

Purdue University

PRE weed mgmt strategy that supports RR soybean

Trial ID: 08S-ROM-CTS-35 Protocol ID: 08S-ROM-CTS-35
 Location: Romney Study Director: Melissa Kruger
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact:

General Trial Information

Study Director: Melissa Kruger **Title:** Lab Technician VII
Investigator: Dr. William G. Johnson **Title:** Associate Professor

Discipline: H herbicide
Trial Status: F one-year/final
Initiation Date: 4/23/2008 **Planned Completion Date:** 5/19/2008

Trial Location

City: Romney
State/Prov.: IN
Postal Code: 47981
Country: USA United States

Objectives:

The objective of the trial is to develop the best herbicide product combination for hard to control and glyphosate resistant weeds in the Roundup Ready system.

Personnel

Study Director: Melissa Kruger **Title:** Lab Technician VII
Affiliation: Purdue University
Address: 915 W. State St.
Location: West Lafayette, IN USA
Postal Code: 47907 **E-mail:** mmkruger@purdue.edu
Phone No.: 765-494-4621
Investigator: Dr. William G. Johnson **Title:** Associate Professor
Affiliation: Purdue University
Address: 915 W. State St.
Location: West Lafayette, IN USA
Postal Code: 47907 **E-mail:** wj@purdue.edu
Phone No.: 765-494-4656

Cooperator/Landowner

Cooperator: Roger Verhey **Role:** Landowner
Address 1: 9012 S. Co. Rd. 200 W
Phone No.: 765-538-2481
City: Romney
State/Prov: IN
Postal Code: 47981
Country: USA United States

Crop Description

Crop 1: GLXMA Glycine max Soybean
Variety: AG3306 **Description:** RR; JD7200
BBCH Scale: BSOY **Planting Date:** 4/30/2008
Planting Method: DIRDRI direct drilled **Rate, Unit:** 130000 S/A
Depth, Unit: 2 IN
Row Spacing, Unit: 30 IN
Soil Temperature, Unit: 61 F
Soil Moisture: DRY dry **Emergence Date:** 5/9/2008

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:** CHEAL Chenopodium album

Common Name: Common lambsquarters

Pest 4 Type: W **Code:** ABUTH *Abutilon theophrasti*

Common Name: Velvetleaf

Site and Design

Plot Width, Unit: 10 FT **Site Type:** FIELD field

Plot Length, Unit: 30 FT

Plot Area, Unit: 300 FT² **Tillage Type:** NOTILL no-till

Replications: 4 **Study Design:** RACOB L Randomized Complete Block (RCB)

Untreated Arrangement: INCLUDED single control randomized in each block

Maintenance

No.	Date	Maintenance Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit
1.	6/19/2008	Roundup PowerMAX	4.5	LB/GAL	L	22	OZ/A
2.	6/19/2008	AMS	100	%	D	17	LB/100 GAL

Soil Description

Description Name: Romney

% OM: 2.8

pH: 6.7 **Soil Name:** Drummer Toronto

CEC: 10.6

Analyzed By:

□ The Farm Clinic, Inc. 2003

Additional Measured Elements

Element	Quantity	Unit
P	76	lb/a
K	343	lb/a

Moisture and Weather Conditions

Closest Weather Station: On research farm **Distance, Unit:** 1.5 MI

Application Description

	A
Application Date:	4/23/2008
Time of Day:	2:15 PM
Application Method:	SPRAY
Application Timing:	PREPLA
Application Placement:	BROFOL
Applied By:	VM/GK/MK
Air Temperature, Unit:	82 F
% Relative Humidity:	50
Wind Velocity, Unit:	5 MPH
Wind Direction:	NE
Dew Presence (Y/N):	N no
Soil Temperature, Unit:	65 F
Soil Moisture:	DRY
% Cloud Cover:	70

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	GLXMA BSOY
Stage Scale Used:	BBCH
Stage Majority, Percent:	N/A

Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale:	AMBTR W
Stage Majority, Percent:	COTY
Stage Minimum, Percent:	COTY
Stage Maximum, Percent:	1 NODE

