

The Ohio State University

2016/SOYBEAN/AUTHORITY XL/AUTHORITY MTZ/CRUSHER/HARMONY XP/SPLIT/EXTEND SOYBEANS

Title No. 2: APPLICATIONS/FALL/SPRING PROGRAMS/
 Trial ID: SULF.SOY.16.JPR.2(b) Location: Trial Year: 2016
 Protocol ID: SULF.SOY.16.JPR.2(b) Investigator: Dr. Mark M. Loux
 Project ID: Study Director:
 Sponsor Contact:

General Trial Information

Investigator: Dr. Mark M. Loux

Trial Location

City: South Charleston **Country:** USA United States
State/Prov.: Ohio
Postal Code: 45368 **Climate Zone:** USWARM US Warm Continental

Latitude of LL Corner °: 39.85877 N
Longitude of LL Corner °: 83.67295 W
Altitude of LL Corner, Unit: 1059.00 FT
Conducted Under GLP: No
Conducted Under GEP: No
No.

Contacts

Investigator: Dr. Mark M. Loux
Organization: The Ohio State University
Address: 2021 Coffey Road
City+State/Prov: Columbus, Ohio
Postal Code: 43210
Country: USA United States

Cooperator/Landowner

Other Contacts

Crop Description

Crop 1: GLXMA Glycine max Soybean
Variety: SC3577LL
Description: Seed Consultants

Planting Rate, Unit: 1750000 S/A
Depth, Unit: 0.5 IN
Row Spacing, Unit: 15 IN

Planting Date: 5-17-2017
Planting Method: PLANTD planted
Planting Equipment: PP Plot Planter
Emergence Date: 6-1-2017

Soil Temperature, Unit: 66 F
Soil Moisture: DRY dry
Seed Bed: MEDTRA medium/trashy

Pest Description

Pest 1 Type: W **Code:** LAMPU *Lamium purpureum*
Common Name: Purple deadnettle

Pest 2 Type: W **Code:** ERICA *Erigeron canadensis*
Common Name: Canada horseweed

Pest 3 Type: W **Code:** SENGL *Senecio glabellus*
Common Name: Cressleaf groundsel

Pest 4 Type: W **Code:** ERYRE *Erysimum repandum*
Common Name: Bushy wallflower

Pest 5 Type: W **Code:** AMBTR *Ambrosia trifida*
Common Name: Giant ragweed

Pest 6 Type: W **Code:** SETFA *Setaria faberi*
Common Name: Giant foxtail

Site and Design

Treated Plot Width: 10 FT
Treated Plot Length: 30 FT
Treated Plot Area: 300 FT² **Treatments:** 14
Replications: 3
No. Previous Crop Year
 1. Soybean 2016

Site Type: FIELD field
Experimental Unit: 1 PLOT plot
Tillage Type: NOTILL no-till
Study Design: RACOB L Randomized Complete Block (RCB)

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Maintenance

No.

Soil Description

Description Name: F-10 West
 % OM: 1.6 Texture: SIC silty clay
 pH: 6.6 Soil Name: Crosby
 CEC: 9 Fert. Level: G good
 Soil Drainage: G good

Additional Measured Elements

Application Description

	A	B	C	D	E
Application Date:	11-10-2016	4-3-2017	4-25-2017	6-8-2017	6-16-2017
Appl. Start Time:	10:30 AM	8:00 AM	9:30 AM	9:30 AM	8:40 AM
Appl. Stop Time:	10:50 AM	8:15 AM	9:45 AM	9:45 AM	8:50 AM
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	FALL	30 EPP	7 EPP	EPO	POST
Application Placement:	BROFOL	BROFOL	BROFOL	BROFOL	BROFOL
Applied By:	Dobbels	Dobbels	Dobbels	Dobbels	Dobbels
Air Temperature, Unit:	45 F	50 F	59 F	63 F	77 F
% Relative Humidity:	79	66	64	65	76
Wind Velocity, Unit:	9 MPH	5 MPH	7.5 MPH	8 MPH	4 MPH
Wind Direction:	SW	WNW	ESE	SE	SW
Dew Presence (Y/N):	N no	N no	N no	N no	Y yes
Soil Temperature, Unit:	41 F	44 F	54 F	59 F	70 F
Soil Moisture:	DRY	MOIST	DRY	SLIDRY	WET
% Cloud Cover:	0	85	60	40	30
Next Moisture Occurred On:	11-19-2016	4-3-2017	4-27-2017	6-13-2017	6-18-2017
Time to Next Moisture, Unit:	9 DAY	11 HR	2 DAY	5 DAY	2 DAY

Crop Stage At Each Application

	A	B	C	D	E
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:				BBCH	BBCH
Stage Majority, Percent:				11 100	13 100
Height, Unit:				3 IN	3.5 IN
Height Minimum, Maximum:				3 4	3 4

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Pest Stage At Each Application

