

Purdue Weed Science

Weed Control Programs in Enlist Soybean

Trial ID: 23-MGS-Soy-03
 Protocol ID: 23-MGS-Soy-03 Location: Trial Year: 2023
 Project ID: Project ID 2: Project ID 3:
 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: Apr-28-2023
Initiation Date: May-5-2023 **Planned Completion Date:** Oct-15-2023
Completion Date: Oct-8-2023

Trial Location

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

Latitude of LL Corner °: 40.27004 N
Longitude of LL Corner °: -86.880918 W

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 cooperater
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:** wgj@purdue.edu
City: Lafayette **State/Prov:** IN **Postal Code:** 47907

Role: SPONSR sponsor
Contact Name 5: Steve Mroczkiewicz / Chad Threewits
Organization: Syngenta

Role: SPONSR sponsor
Contact Name 6: Eric Ott
Organization: Valent

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, and 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: 78 F **Soil Moisture:** NORMAL normal, adequate
Emergence Date: May-15-2023
Harvested Width: 5 FT
Harvested Length: 26 FT
% Standard Moisture: 13

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Pest Description

Pest 1 Type: W **Code:** AMATA *Amaranthus x tamariscinus* **Entry Date:** Jun-15-2023
Common Name: common water hemp **Stage Scale:** BBCH
Attributes: Glyphosate-R and PPO-R

Pest 2 Type: W **Code:** SETFA *Setaria faberi* **Entry Date:** Jun-15-2023
Common Name: Giant foxtail **Stage Scale:** BBCH

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:** 19 **Plots:** 76 **Study Design:** RAOBL 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	Interval	Min Temp	Max Temp	Avg Temp	Temp Unit	Max Wind	Avg Wind	Unit
1.	May-1-2023	0.011	IN	0	39.7	46.4	42.6	F	29.3	10.7	MPH
2.	May-2-2023	0	IN	0	41	57.9	47.1	F	25.1	7.8	MPH
3.	May-3-2023	0	IN	0	39.2	62.4	49.3	F	19.7	5.4	MPH
4.	May-4-2023	0	IN	0	36.3	71.4	55.6	F	12.5	2	MPH
5.	May-5-2023	0	IN	0	49.1	78.1	64.2	F	25.1	7.2	MPH
6.	May-6-2023	0.002	IN	0	57.7	77.5	67.1	F	31.5	9.2	MPH
7.	May-7-2023	0.03	IN	0	60.8	79.7	69.1	F	35.1	9.2	MPH
8.	May-8-2023	0.003	IN	0	58.3	75.9	66.9	F	20.8	6.7	MPH
9.	May-9-2023	0	IN	0	54	75.2	64	F	16.8	5.4	MPH
10.	May-10-2023	0	IN	0	52.9	78.3	65.8	F	17.2	3.1	MPH
11.	May-11-2023	0	IN	0	53	81.4	67.94	F	16.1	1.8	MPH
12.	May-12-2023	0.001	IN	0	63.4	79	70.76	F	17	0.9	MPH
13.	May-13-2023	0.007	IN	0	66.5	80	72.06	F	12	1.2	MPH
14.	May-14-2023	0.023	IN	0	58.7	72.8	65.19	F	16	4.8	MPH
15.	May-15-2023	0.002	IN	0	54.3	71.8	61.5	F	13	2.1	MPH
16.	May-16-2023	0.001	IN	0	53.9	71.4	62.06	F	12	0.9	MPH
17.	May-17-2023	0	IN	0	49.9	70.2	60.7	F	14	2.3	MPH
18.	May-18-2023	0	IN	0	44	74	59.75	F	11	2.2	MPH
19.	May-19-2023	0.045	IN	0	57.1	79.6	64.84	F	25	1.5	MPH
20.	May-20-2023	0	IN	0	47.6	66.3	57.57	F	11	0	MPH
21.	May-21-2023	0	IN	0	44.3	78	62.38	F	8	0.3	MPH
22.	May-22-2023	0	IN	0	51.1	80	67.15	F	9	0.2	MPH
23.	May-23-2023	0	IN	0	56.7	82	70.38	F	9	0.3	MPH
24.	May-24-2023	0	IN	0	54.4	82.9	70.73	F	15	1	MPH
25.	May-25-2023	0	IN	0	48.4	68.3	59.7	F	17	5.9	MPH
26.	May-26-2023	0	IN	0	46.8	75	61.24	F	17	4	MPH
27.	May-27-2023	0	IN	0	47.2	77	64.85	F	16	2.5	MPH
28.	May-28-2023	0	IN	0	57.6	79.6	68.81	F	13	0.5	MPH
29.	May-29-2023	0	IN	0	56.4	84.6	71.88	F	11	0.6	MPH
30.	May-30-2023	0	IN	0	58.7	87.1	75.14	F	14	1.3	MPH
31.	May-31-2023	0	IN	0	65.4	87.7	77.14	F	11	0.6	MPH