Height, Unit:	1 IN
Height Minimum, Maximum:	0 2
Density, Unit:	3 YD2
Pest 2 Code, Type, Scale:	SETFA W
Height, Unit:	0.25 IN
Height Minimum, Maximum:	0 0.5
Density, Unit:	3 YD2
Pest 3 Code, Type, Scale:	CHEAL W
Stage Majority, Percent:	COTY
Stage Minimum, Percent:	COTY
Stage Maximum, Percent:	4 NODE
Height, Unit:	0.375 IN
Height Minimum, Maximum:	0 0.75
Density, Unit:	1 YD2
Pest 4 Code, Type, Scale:	ABUTH W
Stage Majority, Percent:	COTY
Density, Unit:	1 YD2

Application Equipment

	A
Appl. Equipment:	CO2 Backpack
Operating Pressure, Unit:	17 PSI
Nozzle Type:	Flat Fan
Nozzle Size:	XR11002
Nozzle Spacing, Unit:	15 IN
Nozzles/Row:	8
Boom Length, Unit:	10 FT
Boom Height, Unit:	18 IN
Ground Speed, Unit:	3 MPH
Carrier:	H2O
Spray Volume, Unit:	15 GAL/AC
Mix Size, Unit:	1.8 Liters
Propellant:	CO2
Tank Mix (Y/N):	N no

Trt No Treatment Application Comment

15 No Lorox DF was sent from Monsanto (inventory did not contain Lorox DF)

Purdue University

PRE weed mgmt strategy that supports RR soybean

Trial ID: 08S-ROM-CTS-35 Protocol ID: 08S-ROM-CTS-35
 Location: Romney Study Director: Melissa Kruger
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact:

Pest Type	W Weed		W Weed	W Weed				
Pest Code	AMBTR		AMBTR	SETFA				
Pest Scientific Name	Ambrosia trifi>		Ambrosia trifi>	Setaria faberi				
Pest Name	Giant ragweed		Giant ragweed	Giant foxtail				
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA				
BBCH Scale	BSOY	BSOY	BSOY	BSOY				
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max				
Crop Name	Soybean	Soybean	Soybean	Soybean				
Crop Variety	AG3306	AG3306	AG3306	AG3306				
Description	JD 7200; RR	JD 7200; RR	JD 7200; RR	JD 7200; RR				
Part Rated	PLOT P	PLOT C	PLOT P	PLOT P				
Rating Date	5/8/2008	5/19/2008	5/19/2008	5/19/2008				
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO				
Rating Unit	%	%	%	%				
Number of Subsamples	1	1	1	1				
Crop Stage Majority	N/A							
Pest Stage Minimum/Maximum	1-3"		1-12"	0.5-3"				
Pest Density, Unit	3 FT2		15 YD2	27 FT2				
Footnote Number	1	2						
Assessed By	WGJ JM	GK CB	GK JM	GK JM				
Rating Timing	7DAP/14DATA	14DAP/28DATA	14DAP/28DATA	14DAP/28DATA				
Days After First/Last Applic.	15 15	26 26	26 26	26 26				
Trt-Eval Interval	15 DA-A	26 DA-A	26 DA-A	26 DA-A				
Plant-Eval Interval	8 DP-1	19 DP-1	19 DP-1	19 DP-1				
Days After Emergence	-1 DE-	10 DE-	10 DE-	10 DE-				
Trt No.	Treatment Name	Rate	Unit	Appl Code	1	2	3	4
1	Untreated				0.0 b	0.0 d	0.0 b	0.0 d
2	Roundup Original MAX	0.75 lb ae/a	A		93.5 a	7.5 d	94.8 a	85.8 abc
	2,4-D Ester	0.5 lb ai/a	A					
	Ammonium Sulfate	2 % w/w	A					
3	Gramoxone Inteon	0.75 lb ai/a	A		94.0 a	3.8 d	93.0 a	88.5 ab
	2,4-D Ester	0.5 lb ai/a	A					
	Ammonium Sulfate	2 % w/w	A					
4	Roundup Original MAX	0.75 lb ae/a	A		94.8 a	2.0 d	95.0 a	91.5 ab
	2,4-D Ester	0.5 lb ai/a	A					
	FirstRate	0.016 lb ai/a	A					
	Ammonium Sulfate	2 % w/w	A					
5	Roundup Original MAX	0.75 lb ae/a	A		99.0 a	0.0 d	98.5 a	98.8 a
	2,4-D Ester	0.5 lb ai/a	A					
	Valor	0.064 lb ai/a	A					
	Ammonium Sulfate	2 % w/w	A					
6	Roundup Original MAX	0.75 lb ae/a	A		95.5 a	1.0 d	95.3 a	98.5 a
	2,4-D Ester	0.5 lb ai/a	A					
	Valor	0.096 lb ai/a	A					
	Ammonium Sulfate	2 % w/w	A					
7	Extreme	0.82 lb ai/a	A		96.5 a	8.8 d	93.8 a	70.8 c
	NIS	0.125 % v/v	A					
	2,4-D Ester	0.5 lb ai/a	A					
	Ammonium Sulfate	2 % w/w	A					
8	Roundup Original MAX	0.75 lb ae/a	A		95.5 a	2.0 d	97.5 a	94.5 a
	2,4-D Ester	0.5 lb ai/a	A					
	INTRRO	2 lb ai/a	A					
	Ammonium Sulfate	2 % w/w	A					

