

# Purdue University

Roundup Ready system rates in corn

Trial ID: 08S-THP-CTC-53      Protocol ID: 08S-THP-CTC-53  
 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:** 8/4/2008

## Trial Location

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

## Objectives:

The objective of the trial is to generate additional data on the Roundup Ready Rate performance in a Roundup Ready system through both weed control data and yields.

## 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:** Throckmorton Purdue Ag Center      **Role:** Purdue Ag Center  
**Organization:** Purdue University  
**Address 1:** 8343 US 231 S  
**City:** Lafayette      **Phone No.:** 765-538-3422  
**State/Prov:** IN      **Fax No.:** 765-538-3423  
**Postal Code:** 47909      **E-mail:** jayyoung@purdue.edu  
**Country:** US

## Crop Description

**Crop 1:** ZEAMX Zea mays      Corn  
**Variety:** DKC 60-18      **Description:** JD 7200; 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 Moisture:** MOIST      **Soil Temperature, Unit:** 18 C  
**Emergence Date:** 5/5/2008

## Pest Description

**Pest 1 Type:** W      **Code:** SETFA Setaria faberi  
**Common Name:** Giant foxtail

**Pest 2 Type:** W      **Code:** ABUTH Abutilon theophrasti  
**Common Name:** Velvetleaf

**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:** RACOB� Randomized Complete Block (RCB)  
**Untreated Arrangement:** INCLUDED single control randomized in each block

**Field Prep./Maintenance:**

Field was chisel plowed in the fall

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

50 gal/a UAN 28% was applied and incorporated 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

**Application Description**

	A	B	C
<b>Application Date:</b>	4/22/2008	6/23/2008	7/10/2008
<b>Time of Day:</b>	5:30	8:15 AM	10:30 AM
<b>Application Method:</b>	SPRAY	SPRAY	SPRAY
<b>Application Timing:</b>	PREPRE	EAPOWE	LAPOWE
<b>Application Placement:</b>	BROSOI	BROFOL	BROFOL
<b>Applied By:</b>	VMD MK	CB/MM/MK	JM MK
<b>Air Temperature, Unit:</b>	80 F	62 F	82 F
<b>% Relative Humidity:</b>	59	86	63
<b>Wind Velocity, Unit:</b>	0 MPH	2 MPH	3 MPH
<b>Wind Direction:</b>	N/A	N	SW
<b>Dew Presence (Y/N):</b>	N no	Y yes	N no
<b>Soil Temperature, Unit:</b>	18 C	62 F	22 C
<b>Soil Moisture:</b>	DRY	DRY	MOIST
<b>% Cloud Cover:</b>	80	0	20

**Crop Stage At Each Application**

	A	B	C
<b>Crop 1 Code, BBCH Scale:</b>	ZEAMX BCOR	ZEAMX BCOR	ZEAMX BCOR
<b>Stage Scale Used:</b>	BBCH	BBCH	BBCH
<b>Stage Majority, Percent:</b>	N/A	V7	V11
<b>Stage Minimum, Percent:</b>		V6	V11
<b>Stage Maximum, Percent:</b>		V8	V12
<b>Height, Unit:</b>		44 IN	76 IN
<b>Height Minimum, Maximum:</b>		40 48	75 77

**Pest Stage At Each Application**

	A	B	C

<b>Pest 1 Code, Type, Scale:</b>	SETFA W	SETFA W	SETFA W
<b>Stage Majority, Percent:</b>	N/A		
<b>Height, Unit:</b>		15 IN	
<b>Height Minimum, Maximum:</b>		2 28	
<b>Density, Unit:</b>		175 YD2	
<b>Pest 2 Code, Type, Scale:</b>	ABUTH W	ABUTH W	ABUTH W
<b>Stage Majority, Percent:</b>	N/A		
<b>Height, Unit:</b>		15 IN	
<b>Height Minimum, Maximum:</b>		4 26	
<b>Density, Unit:</b>		5 YD2	
<b>Pest 3 Code, Type, Scale:</b>	CHEAL W	CHEAL W	CHEAL W
<b>Stage Majority, Percent:</b>	N/A		
<b>Height, Unit:</b>		15 IN	
<b>Height Minimum, Maximum:</b>		4 26	
<b>Density, Unit:</b>		3 YD2	

