Purdue University Weed Science

Evaluating Authority Supreme/Edge and Anthem Maxx Residual Weed Control in Soybean

Trial ID: 22S-MGS-SOY-03 Cooperator Trial ID:
Protocol ID: 22S-MGS-SOY-03 Location: MEIGS Trial Year: 2022
Project ID: USA-22-067 Project ID 2: Project ID 3:
Study Director: Brent Mansfield Sponsor Contact: Nicholas Hustedde - FMC
Investigator (Creator): Dr. Bill Johnson

General Trial Information

Study Director: Brent Mansfield **Title:** Research Associate
Investigator: Dr. Bill Johnson **Title:** Professor

Discipline: H herbicide
Status: E established
ARM Trial Created On: Apr-11-2022 **Reliability:** 1 usable data
Initiation Date: May-11-2022

Trial Location

City: Lafayette **Country:** USA United States
State/Prov.: Indiana
Postal Code: 47907

Latitude of LL Corner °: 40.2723167 N
Longitude of LL Corner °: -86.8814167 W

Conducted Under GLP: No
Conducted Under GEP: No

Contacts

Role: STYDIR study director
Study Director: Brent Mansfield **Title:** Research Associate
Organization: Purdue University
Address 1: 915 W. State Street
Country: USA United States **E-mail:** brentmansfield@purdue.edu
City: West Lafayette **State/Prov:** IN **Postal Code:** 47907

Role: INVEST investigator
Investigator: Dr. Bill Johnson **Title:** Professor
Organization: Purdue University
Address 1: 915 W. State Street
Country: USA United States **E-mail:** wgj@purdue.edu
City: West Lafayette **State/Prov:** IN **Postal Code:** 47907

Role: SPONSR sponsor
Sponsor: Nicholas Hustedde - FMC

Role: COOPER cooperator
Cooperator: Jay Young **Title:** Superintendent
Organization: Purdue University
Address 1: 8343 US 231 S **Phone No.:** 765-538-3422
Fax No.: 765-538-3423
Country: USA United States **E-mail:** jayyoung@purdue.edu
City: Lafayette **State/Prov:** IN **Postal Code:** 47909

Crop Description

Crop 1: C GLXMA Glycine max Soybean **BBCH Scale:** BSOY
Entry Date: Jun-22-2022 **Stage Scale:** BBCH
Variety: AG29XF1
Attributes: Glyphosate-R, Glufosinate-R, dicamba-R
Planting Date: May-11-2022 **Planting Rate:** 140000 S/A
Depth: 1.75 IN
Rows per Plot: 4 **Planting Method:** PLANTD planted
Row Spacing: 30 IN **Planting Equipment:** PP plot planter
Soil Temperature: 83 F **Soil Moisture:** NORMAL normal, adequate
Emergence Date: May-17-2022
Harvested Width: 5 FT
% Standard Moisture: 13 **Harvested Length:** 24 FT

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Pest Description

Pest 1 Type: W **Code:** AMATA Amaranthus x tamariscinus **Entry Date:** Jun-22-2022
Common Name: common water hemp **Stage Scale:** BBCH
Attributes: Glyphosate-R and PPO-R

Pest 2 Type: W **Code:** ABUTH Abutilon theophrasti **Entry Date:** Jun-22-2022
Common Name: velvetleaf **Stage Scale:** BBCH

Pest 3 Type: W **Code:** CHEAL Chenopodium album **Entry Date:** Jun-22-2022
Common Name: common lambsquarters **Stage Scale:** BBCH

Pest 4 Type: W **Code:** SIDSP Sida spinosa **Entry Date:** Jun-22-2022
Common Name: Prickly sida **Stage Scale:** BBCH

Pest 5 Type: W **Code:** SETFA Setaria faberi **Entry Date:** Jun-22-2022
Common Name: Giant foxtail **Stage Scale:** BBCH

Site and Design

Treated Plot Width: 6.67 FT **Site Type:** FIELD field
Treated Plot Length: 25 FT **Experimental Unit:** 1 PLOT plot
Treated Plot Area: 166.75 FT2 **Tillage Type:** NOTILL no-till
Replications: 4 **Treatments:** 12 **Plots:** 48 **Study Design:** RACOBL Randomized Complete Block (RCB)

Field Prep./Maintenance:
Nontreated checks were sprayed with glyphosate to control giant ragweed

Soil Description

Description Name: MEIGS-S3
% Sand: 21 **% OM:** 2.2 **Texture:** SIL silt loam
% Silt: 54 **Soil Name:** Starks-Fincastle complex
% Clay: 25
pH: 6.8 **CEC:** 8.3

No.	Date	Moisture Total	Unit	Min Temp	Max Temp	Temp Unit
1.	May-1-2022	0	IN	51.1	63.7	F
2.	May-2-2022	0	IN	43.2	66	F
3.	May-3-2022	0.71	IN	46	67.8	F
4.	May-4-2022	0	IN	46	61.5	F
5.	May-5-2022	0.66	IN	53.6	56.7	F
6.	May-6-2022	0.07	IN	51.8	57.2	F
7.	May-7-2022	0	IN	48.7	68.2	F
8.	May-8-2022	0	IN	44.6	68.7	F
9.	May-9-2022	0	IN	52.9	81	F
10.	May-10-2022	0	IN	66.6	88.9	F
11.	May-11-2022	0	IN	73	92.3	F
12.	May-12-2022	0	IN	67.8	90	F
13.	May-13-2022	0	IN	61.9	89.6	F
14.	May-14-2022	0.74	IN	59.7	88.2	F
15.	May-15-2022	1.02	IN	57	86.2	F
16.	May-16-2022	0.01	IN	52.7	76.8	F
17.	May-17-2022	0	IN	53.4	77.7	F
18.	May-18-2022	0.1	IN	57.9	66.9	F
19.	May-19-2022	0	IN	59.7	82.2	F
20.	May-20-2022	0	IN	66.4	86.9	F
21.	May-21-2022	0.1	IN	58.3	77.7	F
22.	May-22-2022	0	IN	53.2	64.6	F
23.	May-23-2022	0	IN	48.4	68.7	F
24.	May-24-2022	0	IN	50.2	75.6	F
25.	May-25-2022	0.05	IN	61.7	85.6	F

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26.	May-26-2022	1.68	IN	60.8	75.4	F
27.	May-27-2022	0.03	IN	53.4	67.8	F
28.	May-28-2022	0	IN	51.6	73.2	F
29.	May-29-2022	0	IN	59.5	82.9	F
30.	May-30-2022	0	IN	67.1	88.5	F
31.	May-31-2022	0	IN	71.6	89.4	F
32.	Jun-1-2022	0	IN	66	81	F
33.	Jun-2-2022	0.01	IN	61.3	79.9	F
34.	Jun-3-2022	0	IN	54.1	84.2	F
35.	Jun-4-2022	0	IN	51.4	84.2	F
36.	Jun-5-2022	0	IN	56.8	85.3	F
37.	Jun-6-2022	0	IN	64	85.8	F
38.	Jun-7-2022	0	IN	62.2	77.9	F
39.	Jun-8-2022	0.02	IN	55.2	77.5	F
40.	Jun-9-2022	0	IN	56.7	78.8	F
41.	Jun-10-2022	0.1	IN	54	79.7	F
42.	Jun-11-2022	0.23	IN	58.5	79.7	F
43.	Jun-12-2022	0.02	IN	65.8	84	F
44.	Jun-13-2022	0	IN	68.7	91	F
45.	Jun-14-2022	0	IN	74.8	95.5	F
46.	Jun-15-2022	0	IN	75	94.6	F
47.	Jun-16-2022	0	IN	76.6	97.3	F
48.	Jun-17-2022	0	IN	69.1	88.2	F
49.	Jun-18-2022	0	IN	60.8	82.2	F
50.	Jun-19-2022	0	IN	52.2	83.8	F
51.	Jun-20-2022	0	IN	57.4	90.1	F
52.	Jun-21-2022	0	IN	63.9	96.3	F
53.	Jun-22-2022	0	IN	72	90.3	F
54.	Jun-23-2022	0	IN	62.4	89.1	F
55.	Jun-24-2022	0	IN	59	93	F
56.	Jun-25-2022	0.01	IN	63.9	82.6	F
57.	Jun-26-2022	0.22	IN	64.2	81.5	F
58.	Jun-27-2022	0	IN	54.7	79.3	F
59.	Jun-28-2022	0	IN	55.2	82.9	F
60.	Jun-29-2022	0	IN	57.6	87.3	F
61.	Jun-30-2022	0	IN	61	90.5	F
62.	Jul-1-2022	0	IN	68.5	90.7	F
63.	Jul-2-2022	0	IN	66.6	86.4	F
64.	Jul-3-2022	0	IN	57.6	89.8	F
65.	Jul-4-2022	0.01	IN	64.6	91.4	F
66.	Jul-5-2022	0	IN	77.2	98.2	F
67.	Jul-6-2022	0	IN	74.3	90	F
68.	Jul-7-2022	0.05	IN	70.3	84.7	F
69.	Jul-8-2022	0.23	IN	70	76.3	F
70.	Jul-9-2022	0	IN	67.5	84.6	F
71.	Jul-10-2022	0	IN	57.9	90.7	F
72.	Jul-11-2022	0	IN	59.5	88	F
73.	Jul-12-2022	0	IN	67.6	83.8	F
74.	Jul-13-2022	0	IN	62.8	86.5	F
75.	Jul-14-2022	0	IN	57.4	84.9	F
76.	Jul-15-2022	0.1	IN	58.1	77.4	F
77.	Jul-16-2022	0.49	IN	69.6	89.4	F
78.	Jul-17-2022	0.47	IN	68.9	76.3	F