	A	B	C	D	E
Pest 1 Code, Type, Scale:	LAMPU W	LAMPU W	LAMPU W	LAMPU W	LAMPU W
Stage Majority, Percent:	16 80				
Stage Minimum, Percent:	14 20				
Stage Maximum, Percent:	16 80				
Diameter, Unit:	0.5 IN				
Height, Unit:	0.5 IN				
Height Minimum, Maximum:	0.5 1				
Density, Unit:	5 M2				

Pest 2 Code, Type, Scale:	ERICA W	ERICA W	ERICA W	ERICA W	ERICA W
Stage Majority, Percent:	16 80		16 100	30 100	30 100
Stage Minimum, Percent:	16 80				
Stage Maximum, Percent:	18 20				
Diameter, Unit:	0.125 IN		1 IN		
Height, Unit:	0.1 IN		1 IN	5 IN	10 IN
Height Minimum, Maximum:	0.1 0.125		0.5 1.5	2 8	8 12
Density, Unit:	5 M2		5 M2	5 M2	5 M2

Pest 3 Code, Type, Scale:	SENGL W	SENGL W	SENGL W	SENGL W	SENGL W
Stage Majority, Percent:	14 80				
Stage Minimum, Percent:	14 80				
Stage Maximum, Percent:	16 29				
Diameter, Unit:	1 IN				
Height, Unit:	0.5 IN				
Height Minimum, Maximum:	0.5 1				
Density, Unit:	0.33 M2				

Pest 4 Code, Type, Scale:	ERYRE W	ERYRE W	ERYRE W	ERYRE W	ERYRE W
Stage Majority, Percent:	18 80				
Stage Minimum, Percent:	18 80				
Stage Maximum, Percent:	19 10				
Diameter, Unit:	3 IN				
Height, Unit:	0.5 IN				
Height Minimum, Maximum:	0.25 0.5				
Density, Unit:	5 M2				

Pest 5 Code, Type, Scale:	AMBTR W	AMBTR W	AMBTR W	AMBTR W	AMBTR W
Stage Majority, Percent:		10 100	12 80	19 100	19 100
Stage Minimum, Percent:			12 80		
Stage Maximum, Percent:			14 20		
Diameter, Unit:		0.5 IN	2 IN		
Height, Unit:		0.5 IN	2 IN	10 IN	10 IN
Height Minimum, Maximum:		0.5 0.5	1 3	8 12	8 12
Density, Unit:		5 M2	9 M2	9 M2	9 M2

Pest 6 Code, Type, Scale:	SETFA W	SETFA W	SETFA W	SETFA W	SETFA W
Stage Majority, Percent:			11 100	13 100	13 100
Height, Unit:			1 IN	2.5 IN	2 IN
Height Minimum, Maximum:			0.5 1	2 3	1 3
Density, Unit:			125 M2	125 M2	125 M2

Application Equipment

	A	B	C	D	E
Appl. Equipment:	10' AI XR	10' AI XR	10' AI XR	10' AI XR	10' AI XR
Equipment Type:	SPRBAC	SPRBAC	SPRBAC	SPRBAC	SPRBAC
Operation Pressure, Unit:	46 PSI	46 PSI	46 PSI	46 PSI	46 PSI
Nozzle Type:	AI XR	AI XR	AI XR	AI XR	AI XR
Nozzle Size:	110015	110015	110015	110015	110015
Nozzle Spacing, Unit:	18 IN	18 IN	18 IN	18 IN	18 IN

Boom Length, Unit:	10 FT	10 FT	10 FT	10 FT	10 FT
Boom Height, Unit:	20 IN	20 IN	20 IN	20 IN	20 IN
Ground Speed, Unit:	3 MPH	3 MPH	3 MPH	3 MPH	3 MPH

Carrier: WATER WATER WATER WATER WATER

Spray Volume, Unit:	15 GPA	15 GPA	15 GPA	15 GPA	15 GPA
Mix Size, Unit:	2 Liters	2 Liters	2 Liters	2 Liters	2 Liters

Propellant: CO2 CO2 CO2 CO2 CO2

Trt No Treatment Application Comment

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	LAMPU	ERICA	SENGL	VERAG	ERYRE	ERICA
Pest Scientific Name	Lamium purpure>	Erigeron canad>	Senecio glabel>	Veronica agres>	Erysimum repan>	Erigeron canad>
Pest Name	Purple deadnet>	Canada horsewe>	Cressleaf grou>	Field speedwell	Bushy wallflow>	Canada horsewe>

Crop Code
BBCH Scale
Crop Scientific Name

Crop Name						
Rating Date	4-14-2017	4-14-2017	4-14-2017	4-14-2017	4-14-2017	5-9-2017
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1
Days After First/Last Applic.	155 11	155 11	155 11	155 11	155 11	180 14
Trt-Eval Interval						AT PLANT
Plant-Eval Interval	-33 DP-1	-33 DP-1	-33 DP-1	-33 DP-1	-33 DP-1	-8 DP-1
Days After Emergence	-48 DE-1	-48 DE-1	-48 DE-1	-48 DE-1	-48 DE-1	-23 DE-1
Number of Decimals	0	0	0	0	0	0

