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Programs for glufosinate soybeans

Trial ID: 12S-THP-CTS-41 Protocol ID: 12S-THP-CTS-41
 Location: Throckmorton Study Director: White/Marquardt
 Project ID: HP12NARMRA Investigator: Dr. Bill Johnson
 Sponsor Contact: Bayer - Dave Lamore

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: 3-19-2012

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:** 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
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: GLXMA Glycine max Soybean
Variety: BECKS 306 NL **Description:** Liberty Link
BBCH Scale: BSOY **Planting Date:** 4-24-2012
Planting Method: PLANTD planted **Rate, Unit:** 124000 S/A
Depth, Unit: 1 IN
Row Spacing, Unit: 15 IN
Seed Bed: COMPAC compacted **Soil Temperature, Unit:** 66 F
Soil Moisture: DRY dry **Emergence Date:** 5-7-2012

Pest Description

Pest 1 Type: W **Code:** AMBTR Ambrosia trifida
Common Name: Giant ragweed
Pest 2 Type: W **Code:** CHEAL Chenopodium album
Common Name: Common lambsquarters
Pest 3 Type: W **Code:** SETFA Setaria faberi
Common Name: Giant foxtail
Pest 4 Type: W **Code:** ABUTH Abutilon theophrasti
Common Name: Velvetleaf

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

Application Description

	A	B	C	D	E	F	G
Application Date:	4-24-2012	5-18-2012	5-30-2012	6-5-2012	5-23-2012	6-5-2012	6-14-2012
Time of Day:		10 AM		8:30 AM	8 AM	8:30 AM	
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	ATPLAN	EAPOWE	MIPOCR	LAPOWE	POSPOS	POSPOS-2	POSPOS-3
Application Placement:	SOIL	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR
Applied By:	MW	MW	mw	MW	MW	MW	mw
Air Temperature, Unit:	66 F	81 F	69 F	74 F	82 F	74 F	56 F
% Relative Humidity:	25	32	45	62	40	62	65
Wind Velocity, Unit:	6 MPH	7 MPH	6 MPH	2 MPH	2.5 MPH	2 MPH	6 MPH
Wind Direction:	SW	S	SW	E	SE	E	NE
Dew Presence (Y/N):	N no	N no	N no	Y yes	Y yes	Y yes	N no
Soil Temperature, Unit:	66 F	64 F	70 F	69 F	69 F	69 F	60 F
Soil Moisture:	DRY	DRY		DRY	DRY	DRY	DRY
% Cloud Cover:	60	0	20	0	5	0	0

Crop Stage At Each Application

	A	B	C	D	E	F	G
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:		BBCH	BBCH	BBCH	BBCH	BBCH	
Stage Majority, Percent:		V1	V2	V3	V1	V3	
Height, Unit:		3 IN	8 IN	18 IN	4 IN	18 IN	
Height Minimum, Maximum:		2.5 4					

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Pest Stage At Each Application							
	A	B	C	D	E	F	G
Pest 1 Code, Type, Scale:	AMBTR W	AMBTR W	AMBTR W	AMBTR W	AMBTR W	AMBTR W	AMBTR W
Height, Unit:		3 IN		16 IN	4 IN	16 IN	
Height Minimum, Maximum:		1 5	2 9	8.5 20	1.5 6	8.5 20	6 24
Density, Unit:		35 YD2	30 YD2	40 YD2	40 YD2	40 YD2	30 YD2
Pest 2 Code, Type, Scale:	CHEAL W	CHEAL W	CHEAL W	CHEAL W	CHEAL W	CHEAL W	CHEAL W
Height, Unit:		1 IN		6 IN	2 IN	6 IN	
Height Minimum, Maximum:		0.5 1	2 7	1 8.5	1. 3	1 8.5	4 14
Density, Unit:		16 YD2	12 YD2	20 YD2	7 YD2	20 YD2	11 YD2
Pest 3 Code, Type, Scale:	SETFA W	SETFA W	SETFA W	SETFA W	SETFA W	SETFA W	SETFA W
Height, Unit:		3 IN		4.5 IN	5 IN	4.5 IN	
Height Minimum, Maximum:		0.5 4	2 8	3 6	2 7	3 6	6 12
Density, Unit:		27 YD2	45 YD2	15 YD2	20 YD2	15 YD2	15 YD2
Pest 4 Code, Type, Scale:	ABUTH W	ABUTH W	ABUTH W	ABUTH W	ABUTH W	ABUTH W	ABUTH W
Height, Unit:		3 IN					
Height Minimum, Maximum:			0.5 3				
Density, Unit:		1 YD2	3 YD2				

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

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 Location: Throckmorton Study Director: White/Marquardt
 Project ID: HP12NARMRA Investigator: Dr. Bill Johnson
 Sponsor Contact: Bayer - Dave Lamore