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79.	Jul-18-2022	0	IN	68.9	87.6	F
80.	Jul-19-2022	0	IN	64.2	87.4	F
81.	Jul-20-2022	0	IN	72	90	F
82.	Jul-21-2022	0	IN	66.4	88.7	F
83.	Jul-22-2022	0	IN	68.4	89.6	F
84.	Jul-23-2022	0	IN	69.8	77.4	F
85.	Jul-24-2022	0.18	IN	73.6	84.6	F
86.	Jul-25-2022	0	IN	64.9	83.8	F
87.	Jul-26-2022	0	IN	65.5	75.4	F
88.	Jul-27-2022	0.22	IN	69.3	83.1	F
89.	Jul-28-2022	0.09	IN	65.3	85.6	F
90.	Jul-29-2022	0	IN	57.9	80.1	F
91.	Jul-30-2022	0	IN	57	86.4	F
92.	Jul-31-2022	0	IN	59.7	84.6	F
93.	Aug-1-2022	0.53	IN	67.5	86.5	F
94.	Aug-2-2022	0	IN	65.8	85.1	F
95.	Aug-3-2022	0.58	IN	68.9	90.5	F
96.	Aug-4-2022	0.01	IN	70	85.5	F
97.	Aug-5-2022	0	IN	69.1	89.2	F
98.	Aug-6-2022	0	IN	70.2	89.8	F
99.	Aug-7-2022	0	IN	73.4	88.7	F
100.	Aug-8-2022	0.24	IN	69.8	86.9	F
101.	Aug-9-2022	0.39	IN	64.8	80.1	F
102.	Aug-10-2022	0	IN	62.2	83.1	F
103.	Aug-11-2022	0	IN	59	84	F
104.	Aug-12-2022	0	IN	57.4	77.5	F
105.	Aug-13-2022	0	IN	55.2	78.4	F
106.	Aug-14-2022	0.07	IN	66.2	76.8	F
107.	Aug-15-2022	0	IN	64.9	79.5	F
108.	Aug-16-2022	0	IN	59	82.9	F
109.	Aug-17-2022	0	IN	56.1	83.8	F
110.	Aug-18-2022	0	IN	55.8	86.2	F
111.	Aug-19-2022	0	IN	58.8	85.3	F
112.	Aug-20-2022	0.29	IN	65.1	82.4	F
113.	Aug-21-2022	0.58	IN	63.3	81.1	F
114.	Aug-22-2022	0	IN	60.3	84.7	F
115.	Aug-23-2022	0	IN	55.8	85.3	F
116.	Aug-24-2022	0	IN	56.3	87.1	F
117.	Aug-25-2022	0.25	IN	66.2	80.8	F
118.	Aug-26-2022	0	IN	62.2	83.1	F
119.	Aug-27-2022	0	IN	59.2	85.6	F
120.	Aug-28-2022	0.14	IN	67.5	89.6	F
121.	Aug-29-2022	2.2	IN	65.8	87.4	F
122.	Aug-30-2022	0.3	IN	60.8	79.9	F
123.	Aug-31-2022	0	IN	53.4	81.1	F
124.	Sep-1-2022	0	IN	59	84	F
125.	Sep-2-2022	0	IN	64.2	83.3	F
126.	Sep-3-2022	0	IN	66.9	81.7	F
127.	Sep-4-2022	0	IN	66.6	82	F
128.	Sep-5-2022	0	IN	66.9	74.1	F
129.	Sep-6-2022	0	IN	63.7	82.9	F
130.	Sep-7-2022	0	IN	59.4	82.4	F
131.	Sep-8-2022	0	IN	52.9	82.4	F

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132.	Sep-9-2022	0	IN	54.1	84.2	F
133.	Sep-10-2022	0.05	IN	60.8	88.9	F
134.	Sep-11-2022	0.2	IN	59.4	74.1	F
135.	Sep-12-2022	0.14	IN	51.6	62.8	F
136.	Sep-13-2022	0	IN	53.1	75	F
137.	Sep-14-2022	0	IN	52	86.5	F
138.	Sep-15-2022	0	IN	54.7	86.9	F
139.	Sep-16-2022	0	IN	57.4	84.6	F
140.	Sep-17-2022	0	IN	63.3	85.3	F
141.	Sep-18-2022	0	IN	63.3	86.9	F
142.	Sep-19-2022	0.24	IN	62.4	87.4	F
143.	Sep-20-2022	0	IN	59.2	92.3	F
144.	Sep-21-2022	0	IN	68.9	91.9	F
145.	Sep-22-2022	0	IN	46.6	69.6	F
146.	Sep-23-2022	0	IN	40.5	63.3	F
147.	Sep-24-2022	0.09	IN	51.6	78.4	F
148.	Sep-25-2022	0	IN	54.3	71.1	F
149.	Sep-26-2022	0	IN	44.1	68.4	F
150.	Sep-27-2022	0	IN	39.6	64.9	F
151.	Sep-28-2022	0	IN	37.4	66	F
152.	Sep-29-2022	0	IN	38.7	69.3	F
153.	Sep-30-2022	0	IN	39.2	70.2	F
154.	Oct-1-2022	0	IN	43.9	75.4	F
155.	Oct-2-2022	0	IN	48.6	74.3	F
156.	Oct-3-2022	0	IN	41.7	72.5	F
157.	Oct-4-2022	0	IN	34.2	77.5	F
158.	Oct-5-2022	0	IN	38.1	79.9	F
159.	Oct-6-2022	0.01	IN	53.4	77.5	F
160.	Oct-7-2022	0	IN	36.9	61.2	F
161.	Oct-8-2022	0	IN	30.2	58.8	F
162.	Oct-9-2022	0	IN	34.5	70.3	F
163.	Oct-10-2022	0	IN	40.5	77.5	F
164.	Oct-11-2022	0.1	IN	54.3	69.8	F
165.	Oct-12-2022	0.07	IN	43.5	68	F
166.	Oct-13-2022	0.07	IN	32.9	59.9	F
167.	Oct-14-2022	0.22	IN	33.3	65.1	F

