

# Purdue University

## RyzUp SmartGrass - Silage corn

Trial ID: 12S-THP-CTC-02      Protocol ID: 12S-THP-CTC-02  
 Location: Throckmorton      Study Director: White/Marquardt  
 Project ID: MD 68.10      Investigator: Dr. Bill Johnson  
                                  Sponsor Contact: Valent - Eric Ott

### General Trial Information

**Study Director:** White/Marquardt      **Title:** Research Associate  
**Investigator:** Dr. Bill Johnson      **Title:** Professor

**Discipline:** H herbicide  
**Trial Status:** E established  
**Initiation Date:** 3-16-2012

### Trial Location

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

### Personnel

**Study Director:** White/Marquardt      **Title:** Research Associate  
**Affiliation:** Purdue University  
**Address:** 915 W State Street  
**Location:** West Lafayette, IN, USA  
**Postal Code:** 47907      **E-mail:** mdwhite@purdue.edu  
**Phone No.:** 765-494-0891  
**Investigator:** Dr. Bill Johnson      **Title:** Professor  
**Affiliation:** Purdue University  
**Address:** 915 W State Street  
**Location:** West Lafayette, IN, USA  
**Postal Code:** 47907      **E-mail:** wji@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      **Phone No.:** 765-538-3422  
**State/Prov:** IN      **Fax No.:** 765-538-3423  
**Postal Code:** 47909      **E-mail:** jayyoung@purdue.edu  
**Country:** USA      United States

### Crop Description

**Crop 1:** ZEAMD Zea mays indentata      Dent corn  
**Variety:** Beck's 6175      **Description:** HXX, LL, RR2  
**BBCH Scale:** BCOR      **Planting Date:** 4-18-2012  
**Planting Method:** PLANTD      planted      **Rate, Unit:** 34000 S/A  
**Depth, Unit:** 1.5      IN  
**Row Spacing, Unit:** 30      IN  
**Soil Moisture:** DRY      dry      **Soil Temperature, Unit:** 63      F  
**Emergence Date:** 5-2-2012

### Pest Description

**Pest 1 Type:** W      **Code:** AMBTR Ambrosia trifida  
**Common Name:** Giant ragweed  
**Pest 2 Type:** W      **Code:** SETFA Setaria faberi  
**Common Name:** Giant foxtail

### Site and Design

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

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## Soil Description

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

## Application Description

	A	B	C	D
<b>Application Date:</b>	4-19-2012	5-11-2012	5-30-2012	6-6-2012
<b>Application Method:</b>	SPRAY	SPRAY	SPAY	SPRAY
<b>Application Timing:</b>	ATPLAN	EAPOCR	MIPOCR	POSPOS
<b>Application Placement:</b>	SOIL	FOLIAR	FOLIAR	FOLIAR
<b>Applied By:</b>	MW	MW	MW	MW
<b>Air Temperature, Unit:</b>	69 F	59 F	78 F	70 F
<b>% Relative Humidity:</b>	50	54	20.5	50
<b>Wind Velocity, Unit:</b>	8 MPH	3 MPH	0 MPH	5 MPH
<b>Wind Direction:</b>	E	SE		NE
<b>Dew Presence (Y/N):</b>	N no	Y yes	Y yes	N no
<b>Soil Temperature, Unit:</b>	63 F	59 F	85 F	64 F
<b>Soil Moisture:</b>	DRY	SLIWET	DRY	DRY
<b>% Cloud Cover:</b>	10	0	0	1

## Crop Stage At Each Application

	A	B	C	D
<b>Crop 1 Code, BBCH Scale:</b>	ZEAMD BCOR	ZEAMD BCOR	ZEAMD BCOR	ZEAMD BCOR
<b>Stage Scale Used:</b>		BBCH	BBCH	BBCH
<b>Stage Majority, Percent:</b>		V2	V5	V6
<b>Height, Unit:</b>		4.5 IN	24 IN	30 IN

## Pest Stage At Each Application

	A	B	C	D
<b>Pest 1 Code, Type, Scale:</b>	AMBTR W	AMBTR W	AMBTR W	AMBTR W
<b>Height, Unit:</b>		1 IN	5.5 IN	8.5 IN
<b>Height Minimum, Maximum:</b>		0.5 1.5	3 8	2 15
<b>Density, Unit:</b>		15 YD2	15 YD2	37 YD2
<b>Pest 2 Code, Type, Scale:</b>	SETFA W	SETFA W	SETFA W	SETFA W
<b>Height, Unit:</b>			3.5 IN	6 IN
<b>Height Minimum, Maximum:</b>			2 5	2 10
<b>Density, Unit:</b>			7 YD2	12 YD2

