

# Purdue Weed Science

## Panther Pro No-Till / Liberty Link Soybeans

Trial ID: 18S-MGS-Soy-01      Location: Meigs      Trial Year: 2018  
 Protocol ID: Panther Pro No-Till      Investigator: Dr. Bill Johnson  
 Project ID:      Study Director: Taylor Campbell  
 Sponsor Contact: Bob Bruss - Nufarm

### General Trial Information

**Study Director:** Taylor Campbell  
**Investigator:** Dr. Bill Johnson

**Discipline:** H herbicide  
**Trial Status:** E established  
**Initiation Date:** 5/1/2018

### Trial Location

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

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

### Contacts

**Study Director:** Taylor Campbell  
**Organization:** Purdue University  
**Address:** 915 W State Street  
**City+State/Prov:** West Lafayette, IN  
**Postal Code:** 47907  
**Country:** USA United States

**Investigator:** Dr. Bill Johnson  
**Organization:** Purdue University  
**Address:** 915 W State Street  
**City+State/Prov:** West Lafayette, IN  
**Postal Code:** 47907  
**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:** 296L4  
**Description:** Liberty Link

**Planting Date:** 5/29/2018  
**Planting Method:** PLANTD planted  
**Planting Rate, Unit:** 140000 S/A      **Planting Equipment:** PP plot planter  
**Depth, Unit:** 1 IN      **Emergence Date:** 6/3/2018  
**Row Spacing, Unit:** 30 IN  
**Soil Temperature, Unit:** 90 F  
**Soil Moisture:** DRY dry

### Pest Description

**Pest 1 Type:** W      **Code:** AMATA *Amaranthus tamariscinus*  
**Common Name:** Common waterhemp

**Pest 2 Type:** W      **Code:** AMBTR *Ambrosia trifida*  
**Common Name:** Giant ragweed

**Pest 3 Type:** W      **Code:** ERICA *Erigeron canadensis*  
**Common Name:** Canada horseweed

### 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      **Treatments:** 5      **Tillage Type:** NOTILL no-till  
**Replications:** 4      **Study Design:** RACOB� Randomized Complete Block (RCB)

### Soil Description

**Description Name:** MGS-S5  
**% Sand:** 40.7      **% OM:** 2.3      **Texture:** L loam  
**% Silt:** 38.6      **pH:** 6.5      **Soil Name:** Starks-Fincastle complex  
**% Clay:** 20.7      **CEC:** 14.3      **Fert. Level:** G good

## Purdue Weed Science

### Panther Pro No-Till / Liberty Link Soybeans

Trial ID: 18S-MGS-Soy-01  
 Protocol ID: Panther Pro No-Till  
 Project ID:

Location: Meigs      Trial Year: 2018  
 Investigator: Dr. Bill Johnson  
 Study Director: Taylor Campbell  
 Sponsor Contact: Bob Bruss - Nufarm

#### Application Description

	A	B	C	D
<b>Application Date:</b>	5/17/2018	5/29/2018	6/25/2018	6/28/2018
<b>Appl. Start Time:</b>	11:42 AM	1:15 PM	10:35 AM	11:56 AM
<b>Appl. Stop Time:</b>	11:58 AM	1:20 PM	10:38 AM	12:01 PM
<b>Application Method:</b>	SPRAY	SPRAY	SPRAY	SPRAY
<b>Application Timing:</b>	EARPRE	PREPLA	POSPOS	POSPOS
<b>Application Placement:</b>	BROADC	BROADC	BROADC	BROADC
<b>Applied By:</b>	T. Campbell	T. Campbell	T. Campbell	T. Campbell
<b>Air Temperature, Unit:</b>	83 F	91 F	92 F	87 F
<b>% Relative Humidity:</b>	39	42	85	70
<b>Wind Velocity, Unit:</b>	7 MPH	5 MPH	3 MPH	3 MPH
<b>Wind Direction:</b>	SW	W	W	W
<b>Dew Presence (Y/N):</b>	N no	N no	N no	N no
<b>Soil Temperature, Unit:</b>	81 F	90 F	90 F	85 F
<b>Soil Moisture:</b>	DRY	DRY	SLIWET	SLIWET
<b>% Cloud Cover:</b>	50	80	60	15

