Purdue Weed Science

Valent Actives in a Liberty Link System

Trial ID: 20S-MGS-SOY-09 Location: Lafayette, IN Trial Year: 2020
Protocol ID: 20S-MGS-SOY-09 Investigator (Creator): Eric Ott
Project ID: Study Director:
Sponsor Contact:

General Trial Information
Investigator: Eric Ott

Trial Status: E established **Trial Reliability:** 2 partially usable data
Initiation Date: 5/25/2020

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

Latitude of LL Corner °: 40.271422 N
Longitude of LL Corner °: -86.8814144 W

Conducted Under GLP: No
Conducted Under GEP: No
Study Rules: Default

No.	Guideline	Discipline	Description
1.	ADM-C-PUB	CO	Confidentiality - Public Trial - No Secrecy Agreement Required

Objectives:
To compare Valent PREE and POST actives in a program approach in a Liberty crop ping system. Fierce EZ (6 fl oz/A) and Fierce MTZ (1 pt/A) will be compared to Authority MTZ (11 oz/A) and Zidua Pro (4.5 fl oz/A). Prepetuo (6 fl oz/A) will b e compared to Anthem Maxx @ 2.5 fl oz/A. Measures of success is weed control at 21, 42 & 56 DAP with acceptable crop response.

Conclusions:
Liberty
See test subject list
Liberty
See test subject list

Role: INVEST investigator
Investigator: Eric Ott

Crop Description
Crop 1: C GLXM01 Glycine max GMO Soybean, Liberty Link **BBCH Scale:** BSOY
Stage Scale: BBCH
Variety: Stine 32EA12
Seed Size: 150 TSWG
Planting Date: 5/25/2020 **Planting Rate:** 157000 S/A
Depth: 4.5 cm
Rows per Plot: 4 **Planting Method:** PLANTD planted
Row Spacing: 30 IN **Planting Equipment:** PP plot planter
Soil Temperature: 89 F
Emergence Date: 5/30/2020

Pest Description
Pest 1 Type: W **Code:** ABUTH Abutilon theophrasti
Common Name: velvetleaf **Stage Scale:** BBCH

Pest 2 Type: W **Code:** AMATA Amaranthus x tamariscinus
Common Name: Common waterhemp **Stage Scale:** BBCH

Pest 3 Type: W **Code:** SIDSP Sida spinosa
Common Name: Prickly sida **Stage Scale:** BBCH

Site and Design
Treated Plot Width: 6.67 FT
Treated Plot Length: 25 FT
Treated Plot Area: 166.75 FT2 **Treatments:** 9 **Tillage Type:** NOTILL no-till
Replications: 4 **Study Design:** RACOBL Randomized Complete Block (RCB)

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

Application Description

	A	B	C	D
Application Date	5/26/2020	7/1/2020	1/1/2020	7/1/2020
Appl. Start Time	11:56 AM	3:00 PM		3:00 PM
Appl. Stop Time	12:06 PM	3:30 PM		3:30 PM
Interval to Prev. Appl.	146 DAYS	36 DAYS		36 DAYS
Application Method	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing	PREPRE	EAREAR	POSPOS	LAPLAP
Application Placement	BROADC	BROADC	BROADC	BROADC
Applied By	M. Zimmer	R. Vagedes		R. Vagedes
Air Temperature Start, Stop	82, 82 F	90, 90 F		90, 90 F
% Relative Humidity Start, Stop	62, 62	54, 54		54, 54
Wind Velocity+Dir. Start	0 MPH, S	0 MPH, ESE		0 MPH, ESE
Wind Velocity+Dir. Stop	0.6 MPH, S	1.1 MPH, ESE		1.8 MPH, ESE
Wind Velocity+Dir. Max	1.2 MPH, S	1.8 MPH, ESE		1.1 MPH, ESE
Wet Leaves (Y/N)	N, no	N, no		N, no
Soil Temperature	81 F	92 F		92 F
Soil Moisture	NORMAL	SLIWET	na	SLIWET
% Cloud Cover	95	40		40

Protocol Application Directions:
One preemergence application fb one postemergence application, except for Scout fb Scout treatment, which is two postemergence applications.