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## Application Equipment

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

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 Location: Throckmorton      Study Director: White/Marquardt  
 Project ID: MD 68.10      Investigator: Dr. Bill Johnson  
 Sponsor Contact: Valent - Eric Ott

Crop Code	ZEAMX BCOR	ZEAMX BCOR	ZEAMX BCOR	ZEAMX BCOR	ZEAMX BCOR	ZEAMX BCOR	ZEAMX BCOR				
BCH Scale											
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				
Rating Date	5-21-2012	5-21-2012	5-31-2012	5-31-2012	6-13-2012	6-13-2012	6-20-2012				
Rating Type	HEIGHT	COLOR	COLOR	HEIGHT	HEIGHT	COLOR	HEIGHT				
Rating Unit	CM			CM	CM		CM				
Sample Size, Unit	10 PLINRO	10 PLINRO				10 PLINRO					
Number of Subsamples	6	1	1	6	6	1	6				
Crop Stage Majority	V4				V7	V7					
Assessed By	MW/GT/BM	MW/GT/BM	BM/GT	BM/GT	MW/GT	MW/GT	BM/GT				
Days After First/Last Applic.	32 10	32 10	42 1	42 1	55 7	55 7	62 14				
Plant-Eval Interval	33 DP-1	33 DP-1	43 DP-1	43 DP-1	56 DP-1	56 DP-1	63 DP-1				
Days After Emergence	19 DE-1	19 DE-1	29 DE-1	29 DE-1	42 DE-1	42 DE-1	49 DE-1				
Trt No.	Treatment Name	Rate	Unit	Appl Code	1	2	3	4	5	6	7
1	Lexar (3.7 SC) Roundup PowerMax 4.5 SL AMS - Liquid	3.24 lb ai/a 0.77 lb ae/a 17 lb ai/100 gal	ai/a ae/a gal	A D D	36.9791716 b	35.30 a	48.93 a	98.7916740 a	96.062510 ab	47.40 a	131.750013 bc
2	Lexar (3.7 SC) RyzUP (40 WG) NIS Roundup PowerMax 4.5 SL AMS - Liquid	3.24 lb ai/a 0.0075 lb ai/a 0.25 % v/v 0.77 lb ae/a 17 lb ai/100 gal	ai/a ai/a v/v ae/a gal	A B B D D	41.6666683 ab	33.40 a	45.55 a	68.5625069 a	90.666681 b	46.53 a	125.916677 c
3	Lexar (3.7 SC) RyzUP (40 WG) NIS Roundup PowerMax 4.5 SL AMS - Liquid	3.24 lb ai/a 0.015 lb ai/a 0.25 % v/v 0.77 lb ae/a 17 lb ai/100 gal	ai/a ai/a v/v ae/a gal	A B B D D	44.6666686 a	34.13 a	48.00 a	77.0416718 a	96.958338 ab	47.18 a	132.645842 bc
4	Lexar (3.7 SC) RyzUP (40 WG) NIS Roundup PowerMax 4.5 SL AMS - Liquid	3.24 lb ai/a 0.0075 lb ai/a 0.25 % v/v 0.77 lb ae/a 17 lb ai/100 gal	ai/a ai/a v/v ae/a gal	A C C D D	35.7291715 b	38.53 a	48.28 a	71.4583430 a	98.708346 a	48.10 a	137.458342 ab
5	Lexar (3.7 SC) RyzUP (40 WG) NIS Roundup PowerMax 4.5 SL AMS - Liquid	3.24 lb ai/a 0.015 lb ai/a 0.25 % v/v 0.77 lb ae/a 17 lb ai/100 gal	ai/a ai/a v/v ae/a gal	A C C D D	37.7708358 b	39.23 a	47.13 a	73.4375073 a	103.208346 a	47.50 a	142.125014 a
LSD (P=.05)					4.86801101	4.168	2.734	41.90900840	5.7710625	2.235	7.4402101
Standard Deviation					3.15943440	2.705	1.774	27.19976697	3.7455326	1.450	4.8288417
CV					8.03	7.49	3.73	34.93	3.86	3.06	3.6
Bartlett's X2					11.287	0.273	2.986	39.673	1.794	6.389	1.796
P(Bartlett's X2)					0.024*	0.992	0.56	0.001*	0.774	0.172	0.773
Replicate F					0.112	0.572	5.049	0.781	3.110	2.985	0.516
Replicate Prob(F)					0.9516	0.6441	0.0172	0.5271	0.0668	0.0736	0.6788
Treatment F					5.496	3.754	2.159	0.792	5.871	0.616	6.441
Treatment Prob(F)					0.0095	0.0333	0.1358	0.5526	0.0074	0.6594	0.0052

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.

