

The Ohio State University

Authority Programs in Soybeans

Trial ID: 20FMCSOY Location: Western Branch F-9 East Trial Year: 2020
 Protocol ID: 20FMCSOY Investigator: Dr. Mark M. Loux
 Project ID: USA-20-791 Study Director: Anthony Dobbels
 Sponsor Contact: Drake Copeland, FMC

General Trial Information

Study Director: Anthony Dobbels
Investigator: Dr. Mark M. Loux

Trial Status: E established

ARM Trial Created On: Mar-17-2020

Initiation Date: Apr-1-2020

Trial Location

Address (Location): 7721 South Charleston Pike
City: South Charleston **Country:** USA United States
State/Prov.: Ohio
Postal Code: 45368

Latitude of LL Corner °: 39.85876 N
Longitude of LL Corner °: -83.67309 W
Altitude of LL Corner: 1095.00 FT

Conducted Under GLP: No
Conducted Under GEP: No

Contacts

Study Director: Anthony Dobbels

Investigator: Dr. Mark M. Loux

Crop Description

Crop 1: C GLXMA Glycine max Soybean **BBCH Scale:** BSOY
Entry Date: May-8-2020 **Stage Scale:** BBCH
Variety: Pioneer P30T99E
Attributes: 2,4-D Choline, Glyphosate, Glufosinate Tol
Planting Date: May-7-2020 **Planting Rate:** 155000 S/A
Depth: 1.5 IN
Rows per Plot: 8 **Planting Method:** PLANTD planted
Row Spacing: 15 IN **Planting Equipment:** FE field equipment
Seed Bed: MEDTRA medium/trashy
Soil Temperature: 50 F **Soil Moisture:** NORMAL normal, adequate
Emergence Date: May-25-2020

Pest Description

Pest 1 Type: W **Code:** AMBTR **Ambrosia trifida**
Common Name: ragweed, giant **Entry Date:** Jun-9-2020

Pest 2 Type: W **Code:** SETFA **Setaria faberi**
Common Name: foxtail, giant **Entry Date:** Jun-22-2020

Pest 3 Type: W **Code:** AMARE **Amaranthus retroflexus**
Common Name: Redroot pigweed **Entry Date:** Jun-22-2020

Pest 4 Type: W **Code:** ERICA **Conyza canadensis**
Common Name: horseweed **Entry Date:** Jun-22-2020

Pest 5 Type: W **Code:** CHEAL **Chenopodium album**
Common Name: lambsquarters, common **Entry Date:** Jun-22-2020

Site and Design

Treated Plot Width: 6.67 FT **Site Type:** FIELD field
Treated Plot Length: 30 FT **Experimental Unit:** 1 PLOT plot
Treated Plot Area: 200.1 FT2 **Treatments:** 12 **Tillage Type:** NOTILL no-till
Replications: 3 **Study Design:** RACOB L Randomized Complete Block (RCB)

Previous

No. Crop Year
 1. SOYBEAN 2019

Maintenance

No.	Date	Type	Maintenance Product Name	Form Conc	Form Unit	Form Type	Rate	Tank Unit	Tank Mix Code	Tank Mix
1.	Apr-3-2020	HERB	Roundup Powermax	4.5	LBAE/GAL	SL	32	OZ/A	Y	yes
2.	Apr-3-2020	HERB	2,4-D Ester	4	LBA/GAL	SC	16	OZ/A	Y	yes

The Ohio State University

Authority Programs in Soybeans

Trial ID: 20FMCSOY Location: Western Branch F-9 East Trial Year: 2020
 Protocol ID: 20FMCSOY Investigator: Dr. Mark M. Loux
 Project ID: USA-20-791 Study Director: Anthony Dobbels
 Sponsor Contact: Drake Copeland, FMC

Soil Description

Description Name: F-10 W
% Sand: 31 **% OM:** 1.6 **Texture:** L loam
% Silt: 54 **pH:** 6.5 **Soil Name:** Crosby
% Clay: 15 **CEC:** 11.8 **Fert. Level:** G good
Soil Drainage: G good