Crop Stage At Each Application

	A	B	C	D
Crop 1 Code, BBCH Scale	GLXM01, BSOY	GLXM01, BSOY	GLXM01, BSOY	GLXM01, BSOY
Days after Emergence	-4	32	-150	32
Stage Majority, Percent	00, 100	13, -		13, -
Stage Minimum, Percent		13, -		13, -
Stage Maximum, Percent		14, -		14, -
Height Average		3.5 IN		3.5 IN
Height Minimum, Maximum		3, 4		3, 4

Pest Stage At Each Application

	A	B	C	D
Pest 1 Code, Type, Scale	ABUTH, W, BBCH	ABUTH, W, BBCH	ABUTH, W, BBCH	ABUTH, W, BBCH
Stage Majority, Percent	0, 100	18, -		18, -
Stage Minimum, Percent		14, -		16, -
Stage Maximum, Percent		18, -		18, -
Height Average		8 IN		8 IN
Height Minimum, Maximum		6, 8		6, 8
Density Average		0.5 FT2		0.1 FT2
Density Minimum, Maximum		0, 0.5		0, 0.1
Pest 2 Code, Type, Scale	AMATA, W, BBCH	AMATA, W, BBCH	AMATA, W, BBCH	AMATA, W, BBCH
Stage Majority, Percent	0, 100	16, -		16, -
Stage Minimum, Percent		12, -		12, -
Stage Maximum, Percent		18, -		18, -
Height Average		3 IN		3 IN
Height Minimum, Maximum		0.25, 6		0.25, 6
Density Average		15 FT2		0.5 FT2
Density Minimum, Maximum		10, 25		0, 0.5
Pest 3 Code, Type, Scale	SIDSP, W, BBCH	SIDSP, W, BBCH	SIDSP, W, BBCH	SIDSP, W, BBCH
Stage Majority, Percent	0, 100	18, -		18, -
Stage Minimum, Percent		16, -		16, -
Stage Maximum, Percent		18, -		18, -
Height Average		4 IN		4 IN
Height Minimum, Maximum		2, 6		2, 6
Density Average		7 FT2		0.2 FT2
Density Minimum, Maximum		5, 10		0, 0.5

Application Equipment

	A	B	C	D
Appl. Equipment	CO2 BACKPACK	CO2 BACKPACK		CO2 BACKPACK
Equipment Type	BACSPR	BACSPR		BACSPR
Nozzle Model	XR8002	XR8002		XR8002
Nozzle Type	FLAFXR	FLAFXR		FLAFXR
Nozzle Spacing	20 IN	20 IN		20 IN
Nozzles/Row	4	4		4
Boom Length	6.67 FT	6.67 FT		6.67 FT
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	0 mL	0 mL		0 mL
Mix Size	945 mL	945 mL		945 mL
Propellant	COMCO2	COMCO2		COMCO2

Treatment Appl. Comments

Trt No Treatment Application Comment

2 Delayed weed emergence due to dry weather in June delayed application B. Therefore, application C was not applied due to zero weed emergence following application B.

3 Delayed weed emergence due to dry weather in June delayed application B. Therefore, application C was not applied due to zero weed emergence following application B.

3 Plot 804 was not sprayed due to sprayer error.

2 Plot 702 was sprayed short due to sprayer error.

Notes

Context	Date	By	Notes
STATUS	10/2/2020	Dr. Bill Johnson	Automatically added by ARM: Trial Status updated to 'E' when Initiation Date entered.

Instructions:

1. Please include all treatments in test, even if they do not fit the area in which the test is conducted.
2. Soybean row spacing should be 30".
3. Use 20 GPA for all Scout applications.
4. Select Max does not need to be applied if v. corn is not in test area.

B = 2 inch weeds
C = 21 days after application "B"
D = V6 soybeans

Cropping Considerations:

21 day rating should occur prior to Scout application.

Data to Collect:

Efficacy: 21, 42 and 56 days after pree application. Crop tolerance: 21, 42 and 56 days after pree application.

