Purdue Weed Science

Preview 2.1 Herbicide for Weed Control in Soybeans

Trial ID: 23-MGS-Soy-04
Protocol ID: 23-MGS-Soy-04   Location: Trial Year: 2023
Study Director: Dr. Bill Johnson   Sponsor Contact: Taylor Miller

Investigator: Dr. Bill Johnson

General Trial Information
Study Director: Dr. Bill Johnson   **Title:** Professor
Investigator: Dr. Bill Johnson   **Title:** Professor

Discipline: H   herbicide
Status: E   established
ARM Trial Created On: Mar-25-2023
Initiation Date: May-5-2023   **Planned Completion Date:** Oct-15-2023

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

Regulations
Conducted Under GLP: No
Conducted Under GEP: No

Materials and Methods

Contacts
Role: STYDIR study director
Study Director: 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: 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: Taylor Miller
Organization: UPL
Role: COOPER cooperator
Cooperator: Jay Young   **Title:** Superintendent
Organization: Purdue University
Address 1: 8343 US 231 S   **Phone No.:** (765) 538-3422
Country: USA   United States   **E-mail:** jayyoung@purdue.edu
City: Lafayette   **State/Prov:** IN   **Postal Code:** 47907

Crop Description
Crop 1: C   GLXMA Glycine max   Soybean
Entry Date: May-24-2023   **Stage Scale:** BBCH
Variety: Stine 29EB62
Attributes: Glyphosate-R, Glufosinate-R, 2,4-D-R
Planting Date: May-5-2023   **Planting Rate:** 140000   S/A
Depth: 1.5   IN
Rows per Plot: 4   **Planting Method:** PLANTD   planted
Row Spacing: 30   IN   **Planting Equipment:** PP   plot planter
Soil Temperature: 70   F   **Soil Moisture:** NORMAL normal, adequate
Emergence Date: May-15-2023

Pest Description
Pest 1 Type: W   **Code:** AMATU Amaranthus tuberculatus   **Entry Date:** May-24-2023
Common Name: tall waterhemp   **Stage Scale:** BBCH
Attributes: Glyphosate-R and PPO-R

Pest 2 Type: W   **Code:** AMBTR Ambrosia trifida   **Entry Date:** May-24-2023
Common Name: Giant ragweed   **Stage Scale:** BBCH

Pest 3 Type: W   **Code:** SETFA Setaria faberi   **Entry Date:** May-24-2023
Common Name: Giant foxtail   **Stage Scale:** BBCH

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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   **Tillage Type:** NOTILL   no-till
Replications: 4   **Treatments:** 10 **Plots:** 40   **Study Design:** RACOBL Randomized Complete Block (RCB)

Field Prep./Maintenance:
Roundup PowerMax 3 (30 fl oz/A) + 2,4-D (1 pint/A) applied 04/12/2023.
Gramoxone (3 pt/A) applied 05/04/2023.

Soil Description
Description Name: MEIGS-S5
% Sand: 27   **% OM:** 2.4   **Texture:** SIL   silt loam
% Silt: 52   **Soil Name:** Starks-Fincastle Complex
% Clay: 21   **Fert. Level:** G   good
pH: 7.1   **CEC:** 9.3