Trt Treatment No. Name	Appl Code	1	2	3	4	5	6
5 AUTHORITY MTZ	A	100 a	100 a	100 a	100 a	100 a	87 a
5 WEEDMASTER	A						
5 ROUNDUP POWERMAX	A						
5 COC	A						
5 AMMONIUM SULFATE	A						
5 CRUSHER	B						
5 ROUNDUP POWERMAX	B						
5 COC	B						
5 AMMONIUM SULFATE	B						
5 ANTHEM MAXX	E						
5 CLASSIC	E						
5 COC	E						
5 AMMONIUM SULFATE	E						
5 LIBERTY	F						
5 AMMONIUM SULFATE	F						
6 AUTHORITY MTZ	A	100 a	100 a	100 a	100 a	100 a	100 a
6 WEEDMASTER	A						
6 ROUNDUP POWERMAX	A						
6 COC	A						
6 AMMONIUM SULFATE	A						
6 HARMONY EXTRA XP	B						
6 2,4-D LV ESTER	B						
6 ROUNDUP POWERMAX	B						
6 AMMONIUM SULFATE	B						
6 ANTHEM MAXX	E						
6 CLASSIC	E						
6 LIBERTY	E						
6 AMMONIUM SULFATE	E						
7 CRUSHER	A	100 a	100 a	100 a	100 a	100 a	100 a
7 ROUNDUP POWERMAX	A						
7 COC	A						
7 AMMONIUM SULFATE	A						
7 AUTHORITY ASSIST	C						
7 METRIBUZIN	C						
7 GRAMOXONE INTEON	C						
7 2,4-D Ester	C						
7 COC	C						
7 AMMONIUM SULFATE	C						
7 LIBERTY	F						
7 AMMONIUM SULFATE	F						

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Sponsor Contact:

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	LAMPU	ERICA	SENGL	VERAG	ERYRE	ERICA
Pest Scientific Name	Lamium purpure>	Erigeron canad>	Senecio glabel>	Veronica agres>	Erysimum repan>	Erigeron canad>
Pest Name	Purple deadnet>	Canada horsewe>	Cressleaf grou>	Field speedwell	Bushy wallflow>	Canada horsewe>

Crop Code
BBCH Scale
Crop Scientific Name

Crop Name						
Rating Date	4-14-2017	4-14-2017	4-14-2017	4-14-2017	4-14-2017	5-9-2017
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1
Days After First/Last Applic.	155 11	155 11	155 11	155 11	155 11	180 14
Trt-Eval Interval						AT PLANT
Plant-Eval Interval	-33 DP-1	-33 DP-1	-33 DP-1	-33 DP-1	-33 DP-1	-8 DP-1
Days After Emergence	-48 DE-1	-48 DE-1	-48 DE-1	-48 DE-1	-48 DE-1	-23 DE-1
Number of Decimals	0	0	0	0	0	0

Trt No.	Treatment Name	Appl Code	1	2	3	4	5	6
8	CRUSHER	A	100 a	100 a	100 a	100 a	100 a	95 a
8	ROUNDUP POWERMAX	A						
8	COC	A						
8	AMMONIUM SULFATE	A						
8	HARMONY EXTRA XP	B						
8	2,4-D LV ESTER	B						
8	ROUNDUP POWERMAX	B						
8	AMMONIUM SULFATE	B						
8	ANTHEM MAXX	E						
8	LIBERTY	E						
8	AMMONIUM SULFATE	E						
9	CRUSHER	A	100 a	100 a	100 a	100 a	100 a	40 bc
9	ROUNDUP POWERMAX	A						
9	COC	A						
9	AMMONIUM SULFATE	A						
9	VERDICT	D						
9	ROUNDUP POWERMAX	D						
9	AMMONIUM SULFATE	D						
9	LIBERTY	E						
9	AMMONIUM SULFATE	E						
10	HARMONY EXTRA XP	A	100 a	100 a	100 a	100 a	100 a	100 a
10	WEEDMASTER	A						
10	ROUNDUP POWERMAX	A						
10	AMMONIUM SULFATE	A						
10	AUTHORITY MTZ	C						
10	GRAMOXONE INTEON	C						
10	2,4-D LV ESTER	C						
10	COC	C						
10	AMMONIUM SULFATE	C						
10	ANTHEM MAXX	E						
10	CLASSIC	E						
10	LIBERTY	E						
10	AMMONIUM SULFATE	E						

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	VERAG	AMBTR	ERICA	SETFA	AMBTR		ERICA
Pest Scientific Name	Veronica Ambrosia trifida	Erigeron canadensis	Setaria faberii	Ambrosia trifida	Erigeron canadensis		
Pest Name	Field speedwell	Giant ragweed	Canada horseweed	Giant foxtail	Giant ragweed		Canada horseweed
Crop Code						GLXMA	
BBCH Scale						BSOY	
Crop Scientific Name						Glycine max	
Crop Name						Soybean	
Rating Date	5-9-2017	5-9-2017	5-30-2017	5-30-2017	5-30-2017	6-14-2017	6-14-2017
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	PHYNEC	CONTRO
Rating Unit	%	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1	1
Days After First/Last Applic.	180 14	180 14	201 35	201 35	201 35	216 6	216 6
Trt-Eval Interval	AT PLANT	AT PLANT	14 DAPL	14 DAPL	14 DAPL	6 DA-D	6 DA-D
Plant-Eval Interval	-8 DP-1	-8 DP-1	13 DP-1	13 DP-1	13 DP-1	28 DP-1	28 DP-1
Days After Emergence	-23 DE-1	-23 DE-1	-2 DE-1	-2 DE-1	-2 DE-1	13 DE-1	13 DE-1
Number of Decimals	0	0	0	0	0	0	0

