

Burndown of Glyphosate-Resistant Waterhemp with Sharpen.

Trial ID: 12-FagerS-SharpAMATA

Location: Murphysboro, IL

Investigator: Bryan Young

**General Trial Information**

**Study Director:** Bryan Young  
**Investigator:** Bryan Young **Title:** Professor

**Trial Status:** F - one-year/final  
**Initiation Date:** 8-30-12

**Trial Location**

**City:** Murphysboro  
**State/Prov.:** IL  
**Postal Code:** 62966  
**Country:** USA

**Objectives:**

Optimize the foliar efficacy of Sharpen  
 on glyphosate-resistant waterhemp.

**Personnel**

**Study Director:** Bryan Young  
**Investigator:** Bryan Young **Title:** Professor  
**Affiliation:** Southern Illinois University  
**Address:** 1205 Lincoln Drive - AG 176 - MC 4415  
**Location:** Carbondale IL  
**Postal Code:** 62901 **E-mail:** bgyoung@siu.edu  
**Phone No.:** 618-453-7679 **Mobile No.:** 618-713-6471

**Crop Description**

**Crop 1:** YACKR Arable land Arable land  
**Variety:** NON-CROP  
**Planting Method:** NA - Not-Applicable

**Pest Description**

**Pest 1 Type:** W **Code:** AMATA - Amaranthus rudis Sauer  
**Common Name:** waterhemp, common  
**Description:** glyphosate-resistant waterhemp

**Site and Design**

**Plot Width, Unit:** 10 FT **Site Type:** FIELD  
**Plot Length, Unit:** 25 FT  
**Plot Area, Unit:** 250 FT<sup>2</sup> **Tillage Type:** NOTILL no-till  
**Replications:** 3 **Study Design:** RACOB L Randomized Complete Block (RCB)

No.	Previous Crop	Year
1.	NONE	2011

**Maintenance**

No.	Maintenance Treatment Name
1.	N 0 LB/A, P205 0 LB/A, K20 0 LB/A

**Soil Description**

**% OM:** 1.87 **Texture:** SIL SILT LOAM  
**pH:** 5.5 **Soil Name:** ALVIN  
**CEC:** 7.06

**Additional Measured Elements**

Element	Quantity	Unit
P1	172	LB/A
K	446	LB/A

**Moisture and Weather Conditions**

**Overall Moisture Conditions:** BELNOR below normal  
**Closest Weather Station:** SOUTHERN IL AIRPORT (93810) **Distance, Unit:** 3.5 MI

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## Application Description

	A
Application Date:	8-30-12
Time of Day:	9:00
Application Method:	Spray
Application Timing:	6-8"W
Application Placement:	BROFOL
Applied By:	RJW
Air Temperature, Unit:	82 F
% Relative Humidity:	69
Wind Velocity, Unit:	2 MPH
Wind Direction:	S
Dew Presence (Y/N):	N no
Soil Temperature, Unit:	80 F
Soil Moisture:	BELNOR
% Cloud Cover:	0
Next Rain Occurred On:	8-31-12

## Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	YACKR
Stage Scale Used:	DESC
Stage Majority, Percent:	NA

## Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale:	AMATA W DESC
Stage Majority, Percent:	10
Stage Minimum, Percent:	Coty
Stage Maximum, Percent:	18
Height, Unit:	6 IN
Height Minimum, Maximum:	0.5 12
Density, Unit:	10 FT2

## Application Equipment

	A
Appl. Equipment:	CO2 sprayer
Equipment Type:	BACSPR
Operation Pressure, Unit:	30 PSI
Nozzle Type:	See
Nozzle Size:	comment
Boom Length, Unit:	6.67 FT
Spray Volume, Unit:	15 GPA

