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AMS Replacement Study

Trial ID: 09S-THP-CTS-55 Protocol ID: 09S-THP-CTS-55
 Location: Throckmorton Study Director: Paul Marquardt/Melissa Kruger
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact: George Watters

General Trial Information

Study Director: Paul Marquardt/Melissa Kruger **Title:** Research Associate
Investigator: Dr. Bill Johnson **Title:** Professor

Discipline: H herbicide
Trial Status: E established
Initiation Date: 5/12/09 **Planned Completion Date:** 7/21/09

Trial Location

City: West Lafayette
State/Prov.: IN
Postal Code: 47907
Country: USA United States
Directions:
 TPAC Field 4A

Objectives:

AMS Replacement study

Personnel

Study Director: Paul Marquardt/Melissa Kruger **Title:** Research Associate
Affiliation: Purdue University
Address: 915 W. State Street, Department of Botany & Plant Path.
Location: West Lafayette, IN
Postal Code: 47907 **E-mail:** pmarquar@purdue.edu/mmkruger@purdue.edu
Phone No.: 765-494-4621 **Mobile No.:** 765-409-6369
Investigator: Dr. Bill Johnson **Title:** Professor
Affiliation: Purdue University
Address: 915 W. State Street, Department of Botany & Plant Path.
Location: West Lafayette, IN
Postal Code: 47907 **E-mail:** wgj@purdue.edu

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: US

Crop Description

Crop 1: GLXMA Glycine max Soybean
Variety: AG3402 **Description:** roundup ready
BBCH Scale: BSOY **Planting Date:** 5/12/09
Planting Method: SEEDED seeded **Rate, Unit:** 160000 P/A
Depth, Unit: 1 IN
Row Spacing, Unit: 15 IN **Spacing Within Row, Unit:** 2.5 IN
Seed Bed: CLOTRA cloddy/trashy **Soil Temperature, Unit:** 64 F
Soil Moisture: ABONOR above normal

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Pest Description

- Pest 1 Type:** W **Code:** AMBTR *Ambrosia trifida*
Common Name: Giant ragweed
- Pest 2 Type:** W **Code:** SETFA *Setaria faberi*
Common Name: Giant foxtail
- Pest 3 Type:** W **Code:** AMARE *Amaranthus retroflexus*
Common Name: Redroot pigweed
- Pest 4 Type:** W **Code:** AMATA *Amaranthus tamariscinus*
Common Name: Common waterhemp
- Pest 5 Type:** W **Code:** CHEAL *Chenopodium album*
Common Name: Common lambsquarters
- Pest 6 Type:** W **Code:** ABUTH *Abutilon theophrasti*
Common Name: Velvetleaf
- Pest 7 Type:** W **Code:** SOLPT *Solanum ptycanthum*
Common Name: Eastern black nightshade
- Pest 8 Type:** W **Code:** TAROF *Taraxacum officinale*
Common Name: Common dandelion

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:** NOTILL no-till
Replications: 4 **Study Design:** RACOB L Randomized Complete Block (RCB)

Soil Description

Description Name: TPAC Field 4A
% OM: 3.1 **Texture:** SIL silt loam
pH: 6 **Soil Name:** Toronto-Millbrook
CEC: 11.1

Analyzed By:
 A&L Great Lakes Laboratories, Inc. Report #: F04048-0006

Additional Measured Elements

Element	Quantity	Unit
P	53	ppm
K	208	ppm
Mg	325	ppm
Ca	1100	ppm

Application Description

	A
Application Date:	6/23/09
Time of Day:	7:20A
Application Method:	SPRAY
Application Timing:	POSPOS
Application Placement:	BROFOL
Applied By:	AR
Air Temperature, Unit:	77 F
% Relative Humidity:	77
Wind Velocity, Unit:	1.5 MPH
Wind Direction:	E
Dew Presence (Y/N):	Y yes
Soil Temperature, Unit:	75 F
Soil Moisture:	MOIST
% Cloud Cover:	0