Application Description

	A	B	C
Application Date	May-7-2020	Jun-9-2020	Jun-18-2020
Appl. Start Time	8:00 PM	7:40 AM	8:00 AM
Appl. Stop Time	8:30 PM	8:00 AM	8:00 AM
Interval to Prev. Appl.		33 DAYS	9 DAYS
Application Method	SPRAY	SPRAY	SPRAY
Application Timing	PRE	MPO	POST
Application Placement	BROSOL	BROSOL	BROFOL
Applied By	Dobbels	Kimmet	Kimmet
Appl. Entry Date	May-8-2020	Jun-9-2020	Jun-22-2020
Air Temperature Start, Stop	60 58 F	69 69 F	65 65 F
% Relative Humidity Start, Stop	48 48	64 64	79 79
Wind Velocity+Dir. Start	8 MPH WSW	5 MPH ESE	3 MPH NE
Wind Velocity+Dir. Stop	8 MPH WSW	5 MPH ESE	3 MPH NE
Wind Velocity+Dir. Max	8 MPH W	5 MPH ESE	3 MPH NE
Wet Leaves (Y/N)	N no	N no	N no
Soil Temperature	61 F	68 F	68 F
Soil Moisture	NORMAL	DRY	DRY
Soil Surface Condition	MEDTRA	MEDTRA	MEDTRA
% Cloud Cover	30	20	70
Next Moisture Occurred On	May-8-2020	Jun-9-2020	Jun-18-2020
Time to Next Moisture	13 HR	10 HR	5 HR
Moisture 6 Hours after Appl.	0 IN	0 IN	0.05 IN
Moisture 1 Week after Appl.	0.65 IN	0.37 IN	0.9 IN

Crop Stage At Each Application

	A		B		C	
Crop 1 Code, BBCH Scale	GLXMA	BSOY	GLXMA	BSOY	GLXMA	BSOY
Days after Emergence	-18		15		24	
Stage Scale Used	BBCH		BBCH		BBCH	
Stage Majority, Percent			12	80	13	90
Stage Minimum, Percent			11	10	12	10
Stage Maximum, Percent			12	80	13	90
Height Average			3	IN	5	IN
Height Minimum, Maximum			1	6	3	6

The Ohio State University

Authority Programs in Soybeans

Trial ID: 20FMCSOY Location: Western Branch F-9 East Trial Year: 2020
 Protocol ID: 20FMCSOY Investigator: Dr. Mark M. Loux
 Project ID: USA-20-791 Study Director: Anthony Dobbels
 Sponsor Contact: Drake Copeland, FMC

Pest Stage At Each Application

	A		B		C	
Pest 1 Code, Type, Scale	AMBTR	W	AMBTR	W	AMBTR	W
Stage Majority, Percent	18	60	19	80		
Stage Minimum, Percent	12	10	14	10		
Stage Maximum, Percent	18	60	19	80		
Height Average	8	IN	13	IN		
Height Minimum, Maximum	2	19	4	20		
Density Average	5	PLA/m2				
Density Min, Max	3	6				
Pest 2 Code, Type, Scale	SETFA	W	SETFA	W	SETFA	W
Stage Majority, Percent	12	90	13	80		
Stage Minimum, Percent	12	90	12	10		
Stage Maximum, Percent	13	10	13	80		
Height Average	3	IN	6	IN		
Height Minimum, Maximum	1	5	3	12		
Density Average	95	PLA/m2				
Density Min, Max	80	120				
Pest 3 Code, Type, Scale	AMARE	W	AMARE	W	AMARE	W
Stage Majority, Percent	14	90	16	80		
Stage Minimum, Percent	12	10	14	10		
Stage Maximum, Percent	14	90	18	10		
Height Average	1	IN	3	IN		
Height Minimum, Maximum	0.5	1	2	4		
Density Average	3	PLA/m2				
Density Min, Max	1	4				
Pest 4 Code, Type, Scale	ERICA	W	ERICA	W	ERICA	W
Stage Majority, Percent	19	100	19	100		
Height Average	3	IN	6	IN		
Height Minimum, Maximum	1	3	4	8		
Density Average	3	PLA/m2				
Density Min, Max	1	5				
Pest 5 Code, Type, Scale	CHEAL	W	CHEAL	W	CHEAL	W
Stage Majority, Percent	12	80	16	80		
Stage Minimum, Percent	12	80	14	10		
Stage Maximum, Percent	14	10	16	80		
Height Average	2	IN	4	IN		
Height Minimum, Maximum	1	2				
Density Average	3	PLA/m2				
Density Min, Max	1	4				

Application Equipment

	A		B		C	
Appl. Equipment	6 Foot AI XR		6' AIXR		10' AIXR	
Equipment Type	BACCAI		BACCAI		BACCAI	
Operation Pressure	48 PSI		44 PSI		44 PSI	
Nozzle Type	AI XR		AIXR		AIXR	
Nozzle Size	110015		1110015		110015	
Nozzle Spacing	18 IN		18 IN		18 IN	
Boom Length	6.67 FT		6.67 FT		10 FT	
Boom Height	20 IN		20 IN		20 IN	
Ground Speed	3 MPH		3 MPH		3 MPH	
Carrier	WATER		WATER		WATER	
Application Amount	15 GAL/AC		15 GAL/AC		15 GAL/AC	
Mix Size	2 L		1 L		1 L	
Propellant	COMCO2		COMCO2		COMCO2	

Context	Date	By	Notes
STATUS	Mar-17-2020	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	Apr-28-2020	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'E' when Date entered.