No.	Date	Moisture Total	Unit	Min Temp	Max Temp	Avg Temp	Temp Unit	Max Wind	Avg Wind	Unit
1.	May-1-2023	0.011	IN	39.7	46.4	42.6	F	29.3	10.7	MPH
2.	May-2-2023	0	IN	41	57.9	47.1	F	25.1	7.8	MPH
3.	May-3-2023	0	IN	39.2	62.4	49.3	F	19.7	5.4	MPH
4.	May-4-2023	0	IN	36.3	71.4	55.6	F	12.5	2	MPH
5.	May-5-2023	0	IN	49.1	78.1	64.2	F	25.1	7.2	MPH
6.	May-6-2023	0.002	IN	57.7	77.5	67.1	F	31.5	9.2	MPH
7.	May-7-2023	0.03	IN	60.8	79.7	69.1	F	35.1	9.2	MPH
8.	May-8-2023	0.003	IN	58.3	75.9	66.9	F	20.8	6.7	MPH
9.	May-9-2023	0	IN	54	75.2	64	F	16.8	5.4	MPH
10.	May-10-2023	0	IN	52.9	78.3	65.8	F	17.2	3.1	MPH
11.	May-11-2023	0	IN	53	81.4	67.94	F	16.1	1.8	MPH
12.	May-12-2023	0.001	IN	63.4	79	70.76	F	17	0.9	MPH
13.	May-13-2023	0.007	IN	66.5	80	72.06	F	12	1.2	MPH
14.	May-14-2023	0.023	IN	58.7	72.8	65.19	F	16	4.8	MPH
15.	May-15-2023	0.002	IN	54.3	71.8	61.5	F	13	2.1	MPH
16.	May-16-2023	0.001	IN	53.9	71.4	62.06	F	12	0.9	MPH
17.	May-17-2023	0	IN	49.9	70.2	60.7	F	14	2.3	MPH
18.	May-18-2023	0	IN	44	74	59.75	F	11	2.2	MPH
19.	May-19-2023	0.045	IN	57.1	79.6	64.84	F	25	1.5	MPH
20.	May-20-2023	0	IN	47.6	66.3	57.57	F	11	0	MPH
21.	May-21-2023	0	IN	44.3	78	62.38	F	8	0.3	MPH
22.	May-22-2023	0	IN	51.1	80	67.15	F	9	0.2	MPH
23.	May-23-2023	0	IN	56.7	82	70.38	F	9	0.3	MPH
24.	May-24-2023	0	IN	54.4	82.9	70.73	F	15	1	MPH
25.	May-25-2023	0	IN	48.4	68.3	59.7	F	17	5.9	MPH
26.	May-26-2023	0	IN	46.8	75	61.24	F	17	4	MPH
27.	May-27-2023	0	IN	47.2	77	64.85	F	16	2.5	MPH
28.	May-28-2023	0	IN	57.6	79.6	68.81	F	13	0.5	MPH
29.	May-29-2023	0	IN	56.4	84.6	71.88	F	11	0.6	MPH
30.	May-30-2023	0	IN	58.7	87.1	75.14	F	14	1.3	MPH
31.	May-31-2023	0	IN	65.4	87.7	77.14	F	11	0.6	MPH
32.	Jun-1-2023	0	IN	64.6	89.2	77.42	F	17	1.6	MPH
33.	Jun-2-2023	0	IN	61	89.9	76.83	F	15	1.3	MPH
34.	Jun-3-2023	0	IN	63.1	89.9	78.15	F	11	1.2	MPH
35.	Jun-4-2023	0	IN	63.5	82	73.54	F	12	2.5	MPH
36.	Jun-5-2023	0	IN	54.1	78.8	67.66	F	12	1.6	MPH
37.	Jun-6-2023	0	IN	53.7	85.5	69.23	F	17	0.1	MPH