#### 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	00	14 70	14 50
<b>Stage Minimum, Percent:</b>			14 70	14 50
<b>Stage Maximum, Percent:</b>			15 30	15 50
<b>Average Diameter, Unit:</b>			6 IN	7 IN
<b>Height, Unit:</b>			10 IN	11 IN
<b>Height Minimum, Maximum:</b>			10 12	10 12

## Purdue Weed Science

### Panther Pro No-Till / Liberty Link Soybeans

Trial ID: 18S-MGS-Soy-01  
 Protocol ID: Panther Pro No-Till  
 Project ID:

Location: Meigs      Trial Year: 2018  
 Investigator: Dr. Bill Johnson  
 Study Director: Taylor Campbell  
 Sponsor Contact: Bob Bruss - Nufarm

#### Pest Stage At Each Application

	A	B	C	D
<b>Pest 1 Code, Type, Scale:</b>	AMATA W	AMATA W	AMATA W	AMATA W
<b>Stage Majority, Percent:</b>		14 60	15 60	15 60
<b>Stage Minimum, Percent:</b>		07 30	14 30	14 30
<b>Stage Maximum, Percent:</b>		18 10	18 10	18 10
<b>Diameter, Unit:</b>		2 IN	7 IN	7 IN
<b>Height, Unit:</b>		2 IN	4 cm	4 cm
<b>Height Minimum, Maximum:</b>		0.5 3	2 6	2 6
<b>Density, Unit:</b>		2 FT2	4 FT2	4 FT2
<b>Pest 2 Code, Type, Scale:</b>	AMBTR W DESC	AMBTR W	AMBTR W	AMBTR W
<b>Stage Majority, Percent:</b>	17 60	15 50	13 50	13 50
<b>Stage Minimum, Percent:</b>	16 30	13 30	11 30	11 30
<b>Stage Maximum, Percent:</b>	19 10	17 20	15 20	15 20
<b>Diameter, Unit:</b>	3 IN	3 IN	3 IN	3 IN
<b>Height, Unit:</b>	4 IN	4 IN	3 IN	3 IN
<b>Height Minimum, Maximum:</b>	2 6	2 6	2 5	2 5
<b>Density, Unit:</b>	8 FT2	5 FT2	5 FT2	5 FT2
<b>Pest 3 Code, Type, Scale:</b>	ERICA W	ERICA W	ERICA W	ERICA W
<b>Stage Majority, Percent:</b>	15 50	16 60	14 50	14 50
<b>Stage Minimum, Percent:</b>	10 30	12 30	12 30	12 30
<b>Stage Maximum, Percent:</b>	30 20	19 10	16 20	16 20
<b>Diameter, Unit:</b>	5 IN	4 IN	4 IN	4 IN
<b>Height, Unit:</b>	3 IN	3 IN	3 IN	3 IN
<b>Height Minimum, Maximum:</b>	1 4	1 4	1 3	1 3
<b>Density, Unit:</b>	2 FT2	2 FT2	2 FT2	2 FT2

#### Application Equipment

	A	B	C	D
<b>Appl. Equipment:</b>	CO2 BACKPACK	CO2 BACKPACK	CO2 BACKPACK	CO2 BACKPACK
<b>Equipment Type:</b>	BACCAI	BACCAI	BACCAI	BACCAI
<b>Operation Pressure, Unit:</b>	44 PSI	44 PSI	43 PSI	43 PSI
<b>Nozzle Type:</b>	AIXR	AIXR	AIXR	AIXR
<b>Nozzle Size:</b>	11015	11015	11015	11015
<b>Nozzle Spacing, Unit:</b>	20 IN	20 IN	20 IN	20 IN
<b>Nozzles/Row:</b>	4	4	4	4
<b>Boom Length, Unit:</b>	6.7 FT	6.7 FT	6.7 FT	6.7 FT
<b>Boom Height, Unit:</b>	21 IN	25 IN	25 IN	25 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>	945 mL	945 mL	945 mL	945 mL
<b>Propellant:</b>	COMCO2	COMCO2	COMCO2	COMCO2

#### Date By Notes

5/10/2018 T. Campbell Trial was over sprayed with Select at 10 oz to encourage Marestalk growth.  
 5/18/2018 T. Campbell Credit Xtreme was removed from trt #3  
 6/7/2018 T. Campbell Evening storm brought hail and slight damage occurred at Meigs field site.