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32.	Jun-1-2023	0	IN	0	64.6	89.2	77.42	F	17	1.6	MPH
33.	Jun-2-2023	0	IN	0	61	89.9	76.83	F	15	1.3	MPH
34.	Jun-3-2023	0	IN	0	63.1	89.9	78.15	F	11	1.2	MPH
35.	Jun-4-2023	0	IN	0	63.5	82	73.54	F	12	2.5	MPH
36.	Jun-5-2023	0	IN	0	54.1	78.8	67.66	F	12	1.6	MPH
37.	Jun-6-2023	0	IN	0	53.7	85.5	69.23	F	17	0.1	MPH
38.	Jun-7-2023	0	IN	0	59.1	76.2	67.27	F	14	1	MPH
39.	Jun-8-2023	0	IN	0	45.9	76.6	62.87	F	10	0.6	MPH
40.	Jun-9-2023	0	IN	0	44.6	79.3	64.11	F	11	0.2	MPH
41.	Jun-10-2023	0	IN	0	56.5	84.1	71.38	F	15	1.3	MPH
42.	Jun-11-2023	0.03	IN	0	56.1	68.3	63.16	F	11	0.3	MPH
43.	Jun-12-2023	0	IN	0	51.5	67.7	58.29	F	15	0.7	MPH
44.	Jun-13-2023	0.001	IN	0	55	68.6	60.74	F	16	2.4	MPH
45.	Jun-14-2023	0.002	IN	0	56.9	76.7	66.76	F	7	0	MPH
46.	Jun-15-2023	0	IN	0	57.6	84.2	70.06	F	16	1.8	MPH
47.	Jun-16-2023	0	IN	0	50.8	71.7	60.86	F	13	0.4	MPH
48.	Jun-17-2023	0	IN	0	50.7	80.9	66.2	F	7	0	MPH
49.	Jun-18-2023	0	IN	0	57.3	82.5	70.7	F	15	1.2	MPH
50.	Jun-19-2023	0	IN	0	65.6	84	74.05	F	17	3.3	MPH
51.	Jun-20-2023	0	IN	0	63.8	86.9	74.64	F	22	4.4	MPH
52.	Jun-21-2023	0	IN	0	64.4	86	75.4	F	18	5.1	MPH
53.	Jun-22-2023	0	IN	0	61.1	81.1	71.33	F	16	2.4	MPH
54.	Jun-23-2023	0	IN	0	64.7	82.4	72.52	F	7	0	MPH
55.	Jun-24-2023	0	IN	0	59.3	89.2	75.93	F	8	0.2	MPH
56.	Jun-25-2023	0.046	IN	0	66.8	87.6	76.75	F	24	2.8	MPH
57.	Jun-26-2023	0	IN	0	65.4	74.7	70.53	F	26	4.3	MPH
58.	Jun-27-2023	0	IN	0	60.4	75.3	66.32	F	7	0.1	MPH
59.	Jun-28-2023	0	IN	0	52.6	79.7	66.17	F	12	0.4	MPH
60.	Jun-29-2023	0.032	IN	0	63.7	82.9	69.49	F	30	1.3	MPH
61.	Jun-30-2023	0	IN	0	62.4	83.8	73.03	F	13	0.6	MPH
62.	Jul-1-2023	0.019	IN	0	69	82.8	74.98	F	18	1.1	MPH
63.	Jul-2-2023	0.067	IN	0	67.7	81.4	72.16	F	15	1.2	MPH
64.	Jul-3-2023	0	IN	0	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

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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
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	C
Date	May-5-2023	Jun-9-2023	Jun-17-2023
Start Time	11:35 AM	5:27 PM	5:12 PM
Stop Time	12:25 PM	6:02 PM	5:29 PM
Method	SPRAY	SPRAY	SPRAY
Timing	PRE	2-3" WEEDS	6-8" WEEDS
Placement	BROSOI	BROFOL	BROFOL
Applied By	M. ZIMMER	M. ZIMMER	M. ZIMMER
Entry Date	May-24-2023	Jun-15-2023	Jun-18-2023
Air Temperature Start, Stop	69, 69 F	87, 87 F	80, 80 F
% Relative Humidity Start, Stop	36, 36	30, 30	33, 33
Wind Velocity+Dir. Start	5 MPH, SSE	1 MPH, S	2 MPH, N
Wind Velocity+Dir. Stop	4 MPH, SSE	1 MPH, S	2 MPH, N
Wind Velocity+Dir. Max	9 MPH, SSE	1 MPH, S	3 MPH, N
Wet Leaves (Y/N)	N, no	N, no	N, no
Soil Temperature	78 F	81 F	80 F
Soil Moisture	ADEQUATE	ADEQUATE	DRY
% Cloud Cover	0	0	0

Crop Stage At Each Application

	A	B	C
Crop 1 Code, BBCH Scale	GLXMA, BSOY	GLXMA, BSOY	GLXMA, BSOY
Days after Emergence	-10	25	33
Stage Majority, Percent	0, -	V4, -	V5, -
Stage Minimum, Percent	0, -	V3, -	V4, -
Stage Maximum, Percent	0, -	V4, -	V6, -
Height Average	0 IN	6 IN	8 IN
Height Minimum, Maximum	0, 0	4, 8	5, 8

Pest Stage At Each Application

	A	B	C
Pest 1 Code, Type, Scale	AMATA, W, BBCH	AMATA, W, BBCH	AMATA, W, BBCH
Height Average	0 IN	4 IN	4 IN
Height Minimum, Maximum	0, 0	4, 6	2, 5
Density Average	0 FT2	8 FT2	8 FT2
Density Minimum, Maximum	0, 0	1, 12	0, 20
Pest 2 Code, Type, Scale	SETFA, W, BBCH	SETFA, W, BBCH	SETFA, W, BBCH
Height Average	0 IN	3 IN	4 IN
Height Minimum, Maximum	0, 0	2, 4	2, 6
Density Average	0 FT2	1 FT2	4 FT2
Density Minimum, Maximum	0, 0	0, 3	0, 5

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Application Equipment

	A	B	C
Equipment Name	CO2 BACKPACK	CO2 BACKPACK	CO2 BACKPACK
Equipment Type	BACSPR	BACSPR	BACSPR
Operation Pressure	39 PSI	41 PSI	42 PSI
Nozzle Model	AIXR	AIXR	AIXR
Nozzle Type	FLAFAI	FLAFAI	FLAFAI
Nozzle TradeName	TEEJET	TEEJET	TEEJET
Nozzle Tip Size, Color	110015, GREEN	110015, GREEN	110015, GREEN
Nozzle Spacing	20 IN	20 IN	20.0 IN
Boom Length	6.67 FT	6.67 FT	6.67 FT
Boom Height	- 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 Overage	75.0 mL	75.0 mL	75.0 mL
Mix Size	1119.0 mL	1119.0 mL	1119.0 mL
Propellant	COMCO2	COMCO2	COMCO2

Notes

Context	Date	By	Notes
STATUS	Apr-14-2023	Dr. Bryan Young	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. Application timing for POST B and C should be based on weed size in Boundary/Tailwind treatments.
2. Evaluations: ci 7, 14, and 28 DAE; wc/photos at POST B and POST C; wc at 14 and 28 DA-B and DA-C. Rate all plots.
3. Yield, some treatments crop destruct