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38.	Jun-7-2023	0	IN	59.1	76.2	67.27	F	14	1	MPH
39.	Jun-8-2023	0	IN	45.9	76.6	62.87	F	10	0.6	MPH
40.	Jun-9-2023	0	IN	44.6	79.3	64.11	F	11	0.2	MPH
41.	Jun-10-2023	0	IN	56.5	84.1	71.38	F	15	1.3	MPH
42.	Jun-11-2023	0.03	IN	56.1	68.3	63.16	F	11	0.3	MPH
43.	Jun-12-2023	0	IN	51.5	67.7	58.29	F	15	0.7	MPH
44.	Jun-13-2023	0.001	IN	55	68.6	60.74	F	16	2.4	MPH
45.	Jun-14-2023	0.002	IN	56.9	76.7	66.76	F	7	0	MPH
46.	Jun-15-2023	0	IN	57.6	84.2	70.06	F	16	1.8	MPH
47.	Jun-16-2023	0	IN	50.8	71.7	60.86	F	13	0.4	MPH
48.	Jun-17-2023	0	IN	50.7	80.9	66.2	F	7	0	MPH
49.	Jun-18-2023	0	IN	57.3	82.5	70.7	F	15	1.2	MPH
50.	Jun-19-2023	0	IN	65.6	84	74.05	F	17	3.3	MPH
51.	Jun-20-2023	0	IN	63.8	86.9	74.64	F	22	4.4	MPH
52.	Jun-21-2023	0	IN	64.4	86	75.4	F	18	5.1	MPH
53.	Jun-22-2023	0	IN	61.1	81.1	71.33	F	16	2.4	MPH
54.	Jun-23-2023	0	IN	64.7	82.4	72.52	F	7	0	MPH
55.	Jun-24-2023	0	IN	59.3	89.2	75.93	F	8	0.2	MPH
56.	Jun-25-2023	0.046	IN	66.8	87.6	76.75	F	24	2.8	MPH
57.	Jun-26-2023	0	IN	65.4	74.7	70.53	F	26	4.3	MPH
58.	Jun-27-2023	0	IN	60.4	75.3	66.32	F	7	0.1	MPH
59.	Jun-28-2023	0	IN	52.6	79.7	66.17	F	12	0.4	MPH
60.	Jun-29-2023	0.032	IN	63.7	82.9	69.49	F	30	1.3	MPH
61.	Jun-30-2023	0	IN	62.4	83.8	73.03	F	13	0.6	MPH
62.	Jul-1-2023	0.019	IN	69	82.8	74.98	F	18	1.1	MPH
63.	Jul-2-2023	0.067	IN	67.7	81.4	72.16	F	15	1.2	MPH
64.	Jul-3-2023	0	IN	65.3	84.2	73.93	F	8	0.1	MPH
65.	Jul-4-2023	0	IN	64.4	88	76.25	F	7	0.3	MPH
66.	Jul-5-2023	0.07	IN	67.9	88.4	78.03	F	18	0.7	MPH
67.	Jul-6-2023	0.01	IN	68.8	82.9	74.17	F	11	0.6	MPH
68.	Jul-7-2023	0	IN	60.5	82.2	71.58	F	8	0.3	MPH
69.	Jul-8-2023	0.9	IN	62.8	74.6	68.13	F	12	0.2	MPH
70.	Jul-9-2023	0	IN	56.4	81	67.51	F	7	0.1	MPH
71.	Jul-10-2023	0	IN	57.6	81	70.65	F	10	0.8	MPH
72.	Jul-11-2023	0	IN	63.1	83.7	73.9	F	14	1.8	MPH
73.	Jul-12-2023	0	IN	69.8	84.4	76.47	F	17	0.7	MPH
74.	Jul-13-2023	0	IN	63.8	77.8	70.21	F	8	0.2	MPH
75.	Jul-14-2023	0	IN	59.6	87	73.92	F	9	0.5	MPH
76.	Jul-15-2023	1.68	IN	66.2	82.1	72.95	F	8	0.3	MPH
77.	Jul-16-2023	0	IN	62.5	81.3	71.73	F	12	1.3	MPH
78.	Jul-17-2023	0.15	IN	65.5	79.1	70.6	F	9	0.9	MPH
79.	Jul-18-2023	0	IN	62.7	79.7	70.75	F	5	0	MPH
80.	Jul-19-2023	0	IN	56.6	82.6	70.73	F	5	0	MPH
81.	Jul-20-2023	0	IN	67.9	84.8	75.5	F	14	0.7	MPH
82.	Jul-21-2023	0	IN	59.8	79.8	70.08	F	6	0	MPH
83.	Jul-22-2023	0	IN	57.3	81.5	69.38	F	6	0	MPH
84.	Jul-23-2023	0.01	IN	58.5	82.8	70.3	F	9	0.7	MPH
85.	Jul-24-2023	0	IN	62.5	84.7	73.5	F	4	0	MPH
86.	Jul-25-2023	0	IN	60.6	84.9	73.27	F	6	0.1	MPH
87.	Jul-26-2023	0.01	IN	68.9	87.5	78.15	F	12	1.1	MPH
88.	Jul-27-2023	0	IN	72.7	92	82.51	F	7	0.3	MPH
89.	Jul-28-2023	1.2	IN	69.1	89.2	79.86	F	17	0.8	MPH