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Pest Type					W, Weed	W, Weed	W, Weed
Pest Code					AMATA	ABUTH	SIDSP
Pest Scientific Name					Amaranthus x ta>	Abutilon theoph>	Sida spinosa
Pest Name					Common waterhemp	velvetleaf	Prickly sida
Crop Type, Code				C, GLXM01	C, GLXM01	C, GLXM01	C, GLXM01
BBCH Scale				BSOY	BSOY	BSOY	BSOY
Crop Scientific Name				Glycine max GMO	Glycine max GMO	Glycine max GMO	Glycine max GMO
Crop Name				Soybean, Libert>	Soybean, Libert>	Soybean, Libert>	Soybean, Libert>
Rating Date				7/1/2020	7/1/2020	7/1/2020	7/1/2020
Part Rated				PLANT, C	PLANT, P	PLANT, P	PLANT, P
Rating Type				PHYGEN	CONTRO	CONTRO	CONTRO
Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
Number of Subsamples				1	1	1	1
Rating Timing				0 DAB	0 DAB	0 DAB	0 DAB
Days After First/Last Applic.				182, 36	182, 36	182, 36	182, 36
Plant-Eval Interval				37 DP-1	37 DP-1	37 DP-1	37 DP-1
Days After Emergence				32 DE-1	32 DE-1	32 DE-1	32 DE-1
Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1	2	3	4
1	UNTREATED CHECK				0.0	0.0	0.0	0.0
2	SCOUT (GLUFOSINATE)	32	FL OZ/A	B	0.0 -			
	DRY AMMONIUM SULFATE	3	LB/A	B				
	SCOUT (GLUFOSINATE)	32	FL OZ/A	C				
	SELECT MAX	9	FL OZ/A	C				
	INDUCE	0.25	% V/V	C				
	DRY AMMONIUM SULFATE	3	LB/A	C				
3	SCOUT (GLUFOSINATE)	32	FL OZ/A	B	0.0 -			
	PERPETUO	6	FL OZ/A	B				
	DRY AMMONIUM SULFATE	3	LB/A	B				
	SCOUT (GLUFOSINATE)	32	FL OZ/A	C				
	SELECT MAX	9	FL OZ/A	C				
	INDUCE	0.25	% V/V	C				
	DRY AMMONIUM SULFATE	3	LB/A	C				
4	FIERCE EZ (2065)	6	FL OZ/A	A	0.0 -	99.8 -	99.3 -	99.3 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				
5	FIERCE MTZ SC (2030)	16	FL OZ/A	A	0.0 -	99.8 -	99.3 -	99.3 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				
6	FIERCE EZ (2065)	6	FL OZ/A	A	0.0 -	99.8 -	99.3 -	99.3 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	PERPETUO	6	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				
7	FIERCE MTZ SC (2030)	16	FL OZ/A	A	0.0 -	99.3 -	99.8 -	99.8 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	PERPETUO	6	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				
8	AUTHORITY MTZ	11	OZ WT/A	A	0.0 -	98.8 -	99.3 -	98.5 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	ANTHEM MAXX	2.5	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				

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:Average=1,5,6,7,8,9,10,11,12,13,14,15,16
Could not calculate LSD (% mean diff) for columns 1,5,8,9,10,11,12,13,14,15,16 because error mean square = 0.
^Calculated from residual.