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Assessed By			Marcelo Zimmer					
Rating Date			May-22-2023	May-29-2023	Jun-12-2023	Jun-17-2023	Jun-9-2023	
Rating Type			PHYGEN	PHYGEN	PHYGEN	PHYGEN	CONTRO	
Rating Unit/Min/Max			% , 0, 100	% , 0, 100	% , 0, 100	% , 0, 100	% , 0, 100	
Crop Scientific Name			Glycine max					
Crop Name			Soybean	Soybean	Soybean	Soybean	Soybean	
Crop Variety			Stine 29 EB62					
Pest Code							AMATA	
Pest Scientific Name							Amaranthus x ta>	
Pest Name							common water he>	
Rating Timing			7 DA-E	14 DA-E	28 DA-E	AT POST C	AT POST B	
ARM Action Codes			EC	EC	EC	EC	EC	
Trt No.	Treatment Name	Rate	Appl Code	1*	2*	3*	8*	4*
		Rate Unit						
1	NONTREATED			0.0	0.0	0.0	0.0	0.0
2	TENDOVO	1.75 qt/a	A	3.5 cd	4.0 a-d	0.0 a	5.0 b	89.5 a-d
	DUAL MAGNUM	1.25 pt/a	B					
	ENLIST ONE	2 pt/a	B					
	ROUNDUP POWERMAX 3	28 fl oz/a	B					
	AMSOL	2.5 % v/v	B					
3	TENDOVO	1.75 qt/a	A	4.0 cd	4.5 a-d	0.0 a	3.3 c	88.3 bcd
	ENLIST ONE	2 pt/a	B					
	ROUNDUP POWERMAX 3	28 fl oz/a	B					
	AMSOL	2.5 % v/v	B					
4	TENDOVO	1.75 qt/a	A	4.8 bcd	5.3 ab	0.0 a	0.0 e	85.0 cde
	DUAL MAGNUM	1.25 pt/a	C					
	ENLIST ONE	2 pt/a	C					
	ROUNDUP POWERMAX 3	28 fl oz/a	C					
	AMSOL	2.5 % v/v	C					
5	BOUNDARY	3 pt/a	A	6.0 abc	5.8 a	0.0 a	5.0 b	80.0 efg
	DUAL MAGNUM	1.25 pt/a	B					
	ENLIST ONE	2 pt/a	B					
	ROUNDUP POWERMAX 3	28 fl oz/a	B					
	AMSOL	2.5 % v/v	B					
6	BOUNDARY	3 pt/a	A	3.3 cd	5.0 abc	0.0 a	0.0 e	85.0 cde
	DUAL MAGNUM	1.25 pt/a	C					
	ENLIST ONE	2 pt/a	C					
	ROUNDUP POWERMAX 3	28 fl oz/a	C					
	AMSOL	2.5 % v/v	C					
7	ZIDUA PRO	6 fl oz/a	A	8.5 a	6.0 a	0.0 a	5.0 b	85.0 cde
	DUAL MAGNUM	1.25 pt/a	B					
	ENLIST ONE	2 pt/a	B					
	ROUNDUP POWERMAX 3	28 fl oz/a	B					
	AMSOL	2.5 % v/v	B					
8	ZIDUA PRO	6 fl oz/a	A	5.0 bcd	4.5 a-d	0.0 a	0.0 e	80.0 efg
	DUAL MAGNUM	1.25 pt/a	C					
	ENLIST ONE	2 pt/a	C					
	ROUNDUP POWERMAX 3	28 fl oz/a	C					
	AMSOL	2.5 % v/v	C					
9	FIERCE EZ	6 fl oz/a	A	6.0 abc	4.8 a-d	0.0 a	35.0 a	83.3 def
	PERPETUO	6 fl oz/a	B					
	ENLIST ONE	2 pt/a	B					
	ROUNDUP POWERMAX 3	28 fl oz/a	B					
	COC	1 % v/v	B					
	AMSOL	2.5 % v/v	B					
10	FIERCE MTZ	16 fl oz/a	A	4.5 bcd	4.0 a-d	0.0 a	35.0 a	86.3 cde
	PERPETUO	6 fl oz/a	B					
	ENLIST ONE	2 pt/a	B					
	ROUNDUP POWERMAX 3	28 fl oz/a	B					
	COC	1 % v/v	B					
	AMSOL	2.5 % v/v	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.

Due to missing data, larger LSD values (col. 5: >=8.40 and <=9.12) are used for mean comparisons of treatment pairs with missing data.

* Adjusted means

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

^Calculated from residual.

Purdue Weed Science

Weed Control Programs in Enlist Soybean

Trial ID: 23-MGS-Soy-03
 Protocol ID: 23-MGS-Soy-03 Location: Trial Year: 2023
 Project ID: Project ID 2: Project ID 3:
 Study Director: Dr. Bill Johnson Sponsor Contact: Taylor Miller
 Investigator: Dr. Bill Johnson

