

Purdue Weed Science

Influence on EXP-1422 on Glufosinate and Glyphosate Tolerant Soybeans.
 Trial ID: 18S-TPAC-SOY-16 Location: TPAC Trial Year: 2018
 Protocol ID: 18S-TPAC-SOY-16 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dr. Bryan Young
 Sponsor Contact: S. Bernard - Itaipollina

General Trial Information

Study Director: Dr. Bryan Young **Title:** Professor
Investigator: Dr. Bill Johnson **Title:** Professor

Discipline: H herbicide

Trial Location

City: Lafayette **Country:** USA United States
State/Prov.: Indiana
Postal Code: 47909

Latitude of LL Corner °: 40.29207 N
Longitude of LL Corner °: 86.91165 W

Conducted Under GLP: No
Conducted Under GEP: No

Contacts

Study Director: Dr. Bryan Young **Title:** Professor
Organization: Purdue University
Address: 915 W. State Street
City+State/Prov: West Lafayette, IN
Postal Code: 47907 **E-mail:** BryanYoung@purdue.edu
Country: USA United States

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

Cooperator/Landowner

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

Crop Description

Crop 1: GLXMA Glycine max Soybean
Variety: XTEND AG30X6
Description: DICAMBA/RR

Planting Rate, Unit: 155000 S/A
Depth, Unit: 1.5 IN
Row Spacing, Unit: 15 IN
Rows per Plot: 7
Soil Temperature, Unit: 72 F

Planting Date: May-7-2018
Planting Method: PLANTD planted
Planting Equipment: PP plot planter
Emergence Date: May-23-2018

Crop 2: GLXMA Glycine max Soybean
Variety: BECKS 296L4
Description: LIBERTY LINK

Planting Rate, Unit: 155000 S/A
Depth, Unit: 1.5 IN
Row Spacing, Unit: 1.5 IN
Rows per Plot: 7
Soil Temperature, Unit: 72 F
Soil Moisture: DRY dry

Harvested Width, Unit: 10 FT
Harvested Length, Unit: 25 FT
% Standard Moisture: 13

Pest Description

Pest 1 Type: W **Code:** AMBTR Ambrosia trifida
Common Name: Giant ragweed

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Treated Plot Width: 10 FT		Site and Design	
Treated Plot Length: 30 FT		Site Type: FIELD field	
Treated Plot Area: 300 FT ²		Experimental Unit: 1 PLOT plot	
Treatments: 6		Tillage Type: CONTIL conventional-till	
Replications: 4		Study Design: RACOBL Randomized Complete Block (RCB)	

Field Prep./Maintenance:
 5/7/18 Applied Blanket of Authority First at 6.4 oz/acre.
 6/1/18 Applied treatments without the EXP-1422 due to weed size.
 Crop stage at V2-V3 with majority at V3.

Description Name: TPAC- Field 4B		Soil Description	
% OM: 2.9		Texture: SIL silt loam	
pH: 6.2		Soil Name: Toronto-Millbrook	
CEC: 13.3			

Application Description	
	A
Application Date:	Jun-20-2018
Appl. Start Time:	3:30 PM
Appl. Stop Time:	3:40 PM
Application Method:	SPRAY
Application Timing:	POSPOS
Application Placement:	BROADC
Applied By:	D. JOHNSON
Air Temperature, Unit:	80 F
% Relative Humidity:	76
Wind Velocity, Unit:	3 MPH
Wind Direction:	W
Dew Presence (Y/N):	N no
Soil Temperature, Unit:	82 F
Soil Moisture:	SLIWET
% Cloud Cover:	50

Crop Stage At Each Application	
	A
Crop 1 Code, BBCH Scale:	GLXMA BSOY
Stage Scale Used:	BBCH
Stage Majority, Percent:	15
Stage Minimum, Percent:	12
Stage Maximum, Percent:	51
Height, Unit:	7 IN
Height Minimum, Maximum:	4 10
Crop 2 Code, BBCH Scale:	GLXMA BSOY
Stage Scale Used:	BBCH
Stage Majority, Percent:	15
Stage Minimum, Percent:	14
Stage Maximum, Percent:	51
Height, Unit:	9.5 IN
Height Minimum, Maximum:	7 12

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Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale:	AMBTR W
Stage Majority, Percent:	12
Stage Minimum, Percent:	11
Stage Maximum, Percent:	14
Height, Unit:	3 IN
Height Minimum, Maximum:	1 5
Density, Unit:	6 FT2