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90.	Jul-29-2023	1.03	IN	68.4	83.1	75.48	F	9	0.4	MPH
91.	Jul-30-2023	0	IN	60.7	82.2	71.86	F	6	0.1	MPH
92.	Jul-31-2023	0	IN	56.2	77.8	67.7	F	6	0.3	MPH
93.	Aug-1-2023	0	IN	55.6	79.8	68.02	F	4	0	MPH
94.	Aug-2-2023	0	IN	59	80.5	70.02	F	6	0	MPH
95.	Aug-3-2023	0	IN	62.9	83.2	72.74	F	5	0	MPH
96.	Aug-4-2023	0	IN	60	86.2	73.91	F	4	0	MPH
97.	Aug-5-2023	0.85	IN	66.3	79.5	72.76	F	10	1	MPH
98.	Aug-6-2023	0.02	IN	63.3	75	68.31	F	12	1.7	MPH
99.	Aug-7-2023	0.21	IN	64.1	76.9	69.3	F	6	0.1	MPH
100.	Aug-8-2023	1.31	IN	60.4	80.2	68.38	F	13	0.5	MPH
101.	Aug-9-2023	0.68	IN	59.2	79.6	67.76	F	7	0	MPH
102.	Aug-10-2023	0.02	IN	63	79.5	70.32	F	10	0.6	MPH
103.	Aug-11-2023	0	IN	63.9	82.9	73.19	F	11	0.9	MPH
104.	Aug-12-2023	0.37	IN	66.5	83.9	74.98	F	14	1	MPH
105.	Aug-13-2023	0	IN	62.8	83.9	72.48	F	7	0.2	MPH
106.	Aug-14-2023	0.18	IN	66	74.7	69.23	F	10	0.5	MPH
107.	Aug-15-2023	0	IN	60.7	72.6	65.52	F	10	1	MPH
108.	Aug-16-2023	0	IN	54	78.2	66.45	F	6	0	MPH
109.	Aug-17-2023	0.38	IN	60.6	75.3	66.57	F	12	1.6	MPH
110.	Aug-18-2023	0	IN	52.7	75.8	64.65	F	8	0	MPH
111.	Aug-19-2023	0	IN	55	79.4	67	F	8	0.2	MPH
112.	Aug-20-2023	0	IN	63.4	86.2	75.11	F	7	0.1	MPH
113.	Aug-21-2023	0	IN	72.2	87.9	79.59	F	5	0.1	MPH
114.	Aug-22-2023	0	IN	70	85	76.8	F	7	0.5	MPH
115.	Aug-23-2023	0	IN	68.9	89.6	79.1	F	13	0.8	MPH
116.	Aug-24-2023	0	IN	76.5	91.8	83.8	F	13	1.3	MPH
117.	Aug-25-2023	0	IN	75.4	87.3	81.47	F	7	0.3	MPH
118.	Aug-26-2023	0	IN	68	83.4	75.1	F	9	0	MPH
119.	Aug-27-2023	0	IN	62.5	76.9	68.89	F	9	0.8	MPH
120.	Aug-28-2023	0	IN	54.1	77	64.85	F	7	0.3	MPH
121.	Aug-29-2023	0	IN	51.9	81.1	66.23	F	8	0.4	MPH
122.	Aug-30-2023	0	IN	55.5	73.1	64.73	F	10	0.3	MPH
123.	Aug-31-2023	0	IN	48.3	74.7	61.46	F	9	0.8	MPH
124.	Sep-1-2023	0	IN	50.6	81.1	65.47	F	7	0.1	MPH
125.	Sep-2-2023	0	IN	55.9	86.1	70.93	F	11	0.4	MPH

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Application Description

	A	B
Date	May-5-2023	Jun-5-2023
Start Time	10:47 AM	10:47 AM
Stop Time	11:11 AM	11:08 AM
Method	SPRAY	SPRAY
Timing	PRE	3" WEEDS
Placement	BROSOI	BROFOL
Applied By	M. ZIMMER	M. ZIMMER
Entry Date	May-24-2023	Jun-15-2023
Air Temperature Start, Stop	71, 71 F	67, 67 F
% Relative Humidity Start, Stop	43, 43	33, 33
Wind Velocity+Dir. Start	3 MPH, SSE	2.5 MPH, NE
Wind Velocity+Dir. Stop	5 MPH, SSE	2.5 MPH, NE
Wind Velocity+Dir. Max	10 MPH, SSE	3 MPH, NE
Wet Leaves (Y/N)	N, no	N, no
Soil Temperature	78 F	85 F
Soil Moisture	ADEQUATE	DRY
% Cloud Cover	0	90