Assessed By	Marcelo Zimmer						
Rating Date	May-22-2023	May-29-2023	Jun-12-2023	Jun-17-2023	Jun-9-2023		
Rating Type	PHYGEN	PHYGEN	PHYGEN	PHYGEN	CONTRO		
Rating Unit/Min/Max	% , 0, 100	% , 0, 100	% , 0, 100	% , 0, 100	% , 0, 100		
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max		
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean		
Crop Variety	Stine 29 EB62	Stine 29 EB62	Stine 29 EB62	Stine 29 EB62	Stine 29 EB62		
Pest Code					AMATA		
Pest Scientific Name					Amaranthus x ta>		
Pest Name					common water he>		
Rating Timing	7 DA-E	14 DA-E	28 DA-E	AT POST C	AT POST B		
ARM Action Codes	EC	EC	EC	EC	EC		
Trt Treatment	Rate	Appl	1*	2*	3*	8*	4*
No. Name	Rate Unit	Code					
11 FIERCE XLT	4 oz/a	A	3.5 cd	4.0 a-d	0.0 a	35.0 a	95.0 a
PERPETUO	6 fl oz/a	B					
ENLIST ONE	2 pt/a	B					
ROUNDUP POWERMAX 3	28 fl oz/a	B					
COC	1 % v/v	B					
AMSOL	2.5 % v/v	B					
12 MOCCASIN MTZ	2.67 pt/a	A	5.0 bcd	4.5 a-d	0.0 a	0.0 e	77.5 fg
INTERMOC	64 fl oz/a	C					
AMSOL	2 lb ai/a	C					
13 PREVIEW 2.1 SC	21 fl oz/a	A	5.3 a-d	4.0 a-d	0.0 a	0.0 e	89.0 a-d
INTERMOC	64 fl oz/a	C					
AMSOL	2 lb ai/a	C					
14 PREVIEW 2.1 SC	21 fl oz/a	A	6.5 abc	6.0 a	0.0 a	0.0 e	94.8 ab
MOCCASIN	1.1 pt/a	A					
INTERMOC	64 fl oz/a	C					
AMSOL	2 lb ai/a	C					
15 PREVIEW 2.1 SC	21 fl oz/a	A	7.5 ab	5.8 a	0.0 a	0.0 e	90.3 abc
INTERMOC	64 fl oz/a	C					
VELEXI	12.8 fl oz/a	C					
AMSOL	2 lb ai/a	C					
16 TAILWIND	24 fl oz/a	A	2.3 d	3.0 cd	0.0 a	0.0 e	70.0 hi
17 TAILWIND	24 fl oz/a	A	2.0 d	2.8 d	0.0 a	0.0 e	76.3 gh
TEMPER	31 fl oz/a	B					
AMSOL	17 lb ai/100 gal	B					
18 TAILWIND	24 fl oz/a	A	2.3 d	3.0 cd	0.0 a	0.0 e	68.8 i
TEMPER HL	24.8 fl oz/a	B					
AMSOL	17 lb ai/100 gal	B					
19 TAILWIND	24 fl oz/a	A	3.3 cd	3.5 bcd	0.0 a	1.5 d	73.8 ghi
TEMPER MORE	41 fl oz/a	B					
POWERAL	8 fl oz/a	B					
AMSOL	17 lb ai/100 gal	B					
LSD P=.05			3.44	2.04	.	1.00	6.64
Standard Deviation			2.42	1.44	0.00	0.71	4.68
CV			52.55	32.19	0.0	10.2	5.63
Levene's Prob(F)			0.001*	0.135	.	0.00*	0.677
P(Shapiro-Wilk)^			0.5725	0.8681	.	0.0*	0.3745
P(Skewness)^			0.5982	0.8942	.	0.0*	0.6099
P(Kurtosis)^			0.7324	0.9096	.	0.0*	0.886
Replicate F			1.192	2.380	0.000	0.176	3.058
Replicate Prob(F)			0.3221	0.0804	1.0000	0.9122	0.0364
Treatment F			2.250	2.060	0.000	1364.614	10.891
Treatment Prob(F)			0.0133	0.0242	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. 5: >=8.40 and <=9.12) are used for mean comparisons of treatment pairs with missing data.

* Adjusted means

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

^Calculated from residual.

Purdue Weed Science

Weed Control Programs in Enlist Soybean

Trial ID: 23-MGS-Soy-03
 Protocol ID: 23-MGS-Soy-03 Location: Trial Year: 2023
 Project ID: Project ID 2: Project ID 3:
 Study Director: Dr. Bill Johnson Sponsor Contact: Taylor Miller
 Investigator: Dr. Bill Johnson

				Marcelo Zimmer	Claudia Bland	Marcelo Zimmer	Marcelo Zimmer
				Jun-17-2023	Jun-23-2023	Jun-30-2023	Jul-7-2023
				CONTRO	CONTRO	CONTRO	CONTRO
				% , 0, 100	% , 0, 100	% , 0, 100	% , 0, 100
				Glycine max	Glycine max	Glycine max	Glycine max
				Soybean	Soybean	Soybean	Soybean
				Stine 29 EB62	Stine 29 EB62	Stine 29 EB62	Stine 29 EB62
				AMATA	AMATA	AMATA	AMATA
				Amaranthus x ta>	Amaranthus x ta>	Amaranthus x ta>	Amaranthus x ta>
				common water he>	common water he>	common water he>	common water he>
				AT POST C	14 DA-B	14 DA-C	28 DA-B
				EC	EC	EC	EC
Trt	Treatment	Rate	Appl	6*	9*	11*	13*
No.	Name	Rate Unit	Code				
1	NONTREATED			0.0	0.0	0.0	0.0
2	TENDOVO	1.75 qt/a	A	96.0 abc	94.5 ab	94.5 ab	91.5 a-d
	DUAL MAGNUM	1.25 pt/a	B				
	ENLIST ONE	2 pt/a	B				
	ROUNDUP POWERMAX 3	28 fl oz/a	B				
	AMSOL	2.5 % v/v	B				
3	TENDOVO	1.75 qt/a	A	93.3 abc	91.8 b	92.0 bc	83.8 de
	ENLIST ONE	2 pt/a	B				
	ROUNDUP POWERMAX 3	28 fl oz/a	B				
	AMSOL	2.5 % v/v	B				
4	TENDOVO	1.75 qt/a	A	73.8 g	80.0 de	91.0 bc	97.3 a
	DUAL MAGNUM	1.25 pt/a	C				
	ENLIST ONE	2 pt/a	C				
	ROUNDUP POWERMAX 3	28 fl oz/a	C				
	AMSOL	2.5 % v/v	C				
5	BOUNDARY	3 pt/a	A	93.8 abc	90.0 bc	88.3 cd	84.5 cde
	DUAL MAGNUM	1.25 pt/a	B				
	ENLIST ONE	2 pt/a	B				
	ROUNDUP POWERMAX 3	28 fl oz/a	B				
	AMSOL	2.5 % v/v	B				
6	BOUNDARY	3 pt/a	A	76.3 fg	77.5 de	90.0 bcd	94.0 abc
	DUAL MAGNUM	1.25 pt/a	C				
	ENLIST ONE	2 pt/a	C				
	ROUNDUP POWERMAX 3	28 fl oz/a	C				
	AMSOL	2.5 % v/v	C				
7	ZIDUA PRO	6 fl oz/a	A	95.3 abc	94.0 ab	94.0 ab	91.0 a-d
	DUAL MAGNUM	1.25 pt/a	B				
	ENLIST ONE	2 pt/a	B				
	ROUNDUP POWERMAX 3	28 fl oz/a	B				
	AMSOL	2.5 % v/v	B				
8	ZIDUA PRO	6 fl oz/a	A	66.3 h	83.8 cd	88.3 cd	94.8 ab
	DUAL MAGNUM	1.25 pt/a	C				
	ENLIST ONE	2 pt/a	C				
	ROUNDUP POWERMAX 3	28 fl oz/a	C				
	AMSOL	2.5 % v/v	C				
9	FIERCE EZ	6 fl oz/a	A	97.0 ab	94.5 ab	93.3 abc	92.0 a-d
	PERPETUO	6 fl oz/a	B				
	ENLIST ONE	2 pt/a	B				
	ROUNDUP POWERMAX 3	28 fl oz/a	B				
	COC	1 % v/v	B				
	AMSOL	2.5 % v/v	B				
10	FIERCE MTZ	16 fl oz/a	A	96.3 abc	94.3 ab	94.0 ab	88.8 a-d
	PERPETUO	6 fl oz/a	B				
	ENLIST ONE	2 pt/a	B				
	ROUNDUP POWERMAX 3	28 fl oz/a	B				
	COC	1 % v/v	B				
	AMSOL	2.5 % v/v	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.