Application Equipment

	A
Appl. Equipment:	CO2 BACKPACK
Equipment Type:	BACSPR
Operation Pressure, Unit:	18 PSI
Nozzle Type:	FLAFXR
Nozzle Size:	XR11002
Nozzle Spacing, Unit:	15 IN
Nozzles/Row:	8
Boom Length, Unit:	10 FT
Boom Height, Unit:	17 IN
Ground Speed, Unit:	3 MPH
Carrier:	WATER
Spray Volume, Unit:	15 GAL/AC
Mix Size, Unit:	1.8 L
Propellant:	COMCO2

Date	By	Notes
Jun-1-2018	D. JOHNSON	Pop up shower occurred at 3:30pm after application.
Jun-8-2018	D. JOHNSON	Evening storm brought hail and slight damage to crop occurred.
Jun-12-2018	D. JOHNSON	Sprayed to control yellow nutsedge in plots - lost plots 401 & 403. Lost 403 was not sprayed entirely.
Jun-20-2018	D. JOHNSON	Planter issue with one row. Had to fill in blank spaces in soybean rows by hand. Also, the Xtend soybeans were very clean at treatment application.

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Influence on EXP-1422 on Glufosinate and Glyphosate Tolerant Soybeans.

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 Project ID:

Location: TPAC Trial Year: 2018
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Reps: 4 Plots: 10 by 30 feet
 Spray vol: 15 GAL/AC Mix Size: 1.8 L (total for 4 plots; minimum=1.564 L)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Appl Code	Appl Description	Amt Product to Measure	Rep 1	2	3	4
1	UNTREATED CHECK									101	203	301	402
2	TTI 11002 NOZZLE						A	V5 - < R1 SOYBEAN		102	201	303	401
	ENGENIA	5 LB/GAL	SL		12.8 fl oz/a	A	V5 - < R1 SOYBEAN	12.0 mL/mx					
	ROUNDUP POWERMAX	4.5 LBAE/GAL	SL		32 fl oz/a	A	V5 - < R1 SOYBEAN	30.0 mL/mx					
	CLASS ACT RIDION	100 %	L		1 % v/v	A	V5 - < R1 SOYBEAN	18.0 mL/mx					
3	TTI 11002 NOZZLE						A	V5 - < R1 SOYBEAN		103	202	302	403
	ENGENIA	5 LB/GAL	SL		12.8 fl oz/a	A	V5 - < R1 SOYBEAN	12.0 mL/mx					
	ROUNDUP POWERMAX	4.5 LBAE/GAL	SL		32 fl oz/a	A	V5 - < R1 SOYBEAN	30.0 mL/mx					
	EXP-1422	100 %	L		16 fl oz/a	A	V5 - < R1 SOYBEAN	15.0 mL/mx					
CLASS ACT RIDION	100 %	L		1 % v/v	A	V5 - < R1 SOYBEAN	18.0 mL/mx						
4	UNTREATED CHECK 2									104	206	305	406
5	XR 11002 NOZZLE						A	V5 - < R1 SOYBEAN		105	204	304	405
	LIBERTY 280 SL	2.34 LB/GAL	SL		32 fl oz/a	A	V5 - < R1 SOYBEAN	30.0 mL/mx					
	DRY AMS	100 %	SG		8.5 lb/100 gal	A	V5 - < R1 SOYBEAN	18.33 g/mx					
6	XR 11002 NOZZLE						A	V5 - < R1 SOYBEAN		106	205	306	404
	LIBERTY 280 SL	2.34 LB/GAL	SL		32 fl oz/a	A	V5 - < R1 SOYBEAN	30.0 mL/mx					
	EXP-1422	100 %	L		16 fl oz/a	A	V5 - < R1 SOYBEAN	15.0 mL/mx					
	DRY AMS	100 %	SG		8.5 lb/100 gal	A	V5 - < R1 SOYBEAN	18.33 g/mx					

Sort Order: Treatment

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Influence on EXP-1422 on Glufosinate and Glyphosate Tolerant Soybeans.