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Application Description

	A	B
Application Date	May-12-2022	Jun-16-2022
Appl. Start Time	12:23 PM	10:10 AM
Appl. Stop Time	12:37 PM	10:30 AM
Interval to Prev. Appl.		35 DAYS
Application Method	SPRAY	SPRAY
Application Timing	PRE	35 DAP
Application Placement	BROSOI	BROFOL
Applied By	J. HAARMANN	L. MAIA
Appl. Entry Date	Jun-22-2022	Jun-22-2022
Air Temperature Start, Stop	86, 86 F	84, 84 F
% Relative Humidity Start, Stop	28, 28	74, 74
Wind Velocity+Dir. Start	5 MPH, SE	2 MPH, SSE
Wind Velocity+Dir. Stop		3 MPH, SSE
Wind Velocity+Dir. Max		6 MPH, SSE
Wet Leaves (Y/N)	N, no	N, no
Soil Temperature	70 F	78 F
Soil Moisture	NORMAL	DRY
% Cloud Cover	15	20

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale	GLXMA, BSOY	GLXMA, BSOY
Days after Emergence	-5	30
Stage Majority, Percent	00, -	V3, -
Stage Minimum, Percent	00, -	V2, -
Stage Maximum, Percent	00, -	V3, -
Height Average	0 IN	8 IN
Height Minimum, Maximum		7, 9

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Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale	AMATA, W, BBCH	AMATA, W, BBCH
Height Average	0 IN	2 IN
Height Minimum, Maximum		1, 4
Density Average	0 FT2	8 FT2
Density Minimum, Maximum		1, 15
Pest 2 Code, Type, Scale	ABUTH, W, BBCH	ABUTH, W, BBCH
Height Average	0 IN	4 IN
Height Minimum, Maximum		3, 6
Density Average	0 FT2	2 FT2
Density Minimum, Maximum		1, 5
Pest 3 Code, Type, Scale	CHEAL, W, BBCH	CHEAL, W, BBCH
Height Average	0 IN	2 IN
Height Minimum, Maximum		1, 3
Density Average	0 FT2	1 FT2
Density Minimum, Maximum		1, 5
Pest 4 Code, Type, Scale	SIDSP, W, BBCH	SIDSP, W, BBCH
Height Average	0 IN	2 IN
Height Minimum, Maximum		1, 3
Density Average	0 FT2	1 FT2
Density Minimum, Maximum		1, 3
Pest 5 Code, Type, Scale	SETFA, W, BBCH	SETFA, W, BBCH
Height Average	0 IN	4 IN
Height Minimum, Maximum		1, 8
Density Average	0 FT2	5 FT2
Density Minimum, Maximum		3, 20

Application Equipment

	A	B
Appl. Equipment	CO2 BACKPACK	CO2 BACKPACK
Equipment Type	BACSPR	BACSPR
Operation Pressure	30 PSI	38 PSI
Nozzle Model	XR	AIXR
Nozzle Type	FLAFXR	FLAFAI
Nozzle TradeName	TEEJET	TEEJET
Nozzle Tip Size, Color	80015, GREEN	110015, GREEN
Nozzle Spacing	20 IN	20 IN
Nozzles/Row	4	4
Boom Length	6.67 FT	6.67 FT
Ground Speed	3 MPH	3 MPH
Carrier	WATER	WATER
Application Amount	15 GAL/AC	15 GAL/AC
Mix Size	945 mL	1119 mL
Propellant	COMCO2	COMCO2

Notes

Context	Date	By	Notes
STATUS	Apr-11-2022	Dr. Bill Johnson	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	Jun-22-2022	Dr. Bill Johnson	Automatically added by ARM: Trial Status changed to: E: changed by (EINJOW).
STATUS	Jun-22-2022	Dr. Bill Johnson	Automatically added by ARM: Trial Status updated to 'E' when Initiation Date entered.

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Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1	2	3	4	5	6
Pest Type									W, Weed	W, Weed
Pest Code									AMATA	SETFA
Pest Scientific Name									Amaranthus x ta>	Setaria faberi
Pest Name									common water he>	Giant foxtail
Crop Type, Code					C, GLXMA	C, GLXMA	C, GLXMA	C, GLXMA		
BBCH Scale					BSOY	BSOY	BSOY	BSOY		
Crop Scientific Name					Glycine max	Glycine max	Glycine max	Glycine max		
Crop Name					Soybean	Soybean	Soybean	Soybean		
Rating Date					May-27-2022	May-27-2022	May-27-2022	Jun-10-2022	May-27-2022	May-27-2022
Part Rated					PLOT, C	PLOT, C	PLOT, C	PLOT, C	PLOT, P	PLOT, P
Rating Type					PHYSTU	PHYNEC	PHYCHL	PHYSTU	CONTRO	CONTRO
Rating Unit/Min/Max					%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
Sample Size										
Number of Subsamples					1	1	1	1	1	1
Assessed By										
Data Entry Date					Jul-19-2022	Jul-19-2022	Jul-19-2022	Jul-19-2022	Jul-19-2022	Jul-19-2022
Rating Timing					15 DAA	15 DAA	15 DAA	29 DAA	15 DAA	15 DAA
Days After First/Last Applic.					15, 15	15, 15	15, 15	29, 29	15, 15	15, 15
Plant-Eval Interval					16 DP-1	16 DP-1	16 DP-1	30 DP-1	16 DP-1	16 DP-1
Days After Emergence					10 DE-1	10 DE-1	10 DE-1	24 DE-1	10 DE-1	10 DE-1
ARM Action Codes					EC	EC	EC	EC	EC	EC
Number of Decimals										
1	NONTREATED				0.0	0.0	0.0	0.0	0.0	0.0
2	AUTHORITY SUPREME	8	fl oz/a	A	18.8 bcd	6.3 ab	3.8 bc	6.3 -	100.0 a	100.0 -
	AMSOL	2.5	% v/v	B						
	LIBERTY	32	fl oz/a	B						
3	AUTHORITY SUPREME	7	fl oz/a	A	23.8 bc	3.8 bcd	2.5 bcd	11.3 -	100.0 a	99.3 -
	TRICOR DF	5	oz/a	A						
	AMSOL	2.5	% v/v	B						
	LIBERTY	32	fl oz/a	B						
4	AUTHORITY SUPREME	6.5	fl oz/a	A	13.8 cde	1.3 cd	1.3 cd	7.5 -	100.0 a	99.5 -
	AMSOL	2.5	% v/v	B						
	ANTHEM MAXX	2.5	fl oz/a	B						
	LIBERTY	32	fl oz/a	B						
5	TENDOVO	56	fl oz/a	A	2.5 ef	0.0 d	1.3 cd	5.0 -	100.0 a	100.0 -
	AMSOL	2.5	% v/v	B						
	LIBERTY	32	fl oz/a	B						
6	ZIDUA PRO	6	fl oz/a	A	23.8 bc	5.0 abc	2.5 bcd	11.3 -	100.0 a	99.3 -
	AMSOL	2.5	% v/v	B						
	LIBERTY	32	fl oz/a	B						
7	KYBER	16	fl oz/a	A	57.5 a	8.8 a	7.5 a	12.5 -	100.0 a	100.0 -
	AMSOL	2.5	% v/v	B						
	LIBERTY	32	fl oz/a	B						
8	ANTHEM MAXX	4	fl oz/a	A	5.0 ef	0.0 d	1.3 cd	0.0 -	100.0 a	97.5 -
	AMSOL	2.5	% v/v	B						
	LIBERTY	32	fl oz/a	B						
9	WARRANT	48	fl oz/a	A	0.0 f	0.0 d	0.0 d	0.0 -	91.3 ab	88.8 -
	AMSOL	2.5	% v/v	B						
	LIBERTY	32	fl oz/a	B						
10	OUTLOOK	14	fl oz/a	A	6.3 def	1.3 cd	2.5 bcd	1.3 -	82.5 b	96.3 -
	AMSOL	2.5	% v/v	B						
	LIBERTY	32	fl oz/a	B						
11	DUAL II MAGNUM	1.3	pt/a	A	0.0 f	1.3 cd	0.0 d	2.5 -	92.5 ab	92.5 -
	AMSOL	2.5	% v/v	B						
	LIBERTY	32	fl oz/a	B						

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.
Untreated treatment(s) 1 excluded from analysis.
Missing data estimates are included in columns:Yates=10,11,12
^Calculated from residual.