Pest Type		W Weed	W Weed	W Weed		W Weed	W Weed	
Pest Code		AMBTR	SETFA	CHEAL		AMBTR	SETFA	
Pest Scientific Name		Ambrosia trif>	Setaria faberi	Chenopodium al>		Ambrosia trifi>	Setaria faberi	
Pest Name		Giant ragweed	Giant foxtail	Common lambsqu>		Giant ragweed	Giant foxtail	
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	
BBCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	
Rating Date	5-16-2012	5-18-2012	5-18-2012	5-18-2012	5-24-2012	5-24-2012	5-24-2012	
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO	
Rating Unit	%	%	%	%	%	%	%	
Number of Subsamples	1	1	1	1	1	1	1	
Crop Stage Scale	VC	V1	V1	V1	V2	V2	V2	
Pest Stage Majority		1-5 IN	0.5-4 IN	0.5-1 IN		1-8 IN	1-5 IN	
Pest Density, Unit		35 YD2	27 YD2	16 YD2		35 M2	40 M2	
Assessed By	JS	MW	MW	MW	JS/JR	JS/JR	JS/JR	
Days After First/Last Applic.	22 22	24 24	24 24	24 24	30 1	30 1	30 1	
Plant-Eval Interval	22 DP-1	24 DP-1	24 DP-1	24 DP-1	30 DP-1	30 DP-1	30 DP-1	
Days After Emergence	9 DE-1	11 DE-1	11 DE-1	11 DE-1	17 DE-1	17 DE-1	17 DE-1	
Trt Treatment	Rate Appl							
No. Name	Rate Unit Code	1	2	3	4	5	6	7
1 Untreated Check		0.00 a	0.0 c	0.0 b	0.0 b	0.0 c	0.0 c	0.0 c
2 Fierce (76 WG)	0.143 lb ai/a A	1.25 a	65.0 ab	98.0 a	99.0 a	15.0 a	93.8 a	100.0 a
Liberty 280 (2.34 SL)	0.53 lb ai/a B							
Prefix (5.29 EC)	0.99 lb ai/a B							
AMS - Liquid	1.5 lb ai/a B							
3 Fierce (76 WG)	0.143 lb ai/a A	1.75 a	52.5 b	98.0 a	99.0 a	17.5 a	96.0 a	99.5 a
Liberty 280 (2.34 SL)	0.53 lb ai/a B							
Prefix (5.29 EC)	1.24 lb ai/a B							
AMS - Liquid	1.5 lb ai/a B							
Liberty 280 (2.34 SL)	0.53 lb ai/a E							
Warrant (3 CS)	1.13 lb ai/a E							
AMS - Liquid	1.5 lb ai/a E							
4 Fierce (76 WG)	0.143 lb ai/a A	0.38 a	56.3 b	97.5 a	99.0 a	1.0 c	32.5 b	73.8 b
Liberty 280 (2.34 SL)	0.53 lb ai/a C							
Prefix (5.29 EC)	1.24 lb ai/a C							
AMS - Liquid	1.5 lb ai/a C							
Liberty 280 (2.34 SL)	0.53 lb ai/a F							
AMS - Liquid	1.5 lb ai/a F							
5 Authority MTZ (45 WG)	0.56 lb ai/a A	0.00 a	52.5 b	99.0 a	99.0 a	18.8 a	93.8 a	99.5 a
Liberty 280 (2.34 SL)	0.53 lb ai/a B							
Zidua (85 WG)	0.133 lb ai/a B							
AMS - Liquid	1.5 lb ai/a B							
6 Liberty 280 (2.34 SL)	0.79 lb ai/a D	0.00 a	0.0 c	0.0 b	0.0 b	0.0 c	0.0 c	0.0 c
AMS - Liquid	1.5 lb ai/a D							
Liberty 280 (2.34 SL)	0.79 lb ai/a G							
AMS - Liquid	1.5 lb ai/a G							
7 Liberty 280 (2.34 SL)	0.66 lb ai/a D	0.00 a	0.0 c	0.0 b	0.0 b	0.0 c	0.0 c	0.0 c
AMS - Liquid	1.5 lb ai/a D							
Liberty 280 (2.34 SL)	0.53 lb ai/a G							
AMS - Liquid	1.5 lb ai/a G							