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale	GLXMA, BSOY	GLXMA, BSOY
Days after Emergence	-10	21
Stage Majority, Percent	0, -	V2, -
Stage Minimum, Percent	0, -	V2, -
Stage Maximum, Percent	0, -	V3, -
Height Average	0 IN	5 IN
Height Minimum, Maximum	0, 0	4, 6

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale	AMATU, W, BBCH	AMATU, W, BBCH
Height Average	0 IN	2 IN
Height Minimum, Maximum	0, 0	0.5, 3
Density Average	0 FT2	1 FT2
Density Minimum, Maximum	0, 0	0, 3
Pest 2 Code, Type, Scale	AMBTR, W, BBCH	AMBTR, W, BBCH
Height Average	0 IN	3 IN
Height Minimum, Maximum	0, 0	2, 4
Density Average	0 FT2	3 FT2
Density Minimum, Maximum	0, 0	0, 6
Pest 3 Code, Type, Scale	SETFA, W, BBCH	SETFA, W, BBCH
Height Average	0 IN	2.5 IN
Height Minimum, Maximum	0, 0	0.5, 3
Density Average	0 FT2	6 FT2
Density Minimum, Maximum	0, 0	0, 20

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Application Equipment

	A	**B**
Equipment Name	CO2 BACKPACK	CO2 BACKPACK
Equipment Type	BACSPR	BACSPR
Operation Pressure	39 PSI	42 PSI
Nozzle Model	AIXR	TT
Nozzle Type	FLAFAI	TEEJTU
Nozzle TradeName	TEEJET	TEEJET
Nozzle Tip Size, Color	110015, GREEN	110015, GREEN
Nozzle Spacing	20 IN	20 IN
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 Overage	75.7 mL	75.7 mL
Mix Size	1119.0 mL	1119.0 mL
Propellant	COMCO2	COMCO2

Notes

Context	Date	By	Notes
STATUS	Mar-25-2023	Dr. Bill Johnson	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	May-23-2023	Dr. Bryan Young	Automatically added by ARM: Status changed to: E: changed by (EINYOB).
STATUS	May-23-2023	Dr. Bryan Young	Automatically added by ARM: Trial Status updated to 'E' when Rating Date entered.

Instructions:
1. Evaluations: ci 7, 14, and 21, DAE; w 14, 28, and 42 DA-A, weed counts at 28 DA-A or at POST, whichever comes first.

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Assessed By Rating Date Rating Type Rating Unit/Min/Max Crop Scientific Name Crop Name Pest Code Pest Scientific Name Pest Name	Claudia Bland May-22-2023 PHYGEN %, 0, 100 Glycine max Soybean	Claudia Bland May-29-2023 PHYGEN %, 0, 100 Glycine max Soybean	Claudia Bland Jun-5-2023 PHYGEN %, 0, 100 Glycine max Soybean	Claudia Bland May-19-2023 CONTRO %, 0, 100 Glycine max Soybean AMATA Amaranthus x ta> common water he>	Claudia Bland Jun-2-2023 CONTRO %, 0, 100 Glycine max Soybean AMATA Amaranthus x ta> common water he>	Claudia Bland Jun-5-2023 COUNT /m2, -, - Glycine max Soybean AMATA Amaranthus x ta> common water he>
Rating Timing ARM Action Codes	7 DA-E	14 DA-E	21 DA-E	14 DA-A	28 DA-A	AT POST
Trt Treatment Rate Appl No. Name Rate Unit Code	4*	5*	9*	1*	6*	10*
1 NONTREATED	0.0 a	0.0 a	0.0 a	0.0 b	0.0 b	3.0 a

2   PREVIEW 2.1 SC   21 fl oz/a A
     INTERLINE   32 fl oz/a B
     AMSOL   5 % v/v B
	1.3 a	0.0 a	0.0 a	100.0 a	97.5 a	0.1 b

3   PREVIEW 2.1 SC   21 fl oz/a A
     MOCCASIN   1.33 pt/a   A
     INTERLINE   32 fl oz/a B
     AMSOL   5 % v/v B
	0.0 a	0.0 a	0.0 a	100.0 a	100.0 a	0.0 b

