae/ha 2.5 % v/v	A B B	93 b	0 b	95 a	95 a	37.9 a	237.5 a
12 ANTHEM ATZ HORNET ROUNDUP POWERMAX N-Pak AMS	1260 g ai/ha 165 g ai/ha 1060 g ae/ha 2.5 % v/v	A A B B	93 b	3 a	88 abc	88 ab	37.6 a	235.5 a
13 SURESTART ROUNDUP POWERMAX N-Pak AMS	1190 g ai/ha 1060 g ae/ha 2.5 % v/v	A B B	88 bc	0 b	85 abc	85 ab	38.1 a	238.5 a
14 Untreated Check			0 d	0 b	0 d	0 c	19.6 b	122.7 b
15 Untreated Check			0 d	0 b	0 d	0 c	18.9 b	118.4 b
LSD (P=.05)			4.5	1.1	6.6	8.4	10.04	62.84
Standard Deviation			3.0	0.7	4.4	5.7	7.02	43.97
CV			4.11	447.21	6.25	8.03	21.31	21.31
Bartlett's X2			1.451	0.0	4.723	2.878	51.313	51.313
P(Bartlett's X2)			0.984	.	0.909	0.969	0.001*	0.001*
Skewness			-0.7102	5.3338*	-0.6784	-0.6694	-1.9105*	-1.9105*
Kurtosis			-1.543*	27.3603*	-1.5423*	-1.5406*	3.0581*	3.0581*



# Purdue University Weed Science

Pest Type				
Pest Code				
Pest Scientific Name				
Pest Name				
Crop Code				ZEAMX
BBCH Scale				BCOR
Crop Scientific Name				Zea mays
Crop Name				Corn
Part Rated				YIELD C
Rating Date				10/28/2013
Rating Type				YIELD
Rating Unit				kg/ha
Sample Size, Unit				1 PLOT
Days After First/Last Applic.				174 146
Trt-Eval Interval				
ARM Action Codes				TY2
Number of Decimals				1
Trt No.	Treatment Name	Rate	Unit	Appl Code
				14
1	Untreated Check			7140.0 b
2	ANTHEM	150 g ai/ha	A	14446.4 a
	CADET	7.2 g ai/ha	B	
	ROUNDUP POWERMAX	1060 g ae/ha	B	
	N-Pak AMS	2.5 % v/v	B	
3	ANTHEM ATZ	1260 g ai/ha	A	14555.3 a
	CADET	7.2 g ai/ha	B	
	ROUNDUP POWERMAX	1060 g ae/ha	B	
	N-Pak AMS	2.5 % v/v	B	
4	ANTHEM ATZ	1260 g ai/ha	A	13844.1 a
	AATREX NINE-O	504 g ai/ha	A	
	CADET	7.2 g ai/ha	B	
	ROUNDUP POWERMAX	1060 g ae/ha	B	
	N-Pak AMS	2.5 % v/v	B	
5	ANTHEM ATZ	1260 g ai/ha	A	14034.4 a
	AATREX NINE-O	504 g ai/ha	B	
	CADET	7.2 g ai/ha	B	
	ROUNDUP POWERMAX	1060 g ae/ha	B	
	N-Pak AMS	2.5 % v/v	B	
6	ANTHEM	151 g ai/ha	A	12991.7 a
	F9387-1	105 g ai/ha	B	
	ROUNDUP POWERMAX	1060 g ae/ha	B	
	N-Pak AMS	2.5 % v/v	B	
7	ANTHEM ATZ	1260 g ai/ha	A	13545.1 a
	F9387-1	105 g ai/ha	B	
	ROUNDUP POWERMAX	1060 g ae/ha	B	
	N-Pak AMS	2.5 % v/v	B	
8	ANTHEM ATZ	1260 g ai/ha	A	14275.3 a
	SHARPEN	50 g ai/ha	A	
	MSO	0.417 % v/v	A	
	ROUNDUP POWERMAX	1060 g ae/ha	B	
	N-Pak AMS	2.5 % v/v	B	
9	VERDICT	684 g ai/ha	A	15046.6 a
	MSO	0.417 % v/v	A	
	ROUNDUP POWERMAX	1060 g ae/ha	B	
	N-Pak AMS	2.5 % v/v	B	