Purdue University Weed Science

Evaluating Authority Supreme/Edge and Anthem Maxx Residual Weed Control in Soybean

Trial ID: 22S-MGS-SOY-03 Cooperator Trial ID:
Protocol ID: 22S-MGS-SOY-03 Location: MEIGS Trial Year: 2022
Project ID: USA-22-067 Project ID 2: Project ID 3:
Study Director: Brent Mansfield Sponsor Contact: Nicholas Hustedde - FMC
Investigator (Creator): Dr. Bill Johnson

Pest Type						W, Weed	W, Weed
Pest Code						AMATA	SETFA
Pest Scientific Name						Amaranthus x ta>	Setaria faberi
Pest Name						common water he>	Giant foxtail
Crop Type, Code		C, GLXMA	C, GLXMA	C, GLXMA	C, GLXMA		
BBCH Scale		BSOY	BSOY	BSOY	BSOY		
Crop Scientific Name		Glycine max	Glycine max	Glycine max	Glycine max		
Crop Name		Soybean	Soybean	Soybean	Soybean		
Rating Date		May-27-2022	May-27-2022	May-27-2022	Jun-10-2022	May-27-2022	May-27-2022
Part Rated		PLOT, C	PLOT, C	PLOT, C	PLOT, C	PLOT, P	PLOT, P
Rating Type		PHYSTU	PHYNEC	PHYCHL	PHYSTU	CONTRO	CONTRO
Rating Unit/Min/Max		%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
Sample Size							
Number of Subsamples		1	1	1	1	1	1
Assessed By							
Data Entry Date		Jul-19-2022	Jul-19-2022	Jul-19-2022	Jul-19-2022	Jul-19-2022	Jul-19-2022
Rating Timing		15 DAA	15 DAA	15 DAA	29 DAA	15 DAA	15 DAA
Days After First/Last Applic.		15, 15	15, 15	15, 15	29, 29	15, 15	15, 15
Plant-Eval Interval		16 DP-1	16 DP-1	16 DP-1	30 DP-1	16 DP-1	16 DP-1
Days After Emergence		10 DE-1	10 DE-1	10 DE-1	24 DE-1	10 DE-1	10 DE-1
ARM Action Codes		EC	EC	EC	EC	EC	EC
Number of Decimals							
Trt No.	Treatment Name	Rate Rate Unit	Appl Code	1	2	3	4	5	6
12	AUTHORITY EDGE	8 fl oz/a	A	28.8 b	5.0 abc	5.0 ab	5.0 -	100.0 a	100.0 -
	AMSOL	2.5 % v/v	B						
	LIBERTY	32 fl oz/a	B						
LSD P=.05				13.30	4.10	3.73	10.33	10.05	8.02
Standard Deviation				9.21	2.84	2.58	7.15	6.96	5.56
CV				56.28	96.14	103.28	125.86	7.18	5.7
Levene's F^				1.628	2.828*	0.644	1.078	0.832	3.021*
Levene's Prob(F)				0.142	0.012*	0.766	0.406	0.602	0.008*
Shapiro-Wilk^				0.9763	0.9456*	0.971	0.9519	0.8727*	0.85*
P(Shapiro-Wilk)^				0.4941	0.0377*	0.3269	0.0646	0.0002*	0.0*
Skewness^				-0.0958	0.4989	-0.4723	0.759*	-1.021*	-1.2236*
P(Skewness)^				0.7967	0.184	0.2081	0.0461*	0.0084*	0.0019*
Kurtosis^				0.2176	0.6645	1.1243	1.1728	3.2507*	5.3298*
P(Kurtosis)^				0.7656	0.3647	0.1285	0.1132	0.0*	0.0*
Replicate F				0.071	0.845	1.250	0.756	2.170	0.302
Replicate Prob(F)				0.9748	0.4801	0.3092	0.5279	0.1123	0.8234
Treatment F				13.802	4.380	3.000	1.622	2.770	1.791
Treatment Prob(F)				0.0001	0.0008	0.0096	0.1480	0.0150	0.1058

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
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Untreated treatment(s) 1 excluded from analysis.
Missing data estimates are included in columns:Yates=10,11,12
^Calculated from residual.

Purdue University Weed Science

Evaluating Authority Supreme/Edge and Anthem Maxx Residual Weed Control in Soybean

Trial ID: 22S-MGS-SOY-03 Cooperator Trial ID:
Protocol ID: 22S-MGS-SOY-03 Location: MEIGS Trial Year: 2022
Project ID: USA-22-067 Project ID 2: Project ID 3:
Study Director: Brent Mansfield Sponsor Contact: Nicholas Hustedde - FMC
Investigator (Creator): Dr. Bill Johnson

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	7	8	9	10	11
	Pest Type				W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code				ABUTH	AMATA	SETFA	ABUTH	CHEAL
	Pest Scientific Name				Abutilon theoph>	Amaranthus x ta>	Setaria faberi	Abutilon theoph>	Chenopodium alb>
	Pest Name				velvetleaf	common water he>	Giant foxtail	velvetleaf	common lambsqua>
	Crop Type, Code								
	BBCH Scale								
	Crop Scientific Name								
	Crop Name								
	Rating Date				May-27-2022	Jun-10-2022	Jun-10-2022	Jun-10-2022	Jun-10-2022
	Part Rated				PLOT, P	PLOT, P	PLOT, P	PLOT, P	PLOT, P
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Sample Size								
	Number of Subsamples				1	1	1	1	1
	Assessed By								
	Data Entry Date				Jul-19-2022	Jul-19-2022	Jul-19-2022	Jul-19-2022	Jul-19-2022
	Rating Timing				15 DAA	29 DAA	29 DAA	29 DAA	29 DAA
	Days After First/Last Applic.				15, 15	29, 29	29, 29	29, 29	29, 29
	Plant-Eval Interval				16 DP-1	30 DP-1	30 DP-1	30 DP-1	30 DP-1
	Days After Emergence				10 DE-1	24 DE-1	24 DE-1	24 DE-1	24 DE-1
	ARM Action Codes				EC	EC	EC	EC	EC
	Number of Decimals								
1	NONTREATED				0.0	0.0	0.0	0.0	0.0
2	AUTHORITY SUPREME	8	fl oz/a	A	100.0 a	98.0 a	96.3 -	100.0 a	100.0 a
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
3	AUTHORITY SUPREME	7	fl oz/a	A	100.0 a	96.8 a	92.5 -	95.8 a	99.5 a
	TRICOR DF	5	oz/a	A					
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
4	AUTHORITY SUPREME	6.5	fl oz/a	A	97.5 a	94.3 a	91.3 -	93.3 a	100.0 a
	AMSOL	2.5	% v/v	B					
	ANTHEM MAXX	2.5	fl oz/a	B					
	LIBERTY	32	fl oz/a	B					
5	TENDOVO	56	fl oz/a	A	98.8 a	91.3 a	96.8 -	100.0 a	100.0 a
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
6	ZIDUA PRO	6	fl oz/a	A	100.0 a	93.3 a	94.5 -	85.0 ab	97.5 a
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
7	KYBER	16	fl oz/a	A	100.0 a	99.5 a	92.3 -	100.0 a	100.0 a
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
8	ANTHEM MAXX	4	fl oz/a	A	97.5 a	86.8 ab	91.3 -	86.3 ab	58.8 b
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
9	WARRANT	48	fl oz/a	A	76.3 ab	72.5 bc	76.3 -	55.0 bc	82.5 ab
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
10	OUTLOOK	14	fl oz/a	A	66.3 b	27.5 d	70.0 -	23.0 d	55.4 b
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
11	DUAL II MAGNUM	1.3	pt/a	A	55.0 b	56.3 c	83.8 -	42.5 cd	57.5 b
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					

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.
Untreated treatment(s) 1 excluded from analysis.
Missing data estimates are included in columns:Yates=10,11,12
^Calculated from residual.

