

# Purdue University Weed Science

## NUP-13007 FALL/EARLY SPRING BURNDOWN

Trial ID: 14S-SEP-NTS-08      Location: SEPAC      Trial Year: 2014  
 Protocol ID: 14S-SEP-NTS-08      Investigator: Dr. Bill Johnson  
 Project ID: H 2014 107 IN      Study Director: Joe Ikley  
 Sponsor Contact: Nufarm - Bob Bruss

### General Trial Information

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

**Discipline:** H herbicide  
**Trial Status:** F one-year/final  
**Initiation Date:** 4/17/2014  
**Completion Date:** 6/25/2014

### Trial Location

**City:** Butlerville      **Country:** USA United States  
**State/Prov.:** Indiana  
**Postal Code:** 47223

### Contacts

**Study Director:** Joe Ikley      **Title:** Research Associate  
**Organization:** Purdue University  
**Address:** 915 West State Street      **Phone No.:** 765-494-0891  
**City+State/Prov:** West Lafayette      **Mobile No.:** 410-596-9091  
**Postal Code:** 47907      **E-mail:** jikley@purdue.edu

**Investigator:** Dr. Bill Johnson      **Title:** Professor  
**Organization:** Purdue University  
**Address:** 915 West State Street      **Phone No.:** 765-494-4656  
**City+State/Prov:** West Lafayette      **Mobile No.:** 765-404-9801  
**Postal Code:** 47907      **E-mail:** wgj@purdue.edu

### Crop Description

**Crop 1:** GLXMA      Glycine max Soybean  
**Variety:** Asgrow 2933  
**Description:** RR  
**Planting Rate, Unit:** 140000 S/A      **Planting Date:** 5/27/2014  
**Depth, Unit:** 1.5 IN      **Planting Method:** DIRDRI direct drilled  
**Row Spacing, Unit:** 30 IN      **Planting Equipment:** PP Plot Planter  
**Soil Temperature, Unit:** 80 F      **Emergence Date:** 5/31/2014  
**Soil Moisture:** WET wet

### Pest Description

**Pest 1 Type:** W      **Code:** BROSS Bromus sp.  
**Common Name:** Bromegrass

**Pest 2 Type:** W      **Code:** RANPF Ranunculus parviflorus  
**Common Name:** Small-flowered buttercup

**Pest 3 Type:** W      **Code:** ALLVI Allium vineale  
**Common Name:** Wild garlic

**Pest 4 Type:** W      **Code:** AMBTR Ambrosia trifida  
**Common Name:** Giant ragweed

### Site and Design

**Treated Plot Width:** 10 FT  
**Treated Plot Length:** 30 FT  
**Treated Plot Area:** 300 FT<sup>2</sup>      **Treatments:** 17  
**Replications:** 4      **Study Design:** RACOB L Randomized Complete Block (RCB)

### Maintenance

No.	Date	Maintenance Product Name	Form Conc	Form Type	Rate	Rate Unit
1.	5/27/2014	ROUNDUP POWEMAX	4.5	L	32	FL OZ/A

**Comment:** Blanket of glyphosate applied at planting to all treatments

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## Soil Description

**Description Name:** SEPAC-Field U4  
**% Sand:** 20      **% OM:** 1.8      **Texture:** SIL silt loam  
**% Silt:** 65      **pH:** 5.6      **Soil Name:** Avonburg  
**% Clay:** 15      **CEC:** 6.7      **Fert. Level:** G good  
**Soil Drainage:** P poor

## Application Description

	A
<b>Application Date:</b>	4/17/2014
<b>Appl. Start Time:</b>	16:30
<b>Appl. Stop Time:</b>	5:30 PM
<b>Application Method:</b>	SPRAY
<b>Application Timing:</b>	30 DPP
<b>Application Placement:</b>	BROADC
<b>Applied By:</b>	Ikley
<b>Air Temperature, Unit:</b>	65 F
<b>% Relative Humidity:</b>	33
<b>Wind Velocity, Unit:</b>	5 MPH
<b>Wind Direction:</b>	S
<b>Dew Presence (Y/N):</b>	N no
<b>Soil Temperature, Unit:</b>	60 F
<b>Soil Moisture:</b>	SLIDRY
<b>% Cloud Cover:</b>	30

## Crop Stage At Each Application

	A
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY

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## Pest Stage At Each Application

