

# Purdue Weed Science

## HT3 Soybean System Comparison

Trial ID: 18S-TPAC-SOY-30      Location: TPAC      Trial Year: 2018  
 Protocol ID: 18S-TPAC-SOY-30      Investigator: Dr. Bill Johnson  
 Project ID: 2018-01-N8-04      Study Director: Dustin Johnson  
 Sponsor Contact: D. Childs - Monsanto

### General Trial Information

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

**Discipline:** H      herbicide  
**Trial Status:** E      established  
**Initiation Date:** May-23-2018

### Trial Location

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

**Latitude of LL Corner °:** 40.29178 N  
**Longitude of LL Corner °:** 86.9129 W

### Directions:

NW  
 N-40.29216  
 W-86.91290

NE  
 N-40.29215  
 W-86.91247

SE  
 N-40.29176  
 W-86.91248

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Contacts

**Study Director:** Dustin Johnson      **Title:** Research Associate  
**Organization:** Purdue University  
**Address:** 915 W. State Street  
**City+State/Prov:** West Lafayette, IN  
**Postal Code:** 47907      **E-mail:** john1357@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

# Purdue Weed Science

Crop Description		
<b>Crop 1:</b> GLXMA <b>Variety:</b> HT3 <b>Description:</b> DICAMBA/LL/RR	Glycine max	Soybean
<b>Planting Rate, Unit:</b> 140000 S/A <b>Depth, Unit:</b> 1.5 IN <b>Row Spacing, Unit:</b> 30 IN <b>Soil Temperature, Unit:</b> 78 F <b>Soil Moisture:</b> DRY dry		<b>Planting Date:</b> May-23-2018 <b>Planting Method:</b> PLANTD planted <b>Planting Equipment:</b> PP plot planter
<b>Crop 2:</b> GLXMA <b>Variety:</b> LL314L4 <b>Description:</b> LIBERTY LINK	Glycine max	Soybean
<b>Planting Rate, Unit:</b> 120000 S/A <b>Depth, Unit:</b> 1.5 IN <b>Row Spacing, Unit:</b> 30 IN <b>Soil Temperature, Unit:</b> 78 F <b>Soil Moisture:</b> DRY dry		<b>Planting Date:</b> May-23-2018 <b>Planting Method:</b> PLANTD planted <b>Planting Equipment:</b> PP plot planter  <b>Harvested Width, Unit:</b> 5 FT <b>Harvested Length, Unit:</b> 25 FT <b>% Standard Moisture:</b> 13

Pest Description	
<b>Pest 1 Type:</b> W <b>Code:</b> ABUTH <b>Common Name:</b> velvetleaf	Abutilon theophrasti
<b>Pest 2 Type:</b> W <b>Code:</b> SETFA <b>Common Name:</b> Giant foxtail	Setaria faberi
<b>Pest 3 Type:</b> W <b>Code:</b> ECHSS <b>Common Name:</b> Barnyardgrass	Echinochloa sp.
<b>Pest 4 Type:</b> W <b>Code:</b> DIGSA <b>Common Name:</b> large crabgrass	Digitaria sanguinalis

Site and Design	
<b>Treated Plot Width:</b> 10 FT <b>Treated Plot Length:</b> 30 FT <b>Treated Plot Area:</b> 300 FT <sup>2</sup> <b>Replications:</b> 4	<b>Site Type:</b> FIELD field <b>Experimental Unit:</b> 1 PLOT plot <b>Tillage Type:</b> CONTIL conventional-till <b>Study Design:</b> RACOB� Randomized Complete Block (RCB)

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

## Purdue Weed Science

### Application Description

	A	B	C	D
<b>Application Date:</b>	May-24-2018	Jun-25-2018	Jun-25-2018	Jul-6-2018
<b>Appl. Start Time:</b>	11:45 AM	11:10 AM	11:10 AM	5:20 PM
<b>Appl. Stop Time:</b>	12:00 PM	11:30 AM	11:30 AM	5:40 PM
<b>Application Method:</b>	SPRAY	SPRAY	SPRAY	SPRAY
<b>Application Timing:</b>	PREPRE	POSPOS	POSPOS	POSPOS
<b>Application Placement:</b>	BROADC	BROADC	BROADC	BROADC
<b>Applied By:</b>	D. JOHNSON	D. JOHNSON	D. JOHNSON	C. HODGSKIS
<b>Air Temperature, Unit:</b>	80 F	74 F	74 F	82 F
<b>% Relative Humidity:</b>	39	70	70	45
<b>Wind Velocity, Unit:</b>	4 MPH	6 MPH	6 MPH	3 MPH
<b>Wind Direction:</b>	SE	E	E	E
<b>Dew Presence (Y/N):</b>	N no	N no	N no	N no
<b>Soil Temperature, Unit:</b>	70 F	72 F	72 F	80 F
<b>Soil Moisture:</b>	DRY	WET	WET	SLIWET
<b>% Cloud Cover:</b>	0	0	0	5

### Crop Stage At Each Application

	A	B	C	D
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>	BBCH	BBCH	BBCH	BBCH
<b>Stage Majority, Percent:</b>	00	14	00	51
<b>Stage Minimum, Percent:</b>	00	13	00	18
<b>Stage Maximum, Percent:</b>	00	14	00	51
<b>Height, Unit:</b>		12 IN		16.5 IN
<b>Height Minimum, Maximum:</b>		9 12		12.5 16.5
<b>Crop 2 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>	BBCH	BBCH	BBCH	BBCH
<b>Stage Majority, Percent:</b>	00	00	14	51
<b>Stage Minimum, Percent:</b>	00	00	13	18
<b>Stage Maximum, Percent:</b>	00	00	14	51
<b>Height, Unit:</b>			12 IN	16.5 IN
<b>Height Minimum, Maximum:</b>			9 12	12.5 16.5