4   PREVIEW 2.1 SC   21 fl oz/a A
     INTERMOC   70 fl oz/a B
     AMSOL   5 % v/v B
	1.3 a	0.0 a	0.0 a	100.0 a	100.0 a	0.0 b

5   PREVIEW 2.1 SC   21 fl oz/a A
     MOCCASIN   1.33 pt/a   A
     INTERMOC   70 fl oz/a B
     AMSOL   5 % v/v B
	0.0 a	0.0 a	0.0 a	100.0 a	100.0 a	0.0 b

6   PREVIEW 2.1 SC   21 fl oz/a A
     FIRSTRATE   0.6 oz/a   A
     INTERMOC   70 fl oz/a B
     AMSOL   5 % v/v B
	1.3 a	0.0 a	0.0 a	100.0 a	99.5 a	0.3 b

7   TRIPZIN ZC   44 fl oz/a A
     INTERMOC   70 fl oz/a B
     AMSOL   5 % v/v B
	0.0 a	0.0 a	0.0 a	100.0 a	97.5 a	0.4 b

8   MOCCASIN MTZ   3.5 pt/a   A
     INTERMOC   70 fl oz/a B
     AMSOL   5 % v/v B
	0.0 a	0.0 a	0.0 a	100.0 a	99.5 a	0.8 b

9   ZIDUA PRO   6 fl oz/a A
     LIBERTY   32 fl oz/a B
     DUAL MAGNUM 1.33 pt/a   B
     AMSOL   5 % v/v B
	1.3 a	0.0 a	0.0 a	100.0 a	100.0 a	0.0 b

10   BOUNDARY   2.4 pt/a   A
     LIBERTY   32 fl oz/a B
     DUAL MAGNUM 1.33 pt/a   B
     AMSOL   5 % v/v B
	0.0 a	0.0 a	0.0 a	100.0 a	97.8 a	0.9 b

LSD P=.05 Standard Deviation CV Levene's Prob(F) P(Shapiro-Wilk)^ P(Skewness)^ P(Kurtosis)^	2.16 1.49 298.14 0.952 0.0* 0.0022* 0.014*	. 0.00 0.0	. 0.00 0.0	. 0.00 0.0	3.25 2.24 2.51 0.869 0.0* 0.0003* 0.0*	1.41 0.97 180.43 0.16 0.0* 0.0031* 0.0*
Replicate F Replicate Prob(F) Treatment F Treatment Prob(F)	2.250 0.1053 0.750 0.6613	0.000 1.0000 0.000 1.0000	0.000 1.0000 0.000 1.0000	0.000 1.0000 0.000 1.0000	2.244 0.1060 785.897 0.0001	0.414 0.7441 3.619 0.0045

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.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 5,9,1,13 because error mean square = 0.
^Calculated from residual.

Purdue Weed Science

Preview 2.1 Herbicide for Weed Control in Soybeans

Trial ID: 23-MGS-Soy-04
Protocol ID: 23-MGS-Soy-04   Location: Trial Year: 2023
Study Director: Dr. Bill Johnson   Sponsor Contact: Taylor Miller

