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TO DETERMINE EFFICACY AND SELECTIVITY OF RHYTHM & DAWN WHEN APPLIED POST TO SOYBEAN IN 2011.

Trial ID: 11S-THP-CTS-39 Protocol ID: 11S-THP-CTS-209
 Location: Throckmorton Study Director: White/Marquardt
 Project ID: HGLXMAFOMME1101 Investigator: Dr. Bill Johnson
 Sponsor Contact: Cheminova - Jim Barrentine

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: 4-8-2011

Trial Location

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

Keywords: RHYTHM, DAWN, GLYFOS X-TRA, FLEXSTAR, SOYBEAN, EFFICACY, SELECTIVITY, POST, PALMER AMARANTH, RAGWEED, WATERHEMP, LAMBSQUARTERS

Objectives:

COMPARISON of DAWN & RHYTHM WHEN APPLIED POST TO FLEXSTAR FOR BROADLEAF WEED CONTROL AND SELECTIVITY IN SOYBEAN.

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:** wgi@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: GLXMA Glycine max Soybean

Variety: Asgrow AG2931 **Description:** RR2
BBCH Scale: BSOY **Planting Date:** 5-10-2011
Planting Method: PLANTD planted **Rate, Unit:** 124000 S/A
Depth, Unit: 1 IN
Row Spacing, Unit: 15 IN
Emergence Date: 5-16-2011

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Pest Description

Pest 1 Type: W **Code:** AMAPA *Amaranthus palmeri*
Common Name: Palmer amaranth

Pest 2 Type: W **Code:** CHEAL *Chenopodium album*
Common Name: Common lambsquarters

Pest 3 Type: W **Code:** AMBEL *Ambrosia artemisiifolia*
Common Name: COMMON RAGWEED

Pest 4 Type: W **Code:** AMBTR *Ambrosia trifida*
Common Name: GIANT RAGWEED

Pest 5 Type: W **Code:** AMATA *Amaranthus tamariscinus*
Common Name: Common waterhemp

Pest 6 Type: W **Code:** SOLPT *Solanum ptycanthum*
Common Name: Eastern black nightshade

Pest 7 Type: W **Code:** SETFA *Setaria faberi*
Common Name: Giant foxtail

Pest 8 Type: W **Code:** ABUTH *Abitilon theophrasti*
Common Name: Velvetleaf

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

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
Application Date:	6-1-2011	6-7-2011
Time of Day:	9:15 AM	8-8:30 AM
Application Method:	SPRAY	SPRAY
Application Timing:	POEMCR	
Application Placement:	FOLIAR	FOLIAR
Applied By:	MH	BM
Air Temperature, Unit:	74.2 F	72 F
% Relative Humidity:	47	70
Wind Velocity, Unit:	1.8 MPH	2 MPH
Wind Direction:	SE	SW
Dew Presence (Y/N):	Y yes	Y yes
Soil Temperature, Unit:	70 F	70 F
Soil Moisture:	SLIWET	SLIWET
% Cloud Cover:	70	0

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Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:	BBCH	
Stage Majority, Percent:	V1	
Height, Unit:	2.5 IN	

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	AMAPA W	AMAPA W
Pest 2 Code, Type, Scale:	CHEAL W	CHEAL W
Pest 3 Code, Type, Scale:	AMBEL W	AMBEL W
Pest 4 Code, Type, Scale:	AMBTR W	AMBTR W
Height, Unit:	3.5 IN	4 IN
Height Minimum, Maximum:	2 5	2 6
Density, Unit:	9 YD2	20 YD2
Pest 5 Code, Type, Scale:	AMATA W	AMATA W
Pest 6 Code, Type, Scale:	SOLPT W	SOLPT W
Pest 7 Code, Type, Scale:	SETFA W	SETFA W
Height, Unit:	2.5 IN	3 IN
Height Minimum, Maximum:	1 4	1 5
Density, Unit:	80 YD2	45 YD2
Pest 8 Code, Type, Scale:	ABUTH W	ABUTH W
Height, Unit:		2.5 IN
Height Minimum, Maximum:		2 3
Density, Unit:		3 YD2