Trt No.	Treatment Name	Appl Code	7	8	9	10	11	12	13
1	UNTREATED		0 d	0 e	0 h	0 c	0 d	0.0 d	0 d
2	CRUSHER	A	100 a	47 cd	93 ab	100 a	82 ab	0.0 d	90 a
	2,4-D LV ESTER	A							
	ROUNDUP POWERMAX	A							
	COC	A							
	AMMONIUM SULFATE	A							
	AUTHORITY ASSIST	D							
	METRIBUZIN	D							
	GRAMOXONE INTEON	D							
	COC	D							
	AMMONIUM SULFATE	D							
	LIBERTY	F							
	AMMONIUM SULFATE	F							
3	CRUSHER	A	53 c	20 de	70 cde	100 a	87 a	0.0 d	67 b
	2,4-D LV ESTER	A							
	ROUNDUP POWERMAX	A							
	COC	A							
	AMMONIUM SULFATE	A							
	AUTHORITY XL	D							
	METRIBUZIN	D							
	GRAMOXONE INTEON	D							
	COC	D							
	AMMONIUM SULFATE	D							
	LIBERTY	F							
	AMMONIUM SULFATE	F							
4	CRUSHER	A	87 ab	0 e	57 d-g	95 a	82 ab	0.0 d	53 b
	ROUNDUP POWERMAX	A							
	COC	A							
	AMMONIUM SULFATE	A							
	AUTHORITY FIRST	D							
	METRIBUZIN	D							
	GRAMOXONE INTEON	D							
	COC	D							
	AMMONIUM SULFATE	D							
	LIBERTY	F							
	AMMONIUM SULFATE	F							

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Pest Code	VERAG	AMBTR	ERICA	SETFA	AMBTR		ERICA
Pest Scientific Name	Veronica Ambrosia trifi> agres>	Erigeron canad>	Setaria faberi	Ambrosia trifi>			Erigeron canad>
Pest Name	Field speedwell	Giant ragweed	Canada horsewe>	Giant foxtail	Giant ragweed		Canada horsewe>
Crop Code						GLXMA	
BBCH Scale						BSOY	
Crop Scientific Name						Glycine max Soybean	
Crop Name							
Rating Date	5-9-2017	5-9-2017	5-30-2017	5-30-2017	5-30-2017	6-14-2017	6-14-2017
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	PHYNEC	CONTRO
Rating Unit	%	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1	1
Days After First/Last Applic.	180 14	180 14	201 35	201 35	201 35	216 6	216 6
Trt-Eval Interval	AT PLANT	AT PLANT	14 DAPL	14 DAPL	14 DAPL	6 DA-D	6 DA-D
Plant-Eval Interval	-8 DP-1	-8 DP-1	13 DP-1	13 DP-1	13 DP-1	28 DP-1	28 DP-1
Days After Emergence	-23 DE-1	-23 DE-1	-2 DE-1	-2 DE-1	-2 DE-1	13 DE-1	13 DE-1
Number of Decimals	0	0	0	0	0	0	0

Trt Treatment No. Name	Appl Code	7	8	9	10	11	12	13
5 AUTHORITY MTZ	A	100 a	73 abc	43 fg	62 b	58 c	13.3 c	30 c
5 WEEDMASTER	A							
5 ROUNDUP POWERMAX	A							
5 COC	A							
5 AMMONIUM SULFATE	A							
5 CRUSHER	B							
5 ROUNDUP POWERMAX	B							
5 COC	B							
5 AMMONIUM SULFATE	B							
5 ANTHEM MAXX	E							
5 CLASSIC	E							
5 COC	E							
5 AMMONIUM SULFATE	E							
5 LIBERTY	F							
5 AMMONIUM SULFATE	F							
6 AUTHORITY MTZ	A	100 a	83 ab	73 bcd	0 c	53 c	13.3 c	94 a
6 WEEDMASTER	A							
6 ROUNDUP POWERMAX	A							
6 COC	A							
6 AMMONIUM SULFATE	A							
6 HARMONY EXTRA XP	B							
6 2,4-D LV ESTER	B							
6 ROUNDUP POWERMAX	B							
6 AMMONIUM SULFATE	B							
6 ANTHEM MAXX	E							
6 CLASSIC	E							
6 LIBERTY	E							
6 AMMONIUM SULFATE	E							
7 CRUSHER	A	100 a	100 a	100 a	90 a	83 ab	0.0 d	100 a
7 ROUNDUP POWERMAX	A							
7 COC	A							
7 AMMONIUM SULFATE	A							
7 AUTHORITY ASSIST	C							
7 METRIBUZIN	C							
7 GRAMOXONE INTEON	C							
7 2,4-D Ester	C							
7 COC	C							
7 AMMONIUM SULFATE	C							
7 LIBERTY	F							
7 AMMONIUM SULFATE	F							