Pest Type	W Weed		W Weed	W Weed
Pest Code	AMBTR		AMBTR	SETFA
Pest Scientific Name	Ambrosia trifl>		Ambrosia trifl>	Setaria faberi
Pest Name	Giant ragweed		Giant ragweed	Giant foxtail
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean
Crop Variety	AG3306	AG3306	AG3306	AG3306
Description	JD 7200; RR	JD 7200; RR	JD 7200; RR	JD 7200; RR
Part Rated	PLOT P	PLOT C	PLOT P	PLOT P
Rating Date	5/8/2008	5/19/2008	5/19/2008	5/19/2008
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Crop Stage Majority	N/A			
Pest Stage Minimum/Maximum	1-3"		1-12"	0.5-3"
Pest Density, Unit	3 FT2		15 YD2	27 FT2
Footnote Number	1	2		
Assessed By	WGJ JM	GK CB	GK JM	GK JM
Rating Timing	7DAP/14DATA	14DAP/28DATA	14DAP/28DATA	14DAP/28DATA
Days After First/Last Applic.	15 15	26 26	26 26	26 26
Trt-Eval Interval	15 DA-A	26 DA-A	26 DA-A	26 DA-A
Plant-Eval Interval	8 DP-1	19 DP-1	19 DP-1	19 DP-1
Days After Emergence	-1 DE-	10 DE-	10 DE-	10 DE-
Trt No.	Treatment	Rate	Appl	
	Name	Rate	Unit Code	
				1 2 3 4
9	Roundup Original MAX	0.75 lb ae/a	A	95.8 a
	2,4-D Ester	0.5 lb ai/a	A	1.3 d
	INTRRO	1.5 lb ai/a	A	97.5 a
	Valor	0.064 lb ai/a	A	96.3 a
	Ammonium Sulfate	2 % w/w	A	
10	Roundup Original MAX	0.75 lb ae/a	A	91.8 a
	2,4-D Ester	0.5 lb ai/a	A	1.0 d
	Prowl H2O	0.95 lb ai/a	A	97.5 a
	Ammonium Sulfate	2 % w/w	A	98.5 a
11	Roundup Original MAX	0.75 lb ae/a	A	95.3 a
	2,4-D Ester	0.5 lb ai/a	A	2.0 d
	Canopy EX		A	94.5 a
	Classic	0.0156 lb ai/a	A	92.0 ab
	Express	0.0047 lb ai/a	A	
	Ammonium Sulfate	2 % w/w	A	
12	Roundup Original MAX	0.75 lb ae/a	A	90.3 a
	2,4-D Ester	0.5 lb ai/a	A	2.5 d
	Synchrony XP	0.284 oz ai/a	A	95.5 a
	Ammonium Sulfate	2 % w/w	A	82.3 abc
13	Roundup Original MAX	0.75 lb ae/a	A	94.8 a
	2,4-D Ester	0.5 lb ai/a	A	7.5 d
	Authority First	0.141 lb ai/a	A	90.8 a
	Ammonium Sulfate	2 % w/w	A	99.0 a
14	Roundup PowerMAX	0.75 lb ae/a	A	89.3 a
	2,4-D Ester	0.5 lb ai/a	A	10.5 d
	Sencor 75DF	0.25 lb ai/a	A	90.0 a
	Ammonium Sulfate	2 % w/w	A	75.0 bc
15	Roundup Original MAX	0.75 lb ae/a	A	
	2,4-D Ester	0.5 lb ai/a	A	
	Lorox DF	0.375 lb ai/a	A	
	Ammonium Sulfate	2 % w/w	A	
16	Roundup Original MAX	0.75 lb ae/a	A	99.0 a
	2,4-D Ester	0.5 lb ai/a	A	3.8 d
	Valor XLT		A	98.8 a
	Valor	0.056 lb ai/a	A	98.8 a
	Classic	0.0194 lb ai/a	A	
	Ammonium Sulfate	2 % w/w	A	