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Pest Type Pest Code Pest Name		W Weed AMBTR Giant ragweed	W Weed SETFA Giant foxtail	W Weed ECHSS Barnyardgrass	W Weed AMARE Redroot pigweed				
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA			
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean			
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -			
Rating Date	Jun-20-2018	Jun-20-2018	Jun-20-2018	Jun-20-2018	Jun-20-2018	Jun-27-2018			
Rating Type	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL	PHYGEN			
Rating Unit	%	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1	1			
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON			
Rating Timing	A1	A1	A1	A1	A1	A2			
Days After First/Last Applic.	0 0	0 0	0 0	0 0	0 0	7 7			
Trt-Eval Interval	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A			
ARM Action Codes	P	P	P	P	P	P			
Number of Decimals	0	0	0	0	0	0			
Trt Treatment No. Name	Rate Rate Unit	Appl Code	1	2	3	4	5	6	
1 UNTREATED CHECK			0	0	0	0	0	0	
2 TTI 11002 NOZZLE ENGENIA ROUNDUP POWERMAX CLASS ACT RIDION	12.8 fl oz/a 32 fl oz/a 1 % v/v	A A A A	0 -	100 a	100 -	100 -	100 -	100 -	0 -
3 TTI 11002 NOZZLE ENGENIA ROUNDUP POWERMAX EXP-1422 CLASS ACT RIDION	12.8 fl oz/a 32 fl oz/a 16 fl oz/a 1 % v/v	A A A A A	0 -	100 a	100 -	100 -	100 -	100 -	0 -
4 UNTREATED CHECK 2			0	0	0	0	0	0	
5 XR 11002 NOZZLE LIBERTY 280 SL DRY AMS	32 fl oz/a 8.5 lb/100 gal	A A A	0 -	86 b	100 -	98 -	100 -	100 -	0 -
6 XR 11002 NOZZLE LIBERTY 280 SL EXP-1422 DRY AMS	32 fl oz/a 16 fl oz/a 8.5 lb/100 gal	A A A A	0 -	88 b	100 -	100 -	100 -	100 -	0 -
LSD P=.05	.	3.0	0.4	2.3	0.0	.			
Standard Deviation	0.0	1.8	0.3	1.4	0.0	0.0			
CV	0.0	1.9	0.27	1.37	0.02	0.0			
Levene's F	0.00	1.074		0.943	0.00	0.00			
Levene's Prob(F)	0.00*	0.404		0.456	0.00*	0.00*			
Skewness	.	0.0912	-3.7417*	-3.0279*	.	.			
Kurtosis	.	-2.0233	14.0*	10.0526*	.	.			
Replicate F	0.000	1.390	0.781	0.569	1.556	0.000			
Replicate Prob(F)	1.0000	0.3231	0.5409	0.6527	0.2832	1.0000			
Treatment F	0.000	69.030	1.552	1.373	0.778	0.000			
Treatment Prob(F)	1.0000	0.0001	0.2839	0.3274	0.5426	1.0000			

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, 4 excluded from analysis.
 Missing data estimates are included in columns: Yates=1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18
 Could not calculate LSD (% mean diff) for columns 1,6 because error mean square = 0.

Purdue Weed Science

Pest Type Pest Code Pest Name	W Weed AMBTR Giant ragweed	W Weed SETFA Giant foxtail	W Weed ECHSS Barnyardgrass	W Weed AMARE Redroot pigweed	W Weed AMBTR Giant ragweed	W Weed SETFA Giant foxtail			
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA			
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean			
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -			
Rating Date	Jun-27-2018	Jun-27-2018	Jun-27-2018	Jun-27-2018	Jul-5-2018	Jul-5-2018			
Rating Type	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL			
Rating Unit	%	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1	1			
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON			
Rating Timing	A2	A2	A2	A2	A3	A3			
Days After First/Last Applic.	7 7	7 7	7 7	7 7	15 15	15 15			
Trt-Eval Interval	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A			
ARM Action Codes	P	P	P	P	P	P			
Number of Decimals	0	0	0	0	0	0			
Trt No.	Treatment Name	Rate	Appl Code	7	8	9	10	11	12
		Rate Unit							
1	UNTREATED CHECK			0	0	0	0	0	0
2	TTI 11002 NOZZLE		A	100 a	100 -	100 -	100 -	100 a	100 -
	GENGENIA	12.8 fl oz/a	A						
	ROUNDUP POWERMAX	32 fl oz/a	A						
	CLASS ACT RIDION	1 % v/v	A						
3	TTI 11002 NOZZLE		A	100 a	100 -	100 -	100 -	100 a	100 -
	GENGENIA	12.8 fl oz/a	A						
	ROUNDUP POWERMAX	32 fl oz/a	A						
	EXP-1422	16 fl oz/a	A						
	CLASS ACT RIDION	1 % v/v	A						
4	UNTREATED CHECK 2			0	0	0	0	0	0
5	XR 11002 NOZZLE		A	97 b	100 -	100 -	100 -	96 b	100 -
	LIBERTY 280 SL	32 fl oz/a	A						
	DRY AMS	8.5 lb/100 gal	A						
6	XR 11002 NOZZLE		A	98 b	100 -	100 -	100 -	97 b	100 -
	LIBERTY 280 SL	32 fl oz/a	A						
	EXP-1422	16 fl oz/a	A						
	DRY AMS	8.5 lb/100 gal	A						
LSD P=.05				1.7	0.0	0.5	0.0	2.8	0.0
Standard Deviation				1.0	0.0	0.3	0.0	1.7	0.0
CV				1.02	0.02	0.28	0.02	1.73	0.02
Levene's F				2.775	0.00		0.00	4.286	0.00
Levene's Prob(F)				0.097	0.00*		0.00*	0.035*	0.00*
Skewness				-0.5248	.	-3.7417*	.	-1.1218	.
Kurtosis				-0.8605	.	14.0*	.	0.8387	.
Replicate F				0.500	1.556	0.778	1.556	1.066	1.556
Replicate Prob(F)				0.6940	0.2832	0.5426	0.2832	0.4226	0.2832
Treatment F				11.167	0.778	0.778	0.778	6.712	0.778
Treatment Prob(F)				0.0046	0.5426	0.5426	0.5426	0.0181	0.5426