## Purdue Weed Science

Pest Stage At Each Application				
	A	B	C	D
<b>Pest 1 Code, Type, Scale:</b>	ABUTH W	ABUTH W	ABUTH W	ABUTH W
<b>Stage Majority, Percent:</b>	00	16	16	00
<b>Stage Minimum, Percent:</b>	00	14	14	00
<b>Stage Maximum, Percent:</b>	00	18	18	00
<b>Height, Unit:</b>		6 IN	6 IN	
<b>Height Minimum, Maximum:</b>		2 13	2 13	
<b>Density, Unit:</b>		4 FT2	4 FT2	
<b>Pest 2 Code, Type, Scale:</b>	SETFA W	SETFA W	SETFA W	SETFA W
<b>Stage Majority, Percent:</b>	00	19	19	14
<b>Stage Minimum, Percent:</b>	00	12	12	12
<b>Stage Maximum, Percent:</b>	00	19	19	16
<b>Height, Unit:</b>		8 IN	8 IN	12 IN
<b>Height Minimum, Maximum:</b>		2 12	2 12	5 14
<b>Density, Unit:</b>		8 FT2	8 FT2	2 FT2
<b>Pest 3 Code, Type, Scale:</b>	ECHSS W	ECHSS W	ECHSS W	ECHSS W
<b>Stage Majority, Percent:</b>	00	19	19	00
<b>Stage Minimum, Percent:</b>	00	12	12	00
<b>Stage Maximum, Percent:</b>	00	19	19	00
<b>Height, Unit:</b>		8 IN	8 IN	
<b>Height Minimum, Maximum:</b>		2 10	2 10	
<b>Density, Unit:</b>		9 FT2	9 FT2	
<b>Pest 4 Code, Type, Scale:</b>	DIGSA W	DIGSA W	DIGSA W	DIGSA W
<b>Stage Majority, Percent:</b>	00	19	19	15
<b>Stage Minimum, Percent:</b>	00	12	12	12
<b>Stage Maximum, Percent:</b>	00	19	19	18
<b>Height, Unit:</b>		6 IN	6 IN	10 IN
<b>Height Minimum, Maximum:</b>		2 8	2 8	3 15
<b>Density, Unit:</b>		8 FT2	8 FT2	8 FT2

Application Equipment				
	A	B	C	D
<b>Appl. Equipment:</b>	CO2 BACKPACK	CO2 BACKPACK	CO2 BACKPACK	CO2 BACKPACK
<b>Equipment Type:</b>	BACSPR	BACSPR	BACSPR	BACSPR
<b>Operation Pressure, Unit:</b>	29 PSI	29 PSI	29 PSI	29 PSI
<b>Nozzle Type:</b>	TTI	TTI	TT	TT
<b>Nozzle Size:</b>	110015	110015	110015	110015
<b>Nozzle Spacing, Unit:</b>	15 IN	15 IN	15 IN	15 IN
<b>Nozzles/Row:</b>	8	8	4	4
<b>Boom Length, Unit:</b>	10 FT	10 FT	10 FT	10 FT
<b>Boom Height, Unit:</b>	17 IN	17 IN	17 IN	17 IN
<b>Ground Speed, Unit:</b>	3 MPH	3 MPH	3 MPH	3 MPH
<b>Carrier:</b>	WATER	WATER	WATER	WATER
<b>Spray Volume, Unit:</b>	15 GAL/AC	15 GAL/AC	15 GAL/AC	15 GAL/AC
<b>Mix Size, Unit:</b>	1.8 L	1.8 L	1.8 L	1.8 L
<b>Propellant:</b>	COMCO2		COMCO2	COMCO2

<b>Date</b>	<b>By</b>	<b>Notes</b>	
Jun-8-2018	D. JOHNSON	Evening storm brought hail and damage to crop occurred.	
Jun-25-2018	D. JOHNSON	Did not rate ABUTH due to inactivity of PRE herbicides on HT3 soybeans (there was no control). The 3rd & 4th tiers	

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contained AMBTR but not consistent enough to rate. There is AMATA in checks but grass density suppressed AMATA population.  
Jul-5-2018 D. JOHNSON East side of LL soybeans outer row was killed accidentally when sprayed regulatory borders. LL soybeans did have some dicamba injury.

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HT3 Soybean System Comparison			
Trial ID: 18S-TPAC-SOY-30	Location: TPAC	Trial Year: 2018	
Protocol ID: 18S-TPAC-SOY-30	Investigator: Dr. Bill Johnson		
Project ID: 2018-01-N8-04	Study Director: Dustin Johnson		
Sponsor Contact: D. Childs - Monsanto			