Pest Type	W Weed		W Weed	W Weed
Pest Code	AMBTR		AMBTR	SETFA
Pest Scientific Name	Ambrosia trifl>		Ambrosia trifl>	Setaria faberi
Pest Name	Giant ragweed		Giant ragweed	Giant foxtail
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean
Crop Variety	AG3306	AG3306	AG3306	AG3306
Description	JD 7200; RR	JD 7200; RR	JD 7200; RR	JD 7200; RR
Part Rated	PLOT P	PLOT C	PLOT P	PLOT P
Rating Date	5/8/2008	5/19/2008	5/19/2008	5/19/2008
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Crop Stage Majority	N/A			
Pest Stage Minimum/Maximum	1-3"		1-12"	0.5-3"
Pest Density, Unit	3 FT2		15 YD2	27 FT2
Footnote Number	1	2		
Assessed By	WGJ JM	GK CB	GK JM	GK JM
Rating Timing	7DAP/14DATA	14DAP/28DATA	14DAP/28DATA	14DAP/28DATA
Days After First/Last Applic.	15 15	26 26	26 26	26 26
Trt-Eval Interval	15 DA-A	26 DA-A	26 DA-A	26 DA-A
Plant-Eval Interval	8 DP-1	19 DP-1	19 DP-1	19 DP-1
Days After Emergence	-1 DE-	10 DE-	10 DE-	10 DE-
Trt No.	Treatment	Rate	Appl	
	Name	Rate	Unit Code	
				1 2 3 4
17	Roundup Original MAX	0.75 lb ae/a	A	97.5 a
	2,4-D Ester	0.5 lb ai/a	A	60.5 b
	Clarity	0.5 lb ae/a	A	98.0 a
	Ammonium Sulfate	2 % w/w	A	88.3 ab
18	Gramoxone Inteon	0.75 lb ai/a	A	92.5 a
	2,4-D Ester	0.5 lb ai/a	A	1.3 d
	Sencor 75DF	0.25 lb ai/a	A	99.3 a
	Ammonium Sulfate	2 % w/w	A	92.8 ab
19	Roundup Original MAX	0.75 lb ae/a	A	99.8 a
	2,4-D Ester	0.5 lb ai/a	A	7.3 d
	Gangster	0.126 lb ai/a	A	98.3 a
	Valor	0.048 lb ai/a	A	98.3 a
	FirstRate	0.0158 lb ai/a	A	
	Ammonium Sulfate	2 % w/w	A	
20	Roundup Original MAX	0.75 lb ae/a	A	96.3 a
	2,4-D Ester	0.5 lb ai/a	A	7.0 d
	Valor	0.064 lb ai/a	A	97.3 a
	Classic	0.32 oz ai/a	A	98.3 a
	Harmony GT	0.104 oz ai/a	A	
	Ammonium Sulfate	2 % w/w	A	
21	Roundup Original MAX	0.75 lb ae/a	A	99.3 a
	2,4-D Ester	0.5 lb ai/a	A	2.5 d
	Valor	0.064 lb ai/a	A	98.8 a
	Classic	0.08 oz ai/a	A	100.0 a
	Harmony GT	0.246 oz ai/a	A	
	Ammonium Sulfate	2 % w/w	A	
22	Roundup Original MAX	0.75 lb ae/a	A	95.5 a
	2,4-D Ester	0.5 lb ai/a	A	30.0 c
	Clarity	0.25 lb ae/a	A	97.3 a
	Ammonium Sulfate	2 % w/w	A	91.0 ab
23	Roundup Original MAX	0.75 lb ae/a	A	99.5 a
	2,4-D Ester	0.5 lb ai/a	A	94.3 a
	Clarity	1 lb ae/a	A	100.0 a
	Ammonium Sulfate	2 % w/w	A	96.0 a
24	Untreated			0.0 b
				0.0 d
				0.0 b
				0.0 d