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Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	13	14	15	16	17	18
1	UNTREATED CHECK				0	0	0	8.8	9.7	25.5
2	TTI 11002 NOZZLE			A	100 -	100 -	100 -	22.1 -	12.6 -	64.5 -
	ENGENIA	12.8 fl oz/a		A						
	ROUNDUP POWERMAX	32 fl oz/a		A						
	CLASS ACT RIDION	1 % v/v		A						
3	TTI 11002 NOZZLE			A	100 -	100 -	100 -	23.6 -	12.5 -	68.9 -
	ENGENIA	12.8 fl oz/a		A						
	ROUNDUP POWERMAX	32 fl oz/a		A						
	EXP-1422	16 fl oz/a		A						
	CLASS ACT RIDION	1 % v/v		A						
4	UNTREATED CHECK 2				0	0	0	14.2	12.4	41.6
5	XR 11002 NOZZLE			A	100 -	100 -	98 -	23.3 -	12.7 -	68.0 -
	LIBERTY 280 SL	32 fl oz/a		A						
	DRY AMS	8.5 lb/100 gal		A						
6	XR 11002 NOZZLE			A	100 -	100 -	99 -	21.9 -	12.6 -	64.0 -
	LIBERTY 280 SL	32 fl oz/a		A						
	EXP-1422	16 fl oz/a		A						
	DRY AMS	8.5 lb/100 gal		A						
	LSD P=.05				0.0	0.0	4.5	3.14	0.39	9.17
	Standard Deviation				0.0	0.0	2.7	1.88	0.24	5.49
	CV				0.02	0.02	2.74	8.25	1.87	8.27
	Levene's F				0.00	0.00	0.54	0.705	0.231	0.694
	Levene's Prob(F)				0.00*	0.00*	0.666	0.57	0.873	0.576
	Skewness				.	.	-2.8033*	-0.4138	0.098	-0.4111
	Kurtosis				.	.	7.6791*	0.0488	-1.4554	0.0892
	Replicate F				1.556	1.556	1.909	2.329	3.004	2.220
	Replicate Prob(F)				0.2832	0.2832	0.2166	0.1609	0.1043	0.1735
	Treatment F				0.778	0.778	0.778	0.816	0.530	0.802
	Treatment Prob(F)				0.5426	0.5426	0.5426	0.5246	0.6760	0.5313

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Project ID: Study Director: Dr. Bryan Young
Sponsor Contact: S. Bernard - Itapollina

Pest Type

W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop

Pest Code

AMBTR, Ambrosia trifida, Giant ragweed = US

SETFA, Setaria faberi, Giant foxtail = US

ECHSS, Echinochloa sp., Barnyardgrass = US

AMARE, Amaranthus retroflexus, Redroot pigweed = US

Crop Code

GLXMA, BSOY, Glycine max, Soybean = US

Part Rated

PLOT = plot

Rating Type

PHYGEN = phytotoxicity - general / injury

YIELD = yield

MOICON = moisture content

Rating Unit

% = percent

lb/plot = pounds per plot

BU = bushel

Rating Timing

A1 = 1st Assessment According to Trial Schedule

A2 = 2nd Assessment According to trial Schedule

A3 = 3rd Assessment According to Trial Schedule

A4 = 4th Assessment According to Trial Schedule

ARM Action Codes

P = Rating scale of 0 to 100 (e.g. % control or injury)

TY1 = $2.904 * [C16] * (100 - @MVAVGREP([C17])) / 87$