Investigator: Dr. Bill Johnson

Assessed By	Claudia Bland	Claudia Bland	Claudia Bland	Claudia Bland	Claudia Bland
Rating Date	Jun-16-2023	May-19-2023	Jun-2-2023	Jun-5-2023	Jun-16-2023
Rating Type	CONTRO	CONTRO	CONTRO	COUNT	CONTRO
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100	/m2, -, -	%, 0, 100
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean
Pest Code	AMATA	AMBTR	AMBTR	AMBTR	AMBTR
Pest Scientific Name	Amaranthus x ta>	Ambrosia trifida	Ambrosia trifida	Ambrosia trifida	Ambrosia trifida
Pest Name	common water he>	Giant ragweed	Giant ragweed	Giant ragweed	Giant ragweed
Rating Timing	42 DA-A	14 DA-A	28 DA-A	AT POST	42 DA-A
ARM Action Codes		EC			
Trt Treatment Rate Appl **No. Name** Rate Unit Code	13*	2*	8*	12*	15*
1 NONTREATED	0.0 b	0.0	0.0 c	1.8 a	0.0 c
2 PREVIEW 2.1 SC 21 fl oz/a A INTERLINE 32 fl oz/a B AMSOL 5 % v/v B	100.0 a	88.8 a	83.8 ab	1.8 a	98.8 ab
3 PREVIEW 2.1 SC 21 fl oz/a A MOCCASIN 1.33 pt/a A INTERLINE 32 fl oz/a B AMSOL 5 % v/v B	100.0 a	86.3 a	83.8 ab	2.4 a	95.8 b
4 PREVIEW 2.1 SC 21 fl oz/a A INTERMOC 70 fl oz/a B AMSOL 5 % v/v B	100.0 a	87.5 a	88.3 ab	2.5 a	99.0 ab
5 PREVIEW 2.1 SC 21 fl oz/a A MOCCASIN 1.33 pt/a A INTERMOC 70 fl oz/a B AMSOL 5 % v/v B	100.0 a	90.0 a	88.3 ab	1.8 a	98.5 ab
6 PREVIEW 2.1 SC 21 fl oz/a A FIRSTRATE 0.6 oz/a A INTERMOC 70 fl oz/a B AMSOL 5 % v/v B	100.0 a	91.3 a	95.3 a	0.6 a	99.5 a
7 TRIPZIN ZC 44 fl oz/a A INTERMOC 70 fl oz/a B AMSOL 5 % v/v B	100.0 a	81.3 a	77.5 b	2.1 a	98.8 ab
8 MOCCASIN MTZ 3.5 pt/a A INTERMOC 70 fl oz/a B AMSOL 5 % v/v B	100.0 a	83.8 a	81.3 ab	4.0 a	97.5 ab
9 ZIDUA PRO 6 fl oz/a A LIBERTY 32 fl oz/a B DUAL MAGNUM 1.33 pt/a B AMSOL 5 % v/v B	100.0 a	90.0 a	90.0 ab	1.9 a	99.0 ab
10 BOUNDARY 2.4 pt/a A LIBERTY 32 fl oz/a B DUAL MAGNUM 1.33 pt/a B AMSOL 5 % v/v B	100.0 a	90.0 a	83.3 ab	2.1 a	98.3 ab
LSD P=.05	.	7.40	15.85	2.44	3.26
Standard Deviation	0.00	5.07	10.93	1.68	2.25
CV	0.0	5.78	14.17	80.54	2.54
Levene's Prob(F)	.	0.752	0.33	0.924	0.106
P(Shapiro-Wilk)^	.	0.168	0.0199*	0.2107	0.5534
P(Skewness)^	.	0.2771	0.0111*	0.0639	0.1865
P(Kurtosis)^	.	0.5177	0.0*	0.2576	0.8532
Replicate F	0.000	0.676	1.456	0.692	0.883
Replicate Prob(F)	1.0000	0.5754	0.2487	0.5649	0.4624
Treatment F	0.000	1.730	25.439	1.012	765.373
Treatment Prob(F)	1.0000	0.1426	0.0001	0.4546	0.0001

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* Adjusted means
Could not calculate LSD (% mean diff) for columns 5,9,1,13 because error mean square = 0.
^Calculated from residual.

Purdue Weed Science

Preview 2.1 Herbicide for Weed Control in Soybeans

Trial ID: 23-MGS-Soy-04
Protocol ID: 23-MGS-Soy-04   Location: Trial Year: 2023
Study Director: Dr. Bill Johnson   Sponsor Contact: Taylor Miller

Investigator: Dr. Bill Johnson

				Claudia Bland May-19-2023 CONTRO %, 0, 100 Glycine max Soybean ECHCG Echinochloa cru> common barnyard> 14 DA-A	Claudia Bland Jun-2-2023 CONTRO %, 0, 100 Glycine max Soybean ECHCG Echinochloa cru> common barnyard> 28 DA-A	Claudia Bland Jun-5-2023 COUNT /m2, -, - Glycine max Soybean ECHCG Echinochloa cru> common barnyard> AT POST	Claudia Bland Jun-16-2023 CONTRO %, 0, 100 Glycine max Soybean ECHCG Echinochloa cru> common barnyard> 42 DA-A

Assessed By / Rating Date / Rating Type / Rating Unit/Min/Max / Crop Scientific Name / Crop Name / Pest Code / Pest Scientific Name / Pest Name / Rating Timing / ARM Action Codes

