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Effect of MSO and application volume on Sharpen activity.

Trial ID: 10S-THP-NTS-88 Protocol ID: 10S-THP-NTS-88
 Location: Throckmorton Study Director: White/Marquardt
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact: Winfield Solutions - George Watters

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: 4-13-2010

Trial Location

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

Objectives:

Effect of MSO and application volume on Sharpen activity.

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: GLXMA Glycine max Soybean
Variety: Asgrow AG2939 **Description:** RR2
BBCH Scale: BSOY
Row Spacing, Unit: 30 IN

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:** IPOHE Ipomoea hederacea
Common Name: Ivyleaf morningglory

Pest 4 Type: W **Code:** SETFA Setaria faberi
Common Name: Giant foxtail

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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	B
Application Date:	6-1-2010	
Time of Day:	1:30 PM	
Application Method:	SPRAY	
Application Timing:	ATPLAN	
Application Placement:	FOLIAR	
Applied By:	MH	
Air Temperature, Unit:	89 F	
% Relative Humidity:	59	
Wind Velocity, Unit:	1 MPH	
Wind Direction:	SW	
Dew Presence (Y/N):	N no	
Soil Temperature, Unit:	81 F	
Soil Moisture:	MOIST	
% Cloud Cover:	90	

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	AMBTR W	AMBTR W
Height, Unit:	10.5 IN	
Height Minimum, Maximum:	7 12	
Density, Unit:	60 YD ²	
Pest 2 Code, Type, Scale:	CHEAL W	CHEAL W
Height, Unit:	3 IN	
Density, Unit:	7 YD ²	
Pest 3 Code, Type, Scale:	IPOHE W	IPOHE W
Height, Unit:	2 IN	
Density, Unit:	3 YD ²	
Pest 4 Code, Type, Scale:	SETFA W	SETFA W
Height, Unit:	3.5 IN	
Height Minimum, Maximum:	1 6	
Density, Unit:	25 YD ²	

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Application Equipment		
	A	B
Appl. Equipment:	CO2 BKPK	CO2 BKPK
Equipment Type:	SPRBAC	SPRBAC
Operating Pressure, Unit:	17 PSI	17 PSI
Nozzle Type:	FLAT FAN	FLAT FAN
Nozzle Size:	80015	8003
Nozzle Spacing, Unit:	15 IN	15 IN
Nozzles/Row:	6	6
Boom Length, Unit:	7.5 FT	7.5 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:	CO2	CO2
Tank Mix (Y/N):	N no	N no