Pest Type				W, Weed	W, Weed	W, Weed
Pest Code				AMATA	ABUTH	SIDSP
Pest Scientific Name				Amaranthus x ta>	Abutilon theoph>	Sida spinosa
Pest Name				Common waterhemp	velvetleaf	Prickly sida
Crop Type, Code			C, GLXM01	C, GLXM01	C, GLXM01	C, GLXM01
BBCH Scale			BSOY	BSOY	BSOY	BSOY
Crop Scientific Name			Glycine max GMO	Glycine max GMO	Glycine max GMO	Glycine max GMO
Crop Name			Soybean, Libert>	Soybean, Libert>	Soybean, Libert>	Soybean, Libert>
Rating Date			7/1/2020	7/1/2020	7/1/2020	7/1/2020
Part Rated			PLANT, C	PLANT, P	PLANT, P	PLANT, P
Rating Type			PHYGEN	CONTRO	CONTRO	CONTRO
Rating Unit/Min/Max			%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
Number of Subsamples			1	1	1	1
Rating Timing			0 DAB	0 DAB	0 DAB	0 DAB
Days After First/Last Applic.			182, 36	182, 36	182, 36	182, 36
Plant-Eval Interval			37 DP-1	37 DP-1	37 DP-1	37 DP-1
Days After Emergence			32 DE-1	32 DE-1	32 DE-1	32 DE-1
Trt No.	Treatment Name	Rate / Unit / Appl Code	1	2	3	4
9	ZIDUA PRO	4.5 FL OZ/A A	0.0 -	99.5 -	98.5 -	99.3 -
	SCOUT (GLUFOSINATE)	32 FL OZ/A D				
	PERPETUO	6 FL OZ/A D				
	SELECT MAX	9 FL OZ/A D				
	INDUCE	0.25 % V/V D				
	DRY AMMONIUM SULFATE	3 LB/A D				
LSD P=.05			.	1.77	1.38	1.33
Standard Deviation			0.00	1.17	0.92	0.88
CV			0.0	1.18	0.92	0.89
Grand Mean			0.00	99.46	99.21	99.21
Levene's F^			.	0.887	1.07	0.402
Levene's Prob(F)			.	0.51	0.409	0.841
Rank X2			.	.	.	.
P(Rank X2)			.	.	.	.
Skewness^			.	-1.4778*	-0.0243	0.4345
Kurtosis^			.	3.6243*	2.1935*	1.8474*
Replicate F			0.000	1.970	9.554	10.806
Replicate Prob(F)			1.0000	0.1619	0.0009	0.0005
Treatment F			0.000	0.467	0.762	0.828
Treatment Prob(F)			1.0000	0.7951	0.5907	0.5493

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Could not calculate LSD (% mean diff) for columns 1,5,8,9,10,11,12,13,14,15,16 because error mean square = 0.
^Calculated from residual.

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	5	6	7	8
	Pest Type					W, Weed	W, Weed	W, Weed
	Pest Code					AMATA	ABUTH	SIDSP
	Pest Scientific Name					Amaranthus x ta>	Abutilon theoph>	Sida spinosa
	Pest Name					Common waterhemp	velvetleaf	Prickly sida
	Crop Type, Code				C, GLXM01	C, GLXM01	C, GLXM01	C, GLXM01
	BBCH Scale				BSOY	BSOY	BSOY	BSOY
	Crop Scientific Name				Glycine max GMO	Glycine max GMO	Glycine max GMO	Glycine max GMO
	Crop Name				Soybean, Libert>	Soybean, Libert>	Soybean, Libert>	Soybean, Libert>
	Rating Date				7/22/2020	7/22/2020	7/22/2020	7/22/2020
	Part Rated				PLANT, C	PLANT, P	PLANT, P	PLANT, P
	Rating Type				PHYGEN	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Number of Subsamples				1	1	1	1
	Rating Timing				21 DAT	21 DAT	21 DAT	21 DAT
	Days After First/Last Applic.				203, 21	203, 21	203, 21	203, 21
	Plant-Eval Interval				58 DP-1	58 DP-1	58 DP-1	58 DP-1
	Days After Emergence				53 DE-1	53 DE-1	53 DE-1	53 DE-1
1	UNTREATED CHECK				0.0	0.0	0.0	0.0
2	SCOUT (GLUFOSINATE)	32	FL OZ/A	B	0.0 -	93.5 c	99.3 -	100.0 -
	DRY AMMONIUM SULFATE	3	LB/A	B				
	SCOUT (GLUFOSINATE)	32	FL OZ/A	C				
	SELECT MAX	9	FL OZ/A	C				
	INDUCE	0.25	% V/V	C				
	DRY AMMONIUM SULFATE	3	LB/A	C				
3	SCOUT (GLUFOSINATE)	32	FL OZ/A	B	0.0 -	96.3 b	99.0 -	100.0 -
	PERPETUO	6	FL OZ/A	B				
	DRY AMMONIUM SULFATE	3	LB/A	B				
	SCOUT (GLUFOSINATE)	32	FL OZ/A	C				
	SELECT MAX	9	FL OZ/A	C				
	INDUCE	0.25	% V/V	C				
	DRY AMMONIUM SULFATE	3	LB/A	C				
4	FIERCE EZ (2065)	6	FL OZ/A	A	0.0 -	99.3 a	98.0 -	100.0 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				
5	FIERCE MTZ SC (2030)	16	FL OZ/A	A	0.0 -	100.0 a	100.0 -	100.0 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				
6	FIERCE EZ (2065)	6	FL OZ/A	A	0.0 -	100.0 a	100.0 -	100.0 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	PERPETUO	6	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				
7	FIERCE MTZ SC (2030)	16	FL OZ/A	A	0.0 -	100.0 a	99.3 -	100.0 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	PERPETUO	6	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				
8	AUTHORITY MTZ	11	OZ WT/A	A	0.0 -	100.0 a	100.0 -	100.0 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	ANTHEM MAXX	2.5	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				

