

Ohio State University Horticulture and Crop Science

PURDUE ADJUVANT STUDY

Title No. 2:
Trial ID: 10PURDUEADJ Protocol ID: 10PURDUEADJ
Location: CLARKSBURG Study Director: Chad Brabham
Project ID: Investigator: Dr. Mark M. Loux
Sponsor Contact:

General Trial Information

Study Director: Chad Brabham
Investigator: Dr. Mark M. Loux

Trial Location

City: Clarksburg **Latitude of LL Corner °:** 39.53035 N
State/Prov.: Ohio **Longitude of LL Corner °:** 83.17572 W
Postal Code: 43115 **Altitude of LL Corner, Unit:** 863.00 FT
Country: USA

Personnel

Study Director: Chad Brabham
Investigator: Dr. Mark M. Loux

Crop Description

Crop 1: GLXMA Glycine max Soybean
Variety: Seed Consultants SC9349RR **Description:** RR
BBCH Scale: BSOY **Planting Date:** Apr-20-2010
Planting Method: SEEDED seeded **Rate, Unit:** 182000 S/A
Depth, Unit: 0.75 IN
Row Spacing, Unit: 15 IN
Seed Bed: MEDIUM medium
Soil Moisture: NORMAL normal

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:** HIBTR Hibiscus trionum
Common Name: Venice mallow

Pest 4 Type: W **Code:** CHEAL Chenopodium album
Common Name: Common lambsquarters

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: 3 **Study Design:** FACTOR Factorial

Soil Description

Description Name: Clarksburg
% Sand: 24.5 **% OM:** 2.9 **Texture:** SICL silty clay loam
% Silt: 48.9 **pH:** 6.8 **Soil Name:** Kokomo
% Clay: 26.6 **CEC:** 11.7 **Fert. Level:** G good
Soil Drainage: G good

Application Description

Application Date: May-27-2010
Time of Day: 9:00 A.M.
Application Method: SPRAY
Application Timing: POST
Application Placement: BROFO
Applied By: Miller
Air Temperature, Unit: 81 F
% Relative Humidity: 81
Wind Velocity, Unit: 0.5 MPH
Wind Direction: SW
Dew Presence (Y/N): N no
Soil Temperature, Unit: 68 F
Soil Moisture: SLIWET
% Cloud Cover: 10
Next Rain Occurred On: Jun-2-2010

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Crop Stage At Each Application

A

Crop 1 Code, BBCH Scale: GLXMA BSOY
Stage Scale Used: BBCH
Stage Majority, Percent: 12 100
Height, Unit: 4 IN
Height Minimum, Maximum: 3 4

Pest Stage At Each Application

A

Pest 1 Code, Type, Scale: AMBTR W
Stage Majority, Percent: 16 75
Stage Minimum, Percent: 14 25
Stage Maximum, Percent: 16 74
Height, Unit: 6 IN
Height Minimum, Maximum: 4 8
Pest 2 Code, Type, Scale: SETFA W
Stage Majority, Percent: 13 100
Height, Unit: 3 IN
Height Minimum, Maximum: 2 3
Pest 3 Code, Type, Scale: HIBTR W
Stage Majority, Percent: 12 100
Height, Unit: 2 IN
Height Minimum, Maximum: 1 2
Pest 4 Code, Type, Scale: CHEAL W
Stage Majority, Percent: 14 100
Height, Unit: 3 IN
Height Minimum, Maximum: 2 4

Application Equipment

A

Appl. Equipment: BACKPACK
Equipment Type: SPRBAC
Operating Pressure, Unit: 53 PSI
Nozzle Type: XR
Nozzle Size: 8002
Nozzle Spacing, Unit: 18 IN
Boom Length, Unit: 10 FT
Boom Height, Unit: 20 IN
Ground Speed, Unit: 3 MPH
Carrier: WATER
Spray Volume, Unit: 20 GPA
Mix Size, Unit: 3 Liters
Propellant: CO2

