

Ohio State University  
Horticulture and Crop Science

To examine different rates of F-9324 premix prototype with different adjuvant system on the bio efficacy of small and large weeds and crop safety of soybean

Title No. 2:  
 Trial ID: 12 SOYYLD2                      Protocol ID: 12 SOYYLD2  
 Location: Western Branch G-6          Study Director: Bryan Reeb  
 Project ID: NA12-0897A-01              Investigator: Dr. Mark M. Loux  
    Sponsor Contact: Joe Reed, FMC

General Trial Information

Study Director: Bryan Reeb              Title: Research Technician  
 Investigator: Dr. Mark M. Loux        Title: Professor

Planned Completion Date: Oct-30-2012

Trial Location

City: South Charleston                  Latitude of LL Corner °: 39.85942 N  
 State/Prov.: Ohio                          Longitude of LL Corner °: 83.67435 W  
 Postal Code: 45368  
 Country: USA

Keywords: Weed control, crop safety, Fluthiacet methyl, fomesafen

Objectives:

1. To evaluate bioefficacy of F9324 with different adjuvant system on glyphosate resistant waterhemp, common and giant ragweed and other broadleaf weeds of 4 to 6 inch in height.

2. To examine crop safety of soybean and compare with Flexstar

Crop Description

Crop 1: GLXMA Glycine max	Soybean	Description: Round Up Ready
Variety: SC 9330 RR		Planting Date: May-18-2012
BBCH Scale: BSOY		Rate, Unit: 155000 S/A
Planting Method: PLNTD		
Depth, Unit: 0.75 IN		
Row Spacing, Unit: 15 IN		
Seed Bed: MEDIUM medium	Soil Temperature, Unit: 79 F	
Soil Moisture: DRY dry	Emergence Date: May-27-2012	
Harvest Date: Oct-17-2012	Harvest Equipment: MASSEY 8 XP	
Harvested Width, Unit: 6.25 FT	Harvested Length, Unit: 30 FT	
% Standard Moisture: 13.0	Moisture Meter: HARVEST MASTER	
Weighing Equipment: HARVEST MASTER 401		

Pest Description

Pest 1 Type: W Code: AMBTR Ambrosia trifida  
 Common Name: Giant ragweed

Pest 2 Type: W Code: IPOHE Ipomoea hederacea  
 Common Name: Ivyleaf morningglory

Pest 3 Type: W Code: CHEAL Chenopodium album  
 Common Name: Common lambsquarters

Pest 4 Type: W Code: ABUTH Abutilon theophrasti  
 Common Name: Velvetleaf

Pest 5 Type: W Code: SETFA Setaria faberi  
 Common Name: Giant foxtail

Pest 6 Type: W Code: AMARE Amaranthus retroflexus  
 Common Name: Redroot pigweed

Pest 7 Type: W Code: AMARE Amaranthus retroflexus  
 Common Name: Redroot pigweed

Site and Design

Plot Width, Unit: 6.67 FT	Site Type: FIELD field
Plot Length, Unit: 40 FT	Experimental Unit: 5 PLANT plant
Plot Area, Unit: 266.8 FT2	Tillage Type: CONTIL conventional-till
Replications: 4	Study Design: RACOB L Randomized Complete Block (RCB)
	Untreated Arrangement: INCLUDED single control randomized in each block