## Southern Illinois University

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Pest Code									AMATA-HR	AMATA-HR	AMATA-HR	AMATA-HR	
Crop Code									9-1-12	9-6-12	9-13-12	9-27-12	
Rating Date									Control	Control	Control	Control	
Rating Type									Percent	Percent	Percent	Percent	
Rating Unit									2 DA-A	7 DA-A	14 DA-A	28 DA-A	
Rating Timing													
Trt-Eval Interval													
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code				
1	XR 11002 SHARPEN	2.85	SC	0.0223	lb ai/a	1	fl oz/a	6-8"W	A	40 cd	47 cd	45 de	42 f
	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	6-8"W	A				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A				
2	XR 11002 SHARPEN	2.85	SC	0.0223	lb ai/a	1	fl oz/a	6-8"W	A	42 cd	52 c	50 d	52 de
	MSO (MSO ULTRA)	100	SL	1	% v/v	1	% v/v	6-8"W	A				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A				
3	XR 11002 SHARPEN	2.85	SC	0.0223	lb ai/a	1	fl oz/a	6-8"W	A	38 d	45 cd	43 de	43 ef
	DESTINY HC	100	SL	0.5	% v/v	0.5	% v/v	6-8"W	A				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A				
4	XR 11002 ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	6-8"W	A	20 e	38 d	38 e	40 f
	SHARPEN	2.85	SC	0.0223	lb ai/a	1	fl oz/a	6-8"W	A				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A				
5	XR 11002 ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	6-8"W	A	45 bcd	47 cd	52 d	53 d
	SHARPEN	2.85	SC	0.0223	lb ai/a	1	fl oz/a	6-8"W	A				
	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	6-8"W	A				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A				
6	XR 11002 ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	6-8"W	A	52 bc	67 b	68 bc	66 bc
	SHARPEN	2.85	SC	0.0223	lb ai/a	1	fl oz/a	6-8"W	A				
	MSO (MSO ULTRA)	100	SL	1	% v/v	1	% v/v	6-8"W	A				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A				
7	XR 11002 ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	6-8"W	A	47 bcd	68 b	65 c	58 cd
	SHARPEN	2.85	SC	0.0223	lb ai/a	1	fl oz/a	6-8"W	A				
	DESTINY HC	100	SL	0.5	% v/v	0.5	% v/v	6-8"W	A				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A				
8	XR 11002 ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	6-8"W	A	55 b	65 b	63 c	61 cd
	SHARPEN	2.85	SC	0.0223	lb ai/a	1	fl oz/a	6-8"W	A				
	MSO (MSO ULTRA)	100	SL	1	% v/v	1	% v/v	6-8"W	A				
9	XR 11002 GRAMOXONE 2 SL	2	SL	0.625	lb ai/a	2.5	pt/a	6-8"W	A	94 a	98 a	98 a	98 a
	SHARPEN	2.85	SC	0.0223	lb ai/a	1	fl oz/a	6-8"W	A				
	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	6-8"W	A				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A				
10	XR 11002 GRAMOXONE 2 SL	2	SL	0.625	lb ai/a	2.5	pt/a	6-8"W	A	94 a	98 a	99 a	99 a
	SHARPEN	2.85	SC	0.0223	lb ai/a	1	fl oz/a	6-8"W	A				
	MSO (MSO ULTRA)	100	SL	1	% v/v	1	% v/v	6-8"W	A				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A				
11	NONTREATED									0 f	0 e	0 f	0 g

Means followed by same letter do not significantly differ (P=,05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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										AMATA-HR	AMATA-HR	AMATA-HR	AMATA-HR
										9-1-12	9-6-12	9-13-12	9-27-12
										Control	Control	Control	Control
										Percent	Percent	Percent	Percent
										2 DA-A	7 DA-A	14 DA-A	28 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Other Rate	Other Unit	Growth Stage	Appl Code				
12	TTI 11002									57 b	75 b	75 b	73 b
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	6-8"W	A				
	SHARPEN	2.85	SC	0.0223	lb ai/a	1	fl oz/a	6-8"W	A				
	MSO (MSO ULTRA)	100	SL	1	% v/v	1	% v/v	6-8"W	A				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A				
LSD (P=.05)										11.7	12.6	9.3	9.8
Standard Deviation										6.9	7.4	5.5	5.8
CV										14.24	12.75	9.48	10.12
Replicate F										0.907	3.410	1.938	1.687
Replicate Prob(F)										0.4181	0.0513	0.1678	0.2082
Treatment F										43.556	39.327	72.005	63.870
Treatment Prob(F)										0.0001	0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: SIU.
2. Ratings: WC at 7, 14, and 28 DAT;  
Note the speed of foliar burn at 2 and 4 DAT.  
Photos as appropriate.
3. Spray nozzles are per treatment, see treatment list.
4. AMATA-HR = Herbicide-resistant waterhemp (glyphosate).
5. There were no evaluations made at 4 DA-A.
6. Not harvested, non-crop.