	A
<b>Pest 1 Code, Type, Scale:</b>	BROSS W
<b>Stage Majority, Percent:</b>	23
<b>Stage Minimum, Percent:</b>	21
<b>Stage Maximum, Percent:</b>	25
<b>Height, Unit:</b>	2 IN
<b>Height Minimum, Maximum:</b>	1 3
<b>Density, Unit:</b>	10 YD2
<b>Pest 2 Code, Type, Scale:</b>	RANPF W
<b>Stage Majority, Percent:</b>	55
<b>Height, Unit:</b>	2 IN
<b>Height Minimum, Maximum:</b>	1 3
<b>Density, Unit:</b>	20 YD2
<b>Pest 3 Code, Type, Scale:</b>	ALLVI W
<b>Stage Majority, Percent:</b>	15
<b>Stage Minimum, Percent:</b>	13
<b>Stage Maximum, Percent:</b>	18
<b>Height, Unit:</b>	10 IN
<b>Height Minimum, Maximum:</b>	8 12
<b>Density, Unit:</b>	25 YD2
<b>Pest 4 Code, Type, Scale:</b>	AMBTR W
<b>Stage Majority, Percent:</b>	11
<b>Stage Minimum, Percent:</b>	10
<b>Stage Maximum, Percent:</b>	12
<b>Height, Unit:</b>	0.5 IN
<b>Height Minimum, Maximum:</b>	0 1
<b>Density, Unit:</b>	150 YD2

## Application Equipment

	A
<b>Appl. Equipment:</b>	CO2 Backpack
<b>Equipment Type:</b>	SPRBAC
<b>Operation Pressure, Unit:</b>	18 PSI
<b>Nozzle Type:</b>	Flat Fan
<b>Nozzle Size:</b>	XR11002
<b>Nozzle Spacing, Unit:</b>	15 IN
<b>Nozzles/Row:</b>	8
<b>Boom Length, Unit:</b>	10 FT
<b>Boom Height, Unit:</b>	18 IN
<b>Ground Speed, Unit:</b>	3 MPH
<b>Carrier:</b>	H2O
<b>Water Hardness (ppm CaCO3):</b>	150
<b>Spray Volume, Unit:</b>	15 GAL/AC
<b>Mix Size, Unit:</b>	1.8 Liters
<b>Propellant:</b>	CO2
<b>Tank Mix (Y/N):</b>	N no

### Trt No Treatment Application Comment

2 NUP-13007 did not go into solution well in treatments where it was applied alone

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3 NUP-13007 did not go into solution well in treatments where it was applied alone

### Trial Comments

NUP-13007 did not go into solution well when mixed only with COC. When mixed with AMS and Credit Xtreme, it did go into and stay in solution very well.

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Reps: 4      Plots: 10 by 30 feet  
 Spray vol: 15 gal/ac      Mix size: 1.8 liters (min 1.5642)

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	406	701	1002
2	NUP-13007 COC	100 %		L SL	1 pt/a 1 % v/v	A A	30 DPP 30 DPP		15.0 ml/mx 18.0 ml/mx	102	306	707	901
3	NUP-13007 COC	100 %		L SL	2 pt/a 1 % v/v	A A	30 DPP 30 DPP		30.0 ml/mx 18.0 ml/mx	103	405	603	1004
4	WEEDAR 64 PANTHER COC	3.8 LBAE/GAL 51 % 100 %		L WG SL	1 pt/a 1 oz/a 1 % v/v	A A A	30 DPP 30 DPP 30 DPP		15.0 ml/mx 0.8987 g/mx 18.0 ml/mx	104	402	702	1001
5	WEEDAR 64 PANTHER COC	3.8 LBAE/GAL 51 % 100 %		L WG SL	2 pt/a 2 oz/a 1 % v/v	A A A	30 DPP 30 DPP 30 DPP		30.0 ml/mx 1.797 g/mx 18.0 ml/mx	105	501	605	1005
6	SPITFIRE COC	3.57 LBAE/GAL 100 %		L SL	20 fl oz/a 1 % v/v	A A	30 DPP 30 DPP		18.75 ml/mx 18.0 ml/mx	106	504	607	904
7	SPITFIRE COC	3.57 LBAE/GAL 100 %		L SL	2 pt/a 1 % v/v	A A	30 DPP 30 DPP		30.0 ml/mx 18.0 ml/mx	107	502	801	803
8	PANTHER COC	51 % 100 %		WG SL	2 oz/a 1 % v/v	A A	30 DPP 30 DPP		1.797 g/mx 18.0 ml/mx	201	403	703	804
9	CREDIT XTREME COC N-PAK AMS	4.5 LBAE/GAL 100 % 3.4 LBA/GAL		L SL SL	22 fl oz/a 1 % v/v 1 % v/v	A A A	30 DPP 30 DPP 30 DPP		20.62 ml/mx 18.0 ml/mx 18.0 ml/mx	202	307	601	805
10	SPITFIRE PANTHER COC	3.57 LBAE/GAL 51 % 100 %		L WG SL	20 fl oz/a 1 oz/a 1 % v/v	A A A	30 DPP 30 DPP 30 DPP		18.75 ml/mx 0.8987 g/mx 18.0 ml/mx	203	304	802	1003
11	SPITFIRE PANTHER COC	3.57 LBAE/GAL 51 % 100 %		L WG SL	20 fl oz/a 2 oz/a 1 % v/v	A A A	30 DPP 30 DPP 30 DPP		18.75 ml/mx 1.797 g/mx 18.0 ml/mx	204	401	704	907
12	SPITFIRE PANTHER COC	3.57 LBAE/GAL 51 % 100 %		L WG SL	2 pt/a 1 oz/a 1 % v/v	A A A	30 DPP 30 DPP 30 DPP		30.0 ml/mx 0.8987 g/mx 18.0 ml/mx	205	407	706	903
13	SPITFIRE PANTHER COC	3.57 LBAE/GAL 51 % 100 %		L WG SL	2 pt/a 2 oz/a 1 % v/v	A A A	30 DPP 30 DPP 30 DPP		30.0 ml/mx 1.797 g/mx 18.0 ml/mx	206	503	507	902
14	SPITFIRE CREDIT XTREME COC N-PAK AMS	3.57 LBAE/GAL 4.5 LBAE/GAL 100 % 3.4 LBA/GAL		L L SL SL	20 fl oz/a 22 fl oz/a 1 % v/v 1 % v/v	A A A A	30 DPP 30 DPP 30 DPP 30 DPP		18.75 ml/mx 20.62 ml/mx 18.0 ml/mx 18.0 ml/mx	207	506	705	807
15	SPITFIRE CREDIT XTREME PANTHER COC N-PAK AMS	3.57 LBAE/GAL 4.5 LBAE/GAL 51 % 100 % 3.4 LBA/GAL		L L WG SL SL	20 fl oz/a 22 fl oz/a 1 oz/a 1 % v/v 1 % v/v	A A A A A	30 DPP 30 DPP 30 DPP 30 DPP 30 DPP		18.75 ml/mx 20.62 ml/mx 0.8987 g/mx 18.0 ml/mx 18.0 ml/mx	301	505	606	906
16	NUP-13007 CREDIT XTREME COC N-PAK AMS			L L SL SL	1 pt/a 22 fl oz/a 1 % v/v 1 % v/v	A A A A	30 DPP 30 DPP 30 DPP 30 DPP		15.0 ml/mx 20.62 ml/mx 18.0 ml/mx 18.0 ml/mx	302	404	604	806
17	Untreated Check									303	305	602	905