Pest Type	W Weed		W Weed	W Weed
Pest Code	AMBTR		AMBTR	SETFA
Pest Scientific Name	Ambrosia trifi>		Ambrosia trifi>	Setaria faberi
Pest Name	Giant ragweed		Giant ragweed	Giant foxtail
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean
Crop Variety	AG3306	AG3306	AG3306	AG3306
Description	JD 7200; RR	JD 7200; RR	JD 7200; RR	JD 7200; RR
Part Rated	PLOT P	PLOT C	PLOT P	PLOT P
Rating Date	5/8/2008	5/19/2008	5/19/2008	5/19/2008
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Crop Stage Majority	N/A			
Pest Stage Minimum/Maximum	1-3"		1-12"	0.5-3"
Pest Density, Unit	3 FT2		15 YD2	27 FT2
Footnote Number	1	2		
Assessed By	WGJ JM	GK CB	GK JM	GK JM
Rating Timing	7DAP/14DATA	14DAP/28DATA	14DAP/28DATA	14DAP/28DATA
Days After First/Last Applic.	15 15	26 26	26 26	26 26
Trt-Eval Interval	15 DA-A	26 DA-A	26 DA-A	26 DA-A
Plant-Eval Interval	8 DP-1	19 DP-1	19 DP-1	19 DP-1
Days After Emergence	-1 DE-	10 DE-	10 DE-	10 DE-
Trt Treatment Rate Appl				
No. Name Rate Unit Code	1	2	3	4
25 Untreated	0.0 b	0.0 d	0.0 b	0.0 d
LSD (P=.05)	9.43	13.06	5.91	11.40
Standard Deviation	6.67	9.23	4.18	8.06
CV	7.98	86.48	4.96	10.0
Bartlett's X2	63.437	82.401	31.266	55.046
P(Bartlett's X2)	0.001*	0.001*	0.038*	0.001*
Replicate F	1.446	0.756	0.959	1.058
Replicate Prob(F)	0.2371	0.5227	0.4172	0.3726
Treatment F	94.318	22.775	243.545	63.142
Treatment Prob(F)	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.

Purdue University

PRE weed mgmt strategy that supports RR soybean

Trial ID: 08S-ROM-CTS-35 Protocol ID: 08S-ROM-CTS-35
Location: Romney Study Director: Melissa Kruger
Project ID: Investigator: Dr. Bill Johnson
Sponsor Contact:

Pest Type

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

Pest Code

AMBTR, Ambrosia trifida, = US

SETFA, Setaria faberi, = US

Crop Code

GLXMA, BSOY, Glycine max, = US

P = Pest is Part Rated

C = Crop is Part Rated

Rating Type

CONTRO = control / burndown or knockdown

PHYGEN = phytotoxicity - general / injury

Rating Unit

% = percent

FT2 = per square foot

YD2 = per square yard

Plant-Eval Interval

8 DP-1 = 1 4/30/2008

19 DP-1 = 1 4/30/2008

Footnote 1: No crop emerged at time of rating

Footnote 2: Plot 901 soybeans not emerged at 5/19/08 rating timing