Purdue University Weed Science

Evaluating Authority Supreme/Edge and Anthem Maxx Residual Weed Control in Soybean

Trial ID: 22S-MGS-SOY-03 Cooperator Trial ID:
Protocol ID: 22S-MGS-SOY-03 Location: MEIGS Trial Year: 2022
Project ID: USA-22-067 Project ID 2: Project ID 3:
Study Director: Brent Mansfield Sponsor Contact: Nicholas Hustedde - FMC
Investigator (Creator): Dr. Bill Johnson

Pest Type		W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
Pest Code		ABUTH	AMATA	SETFA	ABUTH	CHEAL
Pest Scientific Name		Abutilon theoph>	Amaranthus x ta>	Setaria faberi	Abutilon theoph>	Chenopodium alb>
Pest Name		velvetleaf	common water he>	Giant foxtail	velvetleaf	common lambsqua>
Crop Type, Code						
BBCH Scale						
Crop Scientific Name						
Crop Name						
Rating Date		May-27-2022	Jun-10-2022	Jun-10-2022	Jun-10-2022	Jun-10-2022
Part Rated		PLOT, P	PLOT, P	PLOT, P	PLOT, P	PLOT, P
Rating Type		CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit/Min/Max		%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
Sample Size						
Number of Subsamples		1	1	1	1	1
Assessed By						
Data Entry Date		Jul-19-2022	Jul-19-2022	Jul-19-2022	Jul-19-2022	Jul-19-2022
Rating Timing		15 DAA	29 DAA	29 DAA	29 DAA	29 DAA
Days After First/Last Applic.		15, 15	29, 29	29, 29	29, 29	29, 29
Plant-Eval Interval		16 DP-1	30 DP-1	30 DP-1	30 DP-1	30 DP-1
Days After Emergence		10 DE-1	24 DE-1	24 DE-1	24 DE-1	24 DE-1
ARM Action Codes		EC	EC	EC	EC	EC
Number of Decimals						
Trt No.	Treatment Name	Rate Rate Unit	Appl Code	7	8	9	10	11
12	AUTHORITY EDGE	8 fl oz/a	A	100.0 a	95.0 a	91.3 -	98.8 a	100.0 a
	AMSOL	2.5 % v/v	B					
	LIBERTY	32 fl oz/a	B					
LSD P=.05				28.39	17.00	19.23	32.01	30.46
Standard Deviation				19.66	11.77	13.32	22.13	21.06
CV				21.81	14.22	15.01	27.68	24.36
Levene's F^				1.823	7.963*	0.747	1.473	1.481
Levene's Prob(F)				0.095	0.00*	0.676	0.195	0.192
Shapiro-Wilk^				0.7244*	0.908*	0.747*	0.8715*	0.9121*
P(Shapiro-Wilk)^				0.0*	0.0019*	0.0*	0.0002*	0.003*
Skewness^				-1.3164*	-0.4426	-2.6084*	-0.6582	-0.7889*
P(Skewness)^				0.0009*	0.2376	0.0*	0.0856	0.0408*
Kurtosis^				7.7996*	1.9651*	13.2703*	2.706*	2.1898*
P(Kurtosis)^				0.0*	0.0096*	0.0*	0.0006*	0.0047*
Replicate F				0.358	0.654	0.806	0.020	2.552
Replicate Prob(F)				0.7835	0.5865	0.5007	0.9960	0.0749
Treatment F				2.761	14.569	1.649	5.982	3.421
Treatment Prob(F)				0.0153	0.0001	0.1402	0.0001	0.0046

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.
Untreated treatment(s) 1 excluded from analysis.
Missing data estimates are included in columns:Yates=10,11,12
^Calculated from residual.

Purdue University Weed Science

Evaluating Authority Supreme/Edge and Anthem Maxx Residual Weed Control in Soybean

Trial ID: 22S-MGS-SOY-03 Cooperator Trial ID:
Protocol ID: 22S-MGS-SOY-03 Location: MEIGS Trial Year: 2022
Project ID: USA-22-067 Project ID 2: Project ID 3:
Study Director: Brent Mansfield Sponsor Contact: Nicholas Hustedde - FMC
Investigator (Creator): Dr. Bill Johnson

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	12	13	14	15	16
	Pest Type				W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code				SIDSP	AMATA	SETFA	ABUTH	CHEAL
	Pest Scientific Name				Sida spinosa	Amaranthus x ta>	Setaria faberi	Abutilon theoph>	Chenopodium alb>
	Pest Name				Prickly sida	common water he>	Giant foxtail	velvetleaf	common lambsqua>
	Crop Type, Code								
	BBCH Scale								
	Crop Scientific Name								
	Crop Name								
	Rating Date				Jun-10-2022	Jul-7-2022	Jul-7-2022	Jul-7-2022	Jul-7-2022
	Part Rated				PLOT, P	PLOT, P	PLOT, P	PLOT, P	PLOT, P
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Sample Size								
	Number of Subsamples				1	1	1	1	1
	Assessed By								
	Data Entry Date				Jul-19-2022	Jul-19-2022	Jul-19-2022	Jul-19-2022	Jul-19-2022
	Rating Timing				29 DAA	56 DAA	56 DAA	56 DAA	56 DAA
	Days After First/Last Applic.				29, 29	56, 21	56, 21	56, 21	56, 21
	Plant-Eval Interval				30 DP-1	57 DP-1	57 DP-1	57 DP-1	57 DP-1
	Days After Emergence				24 DE-1	51 DE-1	51 DE-1	51 DE-1	51 DE-1
	ARM Action Codes				EC	EC	EC	EC	EC
	Number of Decimals								
1	NONTREATED				0.0	0.0	0.0	0.0	0.0
2	AUTHORITY SUPREME	8	fl oz/a	A	98.3 a	95.8 -	95.8 -	100.0 -	95.0 a
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
3	AUTHORITY SUPREME	7	fl oz/a	A	96.3 a	91.3 -	89.5 -	99.5 -	100.0 a
	TRICOR DF	5	oz/a	A					
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
4	AUTHORITY SUPREME	6.5	fl oz/a	A	95.8 ab	96.8 -	94.8 -	99.5 -	100.0 a
	AMSOL	2.5	% v/v	B					
	ANTHEM MAXX	2.5	fl oz/a	B					
	LIBERTY	32	fl oz/a	B					
5	TENDOVO	56	fl oz/a	A	100.0 a	90.8 -	93.8 -	100.0 -	100.0 a
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
6	ZIDUA PRO	6	fl oz/a	A	100.0 a	88.8 -	88.8 -	100.0 -	100.0 a
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
7	KYBER	16	fl oz/a	A	100.0 a	93.5 -	86.8 -	96.3 -	100.0 a
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
8	ANTHEM MAXX	4	fl oz/a	A	95.0 ab	92.5 -	95.0 -	97.0 -	95.0 a
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
9	WARRANT	48	fl oz/a	A	52.5 c	90.8 -	94.3 -	100.0 -	100.0 a
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
10	OUTLOOK	14	fl oz/a	A	57.5 c	75.0 -	91.3 -	92.5 -	85.0 b
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
11	DUAL II MAGNUM	1.3	pt/a	A	72.5 bc	78.3 -	89.3 -	98.3 -	100.0 a
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					

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.
Untreated treatment(s) 1 excluded from analysis.
Missing data estimates are included in columns:Yates=10,11,12
^Calculated from residual.