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Crop Stage At Each Application	
	A
Crop 1 Code, BBCH Scale:	GLXMA BSOY
Stage Scale Used:	BBCH
Stage Majority, Percent:	V4 90
Stage Minimum, Percent:	V3 10
Stage Maximum, Percent:	V4 90
Height, Unit:	6 IN
Height Minimum, Maximum:	4 8

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Pest Stage At Each Application	
	A
Pest 1 Code, Type, Scale:	AMBTR W
Stage Minimum, Percent:	32
Stage Maximum, Percent:	35
Height, Unit:	7 IN
Height Minimum, Maximum:	2 12
Density, Unit:	11 YD2
Pest 2 Code, Type, Scale:	SETFA W
Stage Minimum, Percent:	12
Stage Maximum, Percent:	16
Height, Unit:	5.5 IN
Height Minimum, Maximum:	1 10
Density, Unit:	60 YD2
Pest 3 Code, Type, Scale:	AMARE W
Stage Minimum, Percent:	13
Stage Maximum, Percent:	15
Height, Unit:	3 IN
Height Minimum, Maximum:	2 4
Density, Unit:	3 YD2
Pest 4 Code, Type, Scale:	AMATA W
Stage Minimum, Percent:	32
Stage Maximum, Percent:	34
Height, Unit:	3.5 IN
Height Minimum, Maximum:	2 5
Density, Unit:	2 YD2
Pest 5 Code, Type, Scale:	CHEAL W
Stage Minimum, Percent:	32
Stage Maximum, Percent:	35
Height, Unit:	4 IN
Height Minimum, Maximum:	2 6
Density, Unit:	2 YD2
Pest 6 Code, Type, Scale:	ABUTH W
Stage Minimum, Percent:	32
Stage Maximum, Percent:	34
Height, Unit:	4 IN
Height Minimum, Maximum:	2 6
Density, Unit:	2 YD2
Pest 7 Code, Type, Scale:	SOLPT W
Stage Minimum, Percent:	31
Stage Maximum, Percent:	32
Height, Unit:	3 IN
Height Minimum, Maximum:	2 4
Density, Unit:	1.5 YD2
Pest 8 Code, Type, Scale:	TAROF W
Stage Minimum, Percent:	12
Stage Maximum, Percent:	24
Height, Unit:	3 IN
Height Minimum, Maximum:	2 4
Density, Unit:	2 YD2

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Application Equipment	
	A
Appl. Equipment:	CO2 BACKPACK
Equipment Type:	SPRBAC
Operating Pressure, Unit:	17 psi
Nozzle Type:	FLAT FAN
Nozzle Size:	XR11002
Nozzle Spacing, Unit:	15 IN
Nozzles/Row:	6
Boom Length, Unit:	7.5 FT
Boom Height, Unit:	18 IN
Ground Speed, Unit:	3 MPH
Carrier:	H2O
Water Hardness (ppm CaCO3):	150
Spray Volume, Unit:	15 gal/ac
Mix Size, Unit:	1.8 liters
Propellant:	CO2
Tank Mix (Y/N):	N no

No. Date	By	Deviations
1.5/12/09	PM	No-till instead of conventional tillage
Reasons: Wet conditions forced us to abandon tillage operations and plant when field was dry.		