No. Previous Crop Year  
 1. CORN 2011



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Application Equipment

	A		B		C		D		E	
Appl. Equipment:	Backpack		Backpack		Backpack		Backpack		Backpack	
Equipment Type:	SPRBAC		SPRBAC		SPRBAC		SPRBAC		SPRBAC	
Operation Pressure, Unit:	44	PSI	44	PSI	44	PSI	44	PSI	44	PSI
Nozzle Type:	AIXR		AIXR		AIXR		AIXR		AIXR	
Nozzle Size:	110015		110015		110015		110015		110015	
Nozzle Spacing, Unit:	18 IN		18 IN		18 IN		18 IN		18 IN	
Boom Length, Unit:	6 FT		6 FT		6 FT		6 FT		6 FT	
Boom Height, Unit:	18 IN		18 IN		18 IN		18 IN		18 IN	
Ground Speed, Unit:	3 MPH		3 MPH		3 MPH		3 MPH		3 MPH	
Carrier:	WATER		WATER		WATER		WATER		WATER	
Spray Volume, Unit:	15	gal/ac	15	gal/ac	15	gal/ac	15	gal/ac	15	gal/ac
Mix Size, Unit:	2	Liters	3	Gallons	3	Gallons	2	Liters	3	Gallons
Propellant:	COMCO2		COMCO2		COMCO2		COMCO2		COMCO2	

Equipment Comment: Treatments will be applied by Backpack Knapsack Sprayer with CO2 pressurized tank

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Pest Type  
 Pest Code  
 Pest Scientific Name  
 Pest Name  
 Crop Code GLXMA GLXMA GLXMA  
 BBCH Scale BSOY BSOY BSOY  
 Crop Scientific Name Glycine max Glycine max Glycine max  
 Crop Name Soybean Soybean Soybean  
 Rating Date Oct-17-2012 Oct-17-201 Oct-17-2012  
 Rating Type 2  
 Rating Unit YIELD MOICON YIELD  
 Number of Subsamples LBS % BU  
 Days After First/Last Applic. 1 1 1  
 Trt-Eval Interval 119 97 119 97 119 97  
 Plant-Eval Interval  
 Days After Emergence 152 DP-1 152 DP-1 152 DP-1  
 ARM Action Codes 143 DE-1 143 DE-1 143 DE-1  
 Number of Decimals TY1  
 1 1 1

Trt No.	Treatment Name	Rate	Other Rate	Other Rate	Unit	Appl Code	23	24	25
1	4-6 INCH WEED					A	16.3 a	10.8 a	64.7 a
1	ROUNDUP POWERMAX	22 fl oz/a	0.95 lb ai/a			A			
1	AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal			A			
1	ROUNDUP POWERMAX	22 fl oz/a	0.95 lb ai/a			E			
1	AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal			E			
2	F9324-9	5.0 fl oz/a	0.117 lb ai/a			A	13.8 def	10.8 a	54.9 de
2	MSO	1.0 % v/v	1.25 lb ai/a			A			
2	AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal			A			
2	SELECT	8 fl oz/a	0.125 lb ai/a			C			
2	COC	1 % v/v	1.25 lb ai/a			C			
2	ROUNDUP POWERMAX	22 fl oz/a	0.95 lb ai/a			E			
2	AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal			E			
3	F9324-9	6.0 fl oz/a	0.14 lb ai/a			A	15.6 ab	10.7 a	61.9 ab
3	MSO	1.0 % v/v	1.25 lb ai/a			A			
3	AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal			A			
3	SELECT	8 fl oz/a	0.125 lb ai/a			C			
3	COC	1 % v/v	1.25 lb ai/a			C			
3	ROUNDUP POWERMAX	22 fl oz/a	0.95 lb ai/a			E			
3	AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal			E			
4	F9324-9	7.25 fl oz/a	0.17 lb ai/a			A	15.4 abc	10.6 a	61.1 abc
4	MSO	1.0 % v/v	1.25 lb ai/a			A			
4	AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal			A			
4	SELECT	8 fl oz/a	0.125 lb ai/a			C			
4	COC	1 % v/v	1.25 lb ai/a			C			
4	ROUNDUP POWERMAX	22 fl oz/a	0.95 lb ai/a			E			
4	AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal			E			
5	F9324-9	7.25 fl oz/a	0.17 lb ai/a			A	14.9 a-e	10.7 a	59.2 a-d
5	COC	1.0 % v/v	1.25 lb ai/a			A			
5	AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal			A			
5	SELECT	8 fl oz/a	0.125 lb ai/a			C			
5	COC	1 % v/v	1.25 lb ai/a			C			
5	ROUNDUP POWERMAX	22 fl oz/a	0.95 lb ai/a			E			
5	AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal			E			
6	F9324-9	7.25 fl oz/a	0.17 lb ai/a			A	15.3 a-d	10.7 a	61.0 abc
6	NIS	0.5 % v/v	0.627 lb ai/a			A			
6	AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal			A			
6	SELECT	8 fl oz/a	0.125 lb ai/a			C			
6	COC	1 % v/v	1.25 lb ai/a			C			

