

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

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: Nov-10-2015

Trial Location

City: CORTLAND **Country:** USA United States
State/Prov.: Indiana
Postal Code: 42778

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

City: Cortland
State/Prov: IN
Postal Code: 47228
Country: USA United States

Crop Description

Crop 1: GLXMA Glycine max Soybean
Variety: Liberty Link 298L4 (126216)
Description: Glufosinate Tolerant

Planting Rate, Unit: 140000 S/A
Depth, Unit: 2 IN
Row Spacing, Unit: 30 IN
Soil Temperature, Unit: 70 F
Soil Moisture: VERDRY very dry

Planting Date: May-30-2016
Planting Method: PLANTD planted
Planting Equipment: PP Plot Planter
Emergence Date: Jun-4-2016

Pest Description

Pest 1 Type: W **Code:** ERICA Conyza canadensis
Common Name: Canada horseweed

Pest 2 Type: W **Code:** LAMAM Lamium amplexicaule
Common Name: Henbit

Pest 3 Type: W **Code:** CHEAL Chenopodium album
Common Name: common lambsquarters

Site and Design

Treated Plot Width: 6.67 FT
Treated Plot Length: 30 FT
Treated Plot Area: 200.1 FT2 **Treatments:** 20
Replications: 4

Site Type: FIELD field
Experimental Unit: 1 PLOT plot
Tillage Type: NOTILL no-till
Study Design: RACOB Randomized Complete Block (RCB)

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Maintenance

No.	Date	Maintenance Product Name	Form Conc	Form Type	Rate	Rate Unit
1.	Mar-30-2016	0-0-60 POTASH			119	LB/A
2.	Mar-30-2016	18-46-0 PHOSPHORUS			60	LB/A
3.	Jun-24-2016	Liberty	2.34	L	36	FL OZ/A

Field Prep./Maintenance:

6/24/16 Sprayed Liberty to control overgrown horseweed for harvesting purposes. Soybeans at V2-V3 stage with majority at V-3.

Soil Description

Description Name: CORTLAND
 % Sand: 46.6 % OM: 1.6 **Texture:** SL sandy loam
 % Silt: 35.6 pH: 6.6 **Soil Name:** Fox-Ockley
 % Clay: 17.8 **CEC:** 9
Soil Drainage: E excellent

Application Description

	A	B	C
Application Date:	Nov-10-2015	Apr-5-2016	May-23-2016
Appl. Start Time:	9:45 AM	11:50 AM	12:30 PM
Appl. Stop Time:	10:15 AM	12:10 PM	1:00 PM
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	FALL	APRIL 1	7 DBP
Application Placement:	BROADC	BROADC	BROADC
Applied By:	M. ZIMMER	M. ZIMMER	M. ZIMMER
Air Temperature, Unit:	47 F	39 F	72 F
Wind Velocity, Unit:	5 MPH	7 MPH	5 MPH
Wind Direction:	WSW	ENE	NE
Dew Presence (Y/N):	N no	N no	N no
Soil Temperature, Unit:	53 F	47 F	70 F
Soil Moisture:	WET	DRY	DRY
% Cloud Cover:	100	90	0

Crop Stage At Each Application

	A	B	C
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:	BBCH	BBCH	BBCH
Stage Majority, Percent:	00	00	00

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Pest Stage At Each Application

	A	B	C
Pest 1 Code, Type, Scale:	ERICA W	ERICA W	ERICA W
Stage Majority, Percent:	14	08 80	
Stage Minimum, Percent:	11	08 80	
Stage Maximum, Percent:	19	17 20	
Diameter, Unit:	3 IN	1.5 IN	
Height, Unit:			6 IN
Height Minimum, Maximum:			2 13
Density, Unit:	1500 YD2	384 YD2	203 YD2
Pest 2 Code, Type, Scale:	LAMAM W	LAMAM W	LAMAM W
Stage Majority, Percent:	31G	65	
Stage Minimum, Percent:	09	14	
Stage Maximum, Percent:	32G	65	
Height, Unit:	0.25 IN	2.5 IN	
Height Minimum, Maximum:	0 0.5	0 5	
Density, Unit:	750 YD2	9 YD2	
Pest 3 Code, Type, Scale:	CHEAL W	CHEAL W	CHEAL W
Height, Unit:			7 IN
Height Minimum, Maximum:			1 14
Density, Unit:			135 YD2