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	304	403
2	HT3 SOYBEAN WARRANT	3 LB/GAL		CS	48 fl oz/a	A		AT PLANTING	45.0 mL/mx	102	201	302	404
	XTENDIMAX	2.9 LBAE/GAL		SL	22 fl oz/a	A		AT PLANTING	20.62 mL/mx				
	ROUNDUP POWERMAX	4.5 LBAE/GAL		SL	32 fl oz/a	B		4" WEEDS OR V3-V5 SOYBEAN	30.0 mL/mx				
	XTENDIMAX	2.9 LBAE/GAL		SL	22 fl oz/a	B		4" WEEDS OR V3-V5 SOYBEAN	20.62 mL/mx				
	WARRANT	3 LB/GAL		CS	48 fl oz/a	B		4" WEEDS OR V3-V5 SOYBEAN	45.0 mL/mx				
	CLASS ACT RIDION	100 %		L	1 % v/v	B		4" WEEDS OR V3-V5 SOYBEAN	18.0 mL/mx				
	INTACT	43.18 %		SL	0.5 % v/v	B		4" WEEDS OR V3-V5 SOYBEAN	8.999 mL/mx				
3	HT3 SOYBEAN WARRANT	3 LB/GAL		CS	48 fl oz/a	A		AT PLANTING	45.0 mL/mx	103	204	301	402
	XTENDIMAX	2.9 LBAE/GAL		SL	22 fl oz/a	A		AT PLANTING	20.62 mL/mx				
	ROUNDUP POWERMAX	4.5 LBAE/GAL		SL	32 fl oz/a	B		4" WEEDS OR V3-V5 SOYBEAN	30.0 mL/mx				
	WARRANT	3 LB/GAL		CS	48 fl oz/a	B		4" WEEDS OR V3-V5 SOYBEAN	45.0 mL/mx				
	LIBERTY 280 SL	2.34 LB/GAL		SL	32 fl oz/a	B		4" WEEDS OR V3-V5 SOYBEAN	30.0 mL/mx				
	N-PAK AMS	3.4 LBA/GAL		L	2.5 % v/v	B		4" WEEDS OR V3-V5 SOYBEAN	45.0 mL/mx				
4	HT3 SOYBEAN WARRANT	3 LB/GAL		CS	48 fl oz/a	A		AT PLANTING	45.0 mL/mx	104	202	303	401
	XTENDIMAX	2.9 LBAE/GAL		SL	22 fl oz/a	A		AT PLANTING	20.62 mL/mx				
	ROUNDUP POWERMAX	4.5 LBAE/GAL		SL	32 fl oz/a	B		4" WEEDS OR V3-V5 SOYBEAN	30.0 mL/mx				
	XTENDIMAX	2.9 LBAE/GAL		SL	22 fl oz/a	B		4" WEEDS OR V3-V5 SOYBEAN	20.62 mL/mx				
	WARRANT	3 LB/GAL		CS	48 fl oz/a	B		4" WEEDS OR V3-V5 SOYBEAN	45.0 mL/mx				
	CLASS ACT RIDION	100 %		L	1 % v/v	B		4" WEEDS OR V3-V5 SOYBEAN	18.0 mL/mx				
	INTACT	43.18 %		SL	0.5 % v/v	B		4" WEEDS OR V3-V5 SOYBEAN	8.999 mL/mx				
	LIBERTY 280 SL	2.34 LB/GAL		SL	32 fl oz/a	D		4" WEEDS OR R1 SOYBEAN	30.0 mL/mx				
	N-PAK AMS	3.4 LBA/GAL		L	2.5 % v/v	D		4" WEEDS OR R1 SOYBEAN	45.0 mL/mx				
5	UNTREATED CHECK 2									105	206	307	406
6	LL SOYBEAN AUTHORITY MAXX	66 %AW/W		WG	6.4 oz wt/a	A		AT PLANTING	5.752 g/mx	106	208	305	408
	LIBERTY 280 SL	2.34 LB/GAL		SL	32 fl oz/a	C		4" WEEDS OR V3-V5 SOYBEAN	30.0 mL/mx				
	N-PAK AMS	3.4 LBA/GAL		L	2.5 % v/v	C		4" WEEDS OR V3-V5 SOYBEAN	45.0 mL/mx				
7	LL SOYBEAN AUTHORITY MAXX	66 %AW/W		WG	6.4 oz wt/a	A		AT PLANTING	5.752 g/mx	107	205	308	407
	LIBERTY 280 SL	2.34 LB/GAL		SL	32 fl oz/a	C		4" WEEDS OR V3-V5 SOYBEAN	30.0 mL/mx				
	ANTHEM MAXX	4.3 LBA/GAL		SC	3 fl oz/a	C		4" WEEDS OR V3-V5 SOYBEAN	2.812 mL/mx				
	N-PAK AMS	3.4 LBA/GAL		L	2.5 % v/v	C		4" WEEDS OR V3-V5 SOYBEAN	45.0 mL/mx				
8	LL SOYBEAN AUTHORITY MAXX	66 %AW/W		WG	6.4 oz wt/a	A		AT PLANTING	5.752 g/mx	108	207	306	405
	LIBERTY 280 SL	2.34 LB/GAL		SL	32 fl oz/a	C		4" WEEDS OR V3-V5 SOYBEAN	30.0 mL/mx				
	ANTHEM MAXX	4.3 LBA/GAL		SC	3 fl oz/a	C		4" WEEDS OR V3-V5 SOYBEAN	2.812 mL/mx				
	N-PAK AMS	3.4 LBA/GAL		L	2.5 % v/v	C		4" WEEDS OR V3-V5 SOYBEAN	45.0 mL/mx				
	LIBERTY 280 SL	2.34 LB/GAL		SL	32 fl oz/a	D		4" WEEDS OR R1 SOYBEAN	30.0 mL/mx				
	N-PAK AMS	3.4 LBA/GAL		L	2.5 % v/v	D		4" WEEDS OR R1 SOYBEAN	45.0 mL/mx				

Sort Order: Treatment

# Purdue Weed Science

## HT3 Soybean System Comparison

Trial ID: 18S-TPAC-SOY-30      Location: TPAC      Trial Year: 2018  
 Protocol ID: 18S-TPAC-SOY-30      Investigator: Dr. Bill Johnson  
 Project ID: 2018-01-N8-04      Study Director: Dustin Johnson  
 Sponsor Contact: D. Childs - Monsanto

Pest Type		W Weed	W Weed	W Weed	W Weed					
Pest Code		ABUTH	SETFA	ECHSS	AMATA					
Pest Name		velvetleaf	Giant foxtail	Barnyardgrass	Common waterhe>					
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-7-2018	Jun-7-2018	Jun-7-2018	Jun-7-2018	Jun-7-2018	Jun-25-2018				
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	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.	14 14	14 14	14 14	14 14	14 14	32 32				
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	Unit	Appl Code	1	2	3	4	5	6
1	UNTREATED CHECK				0	0	0	0	0	0
2	HT3 SOYBEAN				3 a	40 c	100 a	100 a	100 -	0 -
	WARRANT	48 fl oz/a	A							
	XTENDIMAX	22 fl oz/a	A							
	ROUNDUP POWERMAX	32 fl oz/a	B							
	XTENDIMAX	22 fl oz/a	B							
	WARRANT	48 fl oz/a	B							
	CLASS ACT RIDION	1 % v/v	B							
	INTACT	0.5 % v/v	B							
3	HT3 SOYBEAN				4 a	63 b	96 a	98 ab	100 -	0 -
	WARRANT	48 fl oz/a	A							
	XTENDIMAX	22 fl oz/a	A							
	ROUNDUP POWERMAX	32 fl oz/a	B							
	WARRANT	48 fl oz/a	B							
	LIBERTY 280 SL	32 fl oz/a	B							
	N-PAK AMS	2.5 % v/v	B							
4	HT3 SOYBEAN				4 a	53 bc	98 a	98 ab	100 -	0 -
	WARRANT	48 fl oz/a	A							
	XTENDIMAX	22 fl oz/a	A							
	ROUNDUP POWERMAX	32 fl oz/a	B							
	XTENDIMAX	22 fl oz/a	B							
	WARRANT	48 fl oz/a	B							
	CLASS ACT RIDION	1 % v/v	B							
	INTACT	0.5 % v/v	B							
	LIBERTY 280 SL	32 fl oz/a	D							
	N-PAK AMS	2.5 % v/v	D							
5	UNTREATED CHECK 2				0	0	0	0	0	0
6	LL SOYBEAN				0 b	94 a	86 b	95 b	100 -	0 -
	AUTHORITY MAXX	6.4 oz wt/a	A							
	LIBERTY 280 SL	32 fl oz/a	C							
	N-PAK AMS	2.5 % v/v	C							
7	LL SOYBEAN				0 b	95 a	89 b	95 b	100 -	0 -
	AUTHORITY MAXX	6.4 oz wt/a	A							
	LIBERTY 280 SL	32 fl oz/a	C							
	ANTHEM MAXX	3 fl oz/a	C							
	N-PAK AMS	2.5 % v/v	C							

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, 5 excluded from analysis.  
 Missing data estimates are included in columns: Yates=2; Average=15  
 Could not calculate LSD (% mean diff) for columns 5,6,9,20,29 because error mean square = 0.