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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Pest Type							
Pest Code							
Pest Scientific Name							
Pest Name							
Crop Code		GLXMA	GLXMA	GLXMA			
BBCH Scale		BSOY	BSOY	BSOY			
Crop Scientific Name		Glycine max	Glycine max	Glycine max			
Crop Name		Soybean	Soybean	Soybean			
Rating Date		Oct-17-2012	Oct-17-2012	Oct-17-2012			
Rating Type		YIELD	MOICON	YIELD			
Rating Unit		LBS	%	BU			
Number of Subsamples		1	1	1			
Days After First/Last Applic.		119	97	119	97	119	97
Trt-Eval Interval							
Plant-Eval Interval		152 DP-1	152 DP-1	152 DP-1			
Days After Emergence		143 DE-1	143 DE-1	143 DE-1			
ARM Action Codes				TY1			
Number of Decimals		1	1	1			
Trt Treatment	Rate	Other	Other	Appl			
No. Name	Rate Unit	Rate	Rate Unit	Code	23	24	25
6 ROUNDUP POWERMAX	22 fl oz/a	0.95 lb ai/a		E			
6 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal		E			
7 FLEXSTAR	16 fl oz/a	0.235 lb ai/a		A	15.4 abc	10.7 a	61.2 abc
7 MSO	1.0 % v/v	1.25 lb ai/a		A			
7 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal		A			
7 SELECT	8 fl oz/a	0.125 lb ai/a		C			
7 COC	1 % v/v	1.25 lb ai/a		C			
7 ROUNDUP POWERMAX	22 fl oz/a	0.95 lb ai/a		E			
7 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal		E			
8 COBRA	12 fl oz/a	0.188 lb ai/a		A	13.5 ef	10.8 a	53.7 de
8 COC	1.0 % v/v	1.25 lb ai/a		A			
8 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal		A			
8 SELECT	8 fl oz/a	0.125 lb ai/a		C			
8 COC	1 % v/v	1.25 lb ai/a		C			
8 ROUNDUP POWERMAX	22 fl oz/a	0.95 lb ai/a		E			
8 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal		E			
9 8-10 INCH WEED				D	15.3 a-d	10.7 a	61.0 abc
9 ROUNDUP POWERMAX	22 fl oz/a	0.95 lb ai/a		D			
9 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal		D			
9 ROUNDUP POWERMAX	22 fl oz/a	0.95 lb ai/a		E			
9 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal		E			
10 SELECT	8 fl oz/a	0.125 lb ai/a		B	14.0 c-f	10.7 a	55.7 cde
10 COC	1 % v/v	1.25 lb ai/a		B			
10 F9324-9	6.0 fl oz/a	0.14 lb ai/a		D			
10 MSO	1.0 % v/v	1.25 lb ai/a		D			
10 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal		D			
10 ROUNDUP POWERMAX	22 fl oz/a	0.95 lb ai/a		E			
10 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal		E			
11 SELECT	8 fl oz/a	0.125 lb ai/a		B	14.1 b-f	10.7 a	55.9 b-e
11 COC	1.02 % v/v	8.5 lb/100 gal		B			
11 F9324-9	7.25 fl oz/a	0.17 lb ai/a		D			
11 MSO	1.0 % v/v	1.25 lb ai/a		D			
11 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal		D			
11 ROUNDUP POWERMAX	22 fl oz/a	0.95 lb ai/a		E			
11 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal		E			
12 SELECT	8 fl oz/a	0.125 lb ai/a		B	13.3 f	10.7 a	53.0 e
12 COC	1 % v/v	1.25 lb ai/a		B			
12 F9324-9	7.25 fl oz/a	0.17 lb ai/a		D			
12 COC	1.0 % v/v	1.25 lb ai/a		D			
12 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal		D			
12 ROUNDUP POWERMAX	22 fl oz/a	0.95 lb ai/a		E			
12 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal		E			
13 SELECT	8 fl oz/a	0.125 lb ai/a		B	14.1 b-f	10.7 a	56.0 b-e
13 COC	1 % v/v	1.25 lb ai/a		B			
13 F9324-9	7.25 fl oz/a	0.159 lb ai/a		D			
13 NIS	0.5 % v/v	0.627 lb ai/a		D			
13 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal		D			
13 ROUNDUP POWERMAX	22 fl oz/a	0.95 lb ai/a		E			