Sort Order: Replicate 1

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

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
59.993	ml	NUP-13007		L	

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

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
269.971	ml	COC	100	SL	
44.995	ml	WEEDAR 64	3.8	L	
10.784	g	PANTHER	51	WG	
183.740	ml	SPITFIRE	3.57	L	
82.500	ml	CREDIT XTREME	4.5	L	
71.992	ml	N-PAK AMS	3.4	SL	

\* 'Per area' calculations based on spray volume= 15 gal/ac, mix size= 1.8 liters (mix size basis).

\* 'Per volume' calculations use spray volume= 15 gal/ac, mix size= 1.8 liters.

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	RANPF	ALLVI	RANPF	ALLVI	RANPF		
Pest Scientific Name	Ranunculus par>	Allium vineale	Ranunculus par>	Allium vineale	Ranunculus par>		
Pest Name	Small-flowered>	Wild garlic	Small-flowered>	Wild garlic	Small-flowered>		
Crop Code							
BBCH Scale							
Crop Scientific Name							
Crop Name							
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P		
Rating Date	4/24/2014	4/24/2014	5/1/2014	5/1/2014	5/19/2014		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%		
Days After First/Last Applic.	7 7	7 7	14 14	14 14	32 32		
Trt-Eval Interval	7 DA-A	7 DA-A	14 DA-A	14 DA-A	32 DA-A		
ARM Action Codes	P	P	P	P	P		
Number of Decimals	0	0	0	0	0		
Trt Treatment	Rate	Appl					
No. Name	Rate Unit	Code Plot	1	2	3	4	5
1 Untreated Check		101	0	0	0	0	0
		406	0	0	0	0	0
		701	0	0	0	0	0
		1002	0	0	0	0	0
		Mean =	0	0	0	0	0
2 NUP-13007	1 pt/a A	102	70	30	50	50	95
COC	1 % v/v A	306	10	10	70	50	70
		707	40*	18*	60*	47*	83*
		901	40*	15	60*	40	83*
		Mean =	40	18	60	47	83
3 NUP-13007	2 pt/a A	103	80	40	80	50	95
COC	1 % v/v A	405	40	40	85	35	80
		603	30	30	50	35	100
		1004	50*	37*	72*	40*	92*
		Mean =	50	37	72	40	92
4 WEEDAR 64	1 pt/a A	104	60	40	50	50	90
PANTHER	1 oz/a A	402	30	40	80	50	70
COC	1 % v/v A	702	30	30	30	25	80*
		1001	20	37*	100	30	80*
		Mean =	35	37	65	39	80
5 WEEDAR 64	2 pt/a A	105	65	50	80	60	100
PANTHER	2 oz/a A	501	63*	40*	90*	60*	100*
COC	1 % v/v A	605	60	30	100	60	100
		1005	63*	40*	90*	60*	100*
		Mean =	63	40	90	60	100
6 SPITFIRE	20 fl oz/a A	106	30	30	40	60	80
COC	1 % v/v A	504	18*	20*	38*	47*	80*
		607	5	10	20	30	80*
		904	20	20*	55	50	80*
		Mean =	18	20	38	47	80
7 SPITFIRE	2 pt/a A	107	30	60	60	60	100
COC	1 % v/v A	502	30*	40*	55*	55*	100*
		801	30	20	50	50	100*
		803	30*	40*	55*	55*	100*
		Mean =	30	40	55	55	100
8 PANTHER	2 oz/a A	201	10	10	0	0	0
COC	1 % v/v A	403	20	15	10	0	0
		703	60	0	10	10	0*
		804	30*	8*	7*	3*	0*
		Mean =	30	8	7	3	0

