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Performance of Impact and glyphosate combinations.

Trial ID: 10S-THP-CTC-90 Protocol ID: 10S-THP-CTC-90
 Location: Throckmorton Study Director: White/Marquardt
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact: Amvac - Bill O'Neal

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: 4-23-2010

Trial Location

City: Lafayette USA 49.376656 - 24.53833
State/Prov.: IN -124.715843 - -66.968887
Postal Code: 47909
Country: USA

Objectives:

Performance of Impact and glyphosate combinations.

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:** wgj@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: Dekalb DKC 61-19 **Description:** RR/VT3
BBCH Scale: BCOR

Pest Description

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

Pest 2 Type: W **Code:** AMBTR *Ambrosia trifida*
Common Name: Giant ragweed

Pest 3 Type: W **Code:** ABUTH *Abutilon theophrasti*
Common Name: Velvetleaf

Pest 4 Type: W **Code:** CHEAL *Chenopodium album*
Common Name: Common lambsquarters

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Site and Design

Plot Width, Unit: 10 FT
Plot Length, Unit: 30 FT
Plot Area, Unit: 300 FT²
Replications: 4

Site Type: FIELD field
Experimental Unit: 1 PLOT plot
Tillage Type: CONTIL conventional-till
Study Design: RACOB� Randomized Complete Block (RCB)
Untreated Arrangement: INCLUDED single control randomized in each block

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
Application Date:	5-18-2010
Application Method:	SPRAY
Application Timing:	EAPOWE
Applied By:	MH
Air Temperature, Unit:	60 F
% Relative Humidity:	75
Wind Velocity, Unit:	5 MPH
Wind Direction:	N
Dew Presence (Y/N):	Y yes
Soil Temperature, Unit:	58 F
Soil Moisture:	WET
% Cloud Cover:	10

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	ZEAMD BCOR

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Pest Stage At Each Application	
	A
Pest 1 Code, Type, Scale:	SETFA W
Stage Majority, Percent:	40 100
Height, Unit:	2 IN
Height Minimum, Maximum:	1 4
Density, Unit:	20 YD2
Pest 2 Code, Type, Scale:	AMBTR W
Stage Majority, Percent:	40 100
Height, Unit:	7.5 IN
Height Minimum, Maximum:	1 12
Density, Unit:	6 YD2
Pest 3 Code, Type, Scale:	ABUTH W
Stage Majority, Percent:	40 100
Height, Unit:	1.5 IN
Height Minimum, Maximum:	1 2
Density, Unit:	2 YD2
Pest 4 Code, Type, Scale:	CHEAL W
Stage Majority, Percent:	40 100
Height, Unit:	1.5 IN
Height Minimum, Maximum:	1 2
Density, Unit:	12.5 YD2

Application Equipment	
	A
Appl. Equipment:	CO2 BKPK
Equipment Type:	SPRBAC
Operating Pressure, Unit:	17 PSI
Nozzle Type:	FLAT FAN
Nozzle Size:	XR 110 02
Nozzle Spacing, Unit:	15 IN
Nozzles/Row:	8
Boom Length, Unit:	10 FT
Boom Height, Unit:	18 IN
Ground Speed, Unit:	3 MPH
Carrier:	H20
Water Hardness (ppm CaCO3):	150
Spray Volume, Unit:	15 gal/ac
Mix Size, Unit:	1.8 liters
Propellant:	C02
Tank Mix (Y/N):	N no

