

Ohio State University  
Horticulture and Crop Science

Soybean Yield Advantage Protocol

Title No. 2:

Trial ID: 12 SOYDEMO1  
Location: Western Branch  
Project ID: DEM-H-2012-US-D9F-G-01.0.

Protocol ID: 12 SOYDEMO1  
Study Director: Bryan Reeb  
Investigator: Dr. Mark M. Loux  
Sponsor Contact: Caren Schmidt, BASF

General Trial Information

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

Trial Location

City: South Charleston Latitude of LL Corner °: 39.85883 N  
State/Prov.: Ohio Longitude of LL Corner °: 83.67313 W  
Postal Code: 45368  
Country: USA

Crop Description

Crop 1: GLXMA Glycine max Soybean  
Variety: Asgrow AG3731 Description: Round Up Ready  
BBCH Scale: BSOY Planting Date: Apr-30-2012  
Planting Method: PLANTD planted Rate, Unit: 168000 P/A  
Depth, Unit: 0.5 in  
Row Spacing, Unit: 15 in  
Seed Bed: MEDIUM medium Soil Temperature, Unit: 63 F  
Soil Moisture: SLIWET slightly wet Emergence Date: May-9-2012  
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: LAMPU *Lamium purpureum*  
Common Name: Purple deadnettel
- Pest 2 Type: W Code: CAPBP *Capsella bursa-pastoris*  
Common Name: Shepherd's purse
- Pest 3 Type: W Code: VERPG *Veronica peregrina*  
Common Name: Purslane speedwell
- Pest 4 Type: W Code: VERAG *Veronica agrestis*  
Common Name: Field speedwell
- Pest 5 Type: W Code: RANAB *Ranunculus abortivus*  
Common Name: Smallflower buttercup
- Pest 6 Type: W Code: SENGL *Senecio glabellus*  
Common Name: Cressleaf groundsel
- Pest 7 Type: W Code: CHEAL *Chenopodium album*  
Common Name: Common lambsquarters
- Pest 8 Type: W Code: AMBTR *Ambrosia trifida*  
Common Name: Giant ragweed
- Pest 9 Type: W Code: ERICA *Conyza canadensis*  
Common Name: Canada horseweed
- Pest10 Type: W Code: SETFA *Setaria faberi*  
Common Name: Giant foxtail
- Pest11 Type: W Code: AMBEL *Ambrosia artemisiifolia*  
Common Name: Common ragweed
- Pest12 Type: W Code: POLPY *Persicaria pensylvanica*  
Common Name: Pennsylvania smartweed

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 FT<sup>2</sup> Tillage Type: NOTILL no-till  
Replications: 6 Study Design: RACOB L Randomized Complete Block (RCB)

No. Previous Crop Year  
1. CORN 2011

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Soil Description

Description Name: F-10 West  
 % OM: 2                      Texture: SIL                      silt loam  
 pH: 6.3                      Soil Name: Crosby Silt Loam  
 CEC: 12                      Fert. Level: G                      good  
                                     Soil Drainage: G                      good

Application Description

	A	B	C	D
Application Date:	Apr-25-2012	Apr-29-2012	Jun-6-2012	Jul-12-2012
Time of Day:	9:30 AM	4:00 PM	9:00AM	8:45AM
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	7 EPP	3 EPP	3-4"WDS	R3
Application Placement:	BROFOL	BROFOL	BROFOL	BROFOL
Applied By:	REEB	DOBBELS	REEB	REEB
Air Temperature, Unit:	55 F	65 F	60 F	78 F
% Relative Humidity:	62	54	71	71
Wind Velocity, Unit:	5 MPH	6 MPH	5 MPH	2 MPH
Wind Direction:	S	W	N	E
Dew Presence (Y/N):	N no	N no	N no	N no
Soil Temperature, Unit:	45 F	57 F	58 F	75 F
Soil Moisture:	GOOD	MOIST	DRY	DRY
% Cloud Cover:	3	75	0	0
Next Rain Occurred On:	Apr-26-2012	Apr-30-2012	Jun-11-2012	Jul-15-2012