## Purdue University Weed Science

Pest Type				
Pest Code				
Pest Scientific Name				
Pest Name				
Crop Code			ZEAMX	
BBCH Scale			BCOR	
Crop Scientific Name			Zea mays	
Crop Name			Corn	
Part Rated			YIELD C	
Rating Date			10/28/2013	
Rating Type			YIELD	
Rating Unit			kg/ha	
Sample Size, Unit			1 PLOT	
Days After First/Last Applic.			174 146	
Trt-Eval Interval				
ARM Action Codes			TY2	
Number of Decimals			1	
Trt No.	Treatment Name	Rate	Appl Code	
		Rate Unit		14
10	BICEP LITE II MAGNUM	3200 g ai/ha	A	14629.3 a
	CALLISTO	105 g ai/ha	B	
	ROUNDUP POWERMAX	1060 g ae/ha	B	
	N-Pak AMS	2.5 % v/v	B	
11	LUMAX	2780 g ai/ha	A	14909.3 a
	ROUNDUP POWERMAX	1060 g ae/ha	B	
	N-Pak AMS	2.5 % v/v	B	
12	ANTHEM ATZ	1260 g ai/ha	A	14782.5 a
	HORNET	165 g ai/ha	A	
	ROUNDUP POWERMAX	1060 g ae/ha	B	
	N-Pak AMS	2.5 % v/v	B	
13	SURESTART	1190 g ai/ha	A	14971.4 a
	ROUNDUP POWERMAX	1060 g ae/ha	B	
	N-Pak AMS	2.5 % v/v	B	
14	Untreated Check			7698.5 b
15	Untreated Check			7429.1 b
LSD (P=.05)				3944.40
Standard Deviation				2760.13
CV				21.31
Bartlett's X2				51.313
P(Bartlett's X2)				0.001*
Skewness				-1.9105*
Kurtosis				3.0581*

# Purdue University Weed Science

## 2012/CORN/ANTHEM/ANTHEM ATZ/EAST

Trial ID: 13S-PIP-CTC-04      Location: PPAC      Trial Year: 2013  
 Protocol ID: 13S-PIP-CTC-04      Investigator: Dr. Bill Johnson  
 Project ID:      Study Director: Joe Ikley  
    Sponsor Contact: Joe Reed

Randomized Complete Block (RCB) AOV For ZEAMX BCOR Zea mays Corn PLOT C 5/22/2013 PHYGEN % 1 PLOT 15 15 15 DA-A P 0 (Data Column 1)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	59	291.250000			
Replicate	3	24.583333	8.194444	2.034	0.1236
Treatment	14	97.500000	6.964286	1.729	0.0857
Error	42	169.166667	4.027778		

Randomized Complete Block (RCB) AOV For W Weed AMBTR Ambrosia trifida Giant ragweed PLOT P 5/22/2013 CONTRO % 1 PLOT 15 15 15 DA-A P 0 (Data Column 2)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	31	80993.333333			
Replicate	3	750.000000	250.000000	2.258	0.1266
Treatment	14	78693.333333	5620.952381	50.770	0.0001
Error	14	1550.000000	110.714286		

Randomized Complete Block (RCB) AOV For ZEAMX BCOR Zea mays Corn PLOT C 6/4/2013 PHYGEN % 1 PLOT 28 28 0 DA-B P 0 (Data Column 3)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	59	308.333333			
Replicate	3	28.333333	9.444444	2.017	0.1261
Treatment	14	83.333333	5.952381	1.271	0.2650
Error	42	196.666667	4.682540		

Randomized Complete Block (RCB) AOV For W Weed AMBTR Ambrosia trifida Giant ragweed PLOT P 6/4/2013 CONTRO % 1 PLOT 28 28 0 DA-B P 0 (Data Column 4)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	31	78405.833333			
Replicate	3	2340.833333	780.277778	3.615	0.0403
Treatment	14	73043.333333	5217.380952	24.173	0.0001
Error	14	3021.666667	215.833333		

Randomized Complete Block (RCB) AOV For ZEAMX BCOR Zea mays Corn PLOT C 6/11/2013 PHYGEN % 1 PLOT 35 7 7 DA-B P 0 (Data Column 5)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	59	368.333333			
Replicate	3	5.000000	1.666667	2.154	0.1078
Treatment	14	330.833333	23.630952	30.538	0.0001
Error	42	32.500000	0.773810		

Randomized Complete Block (RCB) AOV For W Weed AMBTR Ambrosia trifida Giant ragweed PLOT P 6/11/2013 CONTRO % 1 PLOT 35 7 7 DA-B P 0 (Data Column 6)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	35	82687.500000			
Replicate	3	300.833333	100.277778	3.077	0.0539
Treatment	14	81800.000000	5842.857143	179.269	0.0001
Error	18	586.666667	32.592593		