Due to missing data, larger LSD values (col. 5: >=8.40 and <=9.12) are used for mean comparisons of treatment pairs with missing data.

* Adjusted means

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

^Calculated from residual.

Purdue Weed Science

Weed Control Programs in Enlist Soybean

Trial ID: 23-MGS-Soy-03
 Protocol ID: 23-MGS-Soy-03 Location: Trial Year: 2023
 Project ID: Project ID 2: Project ID 3:
 Study Director: Dr. Bill Johnson Sponsor Contact: Taylor Miller
 Investigator: Dr. Bill Johnson

Assessed By	Marcelo Zimmer		Claudia Bland	Marcelo Zimmer	Marcelo Zimmer	
Rating Date	Jun-17-2023		Jun-23-2023	Jun-30-2023	Jul-7-2023	
Rating Type	CONTRO		CONTRO	CONTRO	CONTRO	
Rating Unit/Min/Max	%, 0, 100		%, 0, 100	%, 0, 100	%, 0, 100	
Crop Scientific Name	Glycine max		Glycine max	Glycine max	Glycine max	
Crop Name	Soybean		Soybean	Soybean	Soybean	
Crop Variety	Stine 29 EB62		Stine 29 EB62	Stine 29 EB62	Stine 29 EB62	
Pest Code	AMATA		AMATA	AMATA	AMATA	
Pest Scientific Name	Amaranthus x ta>		Amaranthus x ta>	Amaranthus x ta>	Amaranthus x ta>	
Pest Name	common water he>		common water he>	common water he>	common water he>	
Rating Timing	AT POST C		14 DA-B	14 DA-C	28 DA-B	
ARM Action Codes	EC		EC	EC	EC	
Trt Treatment	Rate	Appl	6*	9*	11*	13*
No. Name	Rate Unit	Code				
11 FIERCE XLT	4 oz/a	A	99.0 a	98.5 a	97.8 a	95.0 ab
PERPETUO	6 fl oz/a	B				
ENLIST ONE	2 pt/a	B				
ROUNDUP POWERMAX 3	28 fl oz/a	B				
COC	1 % v/v	B				
AMSOL	2.5 % v/v	B				
12 MOCCASIN MTZ	2.67 pt/a	A	61.3 h	90.8 b	85.0 d	74.5 e
INTERMOC	64 fl oz/a	C				
AMSOL	2 lb ai/a	C				
13 PREVIEW 2.1 SC	21 fl oz/a	A	78.8 fg	91.0 b	94.0 ab	89.0 a-d
INTERMOC	64 fl oz/a	C				
AMSOL	2 lb ai/a	C				
14 PREVIEW 2.1 SC	21 fl oz/a	A	82.5 ef	91.5 b	91.3 bc	85.8 bcd
MOCCASIN	1.1 pt/a	A				
INTERMOC	64 fl oz/a	C				
AMSOL	2 lb ai/a	C				
15 PREVIEW 2.1 SC	21 fl oz/a	A	73.8 g	89.0 bc	92.3 abc	85.8 bcd
INTERMOC	64 fl oz/a	C				
VELEXI	12.8 fl oz/a	C				
AMSOL	2 lb ai/a	C				
16 TAILWIND	24 fl oz/a	A	37.5 i	20.0 f	11.3 g	0.0 h
17 TAILWIND	24 fl oz/a	A	89.5 cd	77.5 de	70.0 ef	42.5 g
TEMPER	31 fl oz/a	B				
AMSOL	17 lb ai/100 gal	B				
18 TAILWIND	24 fl oz/a	A	85.8 de	73.8 e	67.5 f	46.3 fg
TEMPER HL	24.8 fl oz/a	B				
AMSOL	17 lb ai/100 gal	B				
19 TAILWIND	24 fl oz/a	A	91.0 bcd	80.0 de	73.3 e	56.3 f
TEMPER MORE	41 fl oz/a	B				
POWERAL	8 fl oz/a	B				
AMSOL	17 lb ai/100 gal	B				
LSD P=.05			6.90	6.37	5.60	10.08
Standard Deviation			4.86	4.48	3.95	7.10
CV			5.88	5.34	4.71	9.17
Levene's Prob(F)			0.177	0.036*	0.073	0.293
P(Shapiro-Wilk)^			0.0051*	0.5772	0.2844	0.1653
P(Skewness)^			0.8118	0.6944	0.0932	0.6208
P(Kurtosis)^			0.0003*	0.8776	0.2056	0.0046*
Replicate F			0.754	1.697	1.719	3.525
Replicate Prob(F)			0.5253	0.1792	0.1747	0.0213
Treatment F			43.231	61.152	103.818	51.403
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.
 Due to missing data, larger LSD values (col. 5: >=8.40 and <=9.12) are used for mean comparisons of treatment pairs with missing data.
 * Adjusted means
 Could not calculate LSD (% mean diff) for columns 3 because error mean square = 0.
 ^Calculated from residual.