Application Equipment

	A	B
Appl. Equipment:	CO2 BKPK	CO2 BKPK
Equipment Type:	SPRBAC	SPRBAC
Operation Pressure, Unit:	17 PSI	17 PSI
Nozzle Type:	FLAT FAN	FLAT FAN
Nozzle Size:	XR 110 02	XR 110 02
Nozzle Spacing, Unit:	15 IN	15 IN
Nozzles/Row:	8	8
Boom Length, Unit:	10 FT	10 FT
Boom Height, Unit:	18 IN	18 IN
Ground Speed, Unit:	3 MPH	3 MPH
Carrier:	H2O	H2O
Water Hardness (ppm CaCO3):	150	150
Spray Volume, Unit:	15 gal/ac	15 gal/ac
Mix Size, Unit:	1.8 liters	1.8 liters
Propellant:	C02	C02
Tank Mix (Y/N):	N no	N no

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 Sponsor Contact: Cheminova - Jim Barrentine

Pest Type	W Weed AMBTR	W Weed SETFA	W Weed AMBTR	W Weed CHEAL	W Weed ABUTH	W Weed AMARE					
Pest Code	Ambrosia trifi>	Setaria faberi	Ambrosia trifi>	Chenopodium al>	Abutilon theop>	Amaranthus ret>					
Pest Scientific Name	Giant ragweed	Giant foxtail	Giant ragweed	Common lambsqu>	Velvetleaf	Redroot pigweed					
Pest Name	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA					
Crop Code	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY					
BBCH Scale	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max					
Crop Scientific Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean					
Crop Name	6-16-2011	6-16-2011	6-16-2011	6-22-2011	6-22-2011	6-22-2011					
Rating Date	PHYGEN	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO					
Rating Type	%	%	%	%	%	%					
Rating Unit	1	1	1	1	1	1					
Number of Subsamples	V4-V5	V4-V5	V4-V5								
Crop Stage Majority		1-23 IN	1-18 IN	12-30 IN	4-8 IN	4-8 IN					
Pest Stage Majority		50 YD2	100 YD2	4 YD2	21 YD2	21 YD2					
Pest Density, Unit	Assessed By	15 9	15 9	21 15	21 15	21 15					
Days After First/Last Applic.	Plant-Eval Interval	37 DP-1	37 DP-1	43 DP-1	43 DP-1	43 DP-1					
Days After Emergence	31 DE-1	31 DE-1	31 DE-1	37 DE-1	37 DE-1	37 DE-1					
Trt Treatment	Rate	Appl	1	2	3	4	5	6	7	8	
No. Name	Rate	Unit	Code	0.0 b	0.0 c	0.0 c	0.0 a	0.0 c	0.0 c	0.0 b	0.0 b
1 UNTREATED											
2 RHYTHM	0.294 lb ai/a	A		5.3 a	66.3 b	80.0 b	5.0 a	27.5 b	61.3 ab	100.0 a	92.5 a
AMS	2.50 % v/v	A									
SELECT	0.125 lb ai/a	B									
NIS	0.25 % v/v	B									
3 RHYTHM	0.147 lb ai/a	A		2.0 b	93.3 a	93.0 a	0.0 a	71.3 a	97.5 a	97.5 a	100.0 a
GLYFOS X-TRA	0.75 lb ae/a	A									
4 RHYTHM	0.294 lb ai/a	A		1.3 b	95.3 a	96.8 a	1.3 a	78.3 a	88.8 a	100.0 a	100.0 a
GLYFOS X-TRA	0.75 lb ae/a	A									
5 DAWN	0.375 lb ai/a	A		2.0 b	75.0 b	91.3 a	5.0 a	36.3 b	53.8 b	98.8 a	100.0 a
NIS	0.25 % v/v	A									
SELECT	0.125 lb ai/a	B									
NIS	0.25 % v/v	B									
6 FLEXSTAR	0.294 lb ai/a	A		1.3 b	85.5 a	92.5 a	2.5 a	52.5 ab	45.0 b	92.5 a	93.8 a
AMS	2.50 % v/v	A									
SELECT	0.125 lb ai/a	B									
NIS	0.25 % v/v	B									
7 TACKLE	1.03 lb ai/a	A		0.3 b	94.3 a	97.3 a	0.0 a	58.8 ab	95.0 a	100.0 a	87.5 a
AMS	2.5 % v/v	A									
NIS	0.25 % v/v	A									
LSD (P=.05)				2.61	9.52	8.51	3.21	25.95	28.80	8.64	18.65
Standard Deviation				1.76	6.41	5.73	2.16	17.47	19.39	5.82	12.56
CV				102.5	8.81	7.28	109.93	37.68	30.75	6.92	15.32
Bartlett's X2				17.971	13.708	18.75	0.76	6.055	19.269	8.275	1.557
P(Bartlett's X2)				0.003*	0.018*	0.002*	0.684	0.301	0.002*	0.016*	0.459
Replicate F				0.586	2.421	2.116	0.702	2.690	2.587	1.575	0.383
Replicate Prob(F)				0.6319	0.0995	0.1338	0.5630	0.0771	0.0849	0.2302	0.7663
Treatment F				3.925	111.814	150.650	4.404	9.692	12.878	163.487	33.725
Treatment Prob(F)				0.0110	0.0001	0.0001	0.0066	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.