Trt No.	Treatment Name	Rate Rate Unit	Appl Code	3*	7*	11*	14*
1	NONTREATED			0.0 c	0.0 f	58.0 a	0.0 e
2	PREVIEW 2.1 SC INTERLINE AMSOL	21 fl oz/a 32 fl oz/a 5 % v/v	A B B	98.3 ab	67.5 e	21.1 b	90.0 d
3	PREVIEW 2.1 SC MOCCASIN INTERLINE AMSOL	21 fl oz/a 1.33 pt/a 32 fl oz/a 5 % v/v	A A B B	100.0 a	96.3 ab	0.9 c	97.0 abc
4	PREVIEW 2.1 SC INTERMOC AMSOL	21 fl oz/a 70 fl oz/a 5 % v/v	A B B	96.5 ab	76.3 de	10.8 bc	92.5 cd
5	PREVIEW 2.1 SC MOCCASIN INTERMOC AMSOL	21 fl oz/a 1.33 pt/a 70 fl oz/a 5 % v/v	A A B B	100.0 a	97.5 a	0.9 c	97.5 ab
6	PREVIEW 2.1 SC FIRSTRATE INTERMOC AMSOL	21 fl oz/a 0.6 oz/a 70 fl oz/a 5 % v/v	A A B B	96.3 ab	82.5 cd	12.6 bc	95.0 bc
7	TRIPZIN ZC INTERMOC AMSOL	44 fl oz/a 70 fl oz/a 5 % v/v	A B B	95.0 b	87.5 bc	7.3 bc	95.0 bc
8	MOCCASIN MTZ INTERMOC AMSOL	3.5 pt/a 70 fl oz/a 5 % v/v	A B B	100.0 a	92.5 ab	3.1 c	96.3 abc
9	ZIDUA PRO LIBERTY DUAL MAGNUM AMSOL	6 fl oz/a 32 fl oz/a 1.33 pt/a 5 % v/v	A B B B	97.5 ab	100.0 a	0.5 c	100.0 a
10	BOUNDARY LIBERTY DUAL MAGNUM AMSOL	2.4 pt/a 32 fl oz/a 1.33 pt/a 5 % v/v	A B B B	99.5 a	96.5 ab	2.6 c	99.5 ab

	3*	7*	11*	14*
LSD P=.05	4.03	9.04	16.09	4.75
Standard Deviation	2.78	6.23	11.09	3.27
CV	3.15	7.82	94.19	3.8
Levene's Prob(F)	0.613	0.094	0.045*	0.109
P(Shapiro-Wilk)^	0.0023*	0.8566	0.0*	0.1198
P(Skewness)^	0.0153*	0.7392	0.0149*	0.5151
P(Kurtosis)^	0.005*	0.6642	0.0*	0.2534
Replicate F	0.595	3.630	1.623	3.118
Replicate Prob(F)	0.6236	0.0254	0.2072	0.0426
Treatment F	499.778	91.899	10.006	346.229
Treatment Prob(F)	0.0001	0.0001	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.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 5,9,1,13 because error mean square = 0.
^Calculated from residual.

Purdue Weed Science

Preview 2.1 Herbicide for Weed Control in Soybeans

Trial ID: 23-MGS-Soy-04
Protocol ID: 23-MGS-Soy-04   Location: Trial Year: 2023
Study Director: Dr. Bill Johnson   Sponsor Contact: Taylor Miller

Investigator: Dr. Bill Johnson

<u>Rating Type</u>
 PHYGEN = phytotoxicity - general / injury
 CONTRO = control / burndown or knockdown
 COUNT = count
<u>Rating Unit/Min/Max</u>
 %, 0, 100 = percent
 /m2, , = per square meter
<u>Pest Code</u>
 AMATA, Amaranthus x tamariscinus, common water hemp = US
 AMBTR, Ambrosia trifida, Giant ragweed = US
 ECHCG, Echinochloa crus-galli, common barnyardgrass = US
<u>Rating Timing</u>
 14 DA-A = 14 Days After Application A
 28 DA-A = 28 Days After Application A
 42 DA-A = 42 Days After Application A
<u>ARM Action Codes</u>
 EC = Do not analyze untreated check, while still reporting treatment mean on AOV Means Table