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Pest Type	W Weed RANPF	W Weed ALLVI	W Weed RANPF	W Weed ALLVI	W Weed RANPF
Pest Code	Ranunculus par>	Allium vineale	Ranunculus par>	Allium vineale	Ranunculus par>
Pest Scientific Name	Small-flowered>	Wild garlic	Small-flowered>	Wild garlic	Small-flowered>
Pest Name					
Crop Code					
BBCH Scale					
Crop Scientific Name					
Crop Name					
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P
Rating Date	4/24/2014	4/24/2014	5/1/2014	5/1/2014	5/19/2014
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Days After First/Last Applic.	7 7	7 7	14 14	14 14	32 32
Trt-Eval Interval	7 DA-A	7 DA-A	14 DA-A	14 DA-A	32 DA-A
ARM Action Codes	P	P	P	P	P
Number of Decimals	0	0	0	0	0
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code Plot	1	2	3
9 CREDIT XTREME	22 fl oz/a A	202	10	0	80
COC	1 % v/v A	307	10	0	90
N-PAK AMS	1 % v/v A	601	10	0	80*
		805	5	0	70
	Mean =		9	0	80
10 SPITFIRE	20 fl oz/a A	203	70	30	60
PANTHER	1 oz/a A	304	30	15	75
COC	1 % v/v A	802	70	20	30
		1003	57*	22*	55*
	Mean =		57	22	55
11 SPITFIRE	20 fl oz/a A	204	70	30	90
PANTHER	2 oz/a A	401	30	60	95
COC	1 % v/v A	704	50*	45*	93*
		907	50*	45*	93*
	Mean =		50	45	93
12 SPITFIRE	2 pt/a A	205	65	50	80
PANTHER	1 oz/a A	407	30	20	93*
COC	1 % v/v A	706	40	50	100
		903	60	30	100
	Mean =		49	38	93
13 SPITFIRE	2 pt/a A	206	80	40	95
PANTHER	2 oz/a A	503	75*	38*	98*
COC	1 % v/v A	507	75*	38*	98*
		902	70	35	100
	Mean =		75	38	98
14 SPITFIRE	20 fl oz/a A	207	50	20	90
CREDIT XTREME	22 fl oz/a A	506	28*	25*	90*
COC	1 % v/v A	705	25	30	80
N-PAK AMS	1 % v/v A	807	10	25*	100
	Mean =		28	25	90
15 SPITFIRE	20 fl oz/a A	301	30	50	100
CREDIT XTREME	22 fl oz/a A	505	43*	50*	100*
PANTHER	1 oz/a A	606	30	50*	100
COC	1 % v/v A	906	70	50	100
N-PAK AMS	1 % v/v A				
	Mean =		43	50	100
16 NUP-13007	1 pt/a A	302	70	20	100
CREDIT XTREME	22 fl oz/a A	404	20	10	100
COC	1 % v/v A	604	10	40	100
N-PAK AMS	1 % v/v A	806	50	20	100
	Mean =		38	23	100
17 Untreated Check		303	0	0	0
		305	0	0	0
		602	0	0	0
		905	0	0	0
	Mean =		0	0	0