#### Application Equipment

	<b>A</b>	<b>B</b>	<b>C</b>
<b>Appl. Equipment:</b>	CO2 Backpack	CO2 Backpack	CO2 Backpack
<b>Operating Pressure, Unit:</b>	17 PSI	17 PSI	17 PSI
<b>Nozzle Type:</b>	Flat Fan	Flat Fan	Flat Fan
<b>Nozzle Size:</b>	XR11002	XR11002	XR11002
<b>Nozzle Spacing, Unit:</b>	15 IN	15 IN	15 IN
<b>Nozzles/Row:</b>	8	8	6
<b>Boom Length, Unit:</b>	10 FT	10 FT	7.5 FT
<b>Boom Height, Unit:</b>	18 IN	18 IN	18 IN
<b>Ground Speed, Unit:</b>	3 MPH	3 MPH	3 MPH
<b>Carrier:</b>	H2O	H2O	H2O
<b>Water Hardness (ppm CaCO3):</b>	150	150	150
<b>Spray Volume, Unit:</b>	15 GAL/AC	15 GAL/AC	15 GAL/AC
<b>Mix Size, Unit:</b>	1.8 Liters	1.8 Liters	1.8 Liters
<b>Propellant:</b>	CO2	CO2	CO2
<b>Tank Mix (Y/N):</b>	N no	N no	N no

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 Location: Throckmorton      Study Director: Melissa Kruger  
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 Sponsor Contact:

Pest Type	W Weed					
Pest Code	SETFA	ABUTH	CHEAL	SETFA	ABUTH	CHEAL
Pest Scientific Name	Setaria faberi	Abutilon theop>	Chenopodium al>	Setaria faberi	Abutilon theop>	Chenopodium al>
Pest Name	Giant foxtail	Velvetleaf	Common lambsqu>	Giant foxtail	Velvetleaf	Common lambsqu>
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 P					
Rating Date	6/23/2008	6/23/2008	6/23/2008	7/23/2008	7/23/2008	7/23/2008
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1
Crop Stage Majority	V7	V7	V7	R2	R2	R2
Crop Stage Minimum/Maximum	40-48"	40-48"	40-48"	60-80"	60-80"	60-80"
Pest Stage Majority						
Pest Stage Minimum/Maximum	2-28"	4-26"	4-26"	12-40"	12-40"	20-55"
Pest Density, Unit	175 YD2	5 YD2	3 YD2	175 YD2	5 YD2	3 YD2
Assessed By	MK	MK	MK	MK VM	MK VM	MK VM
Days After First/Last Applic.	62 0	62 0	62 0	92 13	92 13	92 13
Plant-Eval Interval	62 DP-1	62 DP-1	62 DP-1	92 DP-1	92 DP-1	92 DP-1
Days After Emergence	49 DE-	49 DE-	49 DE-	79 DE-	79 DE-	79 DE-

  

Trt No.	Treatment Name	Rate	Unit	Appl Code	1	2	3	4	5	6
1	Untreated				0.0 c	0.0 b	0.0 b	0.0 b	0.0 c	0.0 c
2	Harness XTRA 5.6	2.1	lb ai/a	A	99.0 a	98.3 a	100.0 a	99.3 a	100.0 a	100.0 a
	Roundup PowerMAX	0.75	lb ae/a	B						
	Ammonium Sulfate	2	% w/w	B						
3	Degree Xtra	2.01	lb ai/a	A	99.5 a	97.3 a	100.0 a	99.5 a	97.4 b	100.0 a
	Roundup PowerMAX	0.75	lb ae/a	B						
	Ammonium Sulfate	2	% w/w	B						
4	Guardsman MAX	1.56	lb ai/a	A	97.8 a	91.3 a	100.0 a	99.8 a	99.0 a	100.0 a
	Roundup PowerMAX	0.75	lb ae/a	B						
	Ammonium Sulfate	2	% w/w	B						
5	Lexar	1.86	lb ai/a	A	99.5 a	100.0 a	100.0 a	99.8 a	100.0 a	100.0 a
	Touchdown Total	0.78	lb ae/a	B						
	Ammonium Sulfate	2	% w/w	B						
6	Bicep II Magnum	2	lb ai/a	A	98.0 a	92.5 a	100.0 a	99.0 a	100.0 a	100.0 a
	Callisto	0.094	lb ai/a	B						
	Ammonium Sulfate	2	% w/w	B						
7	Atrazine	1	lb ai/a	A	30.0 b	86.7 a	100.0 a	99.0 a	99.3 a	100.0 a
	Roundup PowerMAX	0.75	lb ae/a	B						
	Ammonium Sulfate	2	% w/w	B						
8	SureStart	0.64	lb ae/a	A	90.0 a	84.3 a	100.0 a	99.0 a	99.8 a	100.0 a
	Roundup PowerMAX	0.75	lb ae/a	B						
	Ammonium Sulfate	2	% w/w	B						
9	Roundup PowerMAX	0.75	lb ae/a	B				99.8 a	99.5 a	97.8 b
	Ammonium Sulfate	2	% w/w	B						
10	Roundup PowerMAX	0.75	lb ae/a	B				99.8 a	100.0 a	99.8 a
	Ammonium Sulfate	2	% w/w	B						
	Roundup PowerMAX	0.75	lb ae/a	C						
	Ammonium Sulfate	2	% w/w	C						