The Ohio State University

Authority Programs in Soybeans

Trial ID: 20FMCSOY
 Protocol ID: 20FMCSOY
 Project ID: USA-20-791

Location: Western Branch F-9 East Trial Year: 2020
 Investigator: Dr. Mark M. Loux
 Study Director: Anthony Dobbels
 Sponsor Contact: Drake Copeland, FMC

Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	AMBTR	SETFA	ECHCG
Pest Scientific Name	Erigeron canad>	Ambrosia trifi>	Setaria faberi	Echinochloa cr>
Pest Name	Canada horsewe>	Giant ragweed	Giant foxtail	Common barnyar>
Crop Type, Code			C GLXMA	
BBCH Scale			BSOY	
Crop Scientific Name			Glycine max	
Crop Name			Soybean	
Rating Date	May-27-2020	May-27-2020	Jun-18-2020	Jun-18-2020
Rating Type	CONTRO	CONTRO	PHYNEC	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Assessed By	Dobbels	Dobbels	Dobbels	Dobbels
Data Entry Date	May-28-2020	May-28-2020	Jun-22-2020	Jun-22-2020
Rating Timing	21 DAT	21 DAT	AT POST	AT POST
Days After First/Last Applic.	20 20	20 20	42 9	42 9
Trt-Eval Interval	20 DA-A	20 DA-A	0 DA-C	0 DA-C
Plant-Eval Interval	20 DP-1	20 DP-1	42 DP-1	42 DP-1
Days After Emergence	2 DE-1	2 DE-1	24 DE-1	24 DE-1
Number of Decimals	0	0	0	0

Trt No.	Treatment Name	Rate	Other Rate	Other Rate	Appl Unit Code	1*	2*	3*	4*	5*
1	UTC				A	0 f	0 -	0 b	0 b	0 c
2	Authority Supreme	0.26 lb ai/a	8 oz/a		A	100 a	38 -	0 b	100 a	93 ab
3	Authority Edge	0.266 lb ai/a	8 oz/a		A	100 a	20 -	0 b	97 a	97 ab
4	Authority Edge	0.332 lb ai/a	10 oz/a		A	100 e	30 -	0 b	100 a	100 a
5	Authority Edge	0.266 lb ai/a	8 oz/a		A	100 d	27 -	25 a	100 a	100 a
5	Anthem Maxx	0.084 lb ai/a	2.5 oz/a		B					
5	Roundup Powermax	0.77 lb ae/a	22 oz/a		B					
5	Enlist One	0.95 lb ae/a	32 oz/a		B					
5	N Pak AMS	2.5 % v/v	2.5 % v/v		B					
6	Zidua Pro	0.192 lb ai/a	6 oz/a		A	100	62 -	0 b	100 a	98 ab
7	Boundary	1.47 lb ai/a	29 oz/a		A	100 c	57 -	0 b	97 a	97 ab
8	Authority First	0.28 lb ai/a	6.4 oz/a		A	100	47 -	0 b	99 a	90 b
9	Authority Edge	0.266 lb ai/a	8 oz/a		A	100	53 -	0 b	100 a	100 a
9	Canopy Blend	0.109 lb ai/a	3 oz/a		A					
10	Fierce XLT	0.156 lb ai/a	4 oz/a		A	100	57 -	0 b	99 a	93 ab
11	Anthem Maxx	0.109 lb ai/a	3.25 oz/a		A	100 a	10 -	0 b	99 a	99 a
11	Canopy Blend	0.109 lb ai/a	3 oz/a		A					

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Due to missing data, larger LSD values (col. 10: >=6.1 and <=6.9) are used for mean comparisons of treatment pairs with missing data.
 * Adjusted means
 Could not calculate LSD (% mean diff) for columns 1,3,8,18 because error mean square = 0.