Purdue Weed Science

Weed Control Programs in Enlist Soybean

Trial ID: 23-MGS-Soy-03
 Protocol ID: 23-MGS-Soy-03 Location: Trial Year: 2023
 Project ID: Project ID 2: Project ID 3:
 Study Director: Dr. Bill Johnson Sponsor Contact: Taylor Miller
 Investigator: Dr. Bill Johnson

Assessed By			Marcelo Zimmer	Marcelo Zimmer	Marcelo Zimmer	Claudia Bland	Marcelo Zimmer	
Rating Date			Jul-14-2023	Jun-9-2023	Jun-17-2023	Jun-23-2023	Jun-30-2023	
Rating Type			CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	
Rating Unit/Min/Max			% , 0, 100	% , 0, 100	% , 0, 100	% , 0, 100	% , 0, 100	
Crop Scientific Name			Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	
Crop Name			Soybean	Soybean	Soybean	Soybean	Soybean	
Crop Variety			Stine 29 EB62	Stine 29 EB62	Stine 29 EB62	Stine 29 EB62	Stine 29 EB62	
Pest Code			AMATA	SETFA	SETFA	SETFA	SETFA	
Pest Scientific Name			Amaranthus x ta>	Setaria faberi	Setaria faberi	Setaria faberi	Setaria faberi	
Pest Name			common water he>	Giant foxtail	Giant foxtail	Giant foxtail	Giant foxtail	
Rating Timing			28 DA-C	AT POST B	AT POST C	14 DA-B	14 DA-C	
ARM Action Codes			EC	EC	EC	EC	EC	
Trt No.	Treatment Name	Rate	Appl Code	15*	5*	7*	10*	12*
		Rate Unit						
1	NONTREATED			0.0	0.0	0.0	0.0	0.0
2	TENDOVO	1.75 qt/a	A	93.8 ab	97.0 ab	100.0 a	100.0 a	99.3 ab
	DUAL MAGNUM	1.25 pt/a	B					
	ENLIST ONE	2 pt/a	B					
	ROUNDUP POWERMAX 3	28 fl oz/a	B					
	AMSOL	2.5 % v/v	B					
3	TENDOVO	1.75 qt/a	A	80.0 de	93.3 ab	100.0 a	98.8 abc	98.0 ab
	ENLIST ONE	2 pt/a	B					
	ROUNDUP POWERMAX 3	28 fl oz/a	B					
	AMSOL	2.5 % v/v	B					
4	TENDOVO	1.75 qt/a	A	97.3 a	92.0 ab	87.5 cd	92.0 a-d	99.0 ab
	DUAL MAGNUM	1.25 pt/a	C					
	ENLIST ONE	2 pt/a	C					
	ROUNDUP POWERMAX 3	28 fl oz/a	C					
	AMSOL	2.5 % v/v	C					
5	BOUNDARY	3 pt/a	A	87.0 bcd	94.5 ab	99.3 a	99.8 ab	99.0 ab
	DUAL MAGNUM	1.25 pt/a	B					
	ENLIST ONE	2 pt/a	B					
	ROUNDUP POWERMAX 3	28 fl oz/a	B					
	AMSOL	2.5 % v/v	B					
6	BOUNDARY	3 pt/a	A	95.0 ab	99.0 a	99.5 a	99.5 ab	99.5 a
	DUAL MAGNUM	1.25 pt/a	C					
	ENLIST ONE	2 pt/a	C					
	ROUNDUP POWERMAX 3	28 fl oz/a	C					
	AMSOL	2.5 % v/v	C					
7	ZIDUA PRO	6 fl oz/a	A	91.3 abc	94.0 ab	100.0 a	100.0 a	98.8 ab
	DUAL MAGNUM	1.25 pt/a	B					
	ENLIST ONE	2 pt/a	B					
	ROUNDUP POWERMAX 3	28 fl oz/a	B					
	AMSOL	2.5 % v/v	B					
8	ZIDUA PRO	6 fl oz/a	A	95.0 ab	95.8 ab	94.5 ab	95.3 a-d	99.3 ab
	DUAL MAGNUM	1.25 pt/a	C					
	ENLIST ONE	2 pt/a	C					
	ROUNDUP POWERMAX 3	28 fl oz/a	C					
	AMSOL	2.5 % v/v	C					
9	FIERCE EZ	6 fl oz/a	A	89.5 a-d	92.0 ab	100.0 a	100.0 a	99.0 ab
	PERPETUO	6 fl oz/a	B					
	ENLIST ONE	2 pt/a	B					
	ROUNDUP POWERMAX 3	28 fl oz/a	B					
	COC	1 % v/v	B					
	AMSOL	2.5 % v/v	B					
10	FIERCE MTZ	16 fl oz/a	A	86.3 bcd	88.8 bc	99.3 a	99.8 ab	99.0 ab
	PERPETUO	6 fl oz/a	B					
	ENLIST ONE	2 pt/a	B					
	ROUNDUP POWERMAX 3	28 fl oz/a	B					
	COC	1 % v/v	B					
	AMSOL	2.5 % v/v	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.

Due to missing data, larger LSD values (col. 5: >=8.40 and <=9.12) are used for mean comparisons of treatment pairs with missing data.

* Adjusted means

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

^Calculated from residual.

Purdue Weed Science

Weed Control Programs in Enlist Soybean

Trial ID: 23-MGS-Soy-03
 Protocol ID: 23-MGS-Soy-03 Location: Trial Year: 2023
 Project ID: Project ID 2: Project ID 3:
 Study Director: Dr. Bill Johnson Sponsor Contact: Taylor Miller
 Investigator: Dr. Bill Johnson