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Pest Type		W Weed	W Weed	W Weed	W Weed	
Pest Code		ABUTH	SETFA	ECHSS	AMATA	
Pest Name		velvetleaf	Giant foxtail	Barnyardgrass	Common waterhe>	
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-7-2018	Jun-7-2018	Jun-7-2018	Jun-7-2018	Jun-7-2018	Jun-25-2018
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	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.	14 14	14 14	14 14	14 14	14 14	32 32
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	Rate	Appl				
No. Name	Rate Unit	Code	1	2	3	4
			5	6		
8 LL SOYBEAN			0 b	99 a	88 b	90 c
AUTHORITY MAXX	6.4 oz wt/a	A				100 -
LIBERTY 280 SL	32 fl oz/a	C				
ANTHEM MAXX	3 fl oz/a	C				
N-PAK AMS	2.5 % v/v	C				
LIBERTY 280 SL	32 fl oz/a	D				
N-PAK AMS	2.5 % v/v	D				0 -
LSD P=.05			1.5	20.3	6.2	4.3
Standard Deviation			1.0	13.4	4.1	2.8
CV			56.18	18.11	4.46	2.95
Levene's F			3.533	1.256	2.12	2.394
Levene's Prob(F)			0.021*	0.327	0.11	0.078
Skewness			0.6543	-0.6649	-0.6224	-2.1043*
Kurtosis			-1.2762	-0.5673	-0.6784	6.069*
Replicate F			2.931	1.098	2.580	4.261
Replicate Prob(F)			0.0677	0.3826	0.0922	0.0230
Treatment F			15.621	14.341	7.736	6.224
Treatment Prob(F)			0.0001	0.0001	0.0009	0.0026
						1.0000
						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, 5 excluded from analysis.  
 Missing data estimates are included in columns: Yates=2; Average=15  
 Could not calculate LSD (% mean diff) for columns 5,6,9,20,29 because error mean square = 0.



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Pest Type Pest Code Pest Name	W Weed SETFA Giant foxtail	W Weed ECHSS Barnyardgrass	W Weed AMATA Common waterhe>	W Weed ABUTH velvetleaf	W Weed SETFA Giant foxtail				
Crop Code Crop Name Part Rated	GLXMA Soybean PLOT -	GLXMA Soybean PLOT -	GLXMA Soybean PLOT -	GLXMA Soybean PLOT -	GLXMA Soybean PLOT -				
Rating Date	Jun-25-2018	Jun-25-2018	Jun-25-2018	Jul-5-2018	Jul-5-2018				
Rating Type	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO				
Rating Unit	%	%	%	%	%				
Number of Subsamples	1	1	1	1	1				
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON				
Rating Timing	A2	A2	A2	A3	A3				
Days After First/Last Applic.	32 32	32 32	32 32	42 10	42 10				
Trt-Eval Interval	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A				
ARM Action Codes	P	P	P	P	P				
Number of Decimals	0	0	0	0	0				
Trt No.	Treatment Name	Rate	Appl Code	7	8	9	10	11	12
1	UNTREATED CHECK			0	0	0	0	0	0
2	HT3 SOYBEAN			92 a	88 a	100 -	4 c	95 -	100 a
	WARRANT	48 fl oz/a	A						
	XTENDIMAX	22 fl oz/a	A						
	ROUNDUP POWERMAX	32 fl oz/a	B						
	XTENDIMAX	22 fl oz/a	B						
	WARRANT	48 fl oz/a	B						
	CLASS ACT RIDION	1 % v/v	B						
	INTACT	0.5 % v/v	B						
3	HT3 SOYBEAN			92 a	87 a	100 -	3 c	97 -	97 a
	WARRANT	48 fl oz/a	A						
	XTENDIMAX	22 fl oz/a	A						
	ROUNDUP POWERMAX	32 fl oz/a	B						
	WARRANT	48 fl oz/a	B						
	LIBERTY 280 SL	32 fl oz/a	B						
	N-PAK AMS	2.5 % v/v	B						
4	HT3 SOYBEAN			91 a	86 a	100 -	5 abc	97 -	100 a
	WARRANT	48 fl oz/a	A						
	XTENDIMAX	22 fl oz/a	A						
	ROUNDUP POWERMAX	32 fl oz/a	B						
	XTENDIMAX	22 fl oz/a	B						
	WARRANT	48 fl oz/a	B						
	CLASS ACT RIDION	1 % v/v	B						
	INTACT	0.5 % v/v	B						
	LIBERTY 280 SL	32 fl oz/a	D						
	N-PAK AMS	2.5 % v/v	D						
5	UNTREATED CHECK 2			0	0	0	0	0	0
6	LL SOYBEAN			31 b	31 b	100 -	4 bc	100 -	90 b
	AUTHORITY MAXX	6.4 oz wt/a	A						
	LIBERTY 280 SL	32 fl oz/a	C						
	N-PAK AMS	2.5 % v/v	C						
7	LL SOYBEAN			43 b	43 b	100 -	7 ab	100 -	88 b
	AUTHORITY MAXX	6.4 oz wt/a	A						
	LIBERTY 280 SL	32 fl oz/a	C						
	ANTHEM MAXX	3 fl oz/a	C						
	N-PAK AMS	2.5 % v/v	C						

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, 5 excluded from analysis.

Missing data estimates are included in columns: Yates=2; Average=15

Could not calculate LSD (% mean diff) for columns 5,6,9,20,29 because error mean square = 0.