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 Sponsor Contact:

Pest Type		W Weed	W Weed	W Weed	
Pest Code		AMBTR	CHEAL	HIBTR	
Pest Scientific Name		Ambrosia trifi>	Chenopodium al>	Hibiscus trion>	
Pest Name		Giant ragweed	Common lambsqu>	Venice mallow	
Crop Code	GLXMA				GLXMA
BBCH Scale	BSOY				BSOY
Crop Scientific Name	Glycine max				Glycine max
Crop Name	Soybean				Soybean
Rating Date	Jun-10-2010	Jun-10-2010	Jun-10-2010	Jun-10-2010	Jun-22-2010
Rating Type	PHYNEC	CONTRO	CONTRO	CONTRO	PHYNEC
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By	Loux	Loux	Loux	Loux	Loux
Days After First/Last Applic.	14 14	14 14	14 14	14 14	26 26
Trt-Eval Interval	14 DA-A	14 DA-A	14 DA-A	14 DA-A	26 DA-A
Plant-Eval Interval	51 DP-1	51 DP-1	51 DP-1	51 DP-1	63 DP-1
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Unit	Other Rate	Other Unit	Appl Code	1	2	3	4	5
1	Roundup PowerMax	4.5	LBAE/GAL	0 oz/a		A	0	13	0	0	
	1 Flexstar	1.88		0 oz/a		A					
	1 NO ADJ										
	1 N-PAK AMS	100 %		4 qt/a							
2	Roundup PowerMax	4.5	LBAE/GAL	0 oz/a		A	2	20	0	7	
	2 Flexstar	1.88		0 oz/a		A					
	2 Preference NIS	100		0.4 qt/a							
	2 N-PAK AMS	100 %		4 qt/a							
3	Roundup PowerMax	4.5	LBAE/GAL	0 oz/a		A	0	7	20	7	
	3 Flexstar	1.88		0 oz/a		A					
	3 Superb HC	100 %		0.4 qt/a							
	3 N-PAK AMS	100 %		4 qt/a							
4	Roundup PowerMax	4.5	LBAE/GAL	0 oz/a		A	3	50	30	73	
	4 Flexstar	1.88		12 oz/a		A					
	4 NO ADJ										
	4 N-PAK AMS	100 %		4 qt/a							
5	Roundup PowerMax	4.5	LBAE/GAL	0 oz/a		A	7	80	35	77	
	5 Flexstar	1.88		12 oz/a		A					
	5 Preference NIS	100		0.4 qt/a							
	5 N-PAK AMS	100 %		4 qt/a							
6	Roundup PowerMax	4.5	LBAE/GAL	0 oz/a		A	3	63	65	90	
	6 Flexstar	1.88		12 oz/a		A					
	6 Superb HC	100 %		0.4 qt/a							
	6 N-PAK AMS	100 %		4 qt/a							
7	Roundup PowerMax	4.5	LBAE/GAL	0 oz/a		A	7	82	80	77	
	7 Flexstar	1.88		24 oz/a		A					
	7 NO ADJ										
	7 N-PAK AMS	100 %		4 qt/a							
8	Roundup PowerMax	4.5	LBAE/GAL	0 oz/a		A	8	57	65	92	
	8 Flexstar	1.88		24 oz/a		A					
	8 Preference NIS	100		0.4 qt/a							
	8 N-PAK AMS	100 %		4 qt/a							
9	Roundup PowerMax	4.5	LBAE/GAL	0 oz/a		A	9	77	73	92	
	9 Flexstar	1.88		24 oz/a		A					
	9 Superb HC	100 %		0.4 qt/a							
	9 N-PAK AMS	100 %		4 qt/a							
10	Roundup PowerMax	4.5	LBAE/GAL	21.3 oz/a		A	2	30	100	80	
	10 Flexstar	1.88		0 oz/a		A					