## Purdue Weed Science

### Panther Pro No-Till / Liberty Link Soybeans

Trial ID: 18S-MGS-Soy-01	Location: Meigs	Trial Year: 2018
Protocol ID: Panther Pro No-Till	Investigator: Dr. Bill Johnson	
Project ID:	Study Director: Taylor Campbell	
	Sponsor Contact: Bob Bruss - Nufarm	

Reps: 4      Appl Code: A      Plots: 6.67 by 30 feet  
 Spray vol: 15 GAL/AC      Mix Size: 945 mL (total for 4 plots; minimum=1043.3 mL)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Appl Unit	Appl Code	Amt to Measure	Rep			
									1	2	3	4
1	SPITFIRE	3.57	LB/GAL	L	20 fl oz/a	A		9.844 mL/mx	101	204	303	501
	CREDIT XTREME	4.5	LBAE/GAL	L	32 fl oz/a	A		15.75 mL/mx				
	N-PAK	3.4	LBA/GAL	L	2.5 % v/v	A		23.62 mL/mx				
2	SPITFIRE	3.57	LB/GAL	L	20 fl oz/a	A		9.844 mL/mx	102	301	403	504
	CREDIT XTREME	4.5	LBAE/GAL	L	32 fl oz/a	A		15.75 mL/mx				
	PANTHER PRO	4.23	LB/GAL	L	15 fl oz/a	A		7.383 mL/mx				
	N-PAK	3.4	LBA/GAL	L	2.5 % v/v	A		23.62 mL/mx				
	MSO	100 %		SL	1 % v/v	A		9.449 mL/mx				
3	SPITFIRE	3.57	LB/GAL	L	20 fl oz/a	A		9.844 mL/mx	103	202	402	404
	CREDIT XTREME	4.5	LBAE/GAL	L	32 fl oz/a	A		15.75 mL/mx				
	PANTHER PRO	4.23	LB/GAL	L	15 fl oz/a	A		7.383 mL/mx				
	N-PAK	3.4	LBA/GAL	L	2.5 % v/v	A		23.62 mL/mx				
	MSO	100 %		SL	1 % v/v	A		9.449 mL/mx				
4	SPITFIRE	3.57	LB/GAL	L	20 fl oz/a	A		9.844 mL/mx	104	203	401	502
	CREDIT XTREME	4.5	LBAE/GAL	L	32 fl oz/a	A		15.75 mL/mx				
	N-PAK	3.4	LBA/GAL	L	2.5 % v/v	A		23.62 mL/mx				
5	SPITFIRE	3.57	LB/GAL	L	20 fl oz/a	A		9.844 mL/mx	201	302	304	503
	CREDIT XTREME	4.5	LBAE/GAL	L	32 fl oz/a	A		15.75 mL/mx				
	N-PAK	3.4	LBA/GAL	L	2.5 % v/v	A		23.62 mL/mx				

# Purdue Weed Science

## Panther Pro No-Till / Liberty Link Soybeans

Trial ID: 18S-MGS-Soy-01      Location: Meigs      Trial Year: 2018  
 Protocol ID: Panther Pro No-Till      Investigator: Dr. Bill Johnson  
 Project ID:      Study Director: Taylor Campbell  
    Sponsor Contact: Bob Bruss - Nufarm