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Pest Type	W Weed					
Pest Code	ALLVI					
Pest Scientific Name	Allium vineale					
Pest Name	Wild garlic					
Crop Code				GLXMA	GLXMA	
BBCH Scale				BSOY	BSOY	
Crop Scientific Name				Glycine max	Glycine max	
Crop Name				Soybean	Soybean	
Part Rated			PLOT P	PLOT C	PLOT C	
Rating Date			5/19/2014	6/12/2014	6/25/2014	
Rating Type			CONTRO	PHYGEN	PHYGEN	
Rating Unit			%	%	%	
Days After First/Last Applic.			32 32	56 56	69 69	
Trt-Eval Interval			32 DA-A	56 DA-A	69 DA-A	
ARM Action Codes			P	P	P	
Number of Decimals			0	0	0	
Trt Treatment	Rate	Appl				
No. Name	Rate Unit	Code Plot	6	7	8	
1 Untreated Check		101	0	0	0	
		406	0	0	0	
		701	0	0	0	
		1002	0	0	0	
		Mean =	0	0	0	
2 NUP-13007	1 pt/a A	102	30	0	0	
COC	1 % v/v A	306	30	0	0	
		707	25*	0	0	
		901	15	0	0	
		Mean =	25	0	0	
3 NUP-13007	2 pt/a A	103	30	0	0	
COC	1 % v/v A	405	65	0	0	
		603	50	0	0	
		1004	48*	0	0	
		Mean =	48	0	0	
4 WEEDAR 64	1 pt/a A	104	30	0	0	
PANTHER	1 oz/a A	402	10	0	0	
COC	1 % v/v A	702	0	0	0	
		1001	13*	0	0	
		Mean =	13	0	0	
5 WEEDAR 64	2 pt/a A	105	50	0	0	
PANTHER	2 oz/a A	501	55*	0	0	
COC	1 % v/v A	605	60	0	0	
		1005	55*	0	0	
		Mean =	55	0	0	
6 SPITFIRE	20 fl oz/a A	106	.	0	0	
COC	1 % v/v A	504	.	0	0	
		607	.	0	0	
		904	.	0	0	
		Mean =	.	0	0	
7 SPITFIRE	2 pt/a A	107	.	0	0	
COC	1 % v/v A	502	.	0	0	
		801	.	0	0	
		803	.	0	0	
		Mean =	.	0	0	
8 PANTHER	2 oz/a A	201	0	0	0	
COC	1 % v/v A	403	0	0	0	
		703	0	0	0	
		804	0*	0	0	
		Mean =	0	0	0	

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Pest Type	W Weed			
Pest Code	ALLVI			
Pest Scientific Name	Allium vineale			
Pest Name	Wild garlic			
Crop Code		GLXMA	GLXMA	
BBCH Scale		BSOY	BSOY	
Crop Scientific Name		Glycine max	Glycine max	
Crop Name		Soybean	Soybean	
Part Rated	PLOT P	PLOT C	PLOT C	
Rating Date	5/19/2014	6/12/2014	6/25/2014	
Rating Type	CONTRO	PHYGEN	PHYGEN	
Rating Unit	%	%	%	
Days After First/Last Applic.	32 32	56 56	69 69	
Trt-Eval Interval	32 DA-A	56 DA-A	69 DA-A	
ARM Action Codes	P	P	P	
Number of Decimals	0	0	0	
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code Plot	6	7
9 CREDIT XTREME	22 fl oz/a A	202	65	0
COC	1 % v/v A	307	70	0
N-PAK AMS	1 % v/v A	601	55*	0
		805	30	0
		Mean =	55	0
10 SPITFIRE	20 fl oz/a A	203	30	0
PANTHER	1 oz/a A	304	60	0
COC	1 % v/v A	802	45*	0
		1003	45*	0
		Mean =	45	0
11 SPITFIRE	20 fl oz/a A	204	100	0
PANTHER	2 oz/a A	401	30	0
COC	1 % v/v A	704	65*	0
		907	65*	0
		Mean =	65	0
12 SPITFIRE	2 pt/a A	205	40	0
PANTHER	1 oz/a A	407	80	0
COC	1 % v/v A	706	30	0
		903	20	0
		Mean =	43	0
13 SPITFIRE	2 pt/a A	206	40	0
PANTHER	2 oz/a A	503	45*	0
COC	1 % v/v A	507	45*	0
		902	50	0
		Mean =	45	0
14 SPITFIRE	20 fl oz/a A	207	100	0
CREDIT XTREME	22 fl oz/a A	506	85*	0
COC	1 % v/v A	705	70	0
N-PAK AMS	1 % v/v A	807	85*	0
		Mean =	85	0
15 SPITFIRE	20 fl oz/a A	301	.	0
CREDIT XTREME	22 fl oz/a A	505	.	0
PANTHER	1 oz/a A	606	.	0
COC	1 % v/v A	906	.	0
N-PAK AMS	1 % v/v A		.	0
		Mean =	.	0
16 NUP-13007	1 pt/a A	302	80	0
CREDIT XTREME	22 fl oz/a A	404	100	0
COC	1 % v/v A	604	90*	0
N-PAK AMS	1 % v/v A	806	90*	0
		Mean =	90	0
17 Untreated Check		303	0	0
		305	0	0
		602	0*	0
		905	0	0
		Mean =	0	0