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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Pest Type		W Weed	W Weed	W Weed		W Weed	W Weed	
Pest Code		AMBTR	SETFA	CHEAL		AMBTR	SETFA	
Pest Scientific Name		Ambrosia trif>	Setaria faberi	Chenopodium al>		Ambrosia trif>	Setaria faberi	
Pest Name		Giant ragweed	Giant foxtail	Common lambsqu>		Giant ragweed	Giant foxtail	
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	
BBCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	
Rating Date	5-16-2012	5-18-2012	5-18-2012	5-18-2012	5-24-2012	5-24-2012	5-24-2012	
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO	
Rating Unit	%	%	%	%	%	%	%	
Number of Subsamples	1	1	1	1	1	1	1	
Crop Stage Scale	VC	V1	V1	V1	V2	V2	V2	
Pest Stage Majority		1-5 IN	0.5-4 IN	0.5-1 IN		1-8 IN	1-5 IN	
Pest Density, Unit		35 YD2	27 YD2	16 YD2		35 M2	40 M2	
Assessed By	JS	MW	MW	MW	JS/JR	JS/JR	JS/JR	
Days After First/Last Applic.	22 22	24 24	24 24	24 24	30 1	30 1	30 1	
Plant-Eval Interval	22 DP-1	24 DP-1	24 DP-1	24 DP-1	30 DP-1	30 DP-1	30 DP-1	
Days After Emergence	9 DE-1	11 DE-1	11 DE-1	11 DE-1	17 DE-1	17 DE-1	17 DE-1	
Trt Treatment	Rate Appl							
No. Name	Rate Unit Code	1	2	3	4	5	6	7
8 Liberty 280 (2.34 SL)	1.59 lb ai/a D	0.00 a	0.0 c	0.0 b	0.0 b	0.0 c	0.0 c	0.0 c
AMS - Liquid	1.5 lb ai/a D							
9 Fierce (76 WG)	0.143 lb ai/a A	0.75 a	80.0 a	99.0 a	99.0 a	4.3 c	92.5 a	100.0 a
Liberty 280 (2.34 SL)	0.53 lb ai/a B							
FirstRate (84 WG)	0.0158 lb ai/a B							
AMS - Liquid	1.5 lb ai/a B							
10 Liberty 280 (2.34 SL)	0.53 lb ai/a B	0.00 a	0.0 c	0.0 b	0.0 b	10.5 b	95.0 a	98.8 a
Zidua (85 WG)	0.133 lb ai/a B							
FirstRate (84 WG)	0.0158 lb ai/a B							
AMS - Liquid	1.5 lb ai/a B							
LSD (P=.05)	1.080	17.29	1.53	0.00	3.87	4.61	7.60	
Standard Deviation	0.745	11.91	1.05	0.00	2.67	3.18	5.23	
CV	180.5	38.9	2.14	0.0	39.85	6.31	9.16	
Bartlett's X2	6.969	9.783	0.007	0.0	7.983	8.989	27.036	
P(Bartlett's X2)	0.073	0.044*	0.996	.	0.157	0.061	0.001*	
Replicate F	2.687	2.553	1.535	0.000	0.701	3.746	0.653	
Replicate Prob(F)	0.0664	0.0764	0.2281	1.0000	0.5595	0.0227	0.5878	
Treatment F	2.907	31.074	9695.931	0.000	35.110	885.249	362.204	
Treatment Prob(F)	0.0153	0.0001	0.0001	1.0000	0.0001	0.0001	0.0001	

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	CHEAL	SETFA	AMBTR	CHEAL	ABUTH		
Pest Scientific Name	Chenopodium al>	Setaria faberi	Ambrosia trifi>	Chenopodium al>	Abutilon theop>		
Pest Name	Common lambsqu>	Giant foxtail	Giant ragweed	Common lambsqu>	Velvetleaf		
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean
Rating Date	5-24-2012	5-31-2012	5-31-2012	5-31-2012	5-31-2012	5-31-2012	5-31-2012
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	PHYNLS	PHYLMA
Rating Unit	%	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1	1
Crop Stage Scale	V2	V3	V3	V3	V3	V3	V3
Pest Stage Majority	1-4 IN	4 IN	10 IN	3 IN	4 IN		
Pest Density, Unit	15 M2						
Assessed By	JS/JR	MW	MW	MW	MW	MW	MW
Days After First/Last Applic.	30 1	37 1	37 1	37 1	37 1	37 1	37 1
Plant-Eval Interval	30 DP-1	37 DP-1	37 DP-1	37 DP-1	37 DP-1	37 DP-1	37 DP-1
Days After Emergence	17 DE-1	24 DE-1	24 DE-1	24 DE-1	24 DE-1	24 DE-1	24 DE-1
Trt Treatment	Rate	Rate	Rate	Rate	Rate	Rate	Rate
No. Name	Unit	Unit	Unit	Unit	Unit	Unit	Unit
	8	9	10	11	12	13	14
1 Untreated Check	0.0 b	0.0 c	0.0 e	0.0 c	0.0 b	0.0 c	0.0 d
2 Fierce (76 WG)	0.143 lb ai/a A						
Liberty 280 (2.34 SL)	0.53 lb ai/a B						
Prefix (5.29 EC)	0.99 lb ai/a B						
AMS - Liquid	1.5 lb ai/a B						
3 Fierce (76 WG)	0.143 lb ai/a A	100.0 a	99.0 a	95.3 a	99.0 a	99.0 a	7.5 a
Liberty 280 (2.34 SL)	0.53 lb ai/a B						
Prefix (5.29 EC)	1.24 lb ai/a B						
AMS - Liquid	1.5 lb ai/a B						
Liberty 280 (2.34 SL)	0.53 lb ai/a E						
Warrant (3 CS)	1.13 lb ai/a E						
AMS - Liquid	1.5 lb ai/a E						
4 Fierce (76 WG)	0.143 lb ai/a A	99.5 a	79.5 b	10.0 d	99.0 a	99.0 a	3.5 b
Liberty 280 (2.34 SL)	0.53 lb ai/a C						
Prefix (5.29 EC)	1.24 lb ai/a C						
AMS - Liquid	1.5 lb ai/a C						
Liberty 280 (2.34 SL)	0.53 lb ai/a F						
AMS - Liquid	1.5 lb ai/a F						
5 Authority MTZ (45 WG)	0.56 lb ai/a A	100.0 a	98.0 a	72.5 c	99.0 a	99.0 a	6.8 a
Liberty 280 (2.34 SL)	0.53 lb ai/a B						
Zidua (85 WG)	0.133 lb ai/a B						
AMS - Liquid	1.5 lb ai/a B						
6 Liberty 280 (2.34 SL)	0.79 lb ai/a D	0.0 b	0.0 c	0.0 e	0.0 c	0.0 b	0.0 c
AMS - Liquid	1.5 lb ai/a D						
Liberty 280 (2.34 SL)	0.79 lb ai/a G						
AMS - Liquid	1.5 lb ai/a G						
7 Liberty 280 (2.34 SL)	0.66 lb ai/a D	0.0 b	0.0 c	0.0 e	0.0 c	0.0 b	0.0 c
AMS - Liquid	1.5 lb ai/a D						
Liberty 280 (2.34 SL)	0.53 lb ai/a G						
AMS - Liquid	1.5 lb ai/a G						