Purdue University Weed Science

Evaluating Authority Supreme/Edge and Anthem Maxx Residual Weed Control in Soybean

Trial ID: 22S-MGS-SOY-03 Cooperator Trial ID:
Protocol ID: 22S-MGS-SOY-03 Location: MEIGS Trial Year: 2022
Project ID: USA-22-067 Project ID 2: Project ID 3:
Study Director: Brent Mansfield Sponsor Contact: Nicholas Hustedde - FMC
Investigator (Creator): Dr. Bill Johnson

Pest Type		W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
Pest Code		SIDSP	AMATA	SETFA	ABUTH	CHEAL
Pest Scientific Name		Sida spinosa	Amaranthus x ta>	Setaria faberi	Abutilon theoph>	Chenopodium alb>
Pest Name		Prickly sida	common water he>	Giant foxtail	velvetleaf	common lambsqua>
Crop Type, Code						
BBCH Scale						
Crop Scientific Name						
Crop Name						
Rating Date		Jun-10-2022	Jul-7-2022	Jul-7-2022	Jul-7-2022	Jul-7-2022
Part Rated		PLOT, P	PLOT, P	PLOT, P	PLOT, P	PLOT, P
Rating Type		CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit/Min/Max		%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
Sample Size						
Number of Subsamples		1	1	1	1	1
Assessed By						
Data Entry Date		Jul-19-2022	Jul-19-2022	Jul-19-2022	Jul-19-2022	Jul-19-2022
Rating Timing		29 DAA	56 DAA	56 DAA	56 DAA	56 DAA
Days After First/Last Applic.		29, 29	56, 21	56, 21	56, 21	56, 21
Plant-Eval Interval		30 DP-1	57 DP-1	57 DP-1	57 DP-1	57 DP-1
Days After Emergence		24 DE-1	51 DE-1	51 DE-1	51 DE-1	51 DE-1
ARM Action Codes		EC	EC	EC	EC	EC
Number of Decimals						
Trt No.	Treatment Name	Rate Rate Unit Appl Code	12	13	14	15	16
12	AUTHORITY EDGE	8 fl oz/a A	97.5 a	95.0 -	92.5 -	100.0 -	100.0 a
	AMSOL	2.5 % v/v B					
	LIBERTY	32 fl oz/a B					
LSD P=.05			23.42	14.83	10.66	7.94	9.13
Standard Deviation			16.20	10.27	7.38	5.50	6.32
CV			18.46	11.43	8.03	5.59	6.47
Levene's F^			2.106	1.925	0.965	0.801	3.775*
Levene's Prob(F)			0.054	0.077	0.491	0.629	0.002*
Shapiro-Wilk^			0.8659*	0.9608	0.9577	0.7366*	0.8929*
P(Shapiro-Wilk)^			0.0001*	0.1399	0.1063	0.0*	0.0007*
Skewness^			-0.5337	-0.6431	-0.8058*	-2.5448*	-0.3442
P(Skewness)^			0.1608	0.089	0.0347*	0.0*	0.3569
Kurtosis^			5.6434*	0.8024	1.4523	10.8342*	1.7363*
P(Kurtosis)^			0.0*	0.2748	0.0516	0.0*	0.0211*
Replicate F			0.806	2.588	0.525	0.299	2.500
Replicate Prob(F)			0.5010	0.0714	0.6684	0.8261	0.0785
Treatment F			4.931	1.855	0.671	0.749	2.182
Treatment Prob(F)			0.0004	0.0931	0.7419	0.6746	0.0483

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.
Untreated treatment(s) 1 excluded from analysis.
Missing data estimates are included in columns:Yates=10,11,12
^Calculated from residual.

Purdue University Weed Science

Evaluating Authority Supreme/Edge and Anthem Maxx Residual Weed Control in Soybean

Trial ID: 22S-MGS-SOY-03 Cooperator Trial ID:
Protocol ID: 22S-MGS-SOY-03 Location: MEIGS Trial Year: 2022
Project ID: USA-22-067 Project ID 2: Project ID 3:
Study Director: Brent Mansfield Sponsor Contact: Nicholas Hustedde - FMC
Investigator (Creator): Dr. Bill Johnson

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code					
Pest Type					W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
Pest Code					AMATA	SETFA	ABUTH	CHEAL	SIDSP
Pest Scientific Name					Amaranthus x ta>	Setaria faberi	Abutilon theoph>	Chenopodium alb>	Sida spinosa
Pest Name					common water he>	Giant foxtail	velvetleaf	common lambsqua>	Prickly sida
Crop Type, Code									
BBCH Scale									
Crop Scientific Name									
Crop Name									
Rating Date					Jun-10-2022	Jun-10-2022	Jun-10-2022	Jun-10-2022	Jun-10-2022
Part Rated					PLOT, P	PLOT, P	PLOT, P	PLOT, P	PLOT, P
Rating Type					COUNT	COUNT	COUNT	COUNT	COUNT
Rating Unit/Min/Max					m2, -, -	m2, -, -	m2, -, -	m2, -, -	m2, -, -
Sample Size									
Number of Subsamples					1	1	1	1	1
Assessed By									
Data Entry Date					Jul-19-2022	Jul-19-2022	Jul-19-2022	Jul-19-2022	Jul-19-2022
Rating Timing					29 DAA	29 DAA	29 DAA	29 DAA	29 DAA
Days After First/Last Applic.					29, 29	29, 29	29, 29	29, 29	29, 29
Plant-Eval Interval					30 DP-1	30 DP-1	30 DP-1	30 DP-1	30 DP-1
Days After Emergence					24 DE-1	24 DE-1	24 DE-1	24 DE-1	24 DE-1
ARM Action Codes									
Number of Decimals									
1	NONTREATED				401.5	192.8	6.8	13.8	7.5
2	AUTHORITY SUPREME	8	fl oz/a	A	1.8 c	13.3 -	0.0 -	0.0 -	1.0 b
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
3	AUTHORITY SUPREME	7	fl oz/a	A	13.8 c	27.5 -	1.0 -	0.0 -	0.8 b
	TRICOR DF	5	oz/a	A					
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
4	AUTHORITY SUPREME	6.5	fl oz/a	A	13.0 c	27.5 -	8.8 -	0.3 -	1.8 b
	AMSOL	2.5	% v/v	B					
	ANTHEM MAXX	2.5	fl oz/a	B					
	LIBERTY	32	fl oz/a	B					
5	TENDOVO	56	fl oz/a	A	34.0 bc	6.8 -	0.3 -	0.0 -	0.0 b
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
6	ZIDUA PRO	6	fl oz/a	A	27.0 c	30.0 -	0.0 -	0.0 -	0.0 b
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
7	KYBER	16	fl oz/a	A	3.8 c	35.0 -	0.3 -	0.0 -	0.0 b
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
8	ANTHEM MAXX	4	fl oz/a	A	29.8 c	7.8 -	2.8 -	12.3 -	0.0 b
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
9	WARRANT	48	fl oz/a	A	103.5 bc	32.8 -	7.3 -	3.0 -	5.8 a
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
10	OUTLOOK	14	fl oz/a	A	386.0 a	35.5 -	4.5 -	9.3 -	0.3 b
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					
11	DUAL II MAGNUM	1.3	pt/a	A	165.8 b	16.0 -	6.0 -	6.3 -	4.8 a
	AMSOL	2.5	% v/v	B					
	LIBERTY	32	fl oz/a	B					

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.
Untreated treatment(s) 1 excluded from analysis.
Missing data estimates are included in columns:Yates=10,11,12
^Calculated from residual.