# Purdue University Weed Science

## NUP-13007 FALL/EARLY SPRING BURNDOWN

Trial ID: 14S-SEP-NTS-08      Location: SEPAC      Trial Year: 2014  
Protocol ID: 14S-SEP-NTS-08      Investigator: Dr. Bill Johnson  
Project ID: H 2014 107 IN      Study Director: Joe Ikley  
Sponsor Contact: Nufarm - Bob Bruss

### Pest Type

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

### Pest Code

RANPF, Ranunculus parviflorus, = US

ALLVI, Allium vineale, = US

### Crop Code

GLXMA, BSOY, Glycine max, = 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

### ARM Action Codes

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

# Purdue University Weed Science

## NUP-13007 FALL/EARLY SPRING BURNDOWN

Trial ID: 14S-SEP-NTS-08  
 Protocol ID: 14S-SEP-NTS-08  
 Project ID: H 2014 107 IN

Location: SEPAC Trial Year: 2014  
 Investigator: Dr. Bill Johnson  
 Study Director: Joe Ikley  
 Sponsor Contact: Nufarm - Bob Bruss

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	RANPF	ALLVI	RANPF	ALLVI	RANPF	ALLVI			
Pest Scientific Name	Ranunculus par>	Allium vineale	Ranunculus par>	Allium vineale	Ranunculus par>	Allium vineale			
Pest Name	Small-flowered>	Wild garlic	Small-flowered>	Wild garlic	Small-flowered>	Wild garlic			
Crop Code									
BBCH Scale									
Crop Scientific Name									
Crop Name									
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P			
Rating Date	4/24/2014	4/24/2014	5/1/2014	5/1/2014	5/19/2014	5/19/2014			
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO			
Rating Unit	%	%	%	%	%	%			
Days After First/Last Applic.	7 7	7 7	14 14	14 14	32 32	32 32			
Trt-Eval Interval	7 DA-A	7 DA-A	14 DA-A	14 DA-A	32 DA-A	32 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	1	2	3	4	5	6
1	Untreated Check			0 e	0 e	0 e	0 b	0 c	0 e
2	NUP-13007 COC	1 pt/a 1 % v/v	A A	40 a-e	18 cde	60 cd	47 a	83 ab	25 cde
3	NUP-13007 COC	2 pt/a 1 % v/v	A A	50 a-d	37 abc	72 abc	40 a	92 ab	48 bcd
4	WEEDAR 64 PANTHER COC	1 pt/a 1 oz/a 1 % v/v	A A A	35 a-e	37 abc	65 bcd	39 a	80 b	13 de
5	WEEDAR 64 PANTHER COC	2 pt/a 2 oz/a 1 % v/v	A A A	63 ab	40 abc	90 ab	60 a	100 a	55 a-d
6	SPITFIRE COC	20 fl oz/a 1 % v/v	A A	18 cde	20 b-e	38 d	47 a	80 b	
7	SPITFIRE COC	2 pt/a 1 % v/v	A A	30 b-e	40 abc	55 cd	55 a	100 a	
8	PANTHER COC	2 oz/a 1 % v/v	A A	30 b-e	8 de	7 e	3 b	0 c	0 e
9	CREDIT XTREME COC N-PAK AMS	22 fl oz/a 1 % v/v 1 % v/v	A A A	9 de	0 e	80 abc	11 b	100 a	55 a-d
10	SPITFIRE PANTHER COC	20 fl oz/a 1 oz/a 1 % v/v	A A A	57 abc	22 b-e	55 cd	37 a	83 ab	45 bcd
11	SPITFIRE PANTHER COC	20 fl oz/a 2 oz/a 1 % v/v	A A A	50 a-d	45 ab	93 ab	40 a	90 ab	65 abc
12	SPITFIRE PANTHER COC	2 pt/a 1 oz/a 1 % v/v	A A A	49 a-d	38 abc	93 ab	52 a	95 ab	43 bcd
13	SPITFIRE PANTHER COC	2 pt/a 2 oz/a 1 % v/v	A A A	75 a	38 abc	98 a	60 a	100 a	45 bcd
14	SPITFIRE CREDIT XTREME COC N-PAK AMS	20 fl oz/a 22 fl oz/a 1 % v/v 1 % v/v	A A A A	28 b-e	25 bcd	90 ab	38 a	100 a	85 ab

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.  
 Missing data estimates are included in columns: Average=1,2,3,4,5,6