# Purdue Weed Science

Pest Type	W Weed	W Weed	W Weed		W Weed	W Weed		
Pest Code	SETFA	ECHSS	AMATA		ABUTH	SETFA		
Pest Name	Giant foxtail	Barnyardgrass	Common waterhe>		velvetleaf	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-25-2018	Jun-25-2018	Jun-25-2018	Jul-5-2018	Jul-5-2018	Jul-5-2018		
Rating Type	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO		
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	A3	A3	A3		
Days After First/Last Applic.	32 32	32 32	32 32	42 10	42 10	42 10		
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	Rate	Appl						
No. Name	Rate Unit	Code	7	8	9	10	11	12
8 LL SOYBEAN			33 b	33 b	100 -	8 a	100 -	91 b
AUTHORITY MAXX	6.4 oz wt/a	A						
LIBERTY 280 SL	32 fl oz/a	C						
ANTHEM MAXX	3 fl oz/a	C						
N-PAK AMS	2.5 % v/v	C						
LIBERTY 280 SL	32 fl oz/a	D						
N-PAK AMS	2.5 % v/v	D						
LSD P=.05	19.1	19.6	.	3.1	5.2	4.8		
Standard Deviation	12.7	13.0	0.0	2.0	3.4	3.2		
CV	19.94	21.35	0.0	42.76	3.5	3.35		
Levene's F	4.797	5.815	0.00	3.705	1.087	1.073		
Levene's Prob(F)	0.006*	0.002*	0.00*	0.018*	0.401	0.408		
Skewness	-0.4946	-0.5788	.	1.002*	-2.8082*	-0.6549		
Kurtosis	-1.4006	-1.3292	.	0.3593	8.1513*	-0.3603		
Replicate F	6.424	5.376	0.000	0.301	0.969	2.937		
Replicate Prob(F)	0.0052	0.0103	1.0000	0.8241	0.4332	0.0673		
Treatment F	23.968	18.922	0.000	3.584	1.487	9.984		
Treatment Prob(F)	0.0001	0.0001	1.0000	0.0248	0.2520	0.0002		

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Could not calculate LSD (% mean diff) for columns 5,6,9,20,29 because error mean square = 0.

# Purdue Weed Science

Pest Type Pest Code Pest Name	W Weed ECHSS Barnyardgrass	W Weed DIGSA large crabgrass	W Weed ABUTH velvetleaf	W Weed SETFA Giant foxtail	W Weed ECHSS Barnyardgrass			
Crop Code Crop Name Part Rated Rating Date Rating Type Rating Unit Number of Subsamples Assessed By	GLXMA Soybean PLOT - Jul-5-2018 CONTRO % 1 D. JOHNSON	GLXMA Soybean PLOT - Jul-5-2018 CONTRO % 1 D. JOHNSON	GLXMA Soybean PLOT - Jul-13-2018 PHYGEN % 1 D. JOHNSON	GLXMA Soybean PLOT - Jul-13-2018 CONTRO % 1 D. JOHNSON	GLXMA Soybean PLOT - Jul-13-2018 CONTRO % 1 D. JOHNSON			
Rating Timing Days After First/Last Applic. Trt-Eval Interval ARM Action Codes Number of Decimals	A3 42 10 14 DA-A P 0	A3 42 10 14 DA-A P 0	A4 50 7 14 DA-A P 0	A4 50 7 14 DA-A P 0	A4 50 7 14 DA-A P 0			
Trt Treatment No. Name	Rate Rate Unit	Appl Code	13	14	15	16	17	18
1 UNTREATED CHECK			0	0	0	0	0	0
2 HT3 SOYBEAN WARRANT XTENDIMAX ROUNDUP POWERMAX XTENDIMAX WARRANT CLASS ACT RIDION INTACT	48 fl oz/a A 22 fl oz/a A 32 fl oz/a B 22 fl oz/a B 48 fl oz/a B 1 % v/v B 0.5 % v/v B		97 -	100 -	0 c	95 b	99 a	100 a
3 HT3 SOYBEAN WARRANT XTENDIMAX ROUNDUP POWERMAX WARRANT LIBERTY 280 SL N-PAK AMS	48 fl oz/a A 22 fl oz/a A 32 fl oz/a B 48 fl oz/a B 32 fl oz/a B 2.5 % v/v B		100 -	99 -	0 c	96 b	96 ab	100 a
4 HT3 SOYBEAN WARRANT XTENDIMAX ROUNDUP POWERMAX XTENDIMAX WARRANT CLASS ACT RIDION INTACT LIBERTY 280 SL N-PAK AMS	48 fl oz/a A 22 fl oz/a A 32 fl oz/a B 22 fl oz/a B 48 fl oz/a B 1 % v/v B 0.5 % v/v B 32 fl oz/a D 2.5 % v/v D		99 -	99 -	2 abc	100 a	100 a	100 a
5 UNTREATED CHECK 2			0	0	0	0	0	0
6 LL SOYBEAN AUTHORITY MAXX LIBERTY 280 SL N-PAK AMS	6.4 oz wt/a A 32 fl oz/a C 2.5 % v/v C		100 -	98 -	3 ab	100 a	93 b	100 a
7 LL SOYBEAN AUTHORITY MAXX LIBERTY 280 SL ANTHEM MAXX N-PAK AMS	6.4 oz wt/a A 32 fl oz/a C 3 fl oz/a C 2.5 % v/v C		99 -	97 -	1 bc	100 a	93 b	99 b

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 Missing data estimates are included in columns: Yates=2; Average=15  
 Could not calculate LSD (% mean diff) for columns 5,6,9,20,29 because error mean square = 0.