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Pest Type		W Weed	W Weed	W Weed	
Pest Code		AMBTR	CHEAL	HIBTR	
Pest Scientific Name		Ambrosia trifida	Chenopodium album	Hibiscus trion	
Pest Name		Giant ragweed	Common lambsqu	Venice mallow	
Crop Code	GLXMA				GLXMA
BBCH Scale	BSOY				BSOY
Crop Scientific Name	Glycine max				Glycine max
Crop Name	Soybean				Soybean
Rating Date	Jun-10-2010	Jun-10-2010	Jun-10-2010	Jun-10-2010	Jun-22-2010
Rating Type	PHYNEC	CONTRO	CONTRO	CONTRO	PHYNEC
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By	Loux	Loux	Loux	Loux	Loux
Days After First/Last Applic.	14 14	14 14	14 14	14 14	26 26
Trt-Eval Interval	14 DA-A	14 DA-A	14 DA-A	14 DA-A	26 DA-A
Plant-Eval Interval	51 DP-1	51 DP-1	51 DP-1	51 DP-1	63 DP-1
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Unit	Other Rate	Other Unit	Appl Code	1	2	3	4	5
10	NO ADJ										
10	N-PAK AMS	100 %		4 qt/a							
11	Roundup PowerMax	4.5 LBAE/GAL		21.3 oz/a		A	2	33	85	90	
11	Flexstar	1.88		0 oz/a		A					
11	Preference NIS	100		0.4 qt/a							
11	N-PAK AMS	100 %		4 qt/a							
12	Roundup PowerMax	4.5 LBAE/GAL		21.3 oz/a		A	5	50	80	80	
12	Flexstar	1.88		0 oz/a		A					
12	Superb HC	100 %		0.4 qt/a							
12	N-PAK AMS	100 %		4 qt/a							
13	Roundup PowerMax	4.5 LBAE/GAL		21.3 oz/a		A	8	62	90	87	
13	Flexstar	1.88		12 oz/a		A					
13	NO ADJ										
13	N-PAK AMS	100 %		4 qt/a							
14	Roundup PowerMax	4.5 LBAE/GAL		21.3 oz/a		A	10	65	90	80	
14	Flexstar	1.88		12 oz/a		A					
14	Preference NIS	100		0.4 qt/a							
14	N-PAK AMS	100 %		4 qt/a							
15	Roundup PowerMax	4.5 LBAE/GAL		21.3 oz/a		A	8	58	88	87	
15	Flexstar	1.88		12 oz/a		A					
15	Superb HC	100 %		0.4 qt/a							
15	N-PAK AMS	100 %		4 qt/a							
16	Roundup PowerMax	4.5 LBAE/GAL		21.3 oz/a		A	7	52	98	92	
16	Flexstar	1.88		24 oz/a		A					
16	NO ADJ										
16	N-PAK AMS	100 %		4 qt/a							
17	Roundup PowerMax	4.5 LBAE/GAL		21.3 oz/a		A	10	62	95	87	
17	Flexstar	1.88		24 oz/a		A					
17	Preference NIS	100		0.4 qt/a							
17	N-PAK AMS	100 %		4 qt/a							
18	Roundup PowerMax	4.5 LBAE/GAL		21.3 oz/a		A	11	67	80	92	
18	Flexstar	1.88		24 oz/a		A					
18	Superb HC	100 %		0.4 qt/a							
18	N-PAK AMS	100 %		4 qt/a							
LSD (P=.05)							3.9	23.5	36.8	22.4	.
Standard Deviation							2.3	14.1	16.0	13.4	.
CV							40.44	27.42	24.5	18.79	.
Bartlett's X2							4.46	10.322	6.77	7.078	.
P(Bartlett's X2)							0.974	0.799	0.453	0.972	.
Replicate F							17.395	7.845	0.788	14.603	
Replicate Prob(F)							0.0001	0.0016	0.4005	0.0001	
Treatment F							7.366	7.479	8.626	16.431	
Treatment Prob(F)							0.0001	0.0001	0.0021	0.0001	