## Purdue University Weed Science

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	RANPF	ALLVI	RANPF	ALLVI	RANPF	ALLVI		
Pest Scientific Name	Ranunculus par>	Allium vineale	Ranunculus par>	Allium vineale	Ranunculus par>	Allium vineale		
Pest Name	Small-flowered>	Wild garlic	Small-flowered>	Wild garlic	Small-flowered>	Wild garlic		
Crop Code								
BBCH Scale								
Crop Scientific Name								
Crop Name								
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P		
Rating Date	4/24/2014	4/24/2014	5/1/2014	5/1/2014	5/19/2014	5/19/2014		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%	%		
Days After First/Last Applic.	7 7	7 7	14 14	14 14	32 32	32 32		
Trt-Eval Interval	7 DA-A	7 DA-A	14 DA-A	14 DA-A	32 DA-A	32 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
15 SPITFIRE	20 fl oz/a A		43 a-d	50 a	100 a	50 a	100 a	
CREDIT XTREME	22 fl oz/a A							
PANTHER	1 oz/a A							
COC	1 % v/v A							
N-PAK AMS	1 % v/v A							
16 NUP-13007	1 pt/a A		38 a-e	23 b-e	100 a	55 a	100 a	90 a
CREDIT XTREME	22 fl oz/a A							
COC	1 % v/v A							
N-PAK AMS	1 % v/v A							
17 Untreated Check			0 e	0 e	0 e	0 b	0 c	0 e
LSD (P=.05)			25.1	15.1	19.2	17.2	10.8	27.5
Standard Deviation			17.4	10.4	13.3	11.9	7.4	18.7
CV			48.13	40.34	20.68	31.85	9.66	45.91
Bartlett's X2			15.438	8.698	11.913	16.016	0.936	7.168
P(Bartlett's X2)			0.281	0.729	0.453	0.191	0.919	0.71
Skewness			0.3399	0.2468	-0.575	-0.1289	-1.2047*	0.5087
Kurtosis			-1.2484	-1.0486	-1.2165	-1.2894	-0.3986	-0.7652

# Purdue University Weed Science

Pest Type			
Pest Code			
Pest Scientific Name			
Pest Name			
Crop Code	GLXMA	GLXMA	
BBCH Scale	BSOY	BSOY	
Crop Scientific Name	Glycine max	Glycine max	
Crop Name	Soybean	Soybean	
Part Rated	PLOT C	PLOT C	
Rating Date	6/12/2014	6/25/2014	
Rating Type	PHYGEN	PHYGEN	
Rating Unit	%	%	
Days After First/Last Applic.	56 56	69 69	
Tri-Eval Interval	56 DA-A	69 DA-A	
ARM Action Codes	P	P	
Number of Decimals	0	0	
Tri Treatment No. Name	Rate Unit	Appl Code	
			7                      8
1 Untreated Check			0 a                      0 a
2 NUP-13007 COC	1 pt/a A 1 % v/v A		0 a                      0 a
3 NUP-13007 COC	2 pt/a A 1 % v/v A		0 a                      0 a
4 WEEDAR 64 PANTHER COC	1 pt/a A 1 oz/a A 1 % v/v A		0 a                      0 a
5 WEEDAR 64 PANTHER COC	2 pt/a A 2 oz/a A 1 % v/v A		0 a                      0 a
6 SPITFIRE COC	20 fl oz/a A 1 % v/v A		0 a                      0 a
7 SPITFIRE COC	2 pt/a A 1 % v/v A		0 a                      0 a
8 PANTHER COC	2 oz/a A 1 % v/v A		0 a                      0 a
9 CREDIT XTREME COC N-PAK AMS	22 fl oz/a A 1 % v/v A 1 % v/v A		0 a                      0 a
10 SPITFIRE PANTHER COC	20 fl oz/a A 1 oz/a A 1 % v/v A		0 a                      0 a
11 SPITFIRE PANTHER COC	20 fl oz/a A 2 oz/a A 1 % v/v A		0 a                      0 a
12 SPITFIRE PANTHER COC	2 pt/a A 1 oz/a A 1 % v/v A		0 a                      0 a
13 SPITFIRE PANTHER COC	2 pt/a A 2 oz/a A 1 % v/v A		0 a                      0 a
14 SPITFIRE CREDIT XTREME COC N-PAK AMS	20 fl oz/a A 22 fl oz/a A 1 % v/v A 1 % v/v A		0 a                      0 a

## Purdue University Weed Science

Pest Type			
Pest Code			
Pest Scientific Name			
Pest Name			
Crop Code	GLXMA	GLXMA	
BBCH Scale	BSOY	BSOY	
Crop Scientific Name	Glycine max	Glycine max	
Crop Name	Soybean	Soybean	
Part Rated	PLOT C	PLOT C	
Rating Date	6/12/2014	6/25/2014	
Rating Type	PHYGEN	PHYGEN	
Rating Unit	%	%	
Days After First/Last Applic.	56 56	69 69	
Trt-Eval Interval	56 DA-A	69 DA-A	
ARM Action Codes	P	P	
Number of Decimals	0	0	
<b>Trt No.</b>	<b>Treatment Name</b>	<b>Rate</b>	<b>Appl Code</b>
15	SPITFIRE	20 fl oz/a A	0 a
	CREDIT XTREME	22 fl oz/a A	0 a
	PANTHER	1 oz/a A	
	COC	1 % v/v A	
	N-PAK AMS	1 % v/v A	
16	NUP-13007	1 pt/a A	0 a
	CREDIT XTREME	22 fl oz/a A	0 a
	COC	1 % v/v A	
	N-PAK AMS	1 % v/v A	
17	Untreated Check		0 a
	LSD (P=.05)	0.0	0.0
	Standard Deviation	0.0	0.0
	CV	0.0	0.0
	Bartlett's X2	0.0	0.0
	P(Bartlett's X2)	.	.
	Skewness	.	.
	Kurtosis	.	.