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed					
Pest Code	SETFA	AMBTR	ABUTH	CHEAL	IPHOE					
Pest Scientific Name	Setaria faberi	Ambrosia trif>	Abutilon theop>	Chenopodium ai>	Ipomoea heder>					
Pest Name	Giant foxtail	Giant ragweed	Velvetleaf	Common lambsqu>	lyleaf mornin>					
Crop Code										
BBCH Scale										
Crop Scientific Name										
Crop Name										
Crop Variety										
Description										
Rating Date	5-26-2010	5-26-2010	5-26-2010	5-26-2010	5-26-2010	5-26-2010	5-26-2010			
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	PHYBLE				
Rating Unit	%	%	%	%	%	%				
Number of Subsamples	1	1	1	1	1	1	1			
Crop Stage Majority										
Pest Stage Majority	1-6"	2-18"	1-3"	1-4"	1-3"					
Pest Density, Unit	180 YD2	14 YD2	6 YD2	10 YD2	3 YD2					
Assessed By	MW	MW	MW	MW	MW	MW	MW			
Trt Treatment	Rate	Unit	Appl Code	1	2	3	4	5	6	7
9 Impact (2.8 SC)	0.0219 lb ai/a	A		88.8 ab	90.5 abc	99.0 a	99.0 a	84.5 a	0.8 c	0.0 b
Roundup PowerMax 4.5 SL	0.387 lb ae/a	A								
Atrazine	0.5 lb ai/a	A								
AMS - Liquid	8.5 lb ai/100 gal	A								
10 Status (56 SG)	0.0875 lb ai/a	A		96.8 ab	86.0 abc	93.3 a	94.5 a	90.8 a	0.0 c	0.0 b
Roundup PowerMax 4.5 SL	0.77 lb ae/a	A								
AMS - Liquid	8.5 lb ai/100 gal	A								
11 Callisto (4.0 SC)	0.078 lb ai/a	A		91.0 ab	93.8 ab	99.0 a	99.0 a	86.8 a	2.3 c	0.0 b
Roundup PowerMax 4.5 SL	0.77 lb ae/a	A								
Atrazine	0.5 lb ai/a	A								
AMS - Liquid	8.5 lb ai/100 gal	A								
12 Laudis (3.5 SL)	0.0547 lb ai/a	A		87.5 b	88.5 abc	89.3 a	99.3 a	91.8 a	0.0 c	0.0 b
Roundup PowerMax 4.5 SL	0.77 lb ae/a	A								
Atrazine	0.5 lb ai/a	A								
AMS - Liquid	8.5 lb ai/100 gal	A								
13 Cadet (0.91 EC)	0.00089 lb ai/a	A		90.0 ab	72.5 cd	93.0 a	79.5 a	81.5 a	0.0 c	9.8 a
Roundup PowerMax 4.5 SL	0.77 lb ae/a	A								
AMS - Liquid	8.5 lb ai/100 gal	A								
14 Solida (25 WG)	0.0156 lb ai/a	A		99.0 a	90.0 abc	89.3 a	94.5 a	91.8 a	0.0 c	0.0 b
Glyphos Xtra (3 SL)	0.75 lb ae/a	A								
NIS	0.25 % v/v	A								
28% UAN	3 % v/v	A								
15 Nic-It (2 SC)	0.0313 lb ai/a	A		97.0 ab	65.0 d	86.8 a	87.0 a	74.5 a	0.0 c	0.0 b
Glyphos Xtra (3 SL)	0.75 lb ae/a	A								
NIS	0.25 % v/v	A								
28% UAN	3 % v/v	A								
LSD (P=.05)				6.42	11.95	14.83	12.08	27.69	1.52	1.39
Standard Deviation				4.49	8.37	10.38	8.45	19.37	1.06	0.97
CV				5.18	10.38	11.66	9.54	24.42	69.16	149.95
Bartlett's X2				17.774	22.711	4.674	17.191	13.188	0.34	0.0
P(Bartlett's X2)				0.123	0.045*	0.457	0.009*	0.356	0.997	.
Replicate F				2.572	0.964	2.374	1.490	1.409	1.857	1.000
Replicate Prob(F)				0.0668	0.4188	0.0838	0.2316	0.2538	0.1515	0.4023
Treatment F				116.983	32.866	23.262	35.466	5.975	24.227	26.684
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	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.