Reps: 4      Appl Code: B      Plots: 6.67 by 30 feet  
 Spray vol: 15 GAL/AC      Mix Size: 945 mL (total for 4 plots; minimum=1043.3 mL)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Appl Unit	Code	Amt Product to Measure	Rep 1	Rep 2	Rep 3	Rep 4
4	PANTHER PRO	4.23	LB/GAL	L	12 fl oz/a	B		5.906 mL/mx	104	203	401	502
	CREDIT XTREME	4.5	LBAE/GAL	L	32 fl oz/a	B		15.75 mL/mx				
	MSO	100 %		SL	1 % v/v	B		9.449 mL/mx				
5	PANTHER PRO	4.23	LB/GAL	L	15 fl oz/a	B		7.383 mL/mx	201	302	304	503
	CREDIT XTREME	4.5	LBAE/GAL	L	32 fl oz/a	B		15.75 mL/mx				
	MSO	100 %		SL	1 % v/v	B		9.449 mL/mx				

## Purdue Weed Science

### Panther Pro No-Till / Liberty Link Soybeans

Trial ID: 18S-MGS-Soy-01  
 Protocol ID: Panther Pro No-Till  
 Project ID:

Location: Meigs      Trial Year: 2018  
 Investigator: Dr. Bill Johnson  
 Study Director: Taylor Campbell  
 Sponsor Contact: Bob Bruss - Nufarm

Reps: 4      Appl Code: C      Plots: 6.67 by 30 feet  
 Spray vol: 15 GAL/AC      Mix Size: 945 mL (total for 4 plots; minimum=1043.3 mL)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Appl Code	Amt Product to Measure	Rep 1	Rep 2	Rep 3	Rep 4
2	CHEETAH	2.34	LB/GAL	L	29	fl oz/a	C	14.27 mL/mx	102	301	403	504
	N-PAK	3.4	LBA/GAL	L	2.5	% v/v	C	23.62 mL/mx				
3	COBRA	2	LB/GAL	EC	10	fl oz/a	C	4.922 mL/mx	103	202	402	404
	COC	100	%	SL	1	% v/v	C	9.449 mL/mx				
	N-PAK	3.4	LBA/GAL	L	2.5	% v/v	C	23.62 mL/mx				

## Purdue Weed Science

### Panther Pro No-Till / Liberty Link Soybeans

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Protocol ID: Panther Pro No-Till	Investigator: Dr. Bill Johnson	
Project ID:	Study Director: Taylor Campbell	
	Sponsor Contact: Bob Bruss - Nufarm	

Reps: 4      Appl Code: D      Plots: 6.67 by 30 feet  
 Spray vol: 15 GAL/AC      Mix Size: 945 mL (total for 4 plots; minimum=1043.3 mL)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Appl Code	Amt Product to Measure	Rep			
									1	2	3	4
4	CHEETAH	2.34	LB/GAL	L	29	fl oz/a	D	14.27 mL/mx	104	203	401	502
	N-PAK	3.4	LBA/GAL	L	2.5	% v/v	D	23.62 mL/mx				
5	CHEETAH	2.34	LB/GAL	L	29	fl oz/a	D	14.27 mL/mx	201	302	304	503
	N-PAK	3.4	LBA/GAL	L	2.5	% v/v	D	23.62 mL/mx				

Sort Order: Application Code, Replicate 1

Product quantities required for listed treatments and applications of trials included in this table:

Amount*	Unit	Treatment Name	Form Conc	Form Unit	Form Type	Lot Code
61.523	mL	SPITFIRE	3.57	LB/GAL	L	
137.812	mL	CREDIT XTREME	4.5	LBAE/GAL	L	
265.752	mL	N-PAK	3.4	LBA/GAL	L	
35.068	mL	PANTHER PRO	4.23	LB/GAL	L	
47.245	mL	MSO	100	%	SL	
53.525	mL	CHEETAH	2.34	LB/GAL	L	
6.152	mL	COBRA	2	LB/GAL	EC	
11.811	mL	COC	100	%	SL	

\* 'Per area' calculations based on spray volume= 15 GAL/AC, mix size= 945 mL (mix size basis).

\* Product amount calculations increased 25 % for overage adjustment.

\* 'Per volume' calculations use spray volume= 15 GAL/AC, mix size= 945 mL.