# Purdue Weed Science

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	ECHSS	DIGSA		ABUTH	SETFA	ECHSS		
Pest Name	Barnyardgrass	large crabgrass		velvetleaf	Giant foxtail	Barnyardgrass		
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	Jul-5-2018	Jul-5-2018	Jul-13-2018	Jul-13-2018	Jul-13-2018	Jul-13-2018		
Rating Type	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO		
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	A3	A3	A4	A4	A4	A4		
Days After First/Last Applic.	42 10	42 10	50 7	50 7	50 7	50 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	Rate	Appl						
No. Name	Rate Unit	Code	13	14	15	16	17	18
8 LL SOYBEAN			100 -	97 -	4 a	100 a	100 a	100 a
AUTHORITY MAXX	6.4 oz wt/a	A						
LIBERTY 280 SL	32 fl oz/a	C						
ANTHEM MAXX	3 fl oz/a	C						
N-PAK AMS	2.5 % v/v	C						
LIBERTY 280 SL	32 fl oz/a	D						
N-PAK AMS	2.5 % v/v	D						
LSD P=.05			3.0	2.8	2.3	3.1	4.4	0.6
Standard Deviation			2.0	1.9	1.4	2.1	2.9	0.4
CV			1.98	1.91	93.34	2.11	3.04	0.39
Levene's F			1.02	1.124	4.181	2.157	2.142	
Levene's Prob(F)			0.435	0.383	0.017*	0.105	0.107	
Skewness			-3.9121*	-1.5238*	1.1832*	-1.6942*	-1.2113*	-2.7519*
Kurtosis			17.0645*	2.2096*	0.0695	1.8619*	0.4189	6.4885*
Replicate F			1.535	6.948	0.409	1.480	3.399	1.000
Replicate Prob(F)			0.2464	0.0037	0.7500	0.2602	0.0456	0.4199
Treatment F			1.288	2.102	4.656	5.472	5.644	6.818
Treatment Prob(F)			0.3203	0.1217	0.0187	0.0046	0.0040	0.0017

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## Purdue Weed Science

Trt No.	Treatment Name	Rate	Unit	Appl Code	19	20	21	22	23	24
1	UNTREATED CHECK				0	0	0	0	0	0
2	HT3 SOYBEAN				99 -	0 -	95 b	100 a	100 a	99 ab
	WARRANT	48 fl oz/a	A							
	XTENDIMAX	22 fl oz/a	A							
	ROUNDUP POWERMAX	32 fl oz/a	B							
	XTENDIMAX	22 fl oz/a	B							
	WARRANT	48 fl oz/a	B							
	CLASS ACT RIDION	1 % v/v	B							
	INTACT	0.5 % v/v	B							
3	HT3 SOYBEAN				99 -	0 -	93 b	96 ab	100 a	99 ab
	WARRANT	48 fl oz/a	A							
	XTENDIMAX	22 fl oz/a	A							
	ROUNDUP POWERMAX	32 fl oz/a	B							
	WARRANT	48 fl oz/a	B							
	LIBERTY 280 SL	32 fl oz/a	B							
	N-PAK AMS	2.5 % v/v	B							
4	HT3 SOYBEAN				100 -	0 -	100 a	100 a	100 a	100 a
	WARRANT	48 fl oz/a	A							
	XTENDIMAX	22 fl oz/a	A							
	ROUNDUP POWERMAX	32 fl oz/a	B							
	XTENDIMAX	22 fl oz/a	B							
	WARRANT	48 fl oz/a	B							
	CLASS ACT RIDION	1 % v/v	B							
	INTACT	0.5 % v/v	B							
	LIBERTY 280 SL	32 fl oz/a	D							
	N-PAK AMS	2.5 % v/v	D							
5	UNTREATED CHECK 2				0	0	0	0	0	0
6	LL SOYBEAN				98 -	0 -	100 a	92 b	100 a	97 c
	AUTHORITY MAXX	6.4 oz wt/a	A							
	LIBERTY 280 SL	32 fl oz/a	C							
	N-PAK AMS	2.5 % v/v	C							
7	LL SOYBEAN				98 -	0 -	100 a	93 b	99 b	98 bc
	AUTHORITY MAXX	6.4 oz wt/a	A							
	LIBERTY 280 SL	32 fl oz/a	C							
	ANTHEM MAXX	3 fl oz/a	C							
	N-PAK AMS	2.5 % v/v	C							

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, 5 excluded from analysis.

Missing data estimates are included in columns: Yates=2; Average=15

Could not calculate LSD (% mean diff) for columns 5,6,9,20,29 because error mean square = 0.

# Purdue Weed Science

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed					
Pest Code	DIGSA	ABUTH	SETFA	ECHSS	DIGSA					
Pest Name	large crabgrass	velvetleaf	Giant foxtail	Barnyardgrass	large crabgrass					
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA					
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean					
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -					
Rating Date	Jul-13-2018	Jul-19-2018	Jul-19-2018	Jul-19-2018	Jul-19-2018					
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO					
Rating Unit	%	%	%	%	%					
Number of Subsamples	1	1	1	1	1					
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON					
Rating Timing	A4	A5	A5	A5	A5					
Days After First/Last Applic.	50 7	56 13	56 13	56 13	56 13					
Trt-Eval Interval	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A					
ARM Action Codes	P	P	P	P	P					
Number of Decimals	0	0	0	0	0					
Trt No.	Treatment Name	Rate	Appl Unit	Code	19	20	21	22	23	24
8	LL SOYBEAN				100 -	0 -	100 a	100 a	100 a	100 ab
	AUTHORITY MAXX	6.4 oz wt/a	A							
	LIBERTY 280 SL	32 fl oz/a	C							
	ANTHEM MAXX	3 fl oz/a	C							
	N-PAK AMS	2.5 % v/v	C							
	LIBERTY 280 SL	32 fl oz/a	D							
	N-PAK AMS	2.5 % v/v	D							
LSD P=.05		2.2					4.4	4.4	0.7	1.8
Standard Deviation		1.5			0.0		2.9	2.9	0.5	1.2
CV		1.5			0.0		3.0	3.03	0.47	1.2
Levene's F		1.76			0.00		6.30	3.751		0.511
Levene's Prob(F)		0.172			0.00*		0.002*	0.017*		0.764
Skewness		-1.2873*			.		-2.0322*	-1.2639*	-3.22*	-1.0311*
Kurtosis		-0.1361			.		3.4752*	0.5223	9.124*	-0.5576
Replicate F		6.136			0.000		1.774	3.331	1.000	9.734
Replicate Prob(F)		0.0062			1.0000		0.1952	0.0482	0.4199	0.0008
Treatment F		2.091			0.000		5.129	6.240	3.000	4.503
Treatment Prob(F)		0.1233			1.0000		0.0061	0.0025	0.0450	0.0105

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 Missing data estimates are included in columns: Yates=2; Average=15  
 Could not calculate LSD (% mean diff) for columns 5,6,9,20,29 because error mean square = 0.