Column 1: Weed or volunteer crop; US; control / burndown or knockdown; percent; 1-6"; per square yard; MW

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	SETFA	AMBTR	ABUTH	CHEAL	IPOHE	AMARE			
Pest Scientific Name	Setaria faberi	Ambrosia trifi>	Abutilon theop>	Chenopodium al>	Ipomoea heder>	Amaranthus ret>			
Pest Name	Giant foxtail	Giant ragweed	Velvetleaf	Common lambsqu>	Ivyleaf mornin>	Redroot pigweed			
Crop Code									
BBCH Scale									
Crop Scientific Name									
Crop Name									
Crop Variety									
Description									
Rating Date	6-9-2010	6-9-2010	6-9-2010	6-9-2010	6-9-2010	6-9-2010			
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO			
Rating Unit	%	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1	1			
Crop Stage Majority	V7 30"								
Pest Stage Majority	22"	30"	16"	14"	3"				
Pest Density, Unit	200 YD2	10 YD2	4 YD2	6 YD2	2 YD2				
Assessed By	MW	MW	MW	MW	MW	MW			
Trt Treatment	Rate	Appl	8	9	10	11	12	13	
No. Name	Rate	Unit	Code						
1 Untreated Check				0.0 d	0.0 c	0.0 b	0.0 e	0.0 b	0.0 e
2 Impact (2.8 SC)	0.0164 lb ai/a	A		87.5 abc	89.3 ab	96.8 a	99.0 a	91.8 a	98.0 a
Atrazine	0.5 lb ai/a	A							
MSO	1 % v/v	A							
AMS - Liquid	8.5 lb ai/100 gal	A							
3 Impact (2.8 SC)	0.0219 lb ai/a	A		90.0 abc	85.0 ab	99.0 a	99.0 a	62.3 a	99.0 a
Atrazine	0.5 lb ai/a	A							
MSO	1 % v/v	A							
AMS - Liquid	8.5 lb ai/100 gal	A							
4 Roundup PowerMax 4.5 SL	0.77 lb ae/a	A		81.3 bc	76.3 b	82.0 a	69.8 bcd	87.0 a	55.0 d
AMS - Liquid	8.5 lb ai/100 gal	A							
5 Impact (2.8 SC)	0.0109 lb ai/a	A		92.5 ab	90.0 ab	92.3 a	99.0 a	73.8 a	99.0 a
Roundup PowerMax 4.5 SL	0.77 lb ae/a	A							
Atrazine	0.5 lb ai/a	A							
AMS - Liquid	8.5 lb ai/100 gal	A							
6 Impact (2.8 SC)	0.0109 lb ai/a	A		91.3 ab	86.3 ab	94.5 a	99.0 a	63.8 a	96.8 a
Roundup PowerMax 4.5 SL	0.77 lb ae/a	A							
Atrazine	0.5 lb ai/a	A							
MSO	1 % v/v	A							
AMS - Liquid	8.5 lb ai/100 gal	A							
7 Impact (2.8 SC)	0.0164 lb ai/a	A		78.8 c	81.3 ab	93.3 a	52.5 d	82.0 a	72.3 bcd
Roundup PowerMax 4.5 SL	0.77 lb ae/a	A							
AMS - Liquid	8.5 lb ai/100 gal	A							
8 Impact (2.8 SC)	0.0164 lb ai/a	A		87.5 abc	90.0 ab	98.0 a	99.0 a	75.0 a	99.0 a
Roundup PowerMax 4.5 SL	0.77 lb ae/a	A							
Atrazine	0.5 lb ai/a	A							
AMS - Liquid	8.5 lb ai/100 gal	A							