Crop Stage At Each Application

	A		B		C		D	
Crop 1 Code, BBCH Scale:	GLXMA	BSOY	GLXMA	BSOY	GLXMA	BSOY	GLXMA	BSOY
Stage Scale Used:					BBCH		BBCH	
Stage Majority, Percent:					12	100	69	100
Height, Unit:					5	IN	22	IN
Height Minimum, Maximum:					5	5	20	24

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Pest Stage At Each Application

	A		B		C		D	
Pest 1 Code, Type, Scale:	LAMPU	W	LAMPU	W	LAMPU	W	LAMPU	W
Stage Majority, Percent:	65	100	65	100				
Height, Unit:	5	IN	5	IN				
Height Minimum, Maximum:	3	5	3	5				
Density, Unit:	6.65	m2	6.65	m2				
Pest 2 Code, Type, Scale:	CAPBP	W	CAPBP	W	CAPBP	W	CAPBP	W
Stage Majority, Percent:	65	100	65	100				
Height, Unit:	16	IN	16	IN				
Height Minimum, Maximum:	14	16	14	16				
Density, Unit:	0.25	m2	0.25	m2				
Pest 3 Code, Type, Scale:	VERPG	W	VERPG	W	VERPG	W	VERPG	W
Stage Majority, Percent:	65	100	65	100				
Diameter, Unit:	8	IN	8	IN				
Height, Unit:	6	IN	6	IN				
Height Minimum, Maximum:	4	6	4	6				
Density, Unit:	0.25	m2	0.25	m2				
Pest 4 Code, Type, Scale:	VERAG	W	VERAG	W	VERAG	W	VERAG	W
Stage Majority, Percent:	65	100	65	100				
Diameter, Unit:	8	IN	8	IN				
Height, Unit:	4	IN	4	IN				
Height Minimum, Maximum:	2	4	2	4				
Density, Unit:	0.25	m2	0.25	m2				
Pest 5 Code, Type, Scale:	RANAB	W	RANAB	W	RANAB	W	RANAB	W
Stage Majority, Percent:	65	100	65	100				
Height, Unit:	9	IN	9	IN				
Height Minimum, Maximum:	7	9	7	9				
Density, Unit:	1.33	m2	1.33	m2				
Pest 6 Code, Type, Scale:	SENGL	W	SENGL	W	SENGL	W	SENGL	W
Stage Majority, Percent:	65	100	65	100	69	100		
Height, Unit:	13	IN	13	IN	18	IN		
Height Minimum, Maximum:	10	13	10	13	12	24		
Density, Unit:	6.65	m2	6.65	m2	6.65	M2		
Pest 7 Code, Type, Scale:	CHEAL	W	CHEAL	W	CHEAL	W	CHEAL	W
Stage Majority, Percent:	18	100	18	100	19	100		
Height, Unit:	3	IN	3	IN	10	IN		
Height Minimum, Maximum:	1	3	1	3	10	10		
Density, Unit:	0.25	m2	0.25	m2	0.25	M2		
Pest 8 Code, Type, Scale:	AMBTR	W	AMBTR	W	AMBTR	W	AMBTR	W
Stage Majority, Percent:	18	100	18	100	19	100		
Height, Unit:	4	IN	4	IN	16	IN		
Height Minimum, Maximum:	2	4	2	4	12	18		
Density, Unit:	10.64	m2	10.64	m2	10.64	M2		
Pest 9 Code, Type, Scale:	ERICA	W	ERICA	W	ERICA	W	ERICA	W
Stage Majority, Percent:	16	100	16	100	19	100		
Height, Unit:	0.25	IN	0.25	IN	3	IN		
Height Minimum, Maximum:	0.1	0.25	0.1	0.25	3	3		
Density, Unit:	26.6	m2	26.6	m2	26.6	M2		
Pest10 Code, Type, Scale:	SETFA	W	SETFA	W	SETFA	W	SETFA	W
Stage Majority, Percent:					15	100		
Height, Unit:					7.5	IN		
Height Minimum, Maximum:					6	9		
Density, Unit:					125	M2		
Pest11 Code, Type, Scale:	AMBEL	W	AMBEL	W	AMBEL	W	AMBEL	W
Stage Majority, Percent:					19	100		
Height, Unit:					4	IN		
Height Minimum, Maximum:					4	4		
Density, Unit:					2	M2		
Pest12 Code, Type, Scale:	POLPY	W	POLPY	W	POLPY	W	POLPY	W
Stage Majority, Percent:					19	100		
Height, Unit:					5	IN		
Height Minimum, Maximum:					5	5		
Density, Unit:					1	M2		