Randomized Complete Block (RCB) AOV For ZEAMX BCOR Zea mays Corn PLOT C 6/18/2013 PHYGEN % 1 PLOT 42 14 14 DA-B P 0 (Data Column 7)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	59	48.333333			
Replicate	3	1.666667	0.555556	1.000	0.4023
Treatment	14	23.333333	1.666667	3.000	0.0030
Error	42	23.333333	0.555556		

Randomized Complete Block (RCB) AOV For W Weed AMBTR Ambrosia trifida Giant ragweed PLOT P 6/18/2013 CONTRO % 1 PLOT 42 14 14 DA-B P 0 (Data Column 8)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	35	80885.000000			
Replicate	3	13.333333	4.444444	0.495	0.6904
Treatment	14	80710.000000	5765.000000	641.876	0.0001
Error	18	161.666667	8.981481		

# Purdue University Weed Science

Randomized Complete Block (RCB) AOV For ZEAMX BCOR Zea mays Corn PLOT C 7/2/2013 PHYGEN % 1 PLOT 56 28 28 DA-B P 0 (Data Column 9)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	59	48.333333			
Replicate	3	1.666667	0.555556	1.000	0.4023
Treatment	14	23.333333	1.666667	3.000	0.0030
Error	42	23.333333	0.555556		

Randomized Complete Block (RCB) AOV For W Weed AMBTR Ambrosia trifida Giant ragweed PLOT P 7/2/2013 CONTRO % 1 PLOT 56 28 28 DA-B P 0 (Data Column 10)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	35	76297.500000			
Replicate	3	187.500000	62.500000	3.214	0.0476
Treatment	14	75760.000000	5411.428571	278.302	0.0001
Error	18	350.000000	19.444444		

Randomized Complete Block (RCB) AOV For W Weed AMBTR Ambrosia trifida Giant ragweed PLOT P 8/6/2013 CONTRO % 1 PLOT 91 63 91 DA-A P 0 (Data Column 11)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	35	76762.433333			
Replicate	3	116.033333	38.677778	1.201	0.3376
Treatment	14	76066.933333	5433.352381	168.776	0.0001
Error	18	579.466667	32.192593		

Randomized Complete Block (RCB) AOV For ZEAMX BCOR Zea mays Corn YIELD C 10/28/2013 YIELD lb/plot 1 PLOT 174 146 1 (Data Column 12)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	59	5304.121259			
Replicate	3	142.492849	47.497616	0.962	0.4194
Treatment	14	3088.972917	220.640923	4.471	0.0001
Error	42	2072.655493	49.348940		

Randomized Complete Block (RCB) AOV For ZEAMX BCOR Zea mays Corn YIELD C 10/28/2013 YIELD bu/ac 1 PLOT 174 146 TY1 1 (Data Column 13)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	59	207834.465967			
Replicate	3	5583.380111	1861.126704	0.962	0.4194
Treatment	14	121037.021064	8645.501505	4.471	0.0001
Error	42	81214.064791	1933.668209		

Randomized Complete Block (RCB) AOV For ZEAMX BCOR Zea mays Corn YIELD C 10/28/2013 YIELD kg/ha 1 PLOT 174 146 TY2 1 (Data Column 14)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	59	818832717.649082			
Replicate	3	21997575.277433	7332525.092478	0.962	0.4194
Treatment	14	476865434.388037	34061816.742003	4.471	0.0001
Error	42	319969707.983612	7618326.380562		

**Pest Type**  
W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop

**Pest Code**  
AMBTR, Ambrosia trifida, = US

**Crop Code**  
ZEAMX, BCOR, Zea mays, = US

**Part Rated**  
PLOT = plot  
YIELD = yield  
C = Crop is Part Rated  
P = Pest is Part Rated

**Rating Type**  
PHYGEN = phytotoxicity - general / injury  
CONTRO = control / burndown or knockdown  
YIELD = yield

**Rating Unit**  
% = percent  
lb/plot = pounds per plot  
bu/ac = bushels per acre  
kg/ha = kilograms per hectare

PLOT = total plot

**ARM Action Codes**  
P = Rating scale of 0 to 100 (e.g. % control or injury)  
TY1 = 6.259679\*[12]  
TY2 = 392.908\*[12]