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Trt No.	Treatment Name	Rate	Unit	Appl Code	14	15	16	17	18	19
1	Untreated Check				0.0 a	0.0 b	0.0 c	0.0 b	0.0 d	82.73 c
2	Impact (2.8 SC) Atrazine MSO AMS - Liquid	0.0164 lb ai/a 0.5 lb ai/a 1 % v/v 8.5 lb ai/100 gal A	A A A A		0.0 a	70.0 a	74.8 ab	91.8 a	93.5 a	211.83 ab
3	Impact (2.8 SC) Atrazine MSO AMS - Liquid	0.0219 lb ai/a 0.5 lb ai/a 1 % v/v 8.5 lb ai/100 gal A	A A A A		0.0 a	75.0 a	67.5 ab	96.0 a	96.0 a	196.30 b
4	Roundup PowerMax 4.5 SL AMS - Liquid	0.77 lb ae/a 8.5 lb ai/100 gal A	A A		0.0 a	55.0 a	57.5 ab	76.3 a	50.0 c	200.20 ab
5	Impact (2.8 SC) Roundup PowerMax 4.5 SL Atrazine AMS - Liquid	0.0109 lb ai/a 0.77 lb ae/a 0.5 lb ai/a 8.5 lb ai/100 gal A	A A A A		0.0 a	65.0 a	83.8 ab	99.0 a	98.0 a	218.60 ab
6	Impact (2.8 SC) Roundup PowerMax 4.5 SL Atrazine MSO AMS - Liquid	0.0109 lb ai/a 0.77 lb ae/a 0.5 lb ai/a 1 % v/v 8.5 lb ai/100 gal A	A A A A A		1.3 a	71.3 a	68.3 ab	94.8 a	96.0 a	206.05 ab
7	Impact (2.8 SC) Roundup PowerMax 4.5 SL AMS - Liquid	0.0164 lb ai/a 0.77 lb ae/a 8.5 lb ai/100 gal A	A A A		0.0 a	52.5 a	60.0 ab	66.0 a	73.8 ab	208.40 ab
8	Impact (2.8 SC) Roundup PowerMax 4.5 SL Atrazine AMS - Liquid	0.0164 lb ai/a 0.77 lb ae/a 0.5 lb ai/a 8.5 lb ai/100 gal A	A A A A		0.0 a	63.8 a	81.3 ab	98.0 a	98.0 a	228.20 ab

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Pest Type		W Weed	W Weed	W Weed	W Weed				
Pest Code		SETFA	AMBTR	CHEAL	AMARE				
Pest Scientific Name		Setaria faberi	Ambrosia trifi>	Chenopodium ai>	Amaranthus ret>				
Pest Name		Giant foxtail	Giant ragweed	Common lambsqu>	Redroot pigweed				
Crop Code	ZEAMX					ZEAMD			
BBCH Scale	BCOR					BCOR			
Crop Scientific Name	Zea mays					Zea mays inden>			
Crop Name	Corn					Dent corn			
Crop Variety									
Description									
Rating Date	6-29-2010	6-29-2010	6-29-2010	6-29-2010	6-29-2010	9-29-2010			
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	YIELD			
Rating Unit	%	%	%	%	%	BU56LB			
Number of Subsamples	1	1	1	1	1	1			
Crop Stage Majority									
Pest Stage Majority		3-4"	6-8"	6-36"	24"				
Pest Density, Unit		20 FT2	3 FT2	2 FT2	1 FT2				
Assessed By	WGJ	WGJ	WGJ	WGJ	WGJ				
Trt Treatment	Rate	Rate	Rate	Rate	Rate	Rate			
No. Name	Rate	Unit	Code	14	15	16	17	18	19
9 Impact (2.8 SC)	0.0219 lb ai/a	A		0.0 a	71.3 a	71.3 ab	97.0 a	93.3 a	213.93 ab
Roundup PowerMax 4.5 SL	0.387 lb ae/a	A							
Atrazine	0.5 lb ai/a	A							
AMS - Liquid	8.5 lb ai/100 gal	A							
10 Status (56 SG)	0.0875 lb ai/a	A		1.3 a	57.5 a	71.3 ab	75.0 a	88.5 a	209.03 ab
Roundup PowerMax 4.5 SL	0.77 lb ae/a	A							
AMS - Liquid	8.5 lb ai/100 gal	A							
11 Callisto (4.0 SC)	0.078 lb ai/a	A		0.0 a	66.3 a	93.8 a	97.0 a	97.0 a	241.65 a
Roundup PowerMax 4.5 SL	0.77 lb ae/a	A							
Atrazine	0.5 lb ai/a	A							
AMS - Liquid	8.5 lb ai/100 gal	A							
12 Laudis (3.5 SL)	0.0547 lb ai/a	A		2.5 a	65.0 a	68.3 ab	84.8 a	88.5 a	205.13 ab
Roundup PowerMax 4.5 SL	0.77 lb ae/a	A							
Atrazine	0.5 lb ai/a	A							
AMS - Liquid	8.5 lb ai/100 gal	A							
13 Cadet (0.91 EC)	0.00089 lb ai/a	A		0.0 a	57.5 a	60.0 ab	65.0 a	57.5 bc	201.08 ab
Roundup PowerMax 4.5 SL	0.77 lb ae/a	A							
AMS - Liquid	8.5 lb ai/100 gal	A							
14 Solida (25 WG)	0.0156 lb ai/a	A		0.0 a	71.3 a	84.5 ab	86.3 a	93.5 a	208.33 ab
Glyfos Xtra (3 SL)	0.75 lb ae/a	A							
NIS	0.25 % v/v	A							
28% UAN	3 % v/v	A							
15 Nic-It (2 SC)	0.0313 lb ai/a	A		0.0 a	72.5 a	55.0 b	87.5 a	77.5 a	195.38 b
Glyfos Xtra (3 SL)	0.75 lb ae/a	A							
NIS	0.25 % v/v	A							
28% UAN	3 % v/v	A							
LSD (P=.05)	2.12	12.96	21.99	20.57	16.63	25.693			
Standard Deviation	1.48	9.07	15.39	14.39	11.64	17.979			
CV	445.21	14.89	23.15	17.78	14.53	8.91			
Bartlett's X2	2.039	18.272	17.691	47.038	53.827	12.397			
P(Bartlett's X2)	0.361	0.108	0.17	0.001*	0.001*	0.574			
Replicate F	3.027	1.774	2.010	1.950	1.594	7.754			
Replicate Prob(F)	0.0399	0.1668	0.1272	0.1363	0.2051	0.0003			
Treatment F	1.000	16.130	7.750	12.190	21.066	15.235			
Treatment Prob(F)	0.4708	0.0001	0.0001	0.0001	0.0001	0.0001			