Assessed By			Marcelo Zimmer	Marcelo Zimmer	Marcelo Zimmer	Claudia Bland	Marcelo Zimmer
Rating Date			Jul-14-2023	Jun-9-2023	Jun-17-2023	Jun-23-2023	Jun-30-2023
Rating Type			CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit/Min/Max			% , 0, 100	% , 0, 100	% , 0, 100	% , 0, 100	% , 0, 100
Crop Scientific Name			Glycine max	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name			Soybean	Soybean	Soybean	Soybean	Soybean
Crop Variety			Stine 29 EB62	Stine 29 EB62	Stine 29 EB62	Stine 29 EB62	Stine 29 EB62
Pest Code			AMATA	SETFA	SETFA	SETFA	SETFA
Pest Scientific Name			Amaranthus x ta>	Setaria faberi	Setaria faberi	Setaria faberi	Setaria faberi
Pest Name			common water he>	Giant foxtail	Giant foxtail	Giant foxtail	Giant foxtail
Rating Timing			28 DA-C	AT POST B	AT POST C	14 DA-B	14 DA-C
ARM Action Codes			EC	EC	EC	EC	EC
Trt Treatment	Rate	Appl	15*	5*	7*	10*	12*
No. Name	Rate Unit	Code					
11 FIERCE XLT	4 oz/a	A	94.3 ab	96.0 ab	100.0 a	100.0 a	99.5 a
PERPETUO	6 fl oz/a	B					
ENLIST ONE	2 pt/a	B					
ROUNDUP POWERMAX 3	28 fl oz/a	B					
COC	1 % v/v	B					
AMSOL	2.5 % v/v	B					
12 MOCCASIN MTZ	2.67 pt/a	A	72.5 e	90.0 abc	91.3 bc	94.5 a-d	97.0 abc
INTERMOC	64 fl oz/a	C					
AMSOL	2 lb ai/a	C					
13 PREVIEW 2.1 SC	21 fl oz/a	A	86.3 bcd	91.0 ab	79.1 e	90.4 d	94.9 a-d
INTERMOC	64 fl oz/a	C					
AMSOL	2 lb ai/a	C					
14 PREVIEW 2.1 SC	21 fl oz/a	A	82.5 cd	96.3 ab	87.0 cd	93.3 a-d	93.3 a-d
MOCCASIN	1.1 pt/a	A					
INTERMOC	64 fl oz/a	C					
AMSOL	2 lb ai/a	C					
15 PREVIEW 2.1 SC	21 fl oz/a	A	86.3 bcd	89.5 bc	85.8 cd	90.8 cd	92.3 a-d
INTERMOC	64 fl oz/a	C					
VELEXI	12.8 fl oz/a	C					
AMSOL	2 lb ai/a	C					
16 TAILWIND	24 fl oz/a	A	0.0 h	82.5 cd	81.3 de	60.0 e	60.0 e
17 TAILWIND	24 fl oz/a	A	27.5 f	82.5 cd	94.5 ab	95.3 a-d	91.5 bcd
TEMPER	31 fl oz/a	B					
AMSOL	17 lb ai/100 gal	B					
18 TAILWIND	24 fl oz/a	A	17.5 g	77.5 d	90.8 bc	90.0 d	89.5 cd
TEMPER HL	24.8 fl oz/a	B					
AMSOL	17 lb ai/100 gal	B					
19 TAILWIND	24 fl oz/a	A	23.8 fg	75.0 d	91.3 bc	91.5 bcd	87.5 d
TEMPER MORE	41 fl oz/a	B					
POWERAL	8 fl oz/a	B					
AMSOL	17 lb ai/100 gal	B					
LSD P=.05			9.69	8.40	6.62	8.36	7.77
Standard Deviation			6.83	5.92	4.66	5.89	5.47
CV			9.41	6.54	4.98	6.27	5.8
Levene's Prob(F)			0.127	0.815	0.634	0.71	0.342
P(Shapiro-Wilk)^			0.0555	0.023*	0.2647	0.0*	0.0*
P(Skewness)^			0.0617	0.028*	0.5625	0.0*	0.0*
P(Kurtosis)^			0.0004*	0.0*	0.3312	0.0*	0.0*
Replicate F			0.479	8.640	4.490	2.633	2.733
Replicate Prob(F)			0.6983	0.0001	0.0072	0.0600	0.0534
Treatment F			84.881	5.313	8.218	9.948	11.736
Treatment Prob(F)			0.0001	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.

Due to missing data, larger LSD values (col. 5: >=8.40 and <=9.12) are used for mean comparisons of treatment pairs with missing data.

* Adjusted means

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

^Calculated from residual.

Purdue Weed Science

Weed Control Programs in Enlist Soybean

Trial ID: 23-MGS-Soy-03
 Protocol ID: 23-MGS-Soy-03 Location: Trial Year: 2023
 Project ID: Project ID 2: Project ID 3:
 Study Director: Dr. Bill Johnson Sponsor Contact: Taylor Miller
 Investigator: Dr. Bill Johnson

Assessed By				Marcelo Zimmer	Marcelo Zimmer	Lucas Maia
Rating Date				Jul-7-2023	Jul-14-2023	Oct-8-2023
Rating Type				CONTRO	CONTRO	YIELD
Rating Unit/Min/Max				%, 0, 100	%, 0, 100	BU, -, -
Crop Scientific Name				Glycine max	Glycine max	Glycine max
Crop Name				Soybean	Soybean	Soybean
Crop Variety				Stine 29 EB62	Stine 29 EB62	Stine 29 EB62
Pest Code				SETFA	SETFA	
Pest Scientific Name				Setaria faberi	Setaria faberi	
Pest Name				Giant foxtail	Giant foxtail	
Rating Timing				28 DA-B	28 DA-C	AT HARVEST
ARM Action Codes				EC	EC	TY1
Trt No.	Treatment Name	Rate	Appl Code	14*	16*	19*
		Rate Unit				
1	NONTREATED			0.0	0.0	42.2 e
2	TENDOVO	1.75 qt/a	A	99.3 ab	98.8 a	70.2 a-d
	DUAL MAGNUM	1.25 pt/a	B			
	ENLIST ONE	2 pt/a	B			
	ROUNDUP POWERMAX 3	28 fl oz/a	B			
	AMSOL	2.5 % v/v	B			
3	TENDOVO	1.75 qt/a	A	96.5 abc	92.3 a	75.8 ab
	ENLIST ONE	2 pt/a	B			
	ROUNDUP POWERMAX 3	28 fl oz/a	B			
	AMSOL	2.5 % v/v	B			
4	TENDOVO	1.75 qt/a	A	99.0 ab	98.5 a	80.1 a
	DUAL MAGNUM	1.25 pt/a	C			
	ENLIST ONE	2 pt/a	C			
	ROUNDUP POWERMAX 3	28 fl oz/a	C			
	AMSOL	2.5 % v/v	C			
5	BOUNDARY	3 pt/a	A	98.5 ab	98.0 a	78.3 ab
	DUAL MAGNUM	1.25 pt/a	B			
	ENLIST ONE	2 pt/a	B			
	ROUNDUP POWERMAX 3	28 fl oz/a	B			
	AMSOL	2.5 % v/v	B			
6	BOUNDARY	3 pt/a	A	99.5 a	98.8 a	75.6 ab
	DUAL MAGNUM	1.25 pt/a	C			
	ENLIST ONE	2 pt/a	C			
	ROUNDUP POWERMAX 3	28 fl oz/a	C			
	AMSOL	2.5 % v/v	C			
7	ZIDUA PRO	6 fl oz/a	A	98.3 ab	96.3 a	76.1 ab
	DUAL MAGNUM	1.25 pt/a	B			
	ENLIST ONE	2 pt/a	B			
	ROUNDUP POWERMAX 3	28 fl oz/a	B			
	AMSOL	2.5 % v/v	B			
8	ZIDUA PRO	6 fl oz/a	A	99.3 ab	98.5 a	80.3 a
	DUAL MAGNUM	1.25 pt/a	C			
	ENLIST ONE	2 pt/a	C			
	ROUNDUP POWERMAX 3	28 fl oz/a	C			
	AMSOL	2.5 % v/v	C			
9	FIERCE EZ	6 fl oz/a	A	99.0 ab	97.0 a	75.0 abc
	PERPETUO	6 fl oz/a	B			
	ENLIST ONE	2 pt/a	B			
	ROUNDUP POWERMAX 3	28 fl oz/a	B			
	COC	1 % v/v	B			
	AMSOL	2.5 % v/v	B			
10	FIERCE MTZ	16 fl oz/a	A	98.3 ab	96.0 a	74.2 abc
	PERPETUO	6 fl oz/a	B			
	ENLIST ONE	2 pt/a	B			
	ROUNDUP POWERMAX 3	28 fl oz/a	B			
	COC	1 % v/v	B			
	AMSOL	2.5 % v/v	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.