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Pest Type		W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code		AMBTR	SETFA	CHEAL	AMBTR	SETFA	CHEAL
Pest Scientific Name		Ambrosia trif>	Setaria faberi	Chenopodium al>	Ambrosia trif>	Setaria faberi	Chenopodium al>
Pest Name		Giant ragweed	Giant foxtail	Common lambsqu>	Giant ragweed	Giant foxtail	Common lambsqu>
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean
Rating Date	6-4-2012	6-4-2012	6-4-2012	6-4-2012	6-14-2012	6-14-2012	6-14-2012
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1	1
Crop Stage Scale	V4	V4	V4	V4	V5	V5	V5
Pest Stage Majority		4-24 IN	3-15 IN	2-12 IN	20 IN	6 IN	6 IN
Pest Density, Unit		35 M2	30 M2	15 M2	10 YD2	10 YD2	4 YD2
Assessed By	JS/JR	JS/JR	JS/JR	JS/JR	MW	MW	MW
Days After First/Last Applic.	41 5	41 5	41 5	41 5	51 9	51 9	51 9
Plant-Eval Interval	41 DP-1	41 DP-1	41 DP-1	41 DP-1	51 DP-1	51 DP-1	51 DP-1
Days After Emergence	28 DE-1	28 DE-1	28 DE-1	28 DE-1	38 DE-1	38 DE-1	38 DE-1
Trt Treatment	Rate	Rate	Rate	Rate	Rate	Rate	Rate
No. Name	Unit	Unit	Unit	Unit	Unit	Unit	Unit
	Code	Code	Code	Code	Code	Code	Code
1 Untreated Check	0.00 c	0.0 d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
2 Fierce (76 WG)	0.143 lb ai/a A	2.50 b	81.3 bc	95.8 ab	99.5 a	81.3 b	98.0 a
Liberty 280 (2.34 SL)	0.53 lb ai/a B						
Prefix (5.29 EC)	0.99 lb ai/a B						
AMS - Liquid	1.5 lb ai/a B						
3 Fierce (76 WG)	0.143 lb ai/a A	2.25 b	95.0 a	99.5 a	100.0 a	93.0 a	98.5 a
Liberty 280 (2.34 SL)	0.53 lb ai/a B						
Prefix (5.29 EC)	1.24 lb ai/a B						
AMS - Liquid	1.5 lb ai/a B						
Liberty 280 (2.34 SL)	0.53 lb ai/a E						
Warrant (3 CS)	1.13 lb ai/a E						
AMS - Liquid	1.5 lb ai/a E						
4 Fierce (76 WG)	0.143 lb ai/a A	5.75 a	90.5 ab	92.5 ab	100.0 a	98.5 a	99.0 a
Liberty 280 (2.34 SL)	0.53 lb ai/a C						
Prefix (5.29 EC)	1.24 lb ai/a C						
AMS - Liquid	1.5 lb ai/a C						
Liberty 280 (2.34 SL)	0.53 lb ai/a F						
AMS - Liquid	1.5 lb ai/a F						
5 Authority MTZ (45 WG)	0.56 lb ai/a A	1.00 c	76.3 c	92.0 ab	100.0 a	82.5 b	96.8 a
Liberty 280 (2.34 SL)	0.53 lb ai/a B						
Zidua (85 WG)	0.133 lb ai/a B						
AMS - Liquid	1.5 lb ai/a B						
6 Liberty 280 (2.34 SL)	0.79 lb ai/a D	0.00 c	0.0 d	0.0 c	0.0 c	93.8 a	91.3 b
AMS - Liquid	1.5 lb ai/a D						
Liberty 280 (2.34 SL)	0.79 lb ai/a G						
AMS - Liquid	1.5 lb ai/a G						
7 Liberty 280 (2.34 SL)	0.66 lb ai/a D	0.00 c	0.0 d	0.0 c	0.0 c	92.5 a	94.3 ab
AMS - Liquid	1.5 lb ai/a D						
Liberty 280 (2.34 SL)	0.53 lb ai/a G						
AMS - Liquid	1.5 lb ai/a G						