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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		
Rating Date			6-20-2012	6-29-2012	6-29-2012	8-1-2012		
Rating Type			COLOR	HEIGHT	COLOR	WEIGHT		
Rating Unit				CM		LB		
Sample Size, Unit			10 PLINRO		10 PLINRO	24 ROWFT		
Number of Subsamples			1	6	1	1		
Crop Stage Majority								
Assessed By			BM/GT	BM/GT	BM/GT			
Days After First/Last Applic.			62 14	71 23	71 23	104 56		
Plant-Eval Interval			63 DP-1	72 DP-1	72 DP-1	105 DP-1		
Days After Emergence			49 DE-1	58 DE-1	58 DE-1	91 DE-1		
Trt No.	Treatment Name	Rate	Unit	Appl Code	8	9	10	11
1	Lexar (3.7 SC)	3.24 lb ai/a		A	47.15 a	183.291675 a	44.08 a	46.70 a
	Roundup PowerMax 4.5 SL	0.77 lb ae/a		D				
	AMS - Liquid	17 lb ai/100 gal		D				
2	Lexar (3.7 SC)	3.24 lb ai/a		A	46.05 a	176.833346 a	45.48 a	43.48 a
	RyzUP (40 WG)	0.0075 lb ai/a		B				
	NIS	0.25 % v/v		B				
	Roundup PowerMax 4.5 SL	0.77 lb ae/a		D				
	AMS - Liquid	17 lb ai/100 gal		D				
3	Lexar (3.7 SC)	3.24 lb ai/a		A	48.00 a	187.541691 a	43.98 a	52.55 a
	RyzUP (40 WG)	0.015 lb ai/a		B				
	NIS	0.25 % v/v		B				
	Roundup PowerMax 4.5 SL	0.77 lb ae/a		D				
	AMS - Liquid	17 lb ai/100 gal		D				
4	Lexar (3.7 SC)	3.24 lb ai/a		A	48.78 a	192.458347 a	44.78 a	50.60 a
	RyzUP (40 WG)	0.0075 lb ai/a		C				
	NIS	0.25 % v/v		C				
	Roundup PowerMax 4.5 SL	0.77 lb ae/a		D				
	AMS - Liquid	17 lb ai/100 gal		D				
5	Lexar (3.7 SC)	3.24 lb ai/a		A	47.50 a	194.083363 a	45.18 a	54.20 a
	RyzUP (40 WG)	0.015 lb ai/a		C				
	NIS	0.25 % v/v		C				
	Roundup PowerMax 4.5 SL	0.77 lb ae/a		D				
	AMS - Liquid	17 lb ai/100 gal		D				
LSD (P=.05)					2.740	14.5514207	2.945	8.382
Standard Deviation					1.779	9.4441566	1.912	5.440
CV					3.74	5.05	4.28	10.99
Bartlett's X2					9.082	10.443	6.059	5.425
P(Bartlett's X2)					0.059	0.034*	0.195	0.246
Replicate F					2.660	3.673	2.411	4.969
Replicate Prob(F)					0.0956	0.0437	0.1177	0.0181
Treatment F					1.296	2.211	0.478	2.593
Treatment Prob(F)					0.3259	0.1291	0.7514	0.0900

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Location: Throckmorton      Study Director: White/Marquardt  
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Crop Code

ZEAMX, BCOR, Zea mays, = US

Rating Type

HEIGHT = height

COLOR = color

WEIGHT = weight

Rating Unit

CM = centimeter

LB = pound

PLINRO = plant - in row

ROWFT = row-foot

Plant-Eval Interval

33 DP-1 = 1 ZEAMD 4-18-2012

43 DP-1 = 1 ZEAMD 4-18-2012

56 DP-1 = 1 ZEAMD 4-18-2012

63 DP-1 = 1 ZEAMD 4-18-2012

72 DP-1 = 1 ZEAMD 4-18-2012

105 DP-1 = 1 ZEAMD 4-18-2012