Date	By	Notes
7-7-2010		Sprayed bulk RR

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Pest Type	W Weed AMBTR	W Weed CHEAL	W Weed ABUTH	W Weed AMARE	W Weed AMBTR	W Weed ABUTH	W Weed CHEAL					
Pest Code	Ambrosia trifi>	Chenopodium al>	Abutilon theop>	Amaranthus ret>	Ambrosia trifi>	Abutilon theop>	Chenopodium al>					
Pest Scientific Name	Giant ragweed	Common lambsqu>	Velvetleaf	Redroot pigweed	Giant ragweed	Velvetleaf	Common lambsqu>					
Pest Name												
Crop Code												
BBCH Scale												
Crop Scientific Name												
Crop Name												
Crop Variety												
Description												
Rating Date	6-8-2010	6-8-2010	6-8-2010	6-8-2010	6-17-2010	6-17-2010	6-17-2010					
Rating Type	EFF	EFF	EFF	EFF	EFF	EFF	EFF					
Rating Unit	%	%	%	%	%	%	%					
Number of Subsamples	1	1	1	1	1	1	1					
Crop Stage Majority					VE 1"							
Pest Stage Majority	20"	12"	6"	3"	24"	6"	5"					
Pest Density, Unit	14 YD2	7 YD2	3 YD2	2 YD2	10 YD2	2 YD2	2 YD2					
Assessed By	MW	MW	MW	MW	MW	MW	MW					
Trt No.	Treatment Name	Rate	Appl Unit	Code	1	2	3	4	5	6	7	
1	Untreated Check	0.0	b		0.0	c	0.0	b	0.0	b	0.0	c
2	Sharpen 2.85 SC MSO	0.0223	lb ai/a	A	94.3	a	92.8	a	99.0	a	88.8	a
		1	% v/v	A								
3	Sharpen 2.85 SC Destiny HC	0.0223	lb ai/a	A	96.8	a	92.3	a	99.0	a	86.3	a
		0.5	% v/v	A								
4	Sharpen 2.85 SC Destiny HC	0.0223	lb ai/a	A	96.5	a	97.5	a	99.0	a	86.8	a
		0.75	% v/v	A								
5	Sharpen 2.85 SC Destiny HC	0.0223	lb ai/a	A	94.8	a	94.3	a	99.0	a	90.0	a
		0.83	% v/v	A								
6	Sharpen 2.85 SC MSO	0.0223	lb ai/a	A	98.5	a	95.8	a	99.0	a	92.3	a
		1	% v/v	A								
7	Sharpen 2.85 SC Destiny HC	0.0223	lb ai/a	A	93.0	a	82.3	a	99.0	a	86.3	a
		0.5	% v/v	A								
8	Sharpen 2.85 SC Destiny HC	0.0223	lb ai/a	A	94.8	a	65.0	b	99.0	a	87.3	a
		0.75	% v/v	A								
9	Sharpen 2.85 SC Destiny HC	0.0223	lb ai/a	A	97.5	a	98.5	a	99.0	a	90.5	a
		0.83	% v/v	A								
LSD (P=.05)	3.98	13.16	0.00	0.00	9.33	14.10	17.17					
Standard Deviation	2.73	9.01	0.00	0.00	6.39	9.66	11.77					
CV	3.2	11.3	0.0	0.0	8.13	11.26	16.15					
Bartlett's X2	6.934	27.027	0.0	0.0	3.168	0.776	6.929					
P(Bartlett's X2)	0.436	0.001*	.	.	0.869	0.378	0.436					
Replicate F	2.042	0.089	0.000	0.000	0.948	0.683	1.730					
Replicate Prob(F)	0.1347	0.9655	1.0000	1.0000	0.4333	0.5712	0.1875					
Treatment F	549.643	49.486	0.000	0.000	85.568	45.227	28.282					
Treatment Prob(F)	0.0001	0.0001	1.0000	1.0000	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	W Weed	W Weed
Pest Code	AMBTR	CHEAL	AMBTR	CHEAL
Pest Scientific Name	Ambrosia trifi>	Chenopodium al>	Ambrosia trifi>	Chenopodium al>
Pest Name	Giant ragweed	Common lambsqu>	Giant ragweed	Common lambsqu>
Crop Code				
BBCH Scale				
Crop Scientific Name				
Crop Name				
Crop Variety				
Description				
Rating Date	6-23-2010	6-23-2010	7-7-2010	7-7-2010
Rating Type	EFF	EFF	EFF	EFF
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Crop Stage Majority				
Pest Stage Majority	30"	14"	40"	18"
Pest Density, Unit	15 YD2	10 YD2		
Assessed By	MW	MW	MW	MW
Trt Treatment	Rate	Appl		
No. Name	Rate	Unit	Code	
1 Untreated Check	0.0	b		0.0 c
2 Sharpen 2.85 SC 0.0223 lb ai/a A MSO 1 % v/v A	90.0	a		76.3 a
3 Sharpen 2.85 SC 0.0223 lb ai/a A Destiny HC 0.5 % v/v A	88.8	a		83.8 a
4 Sharpen 2.85 SC 0.0223 lb ai/a A Destiny HC 0.75 % v/v A	90.5	a		82.5 a
5 Sharpen 2.85 SC 0.0223 lb ai/a A Destiny HC 0.83 % v/v A	92.5	a		86.3 a
6 Sharpen 2.85 SC 0.0223 lb ai/a A MSO 1 % v/v A	92.5	a		83.8 a
7 Sharpen 2.85 SC 0.0223 lb ai/a A Destiny HC 0.5 % v/v A	88.8	a		91.3 a
8 Sharpen 2.85 SC 0.0223 lb ai/a A Destiny HC 0.75 % v/v A	92.3	a		47.5 b
9 Sharpen 2.85 SC 0.0223 lb ai/a A Destiny HC 0.83 % v/v A	93.0	a		85.0 a
LSD (P=.05)	6.80			15.97
Standard Deviation	4.66			10.94
CV	5.76			15.34
Bartlett's X2	4.912			5.489
P(Bartlett's X2)	0.671			0.601
Replicate F	1.360			2.585
Replicate Prob(F)	0.2788			0.0767
Treatment F	170.241			29.870
Treatment Prob(F)	0.0001			0.0001

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Column 1: Weed or volunteer crop; US; EFF; percent; 20"; per square yard; MW
Column 2: Weed or volunteer crop; US; EFF; percent; 12"; per square yard; MW
Column 3: Weed or volunteer crop; US; EFF; percent; 6"; per square yard; MW
Column 4: Weed or volunteer crop; US; EFF; percent; 3"; per square yard; MW
Column 5: Weed or volunteer crop; US; EFF; percent; VE 1"; 24"; per square yard; MW
Column 6: Weed or volunteer crop; US; EFF; percent; 6"; per square yard; MW
Column 7: Weed or volunteer crop; US; EFF; percent; 5"; per square yard; MW
Column 8: Weed or volunteer crop; US; EFF; percent; 30"; per square yard; MW
Column 9: Weed or volunteer crop; US; EFF; percent; 14"; per square yard; MW
Column 10: Weed or volunteer crop; US; EFF; percent; 40"; MW
Column 11: Weed or volunteer crop; US; EFF; percent; 18"; MW