Application Equipment

	A		B		C		D	
Appl. Equipment:	Backpack		TRACTOR		Backpack		Backpack	
Equipment Type:	SPRBAC		SPTRMO		SPRBAC		SPRBAC	
Operation Pressure, Unit:	44	PSI	33	PSI	44	PSI	44	PSI
Nozzle Type:	AIXR		AIXR		AIXR		AIXR	
Nozzle Size:	110015		11002		110015		110015	
Nozzle Spacing, Unit:	18	IN	20	IN	18	IN	18	IN
Boom Length, Unit:	10	FT	10	FT	10	FT	10	FT
Boom Height, Unit:	18	IN	18	IN	18	IN	18	IN
Ground Speed, Unit:	3	MPH	3.8	MPH	3	MPH	3	MPH
Carrier:	WATER		WATER		WATER		WATER	
Spray Volume, Unit:	15	gal/ac	15	gal/ac	15	gal/ac	15	gal/ac
Mix Size, Unit:	3	Liters	10	gallons	3	GALLONS	3	Liters
Propellant:	COMCO2		PUMROL		COMCO2		COMCO2	

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Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Unit	Growth Stage	Appl Code	10	11	12
1	Roundup Power Max	0.77 lb ae/a		22 oz/a		3-4" WDS	C	15.8 a	12.6 a	61.5 a
1	Firstrate	0.0158 lb ai/a		0.3 oz/a		3-4" WDS	C			
1	N-pak ams	5 % v/v		3 qt/a		3-4" WDS	C			
2	Roundup Weathermax	0.77 lb ae/a		22 oz/a		7 EPP	A	16.1 a	13.1 a	62.3 a
2	Weedone LV-6	0.56 lb ai/a		12 oz/a		7 EPP	A			
2	N-pak ams	5 % v/v		3 qt/a		7 EPP	A			
2	NIS	0.25 % v/v		0.15 qt/a		7 EPP	A			
2	Roundup Power Max	0.77 lb ae/a		22 oz/a		3-4" WDS	C			
2	Firstrate	0.0158 lb ai/a		0.3 oz/a		3-4" WDS	C			
2	N-pak ams	5 % v/v		3 qt/a		3-4" WDS	C			
3	Roundup Power Max	0.77 lb ae/a		22 oz/a		3 EPP	B	17.1 a	12.6 a	66.6 a
3	OpTill	0.085 lb ai/a		2 oz/a		3 EPP	B			
3	Outlook	0.47 lb ai/a		10 oz/a		3 EPP	B			
3	MSO	1 % v/v		0.6 qt/a		3 EPP	B			
3	N-pak ams	5 % v/v		3 qt/a		3 EPP	B			
3	Roundup Power Max	0.77 lb ae/a		22 oz/a		3-4" WDS	C			
3	Firstrate	0.0158 lb ai/a		0.3 oz/a		3-4" WDS	C			
3	N-pak ams	5 % v/v		3 qt/a		3-4" WDS	C			
4	Roundup Power Max	0.77 lb ae/a		22 oz/a		3 EPP	B	17.3 a	13.0 a	67.0 a
4	OpTill	0.085 lb ai/a		2 oz/a		3 EPP	B			
4	Outlook	0.47 lb ai/a		10 oz/a		3 EPP	B			
4	MSO	1 % v/v		0.6 qt/a		3 EPP	B			
4	N-pak ams	5 % v/v		3 qt/a		3 EPP	B			
4	Roundup Power Max	0.77 lb ae/a		22 oz/a		3-4" WDS	C			
4	Firstrate	0.0158 lb ai/a		0.3 oz/a		3-4" WDS	C			
4	N-pak ams	5 % v/v		3 qt/a		3-4" WDS	C			
4	Priaxor	0.13 lb ai/a		4 oz/a		R3	D			
4	Preference	1.67 % v/v		1 qt/a		R3	D			
4	Interlock	0.208 % v/v		4 oz/a		R3	D			
5	Roundup Power Max	0.77 lb ae/a		22 oz/a		3 EPP	B	17.4 a	13.0 a	67.5 a
5	OpTill	0.085 lb ai/a		2 oz/a		3 EPP	B			
5	Outlook	0.47 lb ai/a		10 oz/a		3 EPP	B			
5	MSO	1 % v/v		0.6 qt/a		3 EPP	B			
5	N-pak ams	5 % v/v		3 qt/a		3 EPP	B			
5	Roundup Power Max	0.77 lb ae/a		22 oz/a		3-4" WDS	C			
5	Firstrate	0.0158 lb ai/a		0.3 oz/a		3-4" WDS	C			
5	N-pak ams	5 % v/v		3 qt/a		3-4" WDS	C			
5	Fastac	0.026 lb ai/a		4 oz/a		R3	D			
5	Priaxor	0.13 lb ai/a		4 oz/a		R3	D			