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Pest Scientific Name	Veronica Ambrosia trifida	Erigeron canadensis	Setaria faberii	Ambrosia trifida	Erigeron canadensis	
Pest Name	Field speedwell	Giant ragweed	Canada horseweed	Giant foxtail	Giant ragweed	Canada horseweed
Crop Code						GLXMA
BBCH Scale						BSOY
Crop Scientific Name						Glycine max
Crop Name						Soybean
Rating Date	5-9-2017	5-9-2017	5-30-2017	5-30-2017	5-30-2017	6-14-2017
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	PHYNEC
Rating Unit	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1
Days After First/Last Applic.	180 14	180 14	201 35	201 35	201 35	216 6
Trt-Eval Interval	AT PLANT	AT PLANT	14 DAPL	14 DAPL	14 DAPL	6 DA-D
Plant-Eval Interval	-8 DP-1	-8 DP-1	13 DP-1	13 DP-1	13 DP-1	28 DP-1
Days After Emergence	-23 DE-1	-23 DE-1	-2 DE-1	-2 DE-1	-2 DE-1	13 DE-1
Number of Decimals	0	0	0	0	0	0

Trt No.	Treatment Name	Appl Code	7	8	9	10	11	12	13
8	CRUSHER	A	100 a	68 bc	57 d-g	0 c	50 c	19.3 a	95 a
8	ROUNDUP POWERMAX	A							
8	COC	A							
8	AMMONIUM SULFATE	A							
8	HARMONY EXTRA XP	B							
8	2,4-D LV ESTER	B							
8	ROUNDUP POWERMAX	B							
8	AMMONIUM SULFATE	B							
8	ANTHEM MAXX	E							
8	LIBERTY	E							
8	AMMONIUM SULFATE	E							
9	CRUSHER	A	100 a	20 de	90 abc	98 a	93 a	14.0 c	100 a
9	ROUNDUP POWERMAX	A							
9	COC	A							
9	AMMONIUM SULFATE	A							
9	VERDICT	D							
9	ROUNDUP POWERMAX	D							
9	AMMONIUM SULFATE	D							
9	LIBERTY	E							
9	AMMONIUM SULFATE	E							
10	HARMONY EXTRA XP	A	100 a	100 a	100 a	90 a	65 bc	16.7 abc	100 a
10	WEEDMASTER	A							
10	ROUNDUP POWERMAX	A							
10	AMMONIUM SULFATE	A							
10	AUTHORITY MTZ	C							
10	GRAMOXONE INTEON	C							
10	2,4-D LV ESTER	C							
10	COC	C							
10	AMMONIUM SULFATE	C							
10	ANTHEM MAXX	E							
10	CLASSIC	E							
10	LIBERTY	E							
10	AMMONIUM SULFATE	E							

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2016/SOYBEAN/AUTHORITY XL/AUTHORITY MTZ/CRUSHER/HARMONY XP/SPLIT/EXTEND SOYBEANS

Title No. 2: APPLICATIONS/FALL/SPRING PROGRAMS/

Trial ID: SULF.SOY.16.JPR.2(b) Location: Trial Year: 2016

Protocol ID: SULF.SOY.16.JPR.2(b) Investigator: Dr. Mark M. Loux

Project ID: Study Director:

Sponsor Contact:

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	SETFA	AMBTR	ERICA	SETFA	AMBTR		
Pest Scientific Name	Setaria faberi	Ambrosia trifida	Erigeron canadensis	Setaria faberi	Ambrosia trifida		
Pest Name	Giant foxtail	Giant ragweed	Canada horseweed	Giant foxtail	Giant ragweed		
Crop Code							
BBCH Scale							
Crop Scientific Name							
Crop Name							
Rating Date	6-14-2017	6-14-2017	7-14-2017	7-14-2017	7-14-2017		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1		
Days After First/Last Applic.	216 6	216 6	246 28	246 28	246 28		
Trt-Eval Interval	6 DA-D	6 DA-D	28 DA-E	28 DA-E	28 DA-E		
Plant-Eval Interval	28 DP-1	28 DP-1	58 DP-1	58 DP-1	58 DP-1		
Days After Emergence	13 DE-1	13 DE-1	43 DE-1	43 DE-1	43 DE-1		
Number of Decimals	0	0	0	0	0		
Trt Treatment No. Name	Appl Code	14	15	16	17	18	19
1 UNTREATED		0 f	0 h	0 e	0 g	0 e	
1							
2 CRUSHER	A	67 c	57 fg	93 ab	85 abc	73 abc	
2 2,4-D LV ESTER	A						
2 ROUNDUP POWERMAX	A						
2 COC	A						
2 AMMONIUM SULFATE	A						
2 AUTHORITY ASSIST	D						
2 METRIBUZIN	D						
2 GRAMOXONE INTEON	D						
2 COC	D						
2 AMMONIUM SULFATE	D						
2 LIBERTY	F						
2 AMMONIUM SULFATE	F						
3 CRUSHER	A	80 b	62 efg	88 ab	90 a	80 a	
3 2,4-D LV ESTER	A						
3 ROUNDUP POWERMAX	A						
3 COC	A						
3 AMMONIUM SULFATE	A						
3 AUTHORITY XL	D						
3 METRIBUZIN	D						
3 GRAMOXONE INTEON	D						
3 COC	D						
3 AMMONIUM SULFATE	D						
3 LIBERTY	F						
3 AMMONIUM SULFATE	F						
3							
4 CRUSHER	A	53 de	53 fg	67 cd	82 abc	73 abc	
4 ROUNDUP POWERMAX	A						
4 COC	A						
4 AMMONIUM SULFATE	A						
4 AUTHORITY FIRST	D						
4 METRIBUZIN	D						
4 GRAMOXONE INTEON	D						
4 COC	D						
4 AMMONIUM SULFATE	D						
4 LIBERTY	F						
4 AMMONIUM SULFATE	F						