# Purdue Weed Science

## Panther Pro No-Till / Liberty Link Soybeans

Trial ID: 18S-MGS-Soy-01      Location: Meigs      Trial Year: 2018  
 Protocol ID: Panther Pro No-Till      Investigator: Dr. Bill Johnson  
 Project ID:      Study Director: Taylor Campbell  
 Sponsor Contact: Bob Bruss - Nufarm

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	AMBTR	ERICA	AMATA	AMBTR	ERICA			
Pest Name	Giant ragweed	Canada horsewe>	Common waterhe>	Giant ragweed	Canada horsewe>			
Crop Code								
Crop Name								
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P			
Rating Date	5/29/2018	5/29/2018	5/29/2018	6/25/2018	6/25/2018			
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO			
Rating Unit	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1			
Assessed By	T. Campbell	T. Campbell	T. Campbell	T. Campbell	T. Campbell			
Days After First/Last Applic.	12 12	12 12	12 12	39 27	39 27			
Days After Emergence	-5 DE-1	-5 DE-1	-5 DE-1	22 DE-1	22 DE-1			
Number of Decimals	0	0	0	0	0			
Trt No.	Treatment Name	Rate	Appl Code	1	2	3	4	5
1	SPITFIRE	20 fl oz/a A		63 b	50 b	63 -	0 b	0 b
	CREDIT XTREME	32 fl oz/a A						
	N-PAK	2.5 % v/v A						
2	SPITFIRE	20 fl oz/a A		100 a	100 a	100 -	89 a	100 a
	CREDIT XTREME	32 fl oz/a A						
	PANTHER PRO	15 fl oz/a A						
	N-PAK	2.5 % v/v A						
	MSO	1 % v/v A						
	CHEETAH	29 fl oz/a C						
	N-PAK	2.5 % v/v C						
3	SPITFIRE	20 fl oz/a A		100 a	100 a	100 -	66 a	99 a
	CREDIT XTREME	32 fl oz/a A						
	PANTHER PRO	15 fl oz/a A						
	N-PAK	2.5 % v/v A						
	MSO	1 % v/v A						
	COBRA	10 fl oz/a C						
	COC	1 % v/v C						
	N-PAK	2.5 % v/v C						
4	SPITFIRE	20 fl oz/a A		75 ab	50 b	75 -	77 a	99 a
	CREDIT XTREME	32 fl oz/a A						
	N-PAK	2.5 % v/v A						
	PANTHER PRO	12 fl oz/a B						
	CREDIT XTREME	32 fl oz/a B						
	MSO	1 % v/v B						
	CHEETAH	29 fl oz/a D						
	N-PAK	2.5 % v/v D						
5	SPITFIRE	20 fl oz/a A		63 b	50 b	75 -	86 a	100 a
	CREDIT XTREME	32 fl oz/a A						
	N-PAK	2.5 % v/v A						
	PANTHER PRO	15 fl oz/a B						
	CREDIT XTREME	32 fl oz/a B						
	MSO	1 % v/v B						
	CHEETAH	29 fl oz/a D						
	N-PAK	2.5 % v/v D						
LSD P=.05				25.4	.	29.8	27.4	1.5
Standard Deviation				16.5	0.0	19.4	17.8	1.0
CV				20.57	0.0	23.47	27.96	1.24
Levene's F				1.75	0.00	5.00	0.629	0.00
Levene's Prob(F)				0.192	0.00*	0.009*	0.649	0.00*
Skewness				-0.4421	0.4421	-0.6812	-0.9631	-1.6225*
Kurtosis				-2.018*	-2.018*	-1.7195	-0.9248	0.6952
Replicate F				3.692	0.000	2.111	2.572	0.615
Replicate Prob(F)				0.0431	1.0000	0.1522	0.1028	0.6181
Treatment F				5.308	0.000	3.000	16.989	8144.283
Treatment Prob(F)				0.0107	1.0000	0.0625	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.  
 Could not calculate LSD (% mean diff) for columns 2,7,11,13 because error mean square = 0.