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Pest Type							
Pest Code							
Pest Scientific Name							
Pest Name							
Crop Code	GLXMA	GLXMA	GLXMA				
BBCH Scale	BSOY	BSOY	BSOY				
Crop Scientific Name	Glycine max	Glycine max	Glycine max				
Crop Name	Soybean	Soybean	Soybean				
Rating Date	Oct-17-2012	Oct-17-201	Oct-17-2012				
Rating Type	YIELD	MOICON	YIELD				
Rating Unit	LBS	%	BU				
Number of Subsamples	1	1	1				
Days After First/Last Applic.	119 97	119 97	119 97				
Trt-Eval Interval							
Plant-Eval Interval	152 DP-1	152 DP-1	152 DP-1				
Days After Emergence	143 DE-1	143 DE-1	143 DE-1				
ARM Action Codes			TY1				
Number of Decimals	1	1	1				
Trt Treatment	Rate	Other	Other	Appl			
No. Name	Rate Unit	Rate	Rate	Code	23	24	25
13 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal	E				
14 SELECT	8 fl oz/a	0.125 lb ai/a	B		14.3 b-f	10.7 a	56.7 b-e
14 COC	1 % v/v	1.25 lb ai/a	B				
14 FLEXSTAR	16 fl oz/a	0.235 lb ai/a	D				
14 MSO	1.0 % v/v	1.25 lb ai/a	D				
14 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal	D				
14 ROUNDUP POWERMAX	22 fl oz/a	0.95 lb ai/a	E				
14 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal	E				
15 SELECT	8 fl oz/a	0.125 lb ai/a	B		14.5 b-f	10.7 a	57.5 b-e
15 COC	1 % v/v	1.25 lb ai/a	B				
15 FLEXSTAR	24 fl oz/a	0.353 lb ai/a	D				
15 MSO	1.0 % v/v	1.25 lb ai/a	D				
15 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal	D				
15 ROUNDUP POWERMAX	22 fl oz/a	0.95 lb ai/a	E				
15 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal	E				
16 SELECT	8 fl oz/a	0.125 lb ai/a	B		13.6 ef	10.8 a	54.1 de
16 COC	1 % v/v	1.25 lb ai/a	B				
16 COBRA	12 fl oz/a	0.188 lb ai/a	D				
16 COC	1.0 % v/v	1.25 lb ai/a	D				
16 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal	D				
16 ROUNDUP POWERMAX	22 fl oz/a	0.95 lb ai/a	E				
16 AMMONIUM SULFATE	1.02 % v/v	8.5 lb/100 gal	E				
LSD (P=.05)					1.53	0.25	6.08
Standard Deviation					1.07	0.18	4.25
CV					7.35	1.66	7.33

Crop Code

GLXMA, BSOY, Glycine max, = US

Rating Type

YIELD = yield

MOICON = moisture content

Rating Unit

% = percent

BU = bushel

Plant-Eval Interval

152 DP-1 = 1 GLXMA May-18-2012

ARM Action Codes

TY1 = 3.872\*[23]\*(100-[24])/87