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Pest Type	W Weed	W Weed	W Weed
Pest Code	AMBTR	CHEAL	HIBTR
Pest Scientific Name	Ambrosia trifi>	Chenopodium al>	Hibiscus trion>
Pest Name	Giant ragweed	Common lambsqu>	Venice mallow
Crop Code			
BBCH Scale			
Crop Scientific Name			
Crop Name			
Rating Date	Jun-22-2010	Jun-22-2010	Jun-22-2010
Rating Type	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%
Number of Subsamples	1	1	1
Assessed By	Loux	Loux	Loux
Days After First/Last Applic.	26 26	26 26	26 26
Trt-Eval Interval	26 DA-A	26 DA-A	26 DA-A
Plant-Eval Interval	63 DP-1	63 DP-1	63 DP-1
Number of Decimals	0	0	0

Trt No.	Treatment Name	Form Conc	Form Unit	Other Rate	Other Unit	Appl Unit Code	6	7	8
1	Roundup PowerMax	4.5	LBAE/GAL	0 oz/a		A	7	33	7
1	Flexstar	1.88		0 oz/a		A			
1	NO ADJ								
1	N-PAK AMS	100 %		4 qt/a					
2	Roundup PowerMax	4.5	LBAE/GAL	0 oz/a		A	23	0	17
2	Flexstar	1.88		0 oz/a		A			
2	Preference NIS	100		0.4 qt/a					
2	N-PAK AMS	100 %		4 qt/a					
3	Roundup PowerMax	4.5	LBAE/GAL	0 oz/a		A	13	0	7
3	Flexstar	1.88		0 oz/a		A			
3	Superb HC	100 %		0.4 qt/a					
3	N-PAK AMS	100 %		4 qt/a					
4	Roundup PowerMax	4.5	LBAE/GAL	0 oz/a		A	40	70	40
4	Flexstar	1.88		12 oz/a		A			
4	NO ADJ								
4	N-PAK AMS	100 %		4 qt/a					
5	Roundup PowerMax	4.5	LBAE/GAL	0 oz/a		A	77	60	67
5	Flexstar	1.88		12 oz/a		A			
5	Preference NIS	100		0.4 qt/a					
5	N-PAK AMS	100 %		4 qt/a					
6	Roundup PowerMax	4.5	LBAE/GAL	0 oz/a		A	70	100	90
6	Flexstar	1.88		12 oz/a		A			
6	Superb HC	100 %		0.4 qt/a					
6	N-PAK AMS	100 %		4 qt/a					
7	Roundup PowerMax	4.5	LBAE/GAL	0 oz/a		A	87	100	87
7	Flexstar	1.88		24 oz/a		A			
7	NO ADJ								
7	N-PAK AMS	100 %		4 qt/a					
8	Roundup PowerMax	4.5	LBAE/GAL	0 oz/a		A	57	100	93
8	Flexstar	1.88		24 oz/a		A			
8	Preference NIS	100		0.4 qt/a					
8	N-PAK AMS	100 %		4 qt/a					
9	Roundup PowerMax	4.5	LBAE/GAL	0 oz/a		A	77	75	95
9	Flexstar	1.88		24 oz/a		A			
9	Superb HC	100 %		0.4 qt/a					
9	N-PAK AMS	100 %		4 qt/a					
10	Roundup PowerMax	4.5	LBAE/GAL	21.3 oz/a		A	27	100	100
10	Flexstar	1.88		0 oz/a		A			

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Pest Type	W Weed	W Weed	W Weed
Pest Code	AMBTR	CHEAL	HIBTR
Pest Scientific Name	Ambrosia trifi>	Chenopodium al>	Hibiscus trion>
Pest Name	Giant ragweed	Common lambsqu>	Venice mallow
Crop Code			
BBCH Scale			
Crop Scientific Name			
Crop Name			
Rating Date	Jun-22-2010	Jun-22-2010	Jun-22-2010
Rating Type	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%
Number of Subsamples	1	1	1
Assessed By	Loux	Loux	Loux
Days After First/Last Applic.	26 26	26 26	26 26
Trt-Eval Interval	26 DA-A	26 DA-A	26 DA-A
Plant-Eval Interval	63 DP-1	63 DP-1	63 DP-1
Number of Decimals	0	0	0