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Pest Code				AMATA	ABUTH	SIDSP
Pest Scientific Name				Amaranthus x ta>	Abutilon theoph>	Sida spinosa
Pest Name				Common waterhemp	velvetleaf	Prickly sida
Crop Type, Code			C, GLXM01	C, GLXM01	C, GLXM01	C, GLXM01
BBCH Scale			BSOY	BSOY	BSOY	BSOY
Crop Scientific Name			Glycine max GMO	Glycine max GMO	Glycine max GMO	Glycine max GMO
Crop Name			Soybean, Libert>	Soybean, Libert>	Soybean, Libert>	Soybean, Libert>
Rating Date			7/22/2020	7/22/2020	7/22/2020	7/22/2020
Part Rated			PLANT, C	PLANT, P	PLANT, P	PLANT, P
Rating Type			PHYGEN	CONTRO	CONTRO	CONTRO
Rating Unit/Min/Max			%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
Number of Subsamples			1	1	1	1
Rating Timing			21 DAT	21 DAT	21 DAT	21 DAT
Days After First/Last Applic.			203, 21	203, 21	203, 21	203, 21
Plant-Eval Interval			58 DP-1	58 DP-1	58 DP-1	58 DP-1
Days After Emergence			53 DE-1	53 DE-1	53 DE-1	53 DE-1
Trt No.	Treatment Name	Rate / Rate Unit / Appl Code	5	6	7	8
9	ZIDUA PRO	4.5 FL OZ/A A	0.0 -	100.0 a	100.0 -	100.0 -
	SCOUT (GLUFOSINATE)	32 FL OZ/A D				
	PERPETUO	6 FL OZ/A D				
	SELECT MAX	9 FL OZ/A D				
	INDUCE	0.25 % V/V D				
	DRY AMMONIUM SULFATE	3 LB/A D				
LSD P=.05			.	2.55	1.90	.
Standard Deviation			0.00	1.73	1.29	0.00
CV			0.0	1.76	1.29	0.0
Grand Mean			0.00	98.64	99.44	100.00
Levene's F^			.	1.034	1.379	.
Levene's Prob(F)			.	0.435	0.261	.
Rank X2			.	.	.	.
P(Rank X2)			.	.	.	.
Skewness^			.	-1.8323*	-1.0257*	.
Kurtosis^			.	8.448*	1.5275	.
Replicate F			0.000	0.937	0.881	0.000
Replicate Prob(F)			1.0000	0.4415	0.4679	1.0000
Treatment F			0.000	7.880	1.240	0.000
Treatment Prob(F)			1.0000	0.0001	0.3280	1.0000

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^Calculated from residual.