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 Location: Throckmorton Study Director: Paul Marquardt/Melissa Kruger
 Project ID: Investigator: Dr. Bill Johnson
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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed				
Pest Code	AMBTR	SETFA	AMARE	AMBTR	SETFA				
Pest Scientific Name	Ambrosia trifida	Setaria faberi	Amaranthus ret.	Ambrosia trifida	Setaria faberi				
Pest Name	Giant ragweed	Giant foxtail	Redroot pigweed	Giant ragweed	Giant foxtail				
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA				
BBCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY				
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max				
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean				
Crop Variety	AG3306	AG3306	AG3306	AG3306	AG3306				
Rating Date	7/9/09	7/9/09	7/9/09	7/20/09	7/20/09				
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO				
Rating Unit	%	%	%	%	%				
Number of Subsamples	1	1	1	1	1				
Crop Stage Majority	R2	R2	R2						
Pest Stage Majority	6-36"	12-24"	1-18"	6-36"	2-18"				
Pest Density, Unit	13 YD2	75 YD2	9.5 YD2	13 YD2	60 YD2				
Assessed By	CB	CB	CB	PM	PM				
Days After First/Last Applic.	16 16	16 16	16 16	27 27	27 27				
Trt-Eval Interval	16 DA-A	16 DA-A	16 DA-A	27 DA-A	27 DA-A				
Plant-Eval Interval	58 DP-1	58 DP-1	58 DP-1	69 DP-1	69 DP-1				
Trt No.	Treatment Name	Rate	Appl Unit	Code	1	2	3	4	5
1	UNTREATED	0.0	b		0.0 b	0.0 b	0.0 b	0.0 b	0.0 b
2	Roundup PowerMax	0.387 lb ae/a	A		65.0 a	98.5 a	86.0 a	83.3 a	94.0 a
3	Roundup PowerMax N-Pak Liquid AMS	0.387 lb ae/a 2.5 % v/v	A		85.3 a	99.3 a	86.8 a	87.0 a	98.5 a
4	Roundup PowerMax Alliance	0.387 lb ae/a 1.25 % v/v	A		74.0 a	98.5 a	83.8 a	72.2 a	96.7 a
5	Roundup PowerMax AG 08014	0.387 lb ae/a 1 % v/v	A		84.8 a	99.3 a	91.3 a	92.0 a	97.5 a
6	Roundup PowerMax AG 08015	0.387 lb ae/a 1 % v/v	A		70.8 a	99.5 a	94.0 a	85.0 a	97.3 a
7	Roundup PowerMax AG 08031	0.387 lb ae/a 1 % v/v	A		73.8 a	99.8 a	75.0 a	86.3 a	92.8 a
8	Roundup PowerMax AG 08034	0.387 lb ae/a 1 % v/v	A		72.5 a	100.0 a	71.3 a	87.5 a	95.8 a
9	Roundup PowerMax AG 07090	0.387 lb ae/a 1.25 % v/v	A		80.0 a	99.8 a	97.3 a	94.5 a	98.0 a
10	Roundup PowerMax AG 03019	0.387 lb ae/a 0.5 % v/v	A		94.2 a	99.8 a	74.5 a	86.3 a	97.3 a
11	Roundup PowerMax AG 07043	0.387 lb ae/a 1 % v/v	A		53.8 a	99.8 a	81.8 a	77.5 a	97.3 a
LSD (P=.05)					32.73	1.43	23.05	17.56	4.24
Standard Deviation					22.63	0.99	15.97	12.14	2.93
CV					33.02	1.1	20.87	15.69	3.34
Bartlett's X2					8.061	25.798	21.453	4.832	18.421
P(Bartlett's X2)					0.528	0.001*	0.011*	0.849	0.018*
Replicate F					0.203	3.390	0.516	0.710	4.079
Replicate Prob(F)					0.8933	0.0307	0.6747	0.5541	0.0156
Treatment F					4.949	3654.782	11.166	18.901	394.861
Treatment Prob(F)					0.0003	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.

Pest Type
 W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop
Pest Code
 AMBTR, Ambrosia trifida, = US
 SETFA, Setaria faberi, = US
 AMARE, Amaranthus retroflexus, = US
Crop Code
 GLXMA, BSOY, Glycine max, = US
Rating Type
 CONTRO = control / burndown or knockdown
Rating Unit
 % = percent

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YD2 = per square yard

Plant-Eval Interval

58 DP-1 = 1 5/12/09

69 DP-1 = 1 5/12/09