Pest Type		W Weed					W Weed	W Weed	
Pest Code		ABUTH					AMBTR	CHEAL	
Pest Scientific Name		Abutilon theop>					Ambrosia trifi>	Chenopodium al>	
Pest Name		Velvetleaf					Giant ragweed	Common lambsqu>	
Crop Code		GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	
BBCH Scale		BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	
Crop Scientific Name		Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	
Crop Name		Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	
Rating Date		6-14-2012	6-14-2012	6-14-2012	6-14-2012	6-14-2012	6-18-2012	6-18-2012	
Rating Type		CONTRO	PHYSTU	PHYNLS	PHYLMA	PHYCHL	PHYGEN	CONTRO	
Rating Unit		%	%	%	%	%	%	%	
Number of Subsamples		1	1	1	1	1	1	1	
Crop Stage Scale		V5	V5	V5	V5	V5	R2-R3	R2-R3	
Pest Stage Majority		6 IN					3-30 IN	1-10 IN	
Pest Density, Unit		2 YD2					25 M2	10 M2	
Assessed By		MW	MW	MW	MW	MW	PM	PM	
Days After First/Last Applic.		51 9	51 9	51 9	51 9	51 9	55 4	55 4	
Plant-Eval Interval		51 DP-1	51 DP-1	51 DP-1	51 DP-1	51 DP-1	55 DP-1	55 DP-1	
Days After Emergence		38 DE-1	38 DE-1	38 DE-1	38 DE-1	38 DE-1	42 DE-1	42 DE-1	
Trt Treatment	Rate Appl								
No. Name	Unit Code	22	23	24	25	26	27	28	29
1 Untreated Check		0.0 c	0.0 b	0.0 c	0.0 d	0.0 c	0.0 c	0.0 c	0.0 c
2 Fierce (76 WG)	0.143 lb ai/a A	99.0 a	0.0 b	0.8 c	5.0 bc	0.0 c	0.0 c	85.0 ab	99.5 a
Liberty 280 (2.34 SL)	0.53 lb ai/a B								
Prefix (5.29 EC)	0.99 lb ai/a B								
AMS - Liquid	1.5 lb ai/a B								
3 Fierce (76 WG)	0.143 lb ai/a A	99.0 a	4.5 ab	0.8 c	8.0 b	0.0 c	0.5 c	95.8 a	100.0 a
Liberty 280 (2.34 SL)	0.53 lb ai/a B								
Prefix (5.29 EC)	1.24 lb ai/a B								
AMS - Liquid	1.5 lb ai/a B								
Liberty 280 (2.34 SL)	0.53 lb ai/a E								
Warrant (3 CS)	1.13 lb ai/a E								
AMS - Liquid	1.5 lb ai/a E								
4 Fierce (76 WG)	0.143 lb ai/a A	99.0 a	10.0 a	7.3 a	20.0 a	8.0 b	7.5 a	99.5 a	100.0 a
Liberty 280 (2.34 SL)	0.53 lb ai/a C								
Prefix (5.29 EC)	1.24 lb ai/a C								
AMS - Liquid	1.5 lb ai/a C								
Liberty 280 (2.34 SL)	0.53 lb ai/a F								
AMS - Liquid	1.5 lb ai/a F								
5 Authority MTZ (45 WG)	0.56 lb ai/a A	99.0 a	0.0 b	0.0 c	4.5 bcd	0.0 c	0.0 c	90.0 ab	100.0 a
Liberty 280 (2.34 SL)	0.53 lb ai/a B								
Zidua (85 WG)	0.133 lb ai/a B								
AMS - Liquid	1.5 lb ai/a B								
6 Liberty 280 (2.34 SL)	0.79 lb ai/a D	99.0 a	10.0 a	0.0 c	2.5 cd	2.5 c	6.5 ab	98.0 a	98.0 a
AMS - Liquid	1.5 lb ai/a D								
Liberty 280 (2.34 SL)	0.79 lb ai/a G								
AMS - Liquid	1.5 lb ai/a G								
7 Liberty 280 (2.34 SL)	0.66 lb ai/a D	99.0 a	7.3 ab	0.0 c	0.8 cd	0.0 c	3.8 abc	88.5 ab	98.0 a
AMS - Liquid	1.5 lb ai/a D								
Liberty 280 (2.34 SL)	0.53 lb ai/a G								
AMS - Liquid	1.5 lb ai/a G								

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[illegible]