Purdue University Weed Science

Evaluating Authority Supreme/Edge and Anthem Maxx Residual Weed Control in Soybean

Trial ID: 22S-MGS-SOY-03 Cooperator Trial ID:
Protocol ID: 22S-MGS-SOY-03 Location: MEIGS Trial Year: 2022
Project ID: USA-22-067 Project ID 2: Project ID 3:
Study Director: Brent Mansfield Sponsor Contact: Nicholas Hustedde - FMC
Investigator (Creator): Dr. Bill Johnson

Pest Type		W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
Pest Code		AMATA	SETFA	ABUTH	CHEAL	SIDSP
Pest Scientific Name		Amaranthus x ta>	Setaria faberi	Abutilon theoph>	Chenopodium alb>	Sida spinosa
Pest Name		common water he>	Giant foxtail	velvetleaf	common lambsqua>	Prickly sida
Crop Type, Code						
BBCH Scale						
Crop Scientific Name						
Crop Name						
Rating Date		Jun-10-2022	Jun-10-2022	Jun-10-2022	Jun-10-2022	Jun-10-2022
Part Rated		PLOT, P	PLOT, P	PLOT, P	PLOT, P	PLOT, P
Rating Type		COUNT	COUNT	COUNT	COUNT	COUNT
Rating Unit/Min/Max		m2, -, -	m2, -, -	m2, -, -	m2, -, -	m2, -, -
Sample Size						
Number of Subsamples		1	1	1	1	1
Assessed By						
Data Entry Date		Jul-19-2022	Jul-19-2022	Jul-19-2022	Jul-19-2022	Jul-19-2022
Rating Timing		29 DAA	29 DAA	29 DAA	29 DAA	29 DAA
Days After First/Last Applic.		29, 29	29, 29	29, 29	29, 29	29, 29
Plant-Eval Interval		30 DP-1	30 DP-1	30 DP-1	30 DP-1	30 DP-1
Days After Emergence		24 DE-1	24 DE-1	24 DE-1	24 DE-1	24 DE-1
ARM Action Codes						
Number of Decimals						
Trt No.	Treatment Name	Rate Rate Unit Appl Code	17	18	19	20	21
12	AUTHORITY EDGE	8 fl oz/a A	16.8 c	34.3 -	0.8 -	0.0 -	0.8 b
	AMSOL	2.5 % v/v B					
	LIBERTY	32 fl oz/a B					
LSD P=.05			132.28	41.00	10.17	8.94	2.73
Standard Deviation			91.60	28.39	7.04	6.19	1.89
CV			126.74	117.31	245.87	219.65	138.64
Levene's F^			9.492*	0.462	0.547	0.651	1.356
Levene's Prob(F)			0.00*	0.902	0.844	0.76	0.243
Shapiro-Wilk^			0.8249*	0.8963*	0.8333*	0.7987*	0.8345*
P(Shapiro-Wilk)^			0.0*	0.0008*	0.0*	0.0*	0.0*
Skewness^			0.118	1.2576*	1.8287*	2.1533*	0.0236
P(Skewness)^			0.751	0.0015*	0.0*	0.0*	0.9493
Kurtosis^			6.3894*	1.4854*	4.7737*	8.9896*	5.9421*
P(Kurtosis)^			0.0*	0.0467*	0.0*	0.0*	0.0*
Replicate F			0.991	3.705	1.454	1.909	0.492
Replicate Prob(F)			0.4102	0.0222	0.2468	0.1494	0.6907
Treatment F			6.348	0.613	0.843	2.050	4.524
Treatment Prob(F)			0.0001	0.7903	0.5931	0.0629	0.0006

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.
Untreated treatment(s) 1 excluded from analysis.
Missing data estimates are included in columns:Yates=10,11,12
^Calculated from residual.

Purdue University Weed Science

Evaluating Authority Supreme/Edge and Anthem Maxx Residual Weed Control in Soybean

Trial ID: 22S-MGS-SOY-03 Cooperator Trial ID:
Protocol ID: 22S-MGS-SOY-03 Location: MEIGS Trial Year: 2022
Project ID: USA-22-067 Project ID 2: Project ID 3:
Study Director: Brent Mansfield Sponsor Contact: Nicholas Hustedde - FMC
Investigator (Creator): Dr. Bill Johnson

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	22	23	24
	Pest Type						
	Pest Code						
	Pest Scientific Name						
	Pest Name						
	Crop Type, Code				C, GLXMA	C, GLXMA	C, GLXMA
	BBCH Scale				BSOY	BSOY	BSOY
	Crop Scientific Name				Glycine max	Glycine max	Glycine max
	Crop Name				Soybean	Soybean	Soybean
	Rating Date				Oct-21-2022	Oct-21-2022	Oct-21-2022
	Part Rated				PLOT, C	PLOT, C	PLOT, C
	Rating Type				YIELD	MOICON	YIELD
	Rating Unit/Min/Max				lb/plot, -, -	%, 0, 100	BU, -, -
	Sample Size				1 PLOT		1 A
	Number of Subsamples				1	1	1
	Assessed By				J. HAARMANN	J. HAARMANN	J. HAARMANN
	Data Entry Date				Oct-24-2022	Oct-24-2022	
	Rating Timing						
	Days After First/Last Applic.				162, 127	162, 127	162, 127
	Plant-Eval Interval				163 DP-1	163 DP-1	163 DP-1
	Days After Emergence				157 DE-1	157 DE-1	157 DE-1
	ARM Action Codes						TY1
	Number of Decimals						1
1	NONTREATED				5.618	8.630	35.7
2	AUTHORITY SUPREME	8	fl oz/a	A	5.280 -	9.200 -	33.4 -
	AMSOL	2.5	% v/v	B			
	LIBERTY	32	fl oz/a	B			
3	AUTHORITY SUPREME	7	fl oz/a	A	6.170 -	9.058 -	39.1 -
	TRICOR DF	5	oz/a	A			
	AMSOL	2.5	% v/v	B			
	LIBERTY	32	fl oz/a	B			
4	AUTHORITY SUPREME	6.5	fl oz/a	A	6.343 -	8.603 -	40.3 -
	AMSOL	2.5	% v/v	B			
	ANTHEM MAXX	2.5	fl oz/a	B			
	LIBERTY	32	fl oz/a	B			
5	TENDOVO	56	fl oz/a	A	6.708 -	8.698 -	42.6 -
	AMSOL	2.5	% v/v	B			
	LIBERTY	32	fl oz/a	B			
6	ZIDUA PRO	6	fl oz/a	A	6.020 -	9.210 -	38.1 -
	AMSOL	2.5	% v/v	B			
	LIBERTY	32	fl oz/a	B			
7	KYBER	16	fl oz/a	A	5.633 -	8.725 -	35.8 -
	AMSOL	2.5	% v/v	B			
	LIBERTY	32	fl oz/a	B			
8	ANTHEM MAXX	4	fl oz/a	A	6.638 -	8.810 -	42.1 -
	AMSOL	2.5	% v/v	B			
	LIBERTY	32	fl oz/a	B			
9	WARRANT	48	fl oz/a	A	6.603 -	9.048 -	41.8 -
	AMSOL	2.5	% v/v	B			
	LIBERTY	32	fl oz/a	B			
10	OUTLOOK	14	fl oz/a	A	6.735 -	8.518 -	42.9 -
	AMSOL	2.5	% v/v	B			
	LIBERTY	32	fl oz/a	B			
11	DUAL II MAGNUM	1.3	pt/a	A	6.533 -	8.533 -	41.6 -
	AMSOL	2.5	% v/v	B			
	LIBERTY	32	fl oz/a	B			

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.
Untreated treatment(s) 1 excluded from analysis.
Missing data estimates are included in columns:Yates=10,11,12
^Calculated from residual.

Purdue University Weed Science

Evaluating Authority Supreme/Edge and Anthem Maxx Residual Weed Control in Soybean

Trial ID: 22S-MGS-SOY-03 Cooperator Trial ID:
Protocol ID: 22S-MGS-SOY-03 Location: MEIGS Trial Year: 2022
Project ID: USA-22-067 Project ID 2: Project ID 3:
Study Director: Brent Mansfield Sponsor Contact: Nicholas Hustedde - FMC
Investigator (Creator): Dr. Bill Johnson