Pest Type	W Weed					
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Pest Name	Giant foxtail	Velvetleaf	Common lambsqu>	Giant foxtail	Velvetleaf	Common lambsqu>
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 P					
Rating Date	6/23/2008	6/23/2008	6/23/2008	7/23/2008	7/23/2008	7/23/2008
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1
Crop Stage Majority	V7	V7	V7	R2	R2	R2
Crop Stage Minimum/Maximum	40-48"	40-48"	40-48"	60-80"	60-80"	60-80"
Pest Stage Majority						
Pest Stage Minimum/Maximum	2-28"	4-26"	4-26"	12-40"	12-40"	20-55"
Pest Density, Unit	175 YD2	5 YD2	3 YD2	175 YD2	5 YD2	3 YD2
Assessed By	MK	MK	MK	MK VM	MK VM	MK VM
Days After First/Last Applic.	62 0	62 0	62 0	92 13	92 13	92 13
Plant-Eval Interval	62 DP-1	62 DP-1	62 DP-1	92 DP-1	92 DP-1	92 DP-1
Days After Emergence	49 DE-	49 DE-	49 DE-	79 DE-	79 DE-	79 DE-
Trt Treatment	Rate	Appl				
No. Name	Rate Unit	Code	1	2	3	4
11 Epic	0.33 lb ai/a	A	99.3 a	100.0 a	100.0 a	99.8 a
Roundup PowerMAX	0.75 lb ae/a	B				
Ammonium Sulfate	2 % w/w	B				
12 Untreated			0.0 c	0.0 b	0.0 b	0.0 b
LSD (P=.05)			15.31	10.95	0.00	0.94
Standard Deviation			10.55	7.53	0.00	0.65
CV			14.79	10.04	0.0	0.79
Bartlett's X2			73.76	10.822	0.0	8.413
P(Bartlett's X2)			0.001*	0.055	.	0.394
Replicate F			1.766	2.784	0.000	1.107
Replicate Prob(F)			0.1775	0.0608	1.0000	0.3604
Treatment F			67.005	112.339	0.000	14046.338
Treatment Prob(F)			0.0001	0.0001	1.0000	0.0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Pest Type	W Weed	W Weed	W Weed
Pest Code	SETFA	ABUTH	CHEAL
Pest Scientific Name	Setaria faberi	Abutilon theop>	Chenopodium ai>
Pest Name	Giant foxtail	Velvetleaf	Common lambsqu>
Crop Code	ZEAMX	ZEAMX	ZEAMX
BBCH Scale	BCOR	BCOR	BCOR
Crop Scientific Name	Zea mays	Zea mays	Zea mays
Crop Name	Corn	Corn	Corn
Crop Variety	DKC 60-18	DKC 60-18	DKC 60-18
Description	JD 7200; RR2/Y>	JD 7200; RR2/Y>	JD 7200; RR2/Y>
Part Rated	PLOT P	PLOT P	PLOT P
Rating Date	8/4/2008	8/4/2008	8/4/2008
Rating Type	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%
Number of Subsamples	1	1	1
Crop Stage Majority	R3-R4	R3-R4	R3-R4
Crop Stage Minimum/Maximum	104"	104"	104"
Pest Stage Majority	3-5 TILL	10-20 ND	10-20 ND
Pest Stage Minimum/Maximum	12-70"	12-84"	12-84"
Pest Density, Unit	125 YD2	5 YD2	3 YD2
Assessed By	VM JM	VM JM	VM JM
Days After First/Last Applic.	104 25	104 25	104 25
Plant-Eval Interval	104 DP-1	104 DP-1	104 DP-1
Days After Emergence	91 DE-	91 DE-	91 DE-
Trt Treatment	Rate	Appl	
No. Name	Rate Unit	Code	
		7	8
		9	
11 Epic	0.33 lb ai/a A	100.0 a	99.8 a
Roundup PowerMAX	0.75 lb ae/a B		
Ammonium Sulfate	2 % w/w B		
12 Untreated		0.0 b	0.0 c
LSD (P=.05)		0.92	1.06
Standard Deviation		0.64	0.74
CV		0.77	0.89
Bartlett's X2		10.808	14.645
P(Bartlett's X2)		0.055	0.041*
Replicate F		1.407	0.720
Replicate Prob(F)		0.2582	0.5474
Treatment F		14697.223	11063.776
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

ABUTH, Abutilon theophrasti, = US

CHEAL, Chenopodium album, = US

Crop Code

ZEAMX, BCOR, Zea mays, = US

P = Pest is Part Rated

Rating Type

CONTRO = control / burndown or knockdown

Rating Unit

% = percent

YD2 = per square yard

Plant-Eval Interval

62 DP-1 = 1 4/22/2008

92 DP-1 = 1 4/22/2008

104 DP-1 = 1 4/22/2008