The Ohio State University

Authority Programs in Soybeans

Trial ID: 20FMCSOY
 Protocol ID: 20FMCSOY
 Project ID: USA-20-791

Location: Western Branch F-9 East Trial Year: 2020
 Investigator: Dr. Mark M. Loux
 Study Director: Anthony Dobbels
 Sponsor Contact: Drake Copeland, FMC

Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	AMBTR	SETFA	ECHCG
Pest Scientific Name	Erigeron canad>	Ambrosia trifi>	Setaria faberi	Echinochloa cr>
Pest Name	Canada horsewe>	Giant ragweed	Giant foxtail	Common barnyar>
Crop Type, Code			C GLXMA	
BBCH Scale			BSOY	
Crop Scientific Name			Glycine max	
Crop Name			Soybean	
Rating Date	May-27-2020	May-27-2020	Jun-18-2020	Jun-18-2020
Rating Type	CONTRO	CONTRO	PHYNEC	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Assessed By	Dobbels	Dobbels	Dobbels	Dobbels
Data Entry Date	May-28-2020	May-28-2020	Jun-22-2020	Jun-22-2020
Rating Timing	21 DAT	21 DAT	AT POST	AT POST
Days After First/Last Applic.	20 20	20 20	42 9	42 9
Trt-Eval Interval	20 DA-A	20 DA-A	0 DA-C	0 DA-C
Plant-Eval Interval	20 DP-1	20 DP-1	42 DP-1	42 DP-1
Days After Emergence	2 DE-1	2 DE-1	24 DE-1	24 DE-1
Number of Decimals	0	0	0	0

Trt Treatment No. Name	Rate	Other Rate	Other Rate	Appl Unit Code	1*	2*	3*	4*	5*
12 Boundary	1.47 lb ai/a	29 oz/a		A	100 a	80 -	0 b	100 a	100 a
12 Canopy Blend	0.109 lb ai/a	3 oz/a		A					
LSD P=.05						56.9		3.8	8.6
Standard Deviation					0.0	33.6	0.0	2.2	5.1
CV					0.0	84.04	0.0	2.46	5.68
Grand Mean					91.7	40.0	2.1	90.9	89.0
Levene's F					0.00	0.386	0.00	0.78	0.597
Levene's Prob(F)						0.949		0.657	0.813
Rank X2									
P(Rank X2)									
Skewness					-3.1478*	0.0981	3.1478*	-3.1103*	-2.9539*
Kurtosis					8.3714*	-1.6901*	8.3714*	8.2111*	7.5398*
Replicate F					0.000	0.887	0.000	3.222	1.457
Replicate Prob(F)					1.0000	0.4262	1.0000	0.0593	0.2545
Treatment F					0.000	1.455	0.000	493.489	93.534
Treatment Prob(F)					1.0000	0.2183	1.0000	0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Due to missing data, larger LSD values (col. 10: >=6.1 and <=6.9) are used for mean comparisons of treatment pairs with missing data.
 * Adjusted means
 Could not calculate LSD (% mean diff) for columns 1,3,8,18 because error mean square = 0.

The Ohio State University

Authority Programs in Soybeans

Trial ID: 20FMCSOY
 Protocol ID: 20FMCSOY
 Project ID: USA-20-791

Location: Western Branch F-9 East Trial Year: 2020
 Investigator: Dr. Mark M. Loux
 Study Director: Anthony Dobbels
 Sponsor Contact: Drake Copeland, FMC