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 Project ID:      Study Director: Taylor Campbell  
 Sponsor Contact: Bob Bruss - Nufarm

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	AMATA	AMATA	AMBTR	ERICA	AMATA	AMATA			
Pest Name	Common waterhe>		Giant ragweed	Canada horsewe>	Common waterhe>				
Crop Code		GLXMA				GLXMA			
Crop Name		Soybean				Soybean			
Part Rated	PLOT P	PLOT C	PLOT P	PLOT P	PLOT P	PLOT C			
Rating Date	6/25/2018	6/25/2018	7/9/2018	7/9/2018	7/9/2018	7/9/2018			
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO	PHYGEN			
Rating Unit	%	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1	1			
Assessed By	T. Campbell	T. Campbell	T. Campbell	T. Campbell	T. Campbell	T. Campbell			
Days After First/Last Applic.	39 27	39 27	53 11	53 11	53 11	53 11			
Days After Emergence	22 DE-1	22 DE-1	36 DE-1	36 DE-1	36 DE-1	36 DE-1			
Number of Decimals	0	0	0	0	0	0			
Trt No.	Treatment Name	Rate	Appl	6	7	8	9	10	11
No. Name	Rate Unit	Code							
1	SPITFIRE	20 fl oz/a	A	0 c	0 -	0 b	0 c	0 c	0 b
	CREDIT XTREME	32 fl oz/a	A						
	N-PAK	2.5 % v/v	A						
2	SPITFIRE	20 fl oz/a	A	86 b	0 -	98 a	100 a	85 b	0 b
	CREDIT XTREME	32 fl oz/a	A						
	PANTHER PRO	15 fl oz/a	A						
	N-PAK	2.5 % v/v	A						
	MSO	1 % v/v	A						
	CHEETAH	29 fl oz/a	C						
	N-PAK	2.5 % v/v	C						
3	SPITFIRE	20 fl oz/a	A	88 ab	0 -	89 a	98 b	86 b	20 a
	CREDIT XTREME	32 fl oz/a	A						
	PANTHER PRO	15 fl oz/a	A						
	N-PAK	2.5 % v/v	A						
	MSO	1 % v/v	A						
	COBRA	10 fl oz/a	C						
	COC	1 % v/v	C						
	N-PAK	2.5 % v/v	C						
4	SPITFIRE	20 fl oz/a	A	95 a	0 -	91 a	100 a	97 a	0 b
	CREDIT XTREME	32 fl oz/a	A						
	N-PAK	2.5 % v/v	A						
	PANTHER PRO	12 fl oz/a	B						
	CREDIT XTREME	32 fl oz/a	B						
	MSO	1 % v/v	B						
	CHEETAH	29 fl oz/a	D						
	N-PAK	2.5 % v/v	D						
5	SPITFIRE	20 fl oz/a	A	95 a	0 -	96 a	100 a	95 a	0 b
	CREDIT XTREME	32 fl oz/a	A						
	N-PAK	2.5 % v/v	A						
	PANTHER PRO	15 fl oz/a	B						
	CREDIT XTREME	32 fl oz/a	B						
	MSO	1 % v/v	B						
	CHEETAH	29 fl oz/a	D						
	N-PAK	2.5 % v/v	D						
LSD P=.05		8.5	.			10.0	2.0	5.5	.
Standard Deviation		5.5	0.0			6.5	1.3	3.6	0.0
CV		7.58	0.0			8.68	1.62	4.95	0.0
Levene's F		1.608	0.00			1.892		4.396	0.00
Levene's Prob(F)		0.224	0.00*			0.164		0.015*	0.00*
Skewness		-1.527*	.			-1.4996*	-1.619*	-1.5318*	1.6245*
Kurtosis		0.5114	.			0.4559	0.6892	0.5475	0.6985
Replicate F		1.158	0.000			2.264	1.000	0.807	0.000
Replicate Prob(F)		0.3660	1.0000			0.1333	0.4262	0.5139	1.0000
Treatment F		219.632	0.000			167.048	4743.000	517.988	0.000
Treatment Prob(F)		0.0001	1.0000			0.0001	0.0001	0.0001	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.  
 Could not calculate LSD (% mean diff) for columns 2,7,11,13 because error mean square = 0.