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Pest Type		W Weed	W Weed
Pest Code		AMBTR	SETFA
Pest Scientific Name		Ambrosia trifida	Setaria faberii
Pest Name		Giant ragweed	Giant foxtail
Crop Code	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean
Rating Date	7-7-2011	7-7-2011	7-7-2011
Rating Type	PHYGEN	CONTRO	CONTRO
Rating Unit	%	%	%
Number of Subsamples	1	1	1
Crop Stage Majority	R2	R2	R2
Pest Stage Majority		48-60 IN	24-36 IN
Pest Density, Unit		20 YD2	27.5YD2
Assessed By	AR	AR	AR
Days After First/Last Applic.	36 30	36 30	36 30
Plant-Eval Interval	58 DP-1	58 DP-1	58 DP-1
Days After Emergence	52 DE-1	52 DE-1	52 DE-1
Trt No.	Treatment Name	Rate	Appl Code
		Unit	
9			
10			
11			
1	UNTREATED	0.0 a	0.0 c
2	RHYTHM	0.294 lb ai/a A	41.3 b
	AMS	2.50 % v/v A	
	SELECT	0.125 lb ai/a B	
	NIS	0.25 % v/v B	
3	RHYTHM	0.147 lb ai/a A	62.5 ab
	GLYFOS X-TRA	0.75 lb ae/a A	
4	RHYTHM	0.294 lb ai/a A	77.5 a
	GLYFOS X-TRA	0.75 lb ae/a A	
5	DAWN	0.375 lb ai/a A	45.0 b
	NIS	0.25 % v/v A	
	SELECT	0.125 lb ai/a B	
	NIS	0.25 % v/v B	
6	FLEXSTAR	0.294 lb ai/a A	57.5 ab
	AMS	2.50 % v/v A	
	SELECT	0.125 lb ai/a B	
	NIS	0.25 % v/v B	
7	TACKLE	1.03 lb ai/a A	61.3 ab
	AMS	2.5 % v/v A	
	NIS	0.25 % v/v A	
LSD (P=.05)		0.00	20.41
Standard Deviation		0.00	13.74
CV		0.0	27.88
Bartlett's X2		0.0	11.034
P(Bartlett's X2)		.	0.051
Replicate F		0.000	2.232
Replicate Prob(F)		1.0000	0.1195
Treatment F		0.000	13.042
Treatment Prob(F)		1.0000	0.0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)
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Study Director: White/Marquardt

Project ID: HGLXMAFOMME1101

Investigator: Dr. Bill Johnson

Sponsor Contact: Cheminova - Jim Barrentine

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

AMARE, Amaranthus retroflexus, = US

Crop Code

GLXMA, BSOY, Glycine max, = US

Rating Type

PHYGEN = phytotoxicity - general / injury

CONTRO = control / burndown or knockdown

Rating Unit

% = percent

YD2 = per square yard

Plant-Eval Interval

37 DP-1 = 1 GLXMA 5-10-2011

43 DP-1 = 1 GLXMA 5-10-2011

58 DP-1 = 1 GLXMA 5-10-2011