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2016/SOYBEAN/AUTHORITY XL/AUTHORITY MTZ/CRUSHER/HARMONY XP/SPLIT/EXTEND SOYBEANS

Title No. 2: APPLICATIONS/FALL/SPRING PROGRAMS/

Trial ID: SULF.SOY.16.JPR.2(b) Location: Trial Year: 2016

Protocol ID: SULF.SOY.16.JPR.2(b) Investigator: Dr. Mark M. Loux

Project ID: Study Director:

Sponsor Contact:

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	SETFA	AMBTR	ERICA	SETFA	AMBTR
Pest Scientific Name	Setaria faberi	Ambrosia trifid	Erigeron canadensis	Setaria faberi	Ambrosia trifid
Pest Name	Giant foxtail	Giant ragweed	Canada horseweed	Giant foxtail	Giant ragweed
Crop Code					
BBCH Scale					
Crop Scientific Name					
Crop Name					
Rating Date	6-14-2017	6-14-2017	7-14-2017	7-14-2017	7-14-2017
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Days After First/Last Applic.	216 6	216 6	246 28	246 28	246 28
Trt-Eval Interval	6 DA-D	6 DA-D	28 DA-E	28 DA-E	28 DA-E
Plant-Eval Interval	28 DP-1	28 DP-1	58 DP-1	58 DP-1	58 DP-1
Days After Emergence	13 DE-1	13 DE-1	43 DE-1	43 DE-1	43 DE-1
Number of Decimals	0	0	0	0	0

Trt Treatment No. Name	Appl Code	14	15	16	17	18	19
5 AUTHORITY MTZ	A	60 cd	47 g	50 d	73 cd	53 d	
5 WEEDMASTER	A						
5 ROUNDUP POWERMAX	A						
5 COC	A						
5 AMMONIUM SULFATE	A						
5 CRUSHER	B						
5 ROUNDUP POWERMAX	B						
5 COC	B						
5 AMMONIUM SULFATE	B						
5 ANTHEM MAXX	E						
5 CLASSIC	E						
5 COC	E						
5 AMMONIUM SULFATE	E						
5 LIBERTY	F						
5 AMMONIUM SULFATE	F						
6 AUTHORITY MTZ	A	82 b	82 bc	77 bc	53 ef	60 cd	
6 WEEDMASTER	A						
6 ROUNDUP POWERMAX	A						
6 COC	A						
6 AMMONIUM SULFATE	A						
6 HARMONY EXTRA XP	B						
6 2,4-D LV ESTER	B						
6 ROUNDUP POWERMAX	B						
6 AMMONIUM SULFATE	B						
6 ANTHEM MAXX	E						
6 CLASSIC	E						
6 LIBERTY	E						
6 AMMONIUM SULFATE	E						
7 CRUSHER	A	47 e	65 def	93 ab	75 bcd	72 abc	
7 ROUNDUP POWERMAX	A						
7 COC	A						
7 AMMONIUM SULFATE	A						
7 AUTHORITY ASSIST	C						
7 METRIBUZIN	C						
7 GRAMOXONE INTEON	C						
7 2,4-D Ester	C						
7 COC	C						
7 AMMONIUM SULFATE	C						
7 LIBERTY	F						
7 AMMONIUM SULFATE	F						

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2016/SOYBEAN/AUTHORITY XL/AUTHORITY MTZ/CRUSHER/HARMONY XP/SPLIT/EXTEND SOYBEANS

Title No. 2: APPLICATIONS/FALL/SPRING PROGRAMS/

Trial ID: SULF.SOY.16.JPR.2(b) Location: Trial Year: 2016

Protocol ID: SULF.SOY.16.JPR.2(b) Investigator: Dr. Mark M. Loux

Project ID: Study Director: Sponsor Contact:

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	SETFA	AMBTR	ERICA	SETFA	AMBTR
Pest Scientific Name	Setaria faberi	Ambrosia trifida	Erigeron canadensis	Setaria faberi	Ambrosia trifida
Pest Name	Giant foxtail	Giant ragweed	Canada horseweed	Giant foxtail	Giant ragweed
Crop Code					
BBCH Scale					
Crop Scientific Name					
Crop Name					
Rating Date	6-14-2017	6-14-2017	7-14-2017	7-14-2017	7-14-2017
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Days After First/Last Applic.	216 6	216 6	246 28	246 28	246 28
Trt-Eval Interval	6 DA-D	6 DA-D	28 DA-E	28 DA-E	28 DA-E
Plant-Eval Interval	28 DP-1	28 DP-1	58 DP-1	58 DP-1	58 DP-1
Days After Emergence	13 DE-1	13 DE-1	43 DE-1	43 DE-1	43 DE-1
Number of Decimals	0	0	0	0	0

Trt Treatment No. Name	Appl Code	14	15	16	17	18	19
8 CRUSHER	A	78 b	73 cde	87 ab	43 f	70 abc	
8 ROUNDUP POWERMAX	A						
8 COC	A						
8 AMMONIUM SULFATE	A						
8 HARMONY EXTRA XP	B						
8 2,4-D LV ESTER	B						
8 ROUNDUP POWERMAX	B						
8 AMMONIUM SULFATE	B						
8 ANTHEM MAXX	E						
8 LIBERTY	E						
8 AMMONIUM SULFATE	E						
9 CRUSHER	A	99 a	98 a	100 a	67 d	63 bcd	
9 ROUNDUP POWERMAX	A						
9 COC	A						
9 AMMONIUM SULFATE	A						
9 VERDICT	D						
9 ROUNDUP POWERMAX	D						
9 AMMONIUM SULFATE	D						
9 LIBERTY	E						
9 AMMONIUM SULFATE	E						
10 HARMONY EXTRA XP	A	88 ab	80 bcd	100 a	82 abc	77 ab	
10 WEEDMASTER	A						
10 ROUNDUP POWERMAX	A						
10 AMMONIUM SULFATE	A						
10 AUTHORITY MTZ	C						
10 GRAMOXONE INTEON	C						
10 2,4-D LV ESTER	C						
10 COC	C						
10 AMMONIUM SULFATE	C						
10 ANTHEM MAXX	E						
10 CLASSIC	E						
10 LIBERTY	E						
10 AMMONIUM SULFATE	E						

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2016/SOYBEAN/AUTHORITY XL/AUTHORITY MTZ/CRUSHER/HARMONY XP/SPLIT/EXTEND SOYBEANS

Title No. 2: APPLICATIONS/FALL/SPRING PROGRAMS/

Trial ID: SULF.SOY.16.JPR.2(b) Location: Trial Year: 2016

Protocol ID: SULF.SOY.16.JPR.2(b) Investigator: Dr. Mark M. Loux

Project ID: Study Director:

Sponsor Contact:

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	SETFA	AMBTR	ERICA	SETFA	AMBTR
Pest Scientific Name	Setaria faberi	Ambrosia trifid	Erigeron canadensis	Setaria faberi	Ambrosia trifid
Pest Name	Giant foxtail	Giant ragweed	Canada horseweed	Giant foxtail	Giant ragweed
Crop Code					
BBCH Scale					
Crop Scientific Name					
Crop Name					
Rating Date	6-14-2017	6-14-2017	7-14-2017	7-14-2017	7-14-2017
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Days After First/Last Applic.	216 6	216 6	246 28	246 28	246 28
Trt-Eval Interval	6 DA-D	6 DA-D	28 DA-E	28 DA-E	28 DA-E
Plant-Eval Interval	28 DP-1	28 DP-1	58 DP-1	58 DP-1	58 DP-1
Days After Emergence	13 DE-1	13 DE-1	43 DE-1	43 DE-1	43 DE-1
Number of Decimals	0	0	0	0	0

Trt Treatment No. Name	Appl Code	14	15	16	17	18	19
11 HARMONY EXTRA XP	A	97 a	93 ab	98 a	87 ab	75 ab	
11 WEEDMASTER	A						
11 ROUNDUP POWERMAX	A						
11 AMMONIUM SULFATE	A						
11 AUTHORITY MTZ	D						
11 BUTYRAC 200	D						
11 GRAMOXONE INTEON	D						
11 COC	D						
11 AMMONIUM SULFATE	D						
11 ANTHEM MAXX	E						
11 CLASSIC	E						
11 LIBERTY	E						
11 AMMONIUM SULFATE	E						
12 HARMONY EXTRA XP	A	99 a	90 ab	67 cd	83 abc	73 abc	
12 WEEDMASTER	A						
12 ROUNDUP POWERMAX	A						
12 AMMONIUM SULFATE	A						
12 AUTHORITY XL	D						
12 ROUNDUP POWERMAX	D						
12 COC	D						
12 AMMONIUM SULFATE	D						
12 ANTHEM MAXX	E						
12 LIBERTY	E						
12 AMMONIUM SULFATE	E						
13 HARMONY EXTRA XP	A	93 a	87 abc	83 abc	75 bcd	67 a-d	
13 WEEDMASTER	A						
13 ROUNDUP POWERMAX	A						
13 AMMONIUM SULFATE	A						
13 ROUNDUP POWERMAX	D						
13 COC	D						
13 AMMONIUM SULFATE	D						
13 ANTHEM MAXX	E						
13 LIBERTY	E						
13 AMMONIUM SULFATE	E						