## Purdue Weed Science

### Panther Pro No-Till / Liberty Link Soybeans

Trial ID: 18S-MGS-Soy-01  
 Protocol ID: Panther Pro No-Till  
 Project ID:

Location: Meigs Trial Year: 2018  
 Investigator: Dr. Bill Johnson  
 Study Director: Taylor Campbell  
 Sponsor Contact: Bob Bruss - Nufarm

Pest Type	W Weed	W Weed	W Weed
Pest Code	AMBTR	ERICA	AMATA
Pest Name	Giant ragweed	Canada horsewee>	Common waterhe>
Crop Code			
Crop Name			
Part Rated	PLOT P	PLOT P	PLOT P
Rating Date	7/23/2018	7/23/2018	7/23/2018
Rating Type	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%
Number of Subsamples	1	1	1
Assessed By	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.	67 25	67 25	67 25
Days After Emergence	50 DE-1	50 DE-1	50 DE-1
Number of Decimals	0	0	0
Trt Treatment	Rate	Appl	
No. Name	Rate Unit	Code	
			12
			13
			14
1 SPITFIRE	20 fl oz/a A		0 c
CREDIT XTREME	32 fl oz/a A		0 b
N-PAK	2.5 % v/v A		0 b
2 SPITFIRE	20 fl oz/a A		99 a
CREDIT XTREME	32 fl oz/a A		100 a
PANTHER PRO	15 fl oz/a A		87 a
N-PAK	2.5 % v/v A		
MSO	1 % v/v A		
CHEETAH	29 fl oz/a C		
N-PAK	2.5 % v/v C		
3 SPITFIRE	20 fl oz/a A		94 b
CREDIT XTREME	32 fl oz/a A		100 a
PANTHER PRO	15 fl oz/a A		85 a
N-PAK	2.5 % v/v A		
MSO	1 % v/v A		
COBRA	10 fl oz/a C		
COC	1 % v/v C		
N-PAK	2.5 % v/v C		
4 SPITFIRE	20 fl oz/a A		98 ab
CREDIT XTREME	32 fl oz/a A		100 a
N-PAK	2.5 % v/v A		91 a
PANTHER PRO	12 fl oz/a B		
CREDIT XTREME	32 fl oz/a B		
MSO	1 % v/v B		
CHEETAH	29 fl oz/a D		
N-PAK	2.5 % v/v D		
5 SPITFIRE	20 fl oz/a A		98 ab
CREDIT XTREME	32 fl oz/a A		100 a
N-PAK	2.5 % v/v A		93 a
PANTHER PRO	15 fl oz/a B		
CREDIT XTREME	32 fl oz/a B		
MSO	1 % v/v B		
CHEETAH	29 fl oz/a D		
N-PAK	2.5 % v/v D		
LSD P=.05	4.2	.	9.0
Standard Deviation	2.7	0.0	5.8
CV	3.52	0.0	8.19
Levene's F	1.684	0.00	2.436
Levene's Prob(F)	0.206	0.00*	0.093
Skewness	-1.6042*	-1.6245*	-1.4806*
Kurtosis	0.6646	0.6985	0.4432
Replicate F	0.656	0.000	4.433
Replicate Prob(F)	0.5943	1.0000	0.0257
Treatment F	1008.233	0.000	187.256
Treatment Prob(F)	0.0001	1.0000	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.

Could not calculate LSD (% mean diff) for columns 2,7,11,13 because error mean square = 0.

## Purdue Weed Science

### Panther Pro No-Till / Liberty Link Soybeans

Trial ID: 18S-MGS-Soy-01      Location: Meigs      Trial Year: 2018  
Protocol ID: Panther Pro No-Till      Investigator: Dr. Bill Johnson  
Project ID:      Study Director: Taylor Campbell  
Sponsor Contact: Bob Bruss - Nufarm

#### Pest Type

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

#### Pest Code

AMBTR, Ambrosia trifida, Giant ragweed = US

ERICA, Erigeron canadensis, Canada horseweed = US

AMATA, Amaranthus tamariscinus, Common waterhemp = US

#### Crop Code

GLXMA, BSOY, Glycine max, Soybean = US

#### Part Rated

PLOT = plot

P = Pest is Part Rated

C = Crop is Part Rated

#### Rating Type

CONTRO = control / burndown or knockdown

PHYGEN = phytotoxicity - general / injury

#### Rating Unit

% = percent