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-17-201	Oct-17-201	Oct-17-201						
Rating Type		2	2	2						
Rating Unit		YIELD	MOICON	YIELD						
Number of Subsamples		LBS	%	BU						
Rating Timing		1	1	1						
Days After First/Last Applic.		175 97	175 97	175 97						
Trt-Eval Interval										
Plant-Eval Interval		170 DP-1	170 DP-1	170 DP-1						
Days After Emergence		161 DE-1	161 DE-1	161 DE-1						
ARM Action Codes				TY1						
Number of Decimals		1	1	1						
Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code	10	11	12
5	Preference	1.67 %	v/v	1 qt/a		R3	D			
5	Interlock	0.208 %	v/v	4 oz/a		R3	D			
6	Roundup Power Max	0.77 lb	ae/a	22 oz/a		3 EPP	B	17.5 a	13.0 a	67.7 a
6	OpTill	0.085 lb	ai/a	2 oz/a		3 EPP	B			
6	Outlook	0.47 lb	ai/a	10 oz/a		3 EPP	B			
6	MSO	1 %	v/v	0.6 qt/a		3 EPP	B			
6	N-pak ams	5 %	v/v	3 qt/a		3 EPP	B			
6	Roundup Power Max	0.77 lb	ae/a	22 oz/a		3-4" WDS	C			
6	Firstrate	0.0158 lb	ai/a	0.3 oz/a		3-4" WDS	C			
6	N-pak ams	5 %	v/v	3 qt/a		3-4" WDS	C			
6	Fastac	0.026 lb	ai/a	4 oz/a		R3	D			
6	Priaxor	0.13 lb	ai/a	4 oz/a		R3	D			
6	AG 8050	0.5 %	v/v	0.3 qt/a		R3	D			
6	MAX-IN	4.18 lb	ai/a	2 qt/a		R3	D			
	LSD (P=.05)							2.38	0.62	9.26
	Standard Deviation							2.00	0.52	7.77
	CV							11.86	4.03	11.87

Crop Code  
GLXMA, BSOY, Glycine max, = US

Rating Type  
YIELD = yield  
MOICON = moisture content

Rating Unit  
% = percent  
BU = bushel

Plant-Eval Interval  
170 DP-1 = 1 GLXMA Apr-30-2012

ARM Action Codes  
TY1 = 3.872\*[10]\*(100-@MVAVGREP([11]))/87