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2016/SOYBEAN/AUTHORITY XL/AUTHORITY MTZ/CRUSHER/HARMONY XP/SPLIT/EXTEND SOYBEANS

Title No. 2: APPLICATIONS/FALL/SPRING PROGRAMS/

Trial ID: SULF.SOY.16.JPR.2(b) Location: Trial Year: 2016

Protocol ID: SULF.SOY.16.JPR.2(b) Investigator: Dr. Mark M. Loux

Project ID: Study Director:

Sponsor Contact:

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	SETFA	AMBTR	ERICA	SETFA	AMBTR		
Pest Scientific Name	Setaria faberi	Ambrosia trifid>	Erigeron canad>	Setaria faberi	Ambrosia trifid>		
Pest Name	Giant foxtail	Giant ragweed	Canada horsewe>	Giant foxtail	Giant ragweed		
Crop Code							
BBCH Scale							
Crop Scientific Name							
Crop Name							
Rating Date	6-14-2017	6-14-2017	7-14-2017	7-14-2017	7-14-2017		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1 1		
Days After First/Last Applic.	216 6	216 6	246 28	246 28	246 28		
Trt-Eval Interval	6 DA-D	6 DA-D	28 DA-E	28 DA-E	28 DA-E		
Plant-Eval Interval	28 DP-1	28 DP-1	58 DP-1	58 DP-1	58 DP-1		
Days After Emergence	13 DE-1	13 DE-1	43 DE-1	43 DE-1	43 DE-1		
Number of Decimals	0	0	0	0	0		
Trt Treatment No. Name	Appl Code	14	15	16	17	18	19
14 AUTHORITY MTZ	A	99 a	85 abc	68 c	63 de	63 bcd	
14 WEEDMASTER	A						
14 ROUNDUP POWERMAX	A						
14 COC	A						
14 AMMONIUM SULFATE	A						
14 ANTHEM MAXX	D						
14 ROUNDUP POWERMAX	D						
14 COC	D						
14 AMMONIUM SULFATE	D						
14 LIBERTY	E						
14 CADET	E						
14 AMMONIUM SULFATE	E						
LSD P=.05		11.4	15.5	17.1	11.8	13.6	.
Standard Deviation		6.8	9.2	10.2	7.0	8.1	.
CV		9.1	13.31	13.32	10.27	12.62	.
Bartlett's X2		23.855	20.329	7.313	12.659	6.045	.
P(Bartlett's X2)		0.013*	0.041*	0.696	0.394	0.87	.
Skewness		-1.4203*	-1.2979*	-1.5537*	-1.7063*	-2.1105*	.
Kurtosis		1.6618*	1.5352*	2.3766*	2.7198*	4.6384*	.
Replicate F		2.101	0.856	0.556	3.699	5.238	
Replicate Prob(F)		0.1427	0.4367	0.5803	0.0386	0.0123	
Treatment F		50.261	22.877	20.552	34.214	17.979	
Treatment Prob(F)		0.0001	0.0001	0.0001	0.0001	0.0001	

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2016/SOYBEAN/AUTHORITY XL/AUTHORITY MTZ/CRUSHER/HARMONY XP/SPLIT/EXTEND SOYBEANS

Title No. 2: APPLICATIONS/FALL/SPRING PROGRAMS/

Trial ID: SULF.SOY.16.JPR.2(b)

Location:

Trial Year: 2016

Protocol ID: SULF.SOY.16.JPR.2(b)

Investigator: Dr. Mark M. Loux

Project ID:

Study Director:

Sponsor Contact:

Pest Type

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

Pest Code

LAMPU, Lamium purpureum, Purple deadnettle = US
ERICA, Erigeron canadensis, Canada horseweed = US
SENGL, Senecio glabellus, Cressleaf groundsel = US
VERAG, Veronica agrestis, Field speedwell = US
ERYRE, Erysimum repandum, Bushy wallflower = US
AMBTR, Ambrosia trifida, Giant ragweed = US
SETFA, Setaria faberi, Giant foxtail = US

Crop Code

GLXMA, BSOY, Glycine max, Soybean = US

Rating Type

CONTRO = control / burndown or knockdown
PHYNEC = phytotoxicity - necrosis /burn

Rating Unit

% = percent

Plant-Eval Interval

-33 DP-1 = 1 GLXMA 5-17-2017
-8 DP-1 = 1 GLXMA 5-17-2017
13 DP-1 = 1 GLXMA 5-17-2017
28 DP-1 = 1 GLXMA 5-17-2017
58 DP-1 = 1 GLXMA 5-17-2017