## Purdue Weed Science

Pest Type Pest Code Pest Name	W Weed ABUTH velvetleaf	W Weed SETFA Giant foxtail	W Weed ECHSS Barnyardgrass	W Weed DIGSA large crabgrass	W Weed ABUTH velvetleaf	W Weed SETFA Giant foxtail		
Crop Code Crop Name Part Rated Rating Date Rating Type Rating Unit Number of Subsamples Assessed By	GLXMA Soybean PLOT - Aug-1-2018 CONTRO % 1 M. ZIMMER	GLXMA Soybean PLOT - Aug-1-2018 CONTRO % 1 M. ZIMMER	GLXMA Soybean PLOT - Aug-1-2018 CONTRO % 1 M. ZIMMER	GLXMA Soybean PLOT - Aug-1-2018 CONTRO % 1 M. ZIMMER	GLXMA Soybean PLOT - Oct-19-2018 CONTRO % 1 D. JOHNSON	GLXMA Soybean PLOT - Oct-19-2018 CONTRO % 1 D. JOHNSON		
Rating Timing Days After First/Last Applic. Trt-Eval Interval ARM Action Codes Number of Decimals	A6 69 26 14 DA-A P 0	A6 69 26 14 DA-A P 0	A6 69 26 14 DA-A P 0	A6 69 26 14 DA-A P 0	A7 148 105 14 DA-A P 0	A7 148 105 14 DA-A P 0		
Trt Treatment No. Name	Rate Rate Unit	Appl Code	25	26	27	28	29	30
1 UNTREATED CHECK			0	0	0	0	0	0
2 HT3 SOYBEAN WARRANT XTENDIMAX ROUNDUP POWERMAX XTENDIMAX WARRANT CLASS ACT RIDION INTACT	48 fl oz/a A 22 fl oz/a A 32 fl oz/a B 22 fl oz/a B 48 fl oz/a B 1 % v/v B 0.5 % v/v B		99 -	100 a	100 -	100 -	100 -	100 -
3 HT3 SOYBEAN WARRANT XTENDIMAX ROUNDUP POWERMAX WARRANT LIBERTY 280 SL N-PAK AMS	48 fl oz/a A 22 fl oz/a A 32 fl oz/a B 48 fl oz/a B 32 fl oz/a B 2.5 % v/v B		98 -	98 a	100 -	100 -	100 -	98 -
4 HT3 SOYBEAN WARRANT XTENDIMAX ROUNDUP POWERMAX XTENDIMAX WARRANT CLASS ACT RIDION INTACT LIBERTY 280 SL N-PAK AMS	48 fl oz/a A 22 fl oz/a A 32 fl oz/a B 22 fl oz/a B 48 fl oz/a B 1 % v/v B 0.5 % v/v B 32 fl oz/a D 2.5 % v/v D		100 -	100 a	100 -	100 -	100 -	98 -
5 UNTREATED CHECK 2			0	0	0	0	0	0
6 LL SOYBEAN AUTHORITY MAXX LIBERTY 280 SL N-PAK AMS	6.4 oz wt/a A 32 fl oz/a C 2.5 % v/v C		100 -	88 b	99 -	96 -	100 -	91 -
7 LL SOYBEAN AUTHORITY MAXX LIBERTY 280 SL ANTHEM MAXX N-PAK AMS	6.4 oz wt/a A 32 fl oz/a C 3 fl oz/a C 2.5 % v/v C		100 -	88 b	99 -	94 -	100 -	97 -

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Missing data estimates are included in columns: Yates=2; Average=15

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# Purdue Weed Science

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	ABUTH	SETFA	ECHSS	DIGSA	ABUTH	SETFA		
Pest Name	velvetleaf	Giant foxtail	Barnyardgrass	large crabgrass	velvetleaf	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	Aug-1-2018	Aug-1-2018	Aug-1-2018	Aug-1-2018	Oct-19-2018	Oct-19-2018		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1		
Assessed By	M. ZIMMER	M. ZIMMER	M. ZIMMER	M. ZIMMER	D. JOHNSON	D. JOHNSON		
Rating Timing	A6	A6	A6	A6	A7	A7		
Days After First/Last Applic.	69 26	69 26	69 26	69 26	148 105	148 105		
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	Rate	Appl						
No. Name	Rate Unit	Code	25	26	27	28	29	30
8 LL SOYBEAN			100 -	100 a	100 -	100 -	100 -	97 -
AUTHORITY MAXX	6.4 oz wt/a	A						
LIBERTY 280 SL	32 fl oz/a	C						
ANTHEM MAXX	3 fl oz/a	C						
N-PAK AMS	2.5 % v/v	C						
LIBERTY 280 SL	32 fl oz/a	D						
N-PAK AMS	2.5 % v/v	D						
LSD P=.05			3.5	6.8	1.9	5.4	.	6.1
Standard Deviation			2.3	4.5	1.3	3.6	0.0	4.0
CV			2.36	4.69	1.3	3.67	0.0	4.14
Levene's F			0.84	2.68	0.00	14.00	0.00	2.242
Levene's Prob(F)			0.539	0.056	0.00*	0.001*	0.00*	0.094
Skewness			-3.7971*	-1.763*	-3.22*	-2.4204*	.	-2.3358*
Kurtosis			14.6501*	2.4457*	9.124*	5.0065*	.	6.4903*
Replicate F			0.696	1.940	2.500	1.064	0.000	1.933
Replicate Prob(F)			0.5686	0.1665	0.0991	0.3938	1.0000	0.1677
Treatment F			0.797	7.352	1.000	2.234	0.000	2.176
Treatment Prob(F)			0.5683	0.0012	0.4509	0.1046	1.0000	0.1118

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Missing data estimates are included in columns: Yates=2; Average=15  
Could not calculate LSD (% mean diff) for columns 5,6,9,20,29 because error mean square = 0.