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	AMBTR	VERAG	SETFA	ECHCG
Pest Scientific Name	Erigeron canad>	Ambrosia trifi>	Veronica agres>	Setaria faberi	Echinochloa cr>
Pest Name	Canada horsewe>	Giant ragweed	Field speedwell	foxtail, giant	barnyardgrass
Crop Type, Code					
BBCH Scale					
Crop Scientific Name					
Crop Name					
Rating Date	Jun-18-2020	Jun-18-2020	Jun-18-2020	Jun-18-2020	Jun-18-2020
Rating Type	CONTRO	CONTRO	CONTRO	PLA/M2	PLA/M2
Rating Unit	%	%	%	PLANT	PLANT
Number of Subsamples	1	1	1	1	1
Assessed By	Dobbels	Dobbels	Dobbels		
Data Entry Date	Jun-22-2020	Jun-22-2020	Jun-22-2020	Aug-10-2020	Aug-10-2020
Rating Timing	AT POST	AT POST	AT POST		
Days After First/Last Applic.	42 9	42 9	42 9	42 9	42 9
Trt-Eval Interval	0 DA-C	0 DA-C	0 DA-C	0 DA-C	0 DA-C
Plant-Eval Interval	42 DP-1	42 DP-1	42 DP-1	42 DP-1	42 DP-1
Days After Emergence	24 DE-1	24 DE-1	24 DE-1	24 DE-1	24 DE-1
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Rate	Other Rate	Other Rate	Appl Unit Code	6*	7*	8*	9*	10*
1	UTC					0 c	0 e	0 f	104 a	21 a
2	Authority Supreme	0.26 lb ai/a	8 oz/a		A	92 ab	63 bcd	100 a	0 b	4 b
3	Authority Edge	0.266 lb ai/a	8 oz/a		A	83 b	47 d	100 a	5 b	1 b
4	Authority Edge	0.332 lb ai/a	10 oz/a		A	90 ab	50 cd	100 e	0 b	0 b
5	Authority Edge	0.266 lb ai/a	8 oz/a		A	100 a	100 a	100 d	0 b	0 b
5	Anthem Maxx	0.084 lb ai/a	2.5 oz/a		B					
5	Roundup Powermax	0.77 lb ae/a	22 oz/a		B					
5	Enlist One	0.95 lb ae/a	32 oz/a		B					
5	N Pak AMS	2.5 % v/v	2.5 % v/v		B					
6	Zidua Pro	0.192 lb ai/a	6 oz/a		A	100 a	72 bc	100	1 b	1 b
7	Boundary	1.47 lb ai/a	29 oz/a		A	100 a	75 b	100 c	4 b	2 b
8	Authority First	0.28 lb ai/a	6.4 oz/a		A	87 ab	73 b	100	4 b	3 b
9	Authority Edge	0.266 lb ai/a	8 oz/a		A	100 a	57 bcd	100	0 b	0 b
9	Canopy Blend	0.109 lb ai/a	3 oz/a		A					
10	Fierce XLT	0.156 lb ai/a	4 oz/a		A	83 b	63 bcd	100	2 b	3 b
11	Anthem Maxx	0.109 lb ai/a	3.25 oz/a		A	100 a	50 cd	100 a	3 b	1 b
11	Canopy Blend	0.109 lb ai/a	3 oz/a		A					

Means followed by same letter or symbol do not significantly differ (P=,05, LSD).
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Due to missing data, larger LSD values (col. 10: >=6.1 and <=6.9) are used for mean comparisons of treatment pairs with missing data.
 * Adjusted means
 Could not calculate LSD (% mean diff) for columns 1,3,8,18 because error mean square = 0.

The Ohio State University

Authority Programs in Soybeans

Trial ID: 20FMCSOY
 Protocol ID: 20FMCSOY
 Project ID: USA-20-791

Location: Western Branch F-9 East Trial Year: 2020
 Investigator: Dr. Mark M. Loux
 Study Director: Anthony Dobbels
 Sponsor Contact: Drake Copeland, FMC

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	AMBTR	VERAG	SETFA	ECHCG
Pest Scientific Name	Erigeron canad>	Ambrosia trifi>	Veronica agres>	Setaria faberi	Echinochloa cr>
Pest Name	Canada horsewe>	Giant ragweed	Field speedwell	foxtail, giant	barnyardgrass

Crop Type, Code					
BBCH Scale					
Crop Scientific Name					
Crop Name					
Rating Date	Jun-18-2020	Jun-18-2020	Jun-18-2020	Jun-18-2020	Jun-18-2020
Rating Type	CONTRO	CONTRO	CONTRO	PLA/M2	PLA/M2
Rating Unit	%	%	%	PLANT	PLANT
Number of Subsamples	1	1	1	1	1
Assessed By	Dobbels	Dobbels	Dobbels		
Data Entry Date	Jun-22-2020	Jun-22-2020	Jun-22-2020	Aug-10-2020	Aug-10-2020
Rating Timing	AT POST	AT POST	AT POST		
Days After First/Last Applic.	42 9	42 9	42 9	42 9	42 9
Trt-Eval Interval	0 DA-C	0 DA-C	0 DA-C	0 DA-C	0 DA-C
Plant-Eval Interval	42 DP-1	42 DP-1	42 DP-1	42 DP-1	42 DP-1
Days After Emergence	24 DE-1	24 DE-1	24 DE-1	24 DE-1	24 DE-1
Number of Decimals	0	0	0	0	0