Trt No.	Treatment Name	Form Conc	Form Unit	Other Rate	Other Unit	Appl Code	6	7	8
10	NO ADJ								
10	N-PAK AMS	100 %		4 qt/a					
11	Roundup PowerMax	4.5 LBAE/GAL		21.3 oz/a		A	23	93	100
11	Flexstar	1.88		0 oz/a		A			
11	Preference NIS	100		0.4 qt/a					
11	N-PAK AMS	100 %		4 qt/a					
12	Roundup PowerMax	4.5 LBAE/GAL		21.3 oz/a		A	50	100	100
12	Flexstar	1.88		0 oz/a		A			
12	Superb HC	100 %		0.4 qt/a					
12	N-PAK AMS	100 %		4 qt/a					
13	Roundup PowerMax	4.5 LBAE/GAL		21.3 oz/a		A	53	100	100
13	Flexstar	1.88		12 oz/a		A			
13	NO ADJ								
13	N-PAK AMS	100 %		4 qt/a					
14	Roundup PowerMax	4.5 LBAE/GAL		21.3 oz/a		A	77	100	100
14	Flexstar	1.88		12 oz/a		A			
14	Preference NIS	100		0.4 qt/a					
14	N-PAK AMS	100 %		4 qt/a					
15	Roundup PowerMax	4.5 LBAE/GAL		21.3 oz/a		A	53	100	100
15	Flexstar	1.88		12 oz/a		A			
15	Superb HC	100 %		0.4 qt/a					
15	N-PAK AMS	100 %		4 qt/a					
16	Roundup PowerMax	4.5 LBAE/GAL		21.3 oz/a		A	47	90	100
16	Flexstar	1.88		24 oz/a		A			
16	NO ADJ								
16	N-PAK AMS	100 %		4 qt/a					
17	Roundup PowerMax	4.5 LBAE/GAL		21.3 oz/a		A	63	100	100
17	Flexstar	1.88		24 oz/a		A			
17	Preference NIS	100		0.4 qt/a					
17	N-PAK AMS	100 %		4 qt/a					
18	Roundup PowerMax	4.5 LBAE/GAL		21.3 oz/a		A	67	100	100
18	Flexstar	1.88		24 oz/a		A			
18	Superb HC	100 %		0.4 qt/a					
18	N-PAK AMS	100 %		4 qt/a					
LSD (P=.05)							31.1	43.8	20.8
Standard Deviation							18.7	25.2	12.5
CV							36.95	31.84	15.99
Bartlett's X2							17.343	5.97	5.829
P(Bartlett's X2)							0.364	0.309	0.666
Replicate F							15.026	1.024	0.899
Replicate Prob(F)							0.0001	0.3830	0.4165
Treatment F							4.903	5.513	23.459
Treatment Prob(F)							0.0001	0.0009	0.0001

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PURDUE ADJUVANT STUDY

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Trial ID: 10PURDUEADJ Protocol ID: 10PURDUEADJ
Location: CLARKSBURG Study Director: Chad Brabham
Project ID: Investigator: Dr. Mark M. Loux
Sponsor Contact:

Pest Type

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

Pest Code

AMBTR, Ambrosia trifida, = US

CHEAL, Chenopodium album, = US

HIBTR, Hibiscus trionum, = US

Crop Code

GLXMA, BSOY, Glycine max, = US

Rating Type

PHYNEC = phytotoxicity - necrosis /burn

CONTRO = control / burndown or knockdown

Rating Unit

% = percent

Plant-Eval Interval

51 DP-1 = 1 Apr-20-2010

63 DP-1 = 1 Apr-20-2010