Application Equipment

	A	B	C
Appl. Equipment:	CO2 BACKPACK	CO2 BACKPACK	CO2 BACKPACK
Equipment Type:	BACSPR	BACSPR	BACSPR
Operation Pressure, Unit:	24 PSI	24 PSI	24 PSI
Nozzle Type:	FLAFXR	FLAFXR	FLAFXR
Nozzle Size:	XR11002	XR11002	XR11002
Nozzle Spacing, Unit:	20 IN	20 IN	20 IN
Nozzles/Row:	4	4	4
Boom Length, Unit:	6.67 FT	6.67 FT	6.67 FT
Boom Height, Unit:	17 IN	17 IN	17 IN
Ground Speed, Unit:	3 MPH	3 MPH	5 MPH
Carrier:	WATER	WATER	WATER
Spray Volume, Unit:	15 GAL/AC	15 GAL/AC	15 GAL/AC
Mix Size, Unit:	1119 mL	1119 mL	1119 mL
Propellant:	COMCO2	COMCO2	COMCO2
Tank Mix (Y/N):	N no		

Trt No Treatment Application Comment

11/10/2015-Fall Application-High residue in some plot areas.

Date By Notes

Nov-10-2015 D. JOHNSON Setup Trial
 Nov-25-2015 D. JOHNSON Rated Trial 14-DAT: Weed densities for horseweed and henbit extremely low, especially for horseweed. Very few plants in untreated checks and check strips. High residue cover in a lot of plot areas.
 Dec-10-2015 D. JOHNSON Rated Trial 28-DAT: Warmer temps in between rating dates. There was newly emerged horseweed and henbit, especially for horseweed.
 Apr-5-2016 D. JOHNSON Sprayed April 1st spring application. Rated Trial 7-DAT
 Apr-14-2016 D. JOHNSON Rated Trial 7-DAT"B": Stopped rating henbit. Spring emerged marestail throughout, however does has some fall emerged in check and untreated areas. Emerging common lambsquarters is most prevalent in plot numbers 107-110, 112, 315, & 501-508.
 Apr-20-2016 D. JOHNSON Rated Trial 14-DAT"B": Missed/did not rate 7-DAT"B" on actual treatments sprayed on 4/5/16.
 May-6-2016 D. JOHNSON Rated Trial 28-DAT"B": Saw big difference in April 1 applied treatments. Spring emerged maretails 2-4". High W.A. cover in plots 113, 408, & 415.

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May-18-2016 D. JOHNSON Rated Trial 42-DAT"B"
 May-23-2016 D. JOHNSON Rated Trial 0-DAT"C"
 May-23-2016 M. ZIMMER Sprayed 7-DPP: Application "C" Treatments 19-20 / Sprayed Application "D" Blanket of Roundup Power Max 32 oz/2,4-D Shredder LV-4 1 pint/ Firece XLT 3.75 oz per acre on all other plots except untreated.
 May-30-2016 D. JOHNSON Rated Trial 7-DAT "C"
 May-30-2016 B. YOUNG Planted
 Jun-8-2016 D. JOHNSON Rated Trial 14-DAT "C" /7-DAP
 Jun-14-2016 D. JOHNSON Rated Trial 21-DAT "C"/14-DAP
 Jun-21-2016 D. JOHNSON Rated Trial 28-DAT"C"/21-DAP
 Jun-24-2016 D. JOHNSON Sprayed Application "E": Blanket of Liberty to control overgrown horseweed for harvesting purposes. Soybeans at V2-V3 stage. There is watherhemp in a handful of plots: 201 206, 207-Heavy, 306, 308/309, 410 and 502.
 Jul-8-2016 D. JOHNSON Rated Trial 14-DAT "D". Overall all trials look very clean.
 Jul-26-2016 D. JOHNSON Rate @ Canopy after Application "D".