Pest Type	W Weed		W Weed	W Weed	W Weed	W Weed	W Weed	
Pest Code	SETFA		SETFA	AMBTR	SETFA	AMBTR	CHEAL	
Pest Scientific Name	Setaria faberi		Setaria faberi	Ambrosia trif>	Setaria faberi	Ambrosia trif>	Chenopodium al>	
Pest Name	Giant foxtail		Giant foxtail	Giant ragweed	Giant foxtail	Giant ragweed	Common lambsqu>	
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean
Rating Date	6-18-2012	6-26-2012	6-26-2012	6-26-2012	7-6-2012	7-6-2012	7-6-2012	7-6-2012
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	PHYSTU
Rating Unit	%	%	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1	1	1
Crop Stage Scale	R2-R3	R2	R2	R2				
Pest Stage Majority	3-12 IN		6-18 IN	6-36 IN	30 IN	49 IN	18 IN	
Pest Density, Unit	25 M2		40 M2	25 M2	20 FT2	10 YD2	5 YD2	
Assessed By	PM	JS	JS	JS	MW	MW	MW	MW
Days After First/Last Applic.	55 4	63 12	63 12	63 12	73 22	73 22	73 22	73 22
Plant-Eval Interval	55 DP-1	63 DP-1	63 DP-1	63 DP-1	73 DP-1	73 DP-1	73 DP-1	73 DP-1
Days After Emergence	42 DE-1	50 DE-1	50 DE-1	50 DE-1	60 DE-1	60 DE-1	60 DE-1	60 DE-1
Trt Treatment	Rate	Appl						
No. Name	Rate	Unit	Code					
1 Untreated Check								
2 Fierce (76 WG)	0.143 lb ai/a A							
Liberty 280 (2.34 SL)	0.53 lb ai/a B							
Prefix (5.29 EC)	0.99 lb ai/a B							
AMS - Liquid	1.5 lb ai/a B							
3 Fierce (76 WG)	0.143 lb ai/a A							
Liberty 280 (2.34 SL)	0.53 lb ai/a B							
Prefix (5.29 EC)	1.24 lb ai/a B							
AMS - Liquid	1.5 lb ai/a B							
Liberty 280 (2.34 SL)	0.53 lb ai/a E							
Warrant (3 CS)	1.13 lb ai/a E							
AMS - Liquid	1.5 lb ai/a E							
4 Fierce (76 WG)	0.143 lb ai/a A							
Liberty 280 (2.34 SL)	0.53 lb ai/a C							
Prefix (5.29 EC)	1.24 lb ai/a C							
AMS - Liquid	1.5 lb ai/a C							
Liberty 280 (2.34 SL)	0.53 lb ai/a F							
AMS - Liquid	1.5 lb ai/a F							
5 Authority MTZ (45 WG)	0.56 lb ai/a A							
Liberty 280 (2.34 SL)	0.53 lb ai/a B							
Zidua (85 WG)	0.133 lb ai/a B							
AMS - Liquid	1.5 lb ai/a B							
6 Liberty 280 (2.34 SL)	0.79 lb ai/a D							
AMS - Liquid	1.5 lb ai/a D							
Liberty 280 (2.34 SL)	0.79 lb ai/a G							
AMS - Liquid	1.5 lb ai/a G							
7 Liberty 280 (2.34 SL)	0.66 lb ai/a D							
AMS - Liquid	1.5 lb ai/a D							
Liberty 280 (2.34 SL)	0.53 lb ai/a G							
AMS - Liquid	1.5 lb ai/a G							

Pest Type	W Weed	W Weed	W Weed	W Weed		W Weed	W Weed
Pest Code	AMBTR	SETFA	CHEAL	ABUTH		SETFA	AMBTR
Pest Scientific Name	Ambrosia trif>	Setaria faberi	Chenopodium al>	Abutilon theop>		Setaria faberi	Ambrosia trif>
Pest Name	Giant ragweed	Giant foxtail	Common lambsqu>	Velvetleaf		Giant foxtail	Giant ragweed
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean
Rating Date	7-13-2012	7-13-2012	7-13-2012	7-13-2012	7-13-2012	7-19-2012	7-19-2012
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1	1
Crop Stage Scale	R2	R2	R2	R2	R2	R3	R3
Pest Stage Majority	40 IN	10 IN	28 IN	7 IN		34 IN	60 IN
Pest Density, Unit	30 YD2	40 YD2	10 YD2	15 YD2			
Assessed By	BM	BM	BM	BM	BM	MW	MW
Days After First/Last Applic.	80 29	80 29	80 29	80 29	80 29	86 35	86 35
Plant-Eval Interval	80 DP-1	80 DP-1	80 DP-1	80 DP-1	80 DP-1	86 DP-1	86 DP-1
Days After Emergence	67 DE-1	67 DE-1	67 DE-1	67 DE-1	67 DE-1	73 DE-1	73 DE-1
Trt Treatment	Rate	Appl					
No. Name	Rate	Unit	Code				
1 Untreated Check							
2 Fierce (76 WG)	0.143 lb ai/a A						
Liberty 280 (2.34 SL)	0.53 lb ai/a B						
Prefix (5.29 EC)	0.99 lb ai/a B						
AMS - Liquid	1.5 lb ai/a B						
3 Fierce (76 WG)	0.143 lb ai/a A						
Liberty 280 (2.34 SL)	0.53 lb ai/a B						
Prefix (5.29 EC)	1.24 lb ai/a B						
AMS - Liquid	1.5 lb ai/a B						
Liberty 280 (2.34 SL)	0.53 lb ai/a E						
Warrant (3 CS)	1.13 lb ai/a E						
AMS - Liquid	1.5 lb ai/a E						
4 Fierce (76 WG)	0.143 lb ai/a A						
Liberty 280 (2.34 SL)	0.53 lb ai/a C						
Prefix (5.29 EC)	1.24 lb ai/a C						
AMS - Liquid	1.5 lb ai/a C						
Liberty 280 (2.34 SL)	0.53 lb ai/a F						
AMS - Liquid	1.5 lb ai/a F						
5 Authority MTZ (45 WG)	0.56 lb ai/a A						
Liberty 280 (2.34 SL)	0.53 lb ai/a B						
Zidua (85 WG)	0.133 lb ai/a B						
AMS - Liquid	1.5 lb ai/a B						
6 Liberty 280 (2.34 SL)	0.79 lb ai/a D						
AMS - Liquid	1.5 lb ai/a D						
Liberty 280 (2.34 SL)	0.79 lb ai/a G						
AMS - Liquid	1.5 lb ai/a G						
7 Liberty 280 (2.34 SL)	0.66 lb ai/a D						
AMS - Liquid	1.5 lb ai/a D						
Liberty 280 (2.34 SL)	0.53 lb ai/a G						
AMS - Liquid	1.5 lb ai/a G						