Trt Treatment No. Name	Rate	Other Rate	Other Rate	Appl Unit Code	6*	7*	8*	9*	10*
12 Boundary	1.47 lb ai/a	29 oz/a		A	100 a	70 bc	100 a	0 b	0 b
12 Canopy Blend	0.109 lb ai/a	3 oz/a		A					
LSD P=.05					14.0	23.0	.	9.9	6.1
Standard Deviation					8.3	13.6	0.0	5.8	3.6
CV					9.59	22.61	0.0	56.84	123.45
Grand Mean					86.3	60.0	91.7	10.3	2.9
Levene's F					1.276	1.136	0.00	0.606	1.279
Levene's Prob(F)					0.296	0.379	.	0.805	0.296
Rank X2					.	.	.	.	.
P(Rank X2)					.	.	.	.	.
Skewness					-2.5792*	-0.8977*	-3.1478*	3.1385*	3.1038*
Kurtosis					5.8892*	0.8215	8.3714*	8.7592*	10.3005*
Replicate F					0.823	0.136	0.000	1.090	1.114
Replicate Prob(F)					0.4523	0.8737	1.0000	0.3536	0.3468
Treatment F					34.440	9.259	0.000	77.882	8.232
Treatment Prob(F)					0.0001	0.0001	1.0000	0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Due to missing data, larger LSD values (col. 10: >=6.1 and <=6.9) are used for mean comparisons of treatment pairs with missing data.
 * Adjusted means
 Could not calculate LSD (% mean diff) for columns 1,3,8,18 because error mean square = 0.

The Ohio State University

Authority Programs in Soybeans

Trial ID: 20FMCSOY
 Protocol ID: 20FMCSOY
 Project ID: USA-20-791

Location: Western Branch F-9 East Trial Year: 2020
 Investigator: Dr. Mark M. Loux
 Study Director: Anthony Dobbels
 Sponsor Contact: Drake Copeland, FMC

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	AMBTR	VERAG	SETFA	ECHCG
Pest Scientific Name	Conyza canadensis	Ambrosia trifida	Veronica agrestis	Setaria faberii	Echinochloa crusgalli
Pest Name	horseweed	ragweed, giant	speedwell, field	foxtail, giant	barnyardgrass
Crop Type, Code					
BBCH Scale					
Crop Scientific Name					
Crop Name					
Rating Date	Jun-18-2020	Jun-18-2020	Jun-18-2020	Jul-15-2020	Jul-15-2020
Rating Type	PLA/M2	PLA/M2	PLA/M2	CONTRO	CONTRO
Rating Unit	PLANT	PLANT	PLANT	%	%
Number of Subsamples	1	1	1	1	1
Assessed By					
Data Entry Date	Aug-10-2020	Aug-10-2020	Aug-10-2020	Jul-15-2020	Jul-15-2020
Rating Timing					
Days After First/Last Applic.	42 9	42 9	42 9	69 27	69 27
Trt-Eval Interval	0 DA-C	0 DA-C	0 DA-C	27 DA-C	27 DA-C
Plant-Eval Interval	42 DP-1	42 DP-1	42 DP-1	69 DP-1	69 DP-1
Days After Emergence	24 DE-1	24 DE-1	24 DE-1	51 DE-1	51 DE-1
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Rate	Other Rate	Other Rate	Appl Unit Code	11*	12*	13*	14*	15*
1	UTC				A	6 a	20 a	4 a	98 -	90 c
2	Authority Supreme	0.26 lb ai/a	8 oz/a		A	1 bc	9 bcd	0 b	98 -	98 ab
3	Authority Edge	0.266 lb ai/a	8 oz/a		A	3 b	12 bc	0 b	98 -	93 bc
4	Authority Edge	0.332 lb ai/a	10 oz/a		A	2 bc	12 bcd	0 b	100 -	98 ab
5	Authority Edge	0.266 lb ai/a	8 oz/a		A	0 c	0 e	0 b	100 -	100 a
5	Anthem Maxx	0.084 lb ai/a	2.5 oz/a		B					
5	Roundup Powermax	0.77 lb ae/a	22 oz/a		B					
5	Enlist One	0.95 lb ae/a	32 oz/a		B					
5	N Pak AMS	2.5 % v/v	2.5 % v/v		B					
6	Zidua Pro	0.192 lb ai/a	6 oz/a		A	0 c	9 bcd	0 b	100 -	100 a
7	Boundary	1.47 lb ai/a	29 oz/a		A	0 c	5 de	0 b	100 -	100 a
8	Authority First	0.28 lb ai/a	6.4 oz/a		A	2 bc	7 cd	0 b	100 -	98 ab
9	Authority Edge	0.266 lb ai/a	8 oz/a		A	0 c	11 bcd	0 b	100 -	100 a
9	Canopy Blend	0.109 lb ai/a	3 oz/a		A					
10	Fierce XLT	0.156 lb ai/a	4 oz/a		A	2 b	14 ab	0 b	100 -	100 a
11	Anthem Maxx	0.109 lb ai/a	3.25 oz/a		A	0 c	14 ab	0 b	100 -	93 bc
11	Canopy Blend	0.109 lb ai/a	3 oz/a		A					

Means followed by same letter or symbol do not significantly differ (P=,05, LSD).