## Purdue Weed Science

Pest Type	W Weed	W Weed			
Pest Code	ECHSS	DIGSA			
Pest Name	Barnyardgrass	large crabgrass			
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -
Rating Date	Oct-19-2018	Oct-19-2018	Oct-19-2018	Oct-19-2018	Oct-19-2018
Rating Type	CONTRO	CONTRO	YIELD	MOICON	YIELD
Rating Unit	%	%	lb/plot	%	BU
Number of Subsamples	1	1	1	1	1
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON
Rating Timing	A7	A7			
Days After First/Last Applic.	148 105	148 105	148 105	148 105	148 105
Trt-Eval Interval	14 DA-A	14 DA-A	123 DA-A	123 DA-A	123 DA-A
ARM Action Codes	P	P	P	P	TY3
Number of Decimals	0	0	1	1	1
Trt No.	Treatment Name	Rate	Appl Code		
		Rate Unit		31	32
				33	34
				35	
1	UNTREATED CHECK			0	0
2	HT3 SOYBEAN			100 -	100 -
	WARRANT	48 fl oz/a	A		
	XTENDIMAX	22 fl oz/a	A		
	ROUNDUP POWERMAX	32 fl oz/a	B		
	XTENDIMAX	22 fl oz/a	B		
	WARRANT	48 fl oz/a	B		
	CLASS ACT RIDION	1 % v/v	B		
	INTACT	0.5 % v/v	B		
3	HT3 SOYBEAN			98 -	98 -
	WARRANT	48 fl oz/a	A		
	XTENDIMAX	22 fl oz/a	A		
	ROUNDUP POWERMAX	32 fl oz/a	B		
	WARRANT	48 fl oz/a	B		
	LIBERTY 280 SL	32 fl oz/a	B		
	N-PAK AMS	2.5 % v/v	B		
4	HT3 SOYBEAN			98 -	98 -
	WARRANT	48 fl oz/a	A		
	XTENDIMAX	22 fl oz/a	A		
	ROUNDUP POWERMAX	32 fl oz/a	B		
	XTENDIMAX	22 fl oz/a	B		
	WARRANT	48 fl oz/a	B		
	CLASS ACT RIDION	1 % v/v	B		
	INTACT	0.5 % v/v	B		
	LIBERTY 280 SL	32 fl oz/a	D		
	N-PAK AMS	2.5 % v/v	D		
5	UNTREATED CHECK 2			0	0
6	LL SOYBEAN			91 -	91 -
	AUTHORITY MAXX	6.4 oz wt/a	A		
	LIBERTY 280 SL	32 fl oz/a	C		
	N-PAK AMS	2.5 % v/v	C		
7	LL SOYBEAN			97 -	97 -
	AUTHORITY MAXX	6.4 oz wt/a	A		
	LIBERTY 280 SL	32 fl oz/a	C		
	ANTHEM MAXX	3 fl oz/a	C		
	N-PAK AMS	2.5 % v/v	C		

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, 5 excluded from analysis.

Missing data estimates are included in columns: Yates=2; Average=15

Could not calculate LSD (% mean diff) for columns 5,6,9,20,29 because error mean square = 0.

## Purdue Weed Science

Pest Type	W Weed	W Weed			
Pest Code	ECHSS	DIGSA			
Pest Name	Barnyardgrass	large crabgrass			
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -
Rating Date	Oct-19-2018	Oct-19-2018	Oct-19-2018	Oct-19-2018	Oct-19-2018
Rating Type	CONTRO	CONTRO	YIELD	MOICON	YIELD
Rating Unit	%	%	lb/plot	%	BU
Number of Subsamples	1	1	1	1	1
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON
Rating Timing	A7	A7			
Days After First/Last Applic.	148 105	148 105	148 105	148 105	148 105
Trt-Eval Interval	14 DA-A	14 DA-A	123 DA-A	123 DA-A	123 DA-A
ARM Action Codes	P	P	P	P	TY3
Number of Decimals	0	0	1	1	1
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code	31	32	33
8 LL SOYBEAN			97 -	97 -	12.8 -
AUTHORITY MAXX	6.4 oz wt/a	A			12.8 -
LIBERTY 280 SL	32 fl oz/a	C			74.4 -
ANTHEM MAXX	3 fl oz/a	C			
N-PAK AMS	2.5 % v/v	C			
LIBERTY 280 SL	32 fl oz/a	D			
N-PAK AMS	2.5 % v/v	D			
LSD P=.05	6.1	6.1	1.50	0.29	8.73
Standard Deviation	4.0	4.0	1.00	0.19	5.79
CV	4.14	4.14	7.88	1.51	7.87
Levene's F	2.242	2.242	0.472	0.834	0.434
Levene's Prob(F)	0.094	0.094	0.792	0.542	0.819
Skewness	-2.3358*	-2.3358*	-0.0784	0.0086	-0.1052
Kurtosis	6.4903*	6.4903*	0.4307	0.0333	0.4096
Replicate F	1.933	1.933	4.615	4.315	4.787
Replicate Prob(F)	0.1677	0.1677	0.0177	0.0221	0.0156
Treatment F	2.176	2.176	1.725	0.404	1.715
Treatment Prob(F)	0.1118	0.1118	0.1895	0.8388	0.1919

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, 5 excluded from analysis.

Missing data estimates are included in columns: Yates=2; Average=15

Could not calculate LSD (% mean diff) for columns 5,6,9,20,29 because error mean square = 0.

# Purdue Weed Science

## HT3 Soybean System Comparison

Trial ID: 18S-TPAC-SOY-30	Location: TPAC	Trial Year: 2018
Protocol ID: 18S-TPAC-SOY-30	Investigator: Dr. Bill Johnson	
Project ID: 2018-01-N8-04	Study Director: Dustin Johnson	
	Sponsor Contact: D. Childs - Monsanto	

Pest Type

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

Pest Code

ABUTH, Abutilon theophrasti, velvetleaf = US

SETFA, Setaria faberi, Giant foxtail = US

ECHSS, Echinochloa sp., Barnyardgrass = US

AMATA, Amaranthus tamariscinus, Common waterhemp = US

DIGSA, Digitaria sanguinalis, large crabgrass = US

Crop Code

GLXMA, BSOY, Glycine max, Soybean = US

Part Rated

PLOT = plot

Rating Type

PHYGEN = phytotoxicity - general / injury

CONTRO = control / burndown or knockdown

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

A5 = 5th Assessment According to Trial Schedule

A6 = 6th Assessment according to Trial Schedule

A7 = 7th Assessment According to Trial Schedule

ARM Action Codes

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

TY3 =  $5.808 * [33] * (100 - [34]) / 87$