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	9	10	11	12
	Pest Type					W, Weed	W, Weed	W, Weed
	Pest Code					AMATA	ABUTH	SIDSP
	Pest Scientific Name					Amaranthus x ta>	Abutilon theoph>	Sida spinosa
	Pest Name					Common waterhemp	velvetleaf	Prickly sida
	Crop Type, Code				C, GLXM01	C, GLXM01	C, GLXM01	C, GLXM01
	BBCH Scale				BSOY	BSOY	BSOY	BSOY
	Crop Scientific Name				Glycine max GMO	Glycine max GMO	Glycine max GMO	Glycine max GMO
	Crop Name				Soybean, Libert>	Soybean, Libert>	Soybean, Libert>	Soybean, Libert>
	Rating Date				8/12/2020	8/12/2020	8/12/2020	8/12/2020
	Part Rated				PLANT, C	PLANT, P	PLANT, P	PLANT, P
	Rating Type				PHYGEN	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Number of Subsamples				1	1	1	1
	Rating Timing				42 DAT	42 DAT	42 DAT	42 DAT
	Days After First/Last Applic.				224, 42	224, 42	224, 42	224, 42
	Plant-Eval Interval				79 DP-1	79 DP-1	79 DP-1	79 DP-1
	Days After Emergence				74 DE-1	74 DE-1	74 DE-1	74 DE-1
1	UNTREATED CHECK				0.0	0.0	0.0	0.0
2	SCOUT (GLUFOSINATE)	32	FL OZ/A	B	0.0 -	100.0 -	100.0 -	100.0 -
	DRY AMMONIUM SULFATE	3	LB/A	B				
	SCOUT (GLUFOSINATE)	32	FL OZ/A	C				
	SELECT MAX	9	FL OZ/A	C				
	INDUCE	0.25	% V/V	C				
	DRY AMMONIUM SULFATE	3	LB/A	C				
3	SCOUT (GLUFOSINATE)	32	FL OZ/A	B	0.0 -	100.0 -	100.0 -	100.0 -
	PERPETUO	6	FL OZ/A	B				
	DRY AMMONIUM SULFATE	3	LB/A	B				
	SCOUT (GLUFOSINATE)	32	FL OZ/A	C				
	SELECT MAX	9	FL OZ/A	C				
	INDUCE	0.25	% V/V	C				
	DRY AMMONIUM SULFATE	3	LB/A	C				
4	FIERCE EZ (2065)	6	FL OZ/A	A	0.0 -	100.0 -	100.0 -	100.0 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				
5	FIERCE MTZ SC (2030)	16	FL OZ/A	A	0.0 -	100.0 -	100.0 -	100.0 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				
6	FIERCE EZ (2065)	6	FL OZ/A	A	0.0 -	100.0 -	100.0 -	100.0 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	PERPETUO	6	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				
7	FIERCE MTZ SC (2030)	16	FL OZ/A	A	0.0 -	100.0 -	100.0 -	100.0 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	PERPETUO	6	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				
8	AUTHORITY MTZ	11	OZ WT/A	A	0.0 -	100.0 -	100.0 -	100.0 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	ANTHEM MAXX	2.5	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				

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:Average=1,5,6,7,8,9,10,11,12,13,14,15,16
Could not calculate LSD (% mean diff) for columns 1,5,8,9,10,11,12,13,14,15,16 because error mean square = 0.
^Calculated from residual.

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	9	10	11	12
	Pest Type					W, Weed	W, Weed	W, Weed
	Pest Code					AMATA	ABUTH	SIDSP
	Pest Scientific Name					Amaranthus x ta>	Abutilon theoph>	Sida spinosa
	Pest Name					Common waterhemp	velvetleaf	Prickly sida
	Crop Type, Code				C, GLXM01	C, GLXM01	C, GLXM01	C, GLXM01
	BBCH Scale				BSOY	BSOY	BSOY	BSOY
	Crop Scientific Name				Glycine max GMO	Glycine max GMO	Glycine max GMO	Glycine max GMO
	Crop Name				Soybean, Libert>	Soybean, Libert>	Soybean, Libert>	Soybean, Libert>
	Rating Date				8/12/2020	8/12/2020	8/12/2020	8/12/2020
	Part Rated				PLANT, C	PLANT, P	PLANT, P	PLANT, P
	Rating Type				PHYGEN	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Number of Subsamples				1	1	1	1
	Rating Timing				42 DAT	42 DAT	42 DAT	42 DAT
	Days After First/Last Applic.				224, 42	224, 42	224, 42	224, 42
	Plant-Eval Interval				79 DP-1	79 DP-1	79 DP-1	79 DP-1
	Days After Emergence				74 DE-1	74 DE-1	74 DE-1	74 DE-1
9	ZIDUA PRO	4.5	FL OZ/A	A	0.0 -	100.0 -	100.0 -	100.0 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	PERPETUO	6	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				
	LSD P=.05				.	.	.	.
	Standard Deviation				0.00	0.00	0.00	0.00
	CV				0.0	0.0	0.0	0.0
	Grand Mean				0.00	100.00	100.00	100.00
	Levene's F^				.	.	.	.
	Levene's Prob(F)				.	.	.	.
	Rank X2				.	.	.	.
	P(Rank X2)				.	.	.	.
	Skewness^				.	.	.	.
	Kurtosis^				.	.	.	.
	Replicate F				0.000	0.000	0.000	0.000
	Replicate Prob(F)				1.0000	1.0000	1.0000	1.0000
	Treatment F				0.000	0.000	0.000	0.000
	Treatment Prob(F)				1.0000	1.0000	1.0000	1.0000