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Due to missing data, larger LSD values (col. 10: >=6.1 and <=6.9) are used for mean comparisons of treatment pairs with missing data.

* Adjusted means

Could not calculate LSD (% mean diff) for columns 1,3,8,18 because error mean square = 0.

The Ohio State University

Authority Programs in Soybeans

Trial ID: 20FMCSOY
 Protocol ID: 20FMCSOY
 Project ID: USA-20-791

Location: Western Branch F-9 East Trial Year: 2020
 Investigator: Dr. Mark M. Loux
 Study Director: Anthony Dobbels
 Sponsor Contact: Drake Copeland, FMC

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed					
Pest Code	ERICA	AMBTR	VERAG	SETFA	ECHCG					
Pest Scientific Name	Conyza canadensis	Ambrosia trifida	Veronica agrestis	Setaria faberii	Echinochloa crusgalli					
Pest Name	horseweed	ragweed, giant	speedwell, field	foxtail, giant	barnyardgrass					
Crop Type, Code										
BBCH Scale										
Crop Scientific Name										
Crop Name										
Rating Date	Jun-18-2020	Jun-18-2020	Jun-18-2020	Jul-15-2020	Jul-15-2020					
Rating Type	PLA/M2	PLA/M2	PLA/M2	CONTRO	CONTRO					
Rating Unit	PLANT	PLANT	PLANT	%	%					
Number of Subsamples	1	1	1	1	1					
Assessed By										
Data Entry Date	Aug-10-2020	Aug-10-2020	Aug-10-2020	Jul-15-2020	Jul-15-2020					
Rating Timing										
Days After First/Last Applic.	42 9	42 9	42 9	69 27	69 27					
Trt-Eval Interval	0 DA-C	0 DA-C	0 DA-C	27 DA-C	27 DA-C					
Plant-Eval Interval	42 DP-1	42 DP-1	42 DP-1	69 DP-1	69 DP-1					
Days After Emergence	24 DE-1	24 DE-1	24 DE-1	51 DE-1	51 DE-1					
Number of Decimals	0	0	0	0	0					
Trt No.	Treatment Name	Rate	Other Rate	Other Rate	Appl Unit Code	11*	12*	13*	14*	15*
12	Boundary	1.47 lb ai/a	29 oz/a		A	0 c	8 bcd	0 b	100 -	100 a
12	Canopy Blend	0.109 lb ai/a	3 oz/a		A					
LSD P=.05		2.0	6.5				0.6	2.2	6.0	
Standard Deviation		1.2	3.8				0.3	1.3	3.6	
CV		92.3	37.71				109.09	1.31	3.64	
Grand Mean		1.3	10.1				0.3	99.4	97.6	
Levene's F		1.009	1.07				1.00	1.491	1.157	
Levene's Prob(F)		0.467	0.423				0.474	0.199	0.365	
Rank X2		
P(Rank X2)		
Skewness		1.2595*	0.0824				3.5551*	-2.661*	-1.8334*	
Kurtosis		0.2173	-0.4823				12.3631*	5.9701*	2.4178*	
Replicate F		1.856	0.766				1.000	1.590	0.220	
Replicate Prob(F)		0.1800	0.4770				0.3840	0.2265	0.8043	
Treatment F		6.155	5.027				30.250	1.621	2.815	
Treatment Prob(F)		0.0002	0.0006				0.0001	0.1611	0.0187	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Due to missing data, larger LSD values (col. 10: >=6.1 and <=6.9) are used for mean comparisons of treatment pairs with missing data.
 * Adjusted means
 Could not calculate LSD (% mean diff) for columns 1,3,8,18 because error mean square = 0.