Trial Comments

Reps: 4 Plots: 6.67 by 30 feet
 Spray vol: 15 GAL/AC Mix Size: 1119 mL (calculated mix size 1043.3)

Trt No.	Treatment	Form Conc	Form Unit	Form Type	Rate	Appl Code	Amt Product to Measure	Rep 1	2	3	4
1	UNTREATED					AB		101	209	403	505
2	ROUNDUP POWERMAX N-PAK AMS	4.5 LBAE/GAL	SL		22 fl oz/a	A	12.82 ml/mx	102	302	314	413
		3.4 LBA/GAL	SL		2.5 % v/v	A	27.97 ml/mx				
3	SHREDDER LV4 ACTIVATOR 90-NIS N-PAK AMS	3.8 LBAE/GAL	L		24 fl oz/a	A	13.99 ml/mx	103	304	315	512
		90 %	SL		0.25 % v/v	A	2.797 ml/mx				
		3.4 LBA/GAL	SL		2.5 % v/v	A	27.97 ml/mx				
4	STERLING BLUE ACTIVATOR 90-NIS N-PAK AMS	4 LBAE/GAL	SL		12 fl oz/a	A	6.994 ml/mx	104	206	311	510
		90 %	SL		0.25 % v/v	A	2.797 ml/mx				
		3.4 LBA/GAL	SL		2.5 % v/v	A	27.97 ml/mx				
5	SHREDDER LV4 STERLING BLUE ACTIVATOR 90-NIS N-PAK AMS	3.8 LBAE/GAL	L		24 fl oz/a	A	13.99 ml/mx	105	214	405	503
		4 LBAE/GAL	SL		12 fl oz/a	A	6.994 ml/mx				
		90 %	SL		0.25 % v/v	A	2.797 ml/mx				
		3.4 LBA/GAL	SL		2.5 % v/v	A	27.97 ml/mx				
6	SHREDDER LV4 DIMETRIC PRIME OIL-COC N-PAK AMS	3.8 LBAE/GAL	L		24 fl oz/a	A	13.99 ml/mx	106	301	316	502
		75 %	DG		6 oz/a	A	3.352 g/mx				
		100 %	OS		1 % v/v	A	11.19 ml/mx				
		3.4 LBA/GAL	SL		2.5 % v/v	A	27.97 ml/mx				
7	STERLING BLUE DIMETRIC PRIME OIL-COC N-PAK AMS	4 LBAE/GAL	SL		12 fl oz/a	A	6.994 ml/mx	107	307	406	509
		75 %	DG		6 oz/a	A	3.352 g/mx				
		100 %	OS		1 % v/v	A	11.19 ml/mx				
		3.4 LBA/GAL	SL		2.5 % v/v	A	27.97 ml/mx				
8	ROUNDUP POWERMAX SHREDDER LV4 N-PAK AMS	4.5 LBAE/GAL	SL		22 fl oz/a	A	12.82 ml/mx	108	216	404	501
		3.8 LBAE/GAL	L		24 fl oz/a	A	13.99 ml/mx				
		3.4 LBA/GAL	SL		2.5 % v/v	A	27.97 ml/mx				
9	ROUNDUP POWERMAX STERLING BLUE N-PAK AMS	4.5 LBAE/GAL	SL		22 fl oz/a	A	12.82 ml/mx	109	213	310	504
		4 LBAE/GAL	SL		12 fl oz/a	A	6.994 ml/mx				
		3.4 LBA/GAL	SL		2.5 % v/v	A	27.97 ml/mx				
10	ROUNDUP POWERMAX SHREDDER LV4 CANOPY EX @ 1.5 OZ/A CLASSIC EXPRESS N-PAK AMS	4.5 LBAE/GAL	SL		22 fl oz/a	A	12.82 ml/mx	110	208	407	508
		3.8 LBAE/GAL	L		24 fl oz/a	A	13.99 ml/mx				
		25 %	DF		1.36 oz/a		0.7598 g/mx				
		50 %	SG		0.2 oz/a		0.1117 g/mx				
		3.4 LBA/GAL	SL		2.5 % v/v	A	27.97 ml/mx				
11	ROUNDUP POWERMAX STERLING BLUE CANOPY EX @ 1.5 OZ/A CLASSIC EXPRESS N-PAK AMS	4.5 LBAE/GAL	SL		22 fl oz/a	A	12.82 ml/mx	111	215	401	415
		4 LBAE/GAL	SL		12 fl oz/a	A	6.994 ml/mx				
		25 %	DF		1.36 oz/a	A	0.7598 g/mx				
		50 %	SG		0.2 oz/a	A	0.1117 g/mx				
		3.4 LBA/GAL	SL		2.5 % v/v	A	27.97 ml/mx				