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Untreated treatment(s) 1 excluded from analysis.
Missing data estimates are included in columns:Average=1,5,6,7,8,9,10,11,12,13,14,15,16
Could not calculate LSD (% mean diff) for columns 1,5,8,9,10,11,12,13,14,15,16 because error mean square = 0.
^Calculated from residual.

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	13	14	15	16
	Pest Type					W, Weed	W, Weed	W, Weed
	Pest Code					AMATA	ABUTH	SIDSP
	Pest Scientific Name					Amaranthus x ta>	Abutilon theoph>	Sida spinosa
	Pest Name					Common waterhemp	velvetleaf	Prickly sida
	Crop Type, Code				C, GLXM01	C, GLXM01	C, GLXM01	C, GLXM01
	BBCH Scale				BSOY	BSOY	BSOY	BSOY
	Crop Scientific Name				Glycine max GMO	Glycine max GMO	Glycine max GMO	Glycine max GMO
	Crop Name				Soybean, Libert>	Soybean, Libert>	Soybean, Libert>	Soybean, Libert>
	Rating Date				8/26/2020	8/26/2020	8/26/2020	8/26/2020
	Part Rated				PLANT, C	PLANT, P	PLANT, P	PLANT, P
	Rating Type				PHYGEN	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Number of Subsamples				1	1	1	1
	Rating Timing				56 DAT	56 DAT	56 DAT	56 DAT
	Days After First/Last Applic.				238, 56	238, 56	238, 56	238, 56
	Plant-Eval Interval				93 DP-1	93 DP-1	93 DP-1	93 DP-1
	Days After Emergence				88 DE-1	88 DE-1	88 DE-1	88 DE-1
1	UNTREATED CHECK				0.0	0.0	0.0	0.0
2	SCOUT (GLUFOSINATE)	32	FL OZ/A	B	0.0 -	100.0 -	100.0 -	100.0 -
	DRY AMMONIUM SULFATE	3	LB/A	B				
	SCOUT (GLUFOSINATE)	32	FL OZ/A	C				
	SELECT MAX	9	FL OZ/A	C				
	INDUCE	0.25	% V/V	C				
	DRY AMMONIUM SULFATE	3	LB/A	C				
3	SCOUT (GLUFOSINATE)	32	FL OZ/A	B	0.0 -	100.0 -	100.0 -	100.0 -
	PERPETUO	6	FL OZ/A	B				
	DRY AMMONIUM SULFATE	3	LB/A	B				
	SCOUT (GLUFOSINATE)	32	FL OZ/A	C				
	SELECT MAX	9	FL OZ/A	C				
	INDUCE	0.25	% V/V	C				
	DRY AMMONIUM SULFATE	3	LB/A	C				
4	FIERCE EZ (2065)	6	FL OZ/A	A	0.0 -	100.0 -	100.0 -	100.0 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				
5	FIERCE MTZ SC (2030)	16	FL OZ/A	A	0.0 -	100.0 -	100.0 -	100.0 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				
6	FIERCE EZ (2065)	6	FL OZ/A	A	0.0 -	100.0 -	100.0 -	100.0 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	PERPETUO	6	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				
7	FIERCE MTZ SC (2030)	16	FL OZ/A	A	0.0 -	100.0 -	100.0 -	100.0 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	PERPETUO	6	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				
8	AUTHORITY MTZ	11	OZ WT/A	A	0.0 -	100.0 -	100.0 -	100.0 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	ANTHEM MAXX	2.5	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				

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Could not calculate LSD (% mean diff) for columns 1,5,8,9,10,11,12,13,14,15,16 because error mean square = 0.
^Calculated from residual.