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Pest Type	W Weed			W Weed	W Weed	W Weed	
Pest Code	CHEAL			AMBTR	SETFA	CHEAL	
Pest Scientific Name	Chenopodium al>			Ambrosia trif>	Setaria faberi	Chenopodium al>	
Pest Name	Common lambsqu>			Giant ragweed	Giant foxtail	Common lambsqu>	
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean
Rating Date	7-19-2012	7-19-2012	7-30-2012	7-30-2012	7-30-2012	7-30-2012	10-9-2012
Rating Type	CONTRO	PHYSTU	PHYSTU	CONTRO	CONTRO	CONTRO	YIELD
Rating Unit	%	%	%	%	%	%	bu/ac
Number of Subsamples	1	1	1	1	1	1	1
Crop Stage Scale	R3	R3	R4	R4	R4	R4	
Pest Stage Majority	36 IN			72 IN	36 IN	37 IN	
Pest Density, Unit				10 YD2	20 FT2	5 YD2	
Assessed By	MW	MW	MW	MW	MW	MW	
Days After First/Last Applic.	86 35	86 35	97 46	97 46	97 46	97 46	168 117
Plant-Eval Interval	86 DP-1	86 DP-1	97 DP-1	97 DP-1	97 DP-1	97 DP-1	168 DP-1
Days After Emergence	73 DE-1	73 DE-1	84 DE-1	84 DE-1	84 DE-1	84 DE-1	155 DE-1
Trt Treatment	Rate	Rate	Rate	Rate	Rate	Rate	Rate
No. Name	Unit	Unit	Unit	Unit	Unit	Unit	Unit
	45	46	47	48	49	50	51
1 Untreated Check	0.0 b	0.0 b	0.0 b	0.0 c	0.0 b	0.0 c	
2 Fierce (76 WG)	0.143 lb ai/a A	89.3 a	0.0 b	0.8 b	82.5 ab	99.0 a	46.68 b
Liberty 280 (2.34 SL)	0.53 lb ai/a B						
Prefix (5.29 EC)	0.99 lb ai/a B						
AMS - Liquid	1.5 lb ai/a B						
3 Fierce (76 WG)	0.143 lb ai/a A	99.0 a	0.0 b	0.0 b	94.3 a	99.0 a	58.88 ab
Liberty 280 (2.34 SL)	0.53 lb ai/a B						
Prefix (5.29 EC)	1.24 lb ai/a B						
AMS - Liquid	1.5 lb ai/a B						
Liberty 280 (2.34 SL)	0.53 lb ai/a E						
Warrant (3 CS)	1.13 lb ai/a E						
AMS - Liquid	1.5 lb ai/a E						
4 Fierce (76 WG)	0.143 lb ai/a A	99.0 a	5.0 b	2.5 b	98.0 a	99.0 a	64.93 a
Liberty 280 (2.34 SL)	0.53 lb ai/a C						
Prefix (5.29 EC)	1.24 lb ai/a C						
AMS - Liquid	1.5 lb ai/a C						
Liberty 280 (2.34 SL)	0.53 lb ai/a F						
AMS - Liquid	1.5 lb ai/a F						
5 Authority MTZ (45 WG)	0.56 lb ai/a A	99.0 a	1.3 b	0.8 b	73.8 b	99.0 a	52.14 ab
Liberty 280 (2.34 SL)	0.53 lb ai/a B						
Zidua (85 WG)	0.133 lb ai/a B						
AMS - Liquid	1.5 lb ai/a B						
6 Liberty 280 (2.34 SL)	0.79 lb ai/a D	99.0 a	13.0 a	11.3 a	96.8 a	99.0 a	57.13 ab
AMS - Liquid	1.5 lb ai/a D						
Liberty 280 (2.34 SL)	0.79 lb ai/a G						
AMS - Liquid	1.5 lb ai/a G						
7 Liberty 280 (2.34 SL)	0.66 lb ai/a D	87.3 a	11.3 a	12.5 a	96.8 a	99.0 a	53.47 ab
AMS - Liquid	1.5 lb ai/a D						
Liberty 280 (2.34 SL)	0.53 lb ai/a G						
AMS - Liquid	1.5 lb ai/a G						