# Purdue University Weed Science

## NUP-13007 FALL/EARLY SPRING BURNDOWN

Trial ID: 14S-SEP-NTS-08      Location: SEPAC      Trial Year: 2014  
 Protocol ID: 14S-SEP-NTS-08      Investigator: Dr. Bill Johnson  
 Project ID: H 2014 107 IN      Study Director: Joe Ikley  
 Sponsor Contact: Nufarm - Bob Bruss

Randomized Complete Block (RCB) AOV For W Weed RANPF Ranunculus parviflorus Small-flowered buttercup PLOT P 4/24/2014 CONTRO % 7 7 7 DA-A P 0 (Data Column 1)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	51	40962.173203			
Replicate	3	3065.441176	1021.813725	3.379	0.0301
Treatment	16	28220.506536	1763.781658	5.833	0.0001
Error	32	9676.225490	302.382047		

Randomized Complete Block (RCB) AOV For W Weed ALLVI Allium vineale Wild garlic PLOT P 4/24/2014 CONTRO % 7 7 7 DA-A P 0 (Data Column 2)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	48	20595.833333			
Replicate	3	295.996732	98.665577	0.908	0.4490
Treatment	16	17150.000000	1071.875000	9.869	0.0001
Error	29	3149.836601	108.615055		

Randomized Complete Block (RCB) AOV For W Weed RANPF Ranunculus parviflorus Small-flowered buttercup PLOT P 5/1/2014 CONTRO % 14 14 14 DA-A P 0 (Data Column 3)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	49	83962.581699			
Replicate	3	1166.258170	388.752723	2.190	0.1098
Treatment	16	77470.915033	4841.932190	27.276	0.0001
Error	30	5325.408497	177.513617		

Randomized Complete Block (RCB) AOV For W Weed ALLVI Allium vineale Wild garlic PLOT P 5/1/2014 CONTRO % 14 14 14 DA-A P 0 (Data Column 4)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	47	32020.915033			
Replicate	3	745.751634	248.583878	1.766	0.1766
Treatment	16	27333.415033	1708.338440	12.135	0.0001
Error	28	3941.748366	140.776727		

Randomized Complete Block (RCB) AOV For W Weed RANPF Ranunculus parviflorus Small-flowered buttercup PLOT P 5/19/2014 CONTRO % 32 32 32 DA-A P 0 (Data Column 5)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	43	90435.457516			
Replicate	3	28.431373	9.477124	0.173	0.9135
Treatment	16	89093.790850	5568.361928	101.764	0.0001
Error	24	1313.235294	54.718137		

Randomized Complete Block (RCB) AOV For W Weed ALLVI Allium vineale Wild garlic PLOT P 5/19/2014 CONTRO % 32 32 32 DA-A P 0 (Data Column 6)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	37	53731.547619			
Replicate	3	592.261905	197.420635	0.567	0.6430
Treatment	13	45823.214286	3524.862637	10.118	0.0001
Error	21	7316.071429	348.384354		

Randomized Complete Block (RCB) AOV For GLXMA BSOY Glycine max Soybean PLOT C 6/12/2014 PHYGEN % 56 56 56 DA-A P 0 (Data Column 7)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	67	0.000000000000			
Replicate	3	0.000000000000	0.000000000000	0.000	1.0000
Treatment	16	0.000000000000	0.000000000000	0.000	1.0000
Error	48	0.000000000000	0.000000000000		

Randomized Complete Block (RCB) AOV For GLXMA BSOY Glycine max Soybean PLOT C 6/25/2014 PHYGEN % 69 69 69 DA-A P 0 (Data Column 8)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	67	0.000000000000			
Replicate	3	0.000000000000	0.000000000000	0.000	1.0000
Treatment	16	0.000000000000	0.000000000000	0.000	1.0000
Error	48	0.000000000000	0.000000000000		

Pest Type  
 W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop  
Pest Code  
 RANPF, Ranunculus parviflorus, = US  
 ALLVI, Allium vineale, = US



## Purdue University Weed Science

Crop Code

GLXMA, BSOY, Glycine max, = 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

ARM Action Codes

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