The Ohio State University

Authority Programs in Soybeans

Trial ID: 20FMCSOY
 Protocol ID: 20FMCSOY
 Project ID: USA-20-791

Location: Western Branch F-9 East Trial Year: 2020
 Investigator: Dr. Mark M. Loux
 Study Director: Anthony Dobbels
 Sponsor Contact: Drake Copeland, FMC

Pest Type	W Weed	W Weed	W Weed
Pest Code	ERICA	AMBTR	VERAG
Pest Scientific Name	Conyza canadens>	Ambrosia trifi>	Veronica agres>
Pest Name	horseweed	ragweed, giant	speedwell, fie>
Crop Type, Code			
BBCH Scale			
Crop Scientific Name			
Crop Name			
Rating Date	Jul-15-2020	Jul-15-2020	Jul-15-2020
Rating Type	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%
Number of Subsamples	1	1	1
Assessed By			
Data Entry Date	Jul-15-2020	Jul-15-2020	Jul-15-2020
Rating Timing			
Days After First/Last Applic.	69 27	69 27	69 27
Trt-Eval Interval	27 DA-C	27 DA-C	27 DA-C
Plant-Eval Interval	69 DP-1	69 DP-1	69 DP-1
Days After Emergence	51 DE-1	51 DE-1	51 DE-1
Number of Decimals	0	0	0

Trt No.	Treatment Name	Rate	Other Rate	Other Rate	Appl Unit Code	16*	17*	18*
1	UTC					75 c	88 -	100 -
2	Authority Supreme	0.26 lb ai/a	8 oz/a		A	100 a	100 -	100 -
3	Authority Edge	0.266 lb ai/a	8 oz/a		A	92 b	93 -	100 -
4	Authority Edge	0.332 lb ai/a	10 oz/a		A	100 a	95 -	100 -
5	Authority Edge	0.266 lb ai/a	8 oz/a		A	100 a	98 -	100 -
5	Anthem Maxx	0.084 lb ai/a	2.5 oz/a		B			
5	Roundup Powermax	0.77 lb ae/a	22 oz/a		B			
5	Enlist One	0.95 lb ae/a	32 oz/a		B			
5	N Pak AMS	2.5 % v/v	2.5 % v/v		B			
6	Zidua Pro	0.192 lb ai/a	6 oz/a		A	100 a	100 -	100 -
7	Boundary	1.47 lb ai/a	29 oz/a		A	100 a	100 -	100 -
8	Authority First	0.28 lb ai/a	6.4 oz/a		A	100 a	98 -	100 -
9	Authority Edge	0.266 lb ai/a	8 oz/a		A	100 a	100 -	100 -
9	Canopy Blend	0.109 lb ai/a	3 oz/a		A			
10	Fierce XLT	0.156 lb ai/a	4 oz/a		A	100 a	100 -	100 -
11	Anthem Maxx	0.109 lb ai/a	3.25 oz/a		A	100 a	93 -	100 -
11	Canopy Blend	0.109 lb ai/a	3 oz/a		A			

Means followed by same letter or symbol do not significantly differ (P=,05, LSD).
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Due to missing data, larger LSD values (col. 10: >=6.1 and <=6.9) are used for mean comparisons of treatment pairs with missing data.
 * Adjusted means
 Could not calculate LSD (% mean diff) for columns 1,3,8,18 because error mean square = 0.

The Ohio State University

Authority Programs in Soybeans

Trial ID: 20FMCSOY Location: Western Branch F-9 East Trial Year: 2020
Protocol ID: 20FMCSOY Investigator: Dr. Mark M. Loux
Project ID: USA-20-791 Study Director: Anthony Dobbels
Sponsor Contact: Drake Copeland, FMC

Pest Type

W, Weed = Weed or volunteer crop

Pest Code

ERICA, Erigeron canadensis, Canada horseweed = US
AMBTR, Ambrosia trifida, Giant ragweed = US
SETFA, Setaria faberi, Giant foxtail = US
ECHCG, Echinochloa crus-galli, Common barnyard grass = US
VERAG, Veronica agrestis, Field speedwell = US
SETFA, Setaria faberi, foxtail, giant = US
ECHCG, Echinochloa crus-galli, barnyardgrass = US
ERICA, Conyza canadensis, horseweed = US
AMBTR, Ambrosia trifida, ragweed, giant = US
VERAG, Veronica agrestis, speedwell, field = US

Crop Type Code

C = EPPO species (Bayer) codes
GLXMA, BSOY, Glycine max, Soybean = US

Rating Type

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

Rating Unit

% = percent
PLANT = plant

Plant-Eval Interval

20 DP-1 = 1 GLXMA May-7-2020
42 DP-1 = 1 GLXMA May-7-2020
69 DP-1 = 1 GLXMA May-7-2020