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Pest Type	W Weed			W Weed	W Weed	W Weed	
Pest Code	CHEAL			AMBTR	SETFA	CHEAL	
Pest Scientific Name	Chenopodium al>			Ambrosia trif>	Setaria faberi	Chenopodium al>	
Pest Name	Common lambsqu>			Giant ragweed	Giant foxtail	Common lambsqu>	
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean
Rating Date	7-19-2012	7-19-2012	7-30-2012	7-30-2012	7-30-2012	7-30-2012	10-9-2012
Rating Type	CONTRO	PHYSTU	PHYSTU	CONTRO	CONTRO	CONTRO	YIELD
Rating Unit	%	%	%	%	%	%	bu/ac
Number of Subsamples	1	1	1	1	1	1	1
Crop Stage Scale	R3	R3	R4	R4	R4	R4	
Pest Stage Majority	36 IN			72 IN	36 IN	37 IN	
Pest Density, Unit				10 YD2	20 FT2	5 YD2	
Assessed By	MW	MW	MW	MW	MW	MW	
Days After First/Last Applic.	86 35	86 35	97 46	97 46	97 46	97 46	168 117
Plant-Eval Interval	86 DP-1	86 DP-1	97 DP-1	97 DP-1	97 DP-1	97 DP-1	168 DP-1
Days After Emergence	73 DE-1	73 DE-1	84 DE-1	84 DE-1	84 DE-1	84 DE-1	155 DE-1
Trt Treatment	Rate	Rate	Rate	Rate	Rate	Rate	Rate
No. Name	Unit	Unit	Unit	Unit	Unit	Unit	Unit
	45	46	47	48	49	50	51
8 Liberty 280 (2.34 SL)	1.59 lb ai/a D	89.3 a	7.5 ab	10.0 a	94.3 a	99.0 a	94.8 a
AMS - Liquid	1.5 lb ai/a D						54.88 ab
9 Fierce (76 WG)	0.143 lb ai/a A	99.0 a	0.0 b	0.0 b	78.8 b	99.0 a	99.0 a
Liberty 280 (2.34 SL)	0.53 lb ai/a B						51.53 ab
FirstRate (84 WG)	0.0158 lb ai/a B						
AMS - Liquid	1.5 lb ai/a B						
10 Liberty 280 (2.34 SL)	0.53 lb ai/a B	79.8 a	0.0 b	0.0 b	83.8 ab	99.0 a	86.3 b
Zidua (85 WG)	0.133 lb ai/a B						62.38 ab
FirstRate (84 WG)	0.0158 lb ai/a B						
AMS - Liquid	1.5 lb ai/a B						
LSD (P=.05)	14.50	4.70	4.34	10.33	0.00	4.28	9.986
Standard Deviation	9.99	3.24	2.99	7.12	0.00	2.95	6.809
CV	11.89	85.15	79.3	8.91	0.0	3.4	12.21
Bartlett's X2	2.237	3.474	8.213	18.639	0.0	2.707	2.952
P(Bartlett's X2)	0.525	0.482	0.145	0.017*	.	0.439	0.937
Replicate F	1.830	0.885	1.498	0.325	0.000	0.648	4.524
Replicate Prob(F)	0.1654	0.4613	0.2375	0.8070	1.0000	0.5910	0.0129
Treatment F	36.802	9.932	12.283	67.962	0.000	435.209	2.792
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0001	1.0000	0.0001	0.0269

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Programs for glufosinate soybeans

Trial ID: 12S-THP-CTS-41 Protocol ID: 12S-THP-CTS-41
 Location: Throckmorton Study Director: White/Marquardt
 Project ID: HP12NARMRA Investigator: Dr. Bill Johnson
 Sponsor Contact: Bayer - Dave Lamore

Pest Type

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

Pest Code

AMBTR, Ambrosia trifida, = US

SETFA, Setaria faberi, = US

CHEAL, Chenopodium album, = US

ABUTH, Abutilon theophrasti, = US

Crop Code

GLXMA, BSOY, Glycine max, = US

Rating Type

PHYGEN = phytotoxicity - general / injury

CONTRO = control / burndown or knockdown

PHYNLS = phytotoxicity - necrosis, leaf spot

PHYLMMA = phytotoxicity - leaf malformation

PHYSTU = phytotoxicity - stunting

PHYCHL = phytotoxicity - chlorosis

YIELD = yield

Rating Unit

% = percent

bu/ac = bushels per acre

YD2 = per square yard

M2 = per square meter

FT2 = per square foot

Plant-Eval Interval

22 DP-1 = 1 GLXMA 4-24-2012

24 DP-1 = 1 GLXMA 4-24-2012

30 DP-1 = 1 GLXMA 4-24-2012

37 DP-1 = 1 GLXMA 4-24-2012

41 DP-1 = 1 GLXMA 4-24-2012

51 DP-1 = 1 GLXMA 4-24-2012

55 DP-1 = 1 GLXMA 4-24-2012

63 DP-1 = 1 GLXMA 4-24-2012

73 DP-1 = 1 GLXMA 4-24-2012

80 DP-1 = 1 GLXMA 4-24-2012

86 DP-1 = 1 GLXMA 4-24-2012

97 DP-1 = 1 GLXMA 4-24-2012

168 DP-1 = 1 GLXMA 4-24-2012