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	13	14	15	16
	Pest Type					W, Weed	W, Weed	W, Weed
	Pest Code					AMATA	ABUTH	SIDSP
	Pest Scientific Name					Amaranthus x ta>	Abutilon theoph>	Sida spinosa
	Pest Name					Common waterhemp	velvetleaf	Prickly sida
	Crop Type, Code				C, GLXM01	C, GLXM01	C, GLXM01	C, GLXM01
	BBCH Scale				BSOY	BSOY	BSOY	BSOY
	Crop Scientific Name				Glycine max GMO	Glycine max GMO	Glycine max GMO	Glycine max GMO
	Crop Name				Soybean, Libert>	Soybean, Libert>	Soybean, Libert>	Soybean, Libert>
	Rating Date				8/26/2020	8/26/2020	8/26/2020	8/26/2020
	Part Rated				PLANT, C	PLANT, P	PLANT, P	PLANT, P
	Rating Type				PHYGEN	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Number of Subsamples				1	1	1	1
	Rating Timing				56 DAT	56 DAT	56 DAT	56 DAT
	Days After First/Last Applic.				238, 56	238, 56	238, 56	238, 56
	Plant-Eval Interval				93 DP-1	93 DP-1	93 DP-1	93 DP-1
	Days After Emergence				88 DE-1	88 DE-1	88 DE-1	88 DE-1
9	ZIDUA PRO	4.5	FL OZ/A	A	0.0 -	100.0 -	100.0 -	100.0 -
	SCOUT (GLUFOSINATE)	32	FL OZ/A	D				
	PERPETUO	6	FL OZ/A	D				
	SELECT MAX	9	FL OZ/A	D				
	INDUCE	0.25	% V/V	D				
	DRY AMMONIUM SULFATE	3	LB/A	D				
	LSD P=.05				.	.	.	.
	Standard Deviation				0.00	0.00	0.00	0.00
	CV				0.0	0.0	0.0	0.0
	Grand Mean				0.00	100.00	100.00	100.00
	Levene's F^				.	.	.	.
	Levene's Prob(F)				.	.	.	.
	Rank X2				.	.	.	.
	P(Rank X2)				.	.	.	.
	Skewness^				.	.	.	.
	Kurtosis^				.	.	.	.
	Replicate F				0.000	0.000	0.000	0.000
	Replicate Prob(F)				1.0000	1.0000	1.0000	1.0000
	Treatment F				0.000	0.000	0.000	0.000
	Treatment Prob(F)				1.0000	1.0000	1.0000	1.0000

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^Calculated from residual.

Purdue Weed Science

Valent Actives in a Liberty Link System

Trial ID: 20S-MGS-SOY-09 Location: Lafayette, IN Trial Year: 2020
Protocol ID: 20S-MGS-SOY-09 Investigator (Creator): Eric Ott
Project ID: Study Director:
Sponsor Contact:

Pest Type
W, Weed = Weed or volunteer crop
Pest Code
AMATA, Amaranthus x tamariscinus, Common waterhemp = US
ABUTH, Abutilon theophrasti, velvetleaf = US
SIDSP, Sida spinosa, Prickly sida = US
Crop Type, Code
C = EPPO species (Bayer) codes
Part Rated
PLANT = plant
C = Crop is Part Rated
P = Pest is Part Rated
Rating Type
PHYGEN = phytotoxicity - general / injury
CONTRO = control / burndown or knockdown
Rating Unit/Min/Max
%, 0, 100 = percent
Plant-Eval Interval
37 DP-1 = 1 GLXM01 5/25/2020
58 DP-1 = 1 GLXM01 5/25/2020
79 DP-1 = 1 GLXM01 5/25/2020
93 DP-1 = 1 GLXM01 5/25/2020