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Pest Type				
Pest Code				
Pest Scientific Name				
Pest Name				
Crop Code				ZEAMD
BBCH Scale				BCOR
Crop Scientific Name				Zea mays inden>
Crop Name				Dent corn
Crop Variety				
Description				
Rating Date				9-29-2010
Rating Type				MOICON
Rating Unit				
Number of Subsamples				1
Crop Stage Majority				
Pest Stage Majority				
Pest Density, Unit				
Assessed By				
Trt No.	Treatment Name	Rate	Appl Code	
		Rate Unit		20
1	Untreated Check			13.33 a
2	Impact (2.8 SC)	0.0164 lb ai/a	A	13.50 a
	Atrazine	0.5 lb ai/a	A	
	MSO	1 % v/v	A	
	AMS - Liquid	8.5 lb ai/100 gal	A	
3	Impact (2.8 SC)	0.0219 lb ai/a	A	13.53 a
	Atrazine	0.5 lb ai/a	A	
	MSO	1 % v/v	A	
	AMS - Liquid	8.5 lb ai/100 gal	A	
4	Roundup PowerMax 4.5 SL	0.77 lb ae/a	A	13.53 a
	AMS - Liquid	8.5 lb ai/100 gal	A	
5	Impact (2.8 SC)	0.0109 lb ai/a	A	13.73 a
	Roundup PowerMax 4.5 SL	0.77 lb ae/a	A	
	Atrazine	0.5 lb ai/a	A	
	AMS - Liquid	8.5 lb ai/100 gal	A	
6	Impact (2.8 SC)	0.0109 lb ai/a	A	13.58 a
	Roundup PowerMax 4.5 SL	0.77 lb ae/a	A	
	Atrazine	0.5 lb ai/a	A	
	MSO	1 % v/v	A	
	AMS - Liquid	8.5 lb ai/100 gal	A	
7	Impact (2.8 SC)	0.0164 lb ai/a	A	13.38 a
	Roundup PowerMax 4.5 SL	0.77 lb ae/a	A	
	AMS - Liquid	8.5 lb ai/100 gal	A	
8	Impact (2.8 SC)	0.0164 lb ai/a	A	13.38 a
	Roundup PowerMax 4.5 SL	0.77 lb ae/a	A	
	Atrazine	0.5 lb ai/a	A	
	AMS - Liquid	8.5 lb ai/100 gal	A	