Pest Type					
Pest Code					
Pest Scientific Name					
Pest Name					
Crop Type, Code			C, GLXMA	C, GLXMA	C, GLXMA
BBCH Scale			BSOY	BSOY	BSOY
Crop Scientific Name			Glycine max	Glycine max	Glycine max
Crop Name			Soybean	Soybean	Soybean
Rating Date			Oct-21-2022	Oct-21-2022	Oct-21-2022
Part Rated			PLOT, C	PLOT, C	PLOT, C
Rating Type			YIELD	MOICON	YIELD
Rating Unit/Min/Max			lb/plot, -, -	%, 0, 100	BU, -, -
Sample Size			1 PLOT		1 A
Number of Subsamples			1	1	1
Assessed By			J. HAARMANN	J. HAARMANN	J. HAARMANN
Data Entry Date			Oct-24-2022	Oct-24-2022	
Rating Timing					
Days After First/Last Applic.			162, 127	162, 127	162, 127
Plant-Eval Interval			163 DP-1	163 DP-1	163 DP-1
Days After Emergence			157 DE-1	157 DE-1	157 DE-1
ARM Action Codes					TY1
Number of Decimals					1
Trt No.	Treatment Name	Rate Unit	Appl Code	22	23	24
12	AUTHORITY EDGE	8 fl oz/a	A	6.493 -	9.298 -	41.0 -
	AMSOL	2.5 % v/v	B			
	LIBERTY	32 fl oz/a	B			
LSD P=.05				1.1999	0.7270	7.75
Standard Deviation				0.8309	0.5035	5.37
CV				13.22	5.67	13.46
Levene's F^				0.591	0.866	0.599
Levene's Prob(F)				0.81	0.572	0.803
Shapiro-Wilk^				0.9379*	0.9385*	0.9412*
P(Shapiro-Wilk)^				0.0198*	0.0209*	0.0262*
Skewness^				0.3186	0.8785*	0.3275
P(Skewness)^				0.3934	0.022*	0.3805
Kurtosis^				2.0287*	1.5326*	2.0115*
P(Kurtosis)^				0.0077*	0.0405*	0.0082*
Replicate F				8.129	15.294	8.431
Replicate Prob(F)				0.0004	0.0001	0.0003
Treatment F				1.294	1.320	1.277
Treatment Prob(F)				0.2780	0.2647	0.2869

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
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Untreated treatment(s) 1 excluded from analysis.
Missing data estimates are included in columns:Yates=10,11,12
^Calculated from residual.

Purdue University Weed Science

Evaluating Authority Supreme/Edge and Anthem Maxx Residual Weed Control in Soybean

Trial ID: 22S-MGS-SOY-03 Cooperator Trial ID:
Protocol ID: 22S-MGS-SOY-03 Location: MEIGS Trial Year: 2022
Project ID: USA-22-067 Project ID 2: Project ID 3:
Study Director: Brent Mansfield Sponsor Contact: Nicholas Hustedde - FMC
Investigator (Creator): Dr. Bill Johnson

Pest Type
W, Weed = Weed or volunteer crop
Pest Code
AMATA, Amaranthus x tamariscinus, common water hemp = US
SETFA, Setaria faberi, Giant foxtail = US
ABUTH, Abutilon theophrasti, velvetleaf = US
CHEAL, Chenopodium album, common lambsquarters = US
SIDSP, Sida spinosa, Prickly sida = US
Crop Type, Code
C = EPPO species (Bayer) codes
GLXMA, BSOY, Glycine max, Soybean = US
Part Rated
PLOT = plot
C = Crop is Part Rated
P = Pest is Part Rated
Rating Type
PHYSTU = phytotoxicity - stunting
PHYNEC = phytotoxicity - necrosis /burn
PHYCHL = phytotoxicity - chlorosis
CONTRO = control / burndown or knockdown
COUNT = count
YIELD = yield
MOICON = moisture content
Rating Unit/Min/Max
%, 0, 100 = percent
m2, , = square meter
lb/plot, , = pounds per plot
BU, , = bushel

PLOT = total plot
A = acre
Plant-Eval Interval
16 DP-1 = 1 GLXMA May-11-2022
30 DP-1 = 1 GLXMA May-11-2022
57 DP-1 = 1 GLXMA May-11-2022
163 DP-1 = 1 GLXMA May-11-2022
ARM Action Codes
EC = Do not analyze untreated check, while still reporting treatment mean on AOV Means Table
TY1 = 6.05*[22]*(100-[23])/87

Trt No.	Type	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Appl Code	Rep 1	2	3	4	Notes
1	CHK	NONTREATED							101	404	606	703	
2	HERB	AUTHORITY SUPREME	4.16	LBA/GAL	SC	8	fl oz/a	A	102	405	506	701	
	ADJ	AMSOL	3.4	LBA/GAL	L	2.5	% v/v	B					
	HERB	LIBERTY	2.34	LBA/GAL	SL	32	fl oz/a	B					
3	HERB	AUTHORITY SUPREME	4.16	LBA/GAL	SC	7	fl oz/a	A	103	306	603	705	
	HERB	TRICOR DF	75	%	DF	5	oz/a	A					
	ADJ	AMSOL	3.4	LBA/GAL	L	2.5	% v/v	B					
	HERB	LIBERTY	2.34	LBA/GAL	SL	32	fl oz/a	B					
4	HERB	AUTHORITY SUPREME	4.16	LBA/GAL	SC	6.5	fl oz/a	A	104	305	502	802	
	ADJ	AMSOL	3.4	LBA/GAL	L	2.5	% v/v	B					
	HERB	ANTHEM MAXX	4.3	LBA/GAL	SC	2.5	fl oz/a	B					
	HERB	LIBERTY	2.34	LBA/GAL	SL	32	fl oz/a	B					
5	HERB	TENDOVO	4.177	LBA/GAL	ZC	56	fl oz/a	A	105	301	503	801	
	ADJ	AMSOL	3.4	LBA/GAL	L	2.5	% v/v	B					
	HERB	LIBERTY	2.34	LBA/GAL	SL	32	fl oz/a	B					
6	HERB	ZIDUA PRO	4.09	LBA/GAL	SC	6	fl oz/a	A	106	302	604	804	
	ADJ	AMSOL	3.4	LBA/GAL	L	2.5	% v/v	B					
	HERB	LIBERTY	2.34	LBA/GAL	SL	32	fl oz/a	B					
7	HERB	KYBER	2.64	LBA/GAL	SC	16	fl oz/a	A	201	406	504	704	
	ADJ	AMSOL	3.4	LBA/GAL	L	2.5	% v/v	B					
	HERB	LIBERTY	2.34	LBA/GAL	SL	32	fl oz/a	B					
8	HERB	ANTHEM MAXX	4.3	LBA/GAL	SC	4	fl oz/a	A	202	403	605	803	
	ADJ	AMSOL	3.4	LBA/GAL	L	2.5	% v/v	B					
	HERB	LIBERTY	2.34	LBA/GAL	SL	32	fl oz/a	B					
9	HERB	WARRANT	3	LBA/GAL	CS	48	fl oz/a	A	203	303	501	806	
	ADJ	AMSOL	3.4	LBA/GAL	L	2.5	% v/v	B					
	HERB	LIBERTY	2.34	LBA/GAL	SL	32	fl oz/a	B					

Purdue University Weed Science

Evaluating Authority Supreme/Edge and Anthem Maxx Residual Weed Control in Soybean

Trial ID: 22S-MGS-SOY-03 Cooperator Trial ID:
Protocol ID: 22S-MGS-SOY-03 Location: MEIGS Trial Year: 2022
Project ID: USA-22-067 Project ID 2: Project ID 3:
Study Director: Brent Mansfield Sponsor Contact: Nicholas Hustedde - FMC
Investigator (Creator): Dr. Bill Johnson

Trt No.	Type	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Appl Code	Rep 1	2	3	4	Notes
10	HERB	OUTLOOK	6	LBA/GAL	EC	14	fl oz/a	A	204	402	505	805	
	ADJ	AMSOL	3.4	LBA/GAL	L	2.5	% v/v	B					
	HERB	LIBERTY	2.34	LBA/GAL	SL	32	fl oz/a	B					
11	HERB	DUAL II MAGNUM	7.64	LBA/GAL	EC	1.3	pt/a	A	205	304	602	702	
	ADJ	AMSOL	3.4	LBA/GAL	L	2.5	% v/v	B					
	HERB	LIBERTY	2.34	LBA/GAL	SL	32	fl oz/a	B					
12	HERB	AUTHORITY EDGE	4.25	LBA/GAL	SC	8	fl oz/a	A	206	401	601	706	
	ADJ	AMSOL	3.4	LBA/GAL	L	2.5	% v/v	B					
	HERB	LIBERTY	2.34	LBA/GAL	SL	32	fl oz/a	B					

Sort Order: Replicate 1