Due to missing data, larger LSD values (col. 5: >=8.40 and <=9.12) are used for mean comparisons of treatment pairs with missing data.

* Adjusted means

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^Calculated from residual.

Purdue Weed Science

Weed Control Programs in Enlist Soybean

Trial ID: 23-MGS-Soy-03
 Protocol ID: 23-MGS-Soy-03 Location: Trial Year: 2023
 Project ID: Project ID 2: Project ID 3:
 Study Director: Dr. Bill Johnson Sponsor Contact: Taylor Miller
 Investigator: Dr. Bill Johnson

Assessed By	Marcelo Zimmer		Marcelo Zimmer	Lucas Maia	
Rating Date	Jul-7-2023		Jul-14-2023	Oct-8-2023	
Rating Type	CONTRO		CONTRO	YIELD	
Rating Unit/Min/Max	%, 0, 100		%, 0, 100	BU, -, -	
Crop Scientific Name	Glycine max		Glycine max	Glycine max	
Crop Name	Soybean		Soybean	Soybean	
Crop Variety	Stine 29 EB62		Stine 29 EB62	Stine 29 EB62	
Pest Code	SETFA		SETFA		
Pest Scientific Name	Setaria faberi		Setaria faberi		
Pest Name	Giant foxtail		Giant foxtail		
Rating Timing	28 DA-B		28 DA-C	AT HARVEST	
ARM Action Codes	EC		EC	TY1	
Trt Treatment	Rate	Appl	14*	16*	19*
No. Name	Rate Unit	Code			
11 FIERCE XLT	4 oz/a	A	99.3 ab	98.3 a	72.2 a-d
PERPETUO	6 fl oz/a	B			
ENLIST ONE	2 pt/a	B			
ROUNDUP POWERMAX 3	28 fl oz/a	B			
COC	1 % v/v	B			
AMSOL	2.5 % v/v	B			
12 MOCCASIN MTZ	2.67 pt/a	A	96.3 abc	91.8 a	67.8 bcd
INTERMOC	64 fl oz/a	C			
AMSOL	2 lb ai/a	C			
13 PREVIEW 2.1 SC	21 fl oz/a	A	95.4 abc	94.4 a	79.2 ab
INTERMOC	64 fl oz/a	C			
AMSOL	2 lb ai/a	C			
14 PREVIEW 2.1 SC	21 fl oz/a	A	92.0 a-d	93.3 a	70.1 a-d
MOCCASIN	1.1 pt/a	A			
INTERMOC	64 fl oz/a	C			
AMSOL	2 lb ai/a	C			
15 PREVIEW 2.1 SC	21 fl oz/a	A	91.8 bcd	92.0 a	76.7 ab
INTERMOC	64 fl oz/a	C			
VELEXI	12.8 fl oz/a	C			
AMSOL	2 lb ai/a	C			
16 TAILWIND	24 fl oz/a	A	60.0 e	58.8 c	48.6 e
17 TAILWIND	24 fl oz/a	A	90.0 cd	78.8 b	61.5 d
TEMPER	31 fl oz/a	B			
AMSOL	17 lb ai/100 gal	B			
18 TAILWIND	24 fl oz/a	A	85.0 d	77.5 b	62.2 d
TEMPER HL	24.8 fl oz/a	B			
AMSOL	17 lb ai/100 gal	B			
19 TAILWIND	24 fl oz/a	A	86.3 d	73.8 b	63.8 cd
TEMPER MORE	41 fl oz/a	B			
POWERAL	8 fl oz/a	B			
AMSOL	17 lb ai/100 gal	B			
LSD P=.05			7.68	8.35	11.64
Standard Deviation			5.40	5.88	8.21
CV			5.78	6.48	11.73
Levene's Prob(F)			0.606	0.689	0.003*
P(Shapiro-Wilk)^			0.0*	0.0*	0.0001*
P(Skewness)^			0.0*	0.0004*	0.001*
P(Kurtosis)^			0.0*	0.0*	0.0*
Replicate F			2.542	1.392	0.354
Replicate Prob(F)			0.0667	0.2562	0.7867
Treatment F			12.501	14.370	6.475
Treatment Prob(F)			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.

Due to missing data, larger LSD values (col. 5: >=8.40 and <=9.12) are used for mean comparisons of treatment pairs with missing data.

* Adjusted means

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

^Calculated from residual.

Purdue Weed Science

Weed Control Programs in Enlist Soybean

Trial ID: 23-MGS-Soy-03
Protocol ID: 23-MGS-Soy-03 Location: Trial Year: 2023
Project ID: Project ID 2: Project ID 3:
Study Director: Dr. Bill Johnson Sponsor Contact: Taylor Miller
Investigator: Dr. Bill Johnson

Assessed By

Marcelo Zimmer = MZ

Rating Type

PHYGEN = phytotoxicity - general / injury

CONTRO = control / burndown or knockdown

YIELD = yield

Rating Unit/Min/Max

%, 0, 100 = percent

BU, , = bushel

Pest Code

AMATA, Amaranthus x tamariscinus, common water hemp = US

SETFA, Setaria faberi, Giant foxtail = US

ARM Action Codes

EC = Do not analyze untreated check, while still reporting treatment mean on AOV Means Table

TY1 = $5.58461538 * [17] * (100 - [18]) / 87$