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Pest Type Pest Code Pest Scientific Name Pest Name Crop Code BBCH Scale Crop Scientific Name Crop Name Crop Variety Description Rating Date Rating Type Rating Unit Number of Subsamples Crop Stage Majority Pest Stage Majority Pest Density, Unit Assessed By	ZEAMD BCOR Zea mays inden> Dent corn 9-29-2010 MOICON 1																																																																																																																																																																																																										
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Trt No.</th> <th style="width: 40%;">Treatment Name</th> <th style="width: 15%;">Rate</th> <th style="width: 15%;">Unit</th> <th style="width: 10%;">Appl Code</th> <th style="width: 10%;"></th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">20</td> </tr> <tr> <td>9</td> <td>Impact (2.8 SC)</td> <td>0.0219</td> <td>lb ai/a</td> <td>A</td> <td rowspan="4" style="text-align: center; vertical-align: middle;">13.48 a</td> </tr> <tr> <td></td> <td>Roundup PowerMax 4.5 SL</td> <td>0.387</td> <td>lb ae/a</td> <td>A</td> </tr> <tr> <td></td> <td>Atrazine</td> <td>0.5</td> <td>lb ai/a</td> <td>A</td> </tr> <tr> <td></td> <td>AMS - Liquid</td> <td>8.5</td> <td>lb ai/100 gal</td> <td>A</td> </tr> <tr> <td>10</td> <td>Status (56 SG)</td> <td>0.0875</td> <td>lb ai/a</td> <td>A</td> <td rowspan="3" style="text-align: center; vertical-align: middle;">13.33 a</td> </tr> <tr> <td></td> <td>Roundup PowerMax 4.5 SL</td> <td>0.77</td> <td>lb ae/a</td> <td>A</td> </tr> <tr> <td></td> <td>AMS - Liquid</td> <td>8.5</td> <td>lb ai/100 gal</td> <td>A</td> </tr> <tr> <td>11</td> <td>Callisto (4.0 SC)</td> <td>0.078</td> <td>lb ai/a</td> <td>A</td> <td rowspan="4" style="text-align: center; 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Purdue University

Column 2: Weed or volunteer crop; US; control / burndown or knockdown; percent; 2-18"; per square yard; MW
Column 3: Weed or volunteer crop; US; control / burndown or knockdown; percent; 1-3"; per square yard; MW
Column 4: Weed or volunteer crop; US; control / burndown or knockdown; percent; 1-4"; per square yard; MW
Column 5: Weed or volunteer crop; US; control / burndown or knockdown; percent; 1-3"; per square yard; MW
Column 6: US; phytotoxicity - bleaching; MW
Column 7: MW
Column 8: Weed or volunteer crop; US; control / burndown or knockdown; percent; V7 30"; 22"; per square yard; MW
Column 9: Weed or volunteer crop; US; control / burndown or knockdown; percent; 30"; per square yard; MW
Column 10: Weed or volunteer crop; US; control / burndown or knockdown; percent; 16"; per square yard; MW
Column 11: Weed or volunteer crop; US; control / burndown or knockdown; percent; 14"; per square yard; MW
Column 12: Weed or volunteer crop; US; control / burndown or knockdown; percent; 3"; per square yard; MW
Column 13: Weed or volunteer crop; US; control / burndown or knockdown; percent; MW
Column 14: US; phytotoxicity - general / injury; percent; WGJ
Column 15: Weed or volunteer crop; US; control / burndown or knockdown; percent; 3-4"; per square foot; WGJ
Column 16: Weed or volunteer crop; US; control / burndown or knockdown; percent; 6-8"; per square foot; WGJ
Column 17: Weed or volunteer crop; US; control / burndown or knockdown; percent; 6-36"; per square foot; WGJ
Column 18: Weed or volunteer crop; US; control / burndown or knockdown; percent; 24"; per square foot; WGJ
Column 19: US; yield; bushel 56 lb
Column 20: US; moisture content