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Reps: 4 Plots: 6.67 by 30 feet
 Spray vol: 15 GAL/AC Mix Size: 1119 mL (calculated mix size 1043.3)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Appl Code	Amt Product to Measure	Rep 1	Rep 2	Rep 3	Rep 4
12	ROUNDUP POWERMAX N-PAK AMS	4.5 LBAE/GAL 3.4 LBA/GAL	GAL	SL	22 fl oz/a 2.5 % v/v	B B	12.82 ml/mx 27.97 ml/mx	112	211	412	414
13	SHREDDER LV4 ACTIVATOR 90-NIS N-PAK AMS	3.8 LBAE/GAL 90 % 3.4 LBA/GAL	GAL	L SL	24 fl oz/a 0.25 % v/v 2.5 % v/v	B B B	13.99 ml/mx 2.797 ml/mx 27.97 ml/mx	113	305	408	416
14	ROUNDUP POWERMAX SHREDDER LV4 N-PAK AMS	4.5 LBAE/GAL 3.8 LBAE/GAL 3.4 LBA/GAL	GAL	SL L SL	22 fl oz/a 24 fl oz/a 2.5 % v/v	B B B	12.82 ml/mx 13.99 ml/mx 27.97 ml/mx	114	303	402	515
15	ROUNDUP POWERMAX SHARPEN MSO ULTRA N-PAK AMS	4.5 LBAE/GAL 2.85 LBA/GAL 100 LB/GAL 3.4 LBA/GAL	GAL	SL SL SL	22 fl oz/a 1 fl oz/a 1 % v/v 2.5 % v/v	B B B B	12.82 ml/mx 0.5828 ml/mx 11.19 ml/mx 27.97 ml/mx	115	210	411	514
16	ROUNDUP POWERMAX SHREDDER LV4 SHARPEN MSO ULTRA N-PAK AMS	4.5 LBAE/GAL 3.8 LBAE/GAL 2.85 LBA/GAL 100 LB/GAL 3.4 LBA/GAL	GAL	SL L SL SL	22 fl oz/a 24 fl oz/a 1 fl oz/a 1 % v/v 2.5 % v/v	B B B B B	12.82 ml/mx 13.99 ml/mx 0.5828 ml/mx 11.19 ml/mx 27.97 ml/mx	116	212	410	513
17	ROUNDUP POWERMAX SHREDDER LV4 CANOPY BLEND @ 5 OZ/A Canopy N-PAK AMS	4.5 LBAE/GAL 3.8 LBAE/GAL 75 %AW/W 3.4 LBA/GAL	GAL	SL L DF SL	22 fl oz/a 24 fl oz/a 2.915 oz ai/a 2.5 % v/v	B B B B	12.82 ml/mx 13.99 ml/mx 2.171 g/mx 27.97 ml/mx	201	207	309	506
18	ROUNDUP POWERMAX SHARPEN DIMETRIC MSO ULTRA N-PAK AMS	4.5 LBAE/GAL 2.85 LBA/GAL 75 % 100 LB/GAL 3.4 LBA/GAL	GAL	SL SL DG SL	22 fl oz/a 1 fl oz/a 6 oz/a 1 % v/v 2.5 % v/v	B B B B B	12.82 ml/mx 0.5828 ml/mx 3.352 g/mx 11.19 ml/mx 27.97 ml/mx	202	306	409	511
19	ROUNDUP POWERMAX SHARPEN CANOPY BLEND @ 5 OZ/A Canopy MSO ULTRA N-PAK AMS	4.5 LBAE/GAL 2.85 LBA/GAL 75 %AW/W 100 LB/GAL 3.4 LBA/GAL	GAL	SL SL DF SL	22 fl oz/a 1 fl oz/a 2.915 oz ai/a 1 % v/v 2.5 % v/v	C C C C C	12.82 ml/mx 0.5828 ml/mx 2.171 g/mx 11.19 ml/mx 27.97 ml/mx	203	205	313	516
20	GRAMOXONE 2SL SHREDDER LV4 FIERCE XLT ACTIVATOR 90-NIS N-PAK AMS	2 LBAE/GAL 3.8 LBAE/GAL 62.41 % 90 % 3.4 LBA/GAL	GAL	SL L WG SL SL	3 pt/a 16 fl oz/a 3.75 oz/a 0.25 % v/v 2.5 % v/v	C C C C C	27.97 ml/mx 9.325 ml/mx 2.095 g/mx 2.797 ml/mx 27.97 ml/mx	204	308	312	507

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
192.328	ml	ROUNDUP POWERMAX	4.5	SL	
664.334	ml	N-PAK AMS	3.4	SL	
169.015	ml	SHREDDER LV4	3.8	L	
17.482	ml	ACTIVATOR 90-NIS	90	SL	
43.711	ml	STERLING BLUE	4	SL	
12.571	g	DIMETRIC	75	DG	
27.972	ml	PRIME OIL-COC	100	OS	
1.900	g	CLASSIC	25	DF	

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	Sponsor Contact: Purdue University

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

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
0.279	g	EXPRESS	50	SG	
2.914	ml	SHARPEN	2.85	SL	
55.944	ml	MSO ULTRA	100	SL	
5.429	g	Canopy	75	DF	
34.969	ml	GRAMOXONE 2SL	2	SL	
2.619	g	FIERCE XLT	62.41	WG	

- * 'Per area' calculations based on spray volume= 15 GAL/AC, mix size= 1119 mL (mix size basis).
- * Product amount calculations increased 25 % for coverage adjustment.
- * 'Per volume' calculations use spray volume= 15 GAL/AC, mix size= 1119 mL.
- * Adjusted for multiple applications in treatment list.
- * One application was assumed for blank application codes or multipliers.

Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	LAMAM	ERICA	LAMAM
Pest Scientific Name	Conyza canadens>	Lamium amplexi>	Conyza canadens>	Lamium amplexi>
Pest Name	Canada horsewe>	Henbit	Canada horsewe>	Henbit
Crop Code				
BBCH Scale				
Crop Scientific Name				
Crop Name				
Rating Date	Nov-25-2015	Nov-25-2015	Dec-10-2015	Dec-10-2015
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Crop Stage Majority				
SE Group No.	1	2	3	4
Days After First/Last Applic.	15 15	15 15	30 30	30 30
Trt-Eval Interval	15 DA-A	15 DA-A	30 DA-A	30 DA-A
Plant-Eval Interval	-187 DP-1	-187 DP-1	-172 DP-1	-172 DP-1
Days After Emergence	-192 DE-1	-192 DE-1	-177 DE-1	-177 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code Plot	1	2
1 UNTREATED		AB 101	0	0
		209	0	0
		403	0	0
		505	0	0
		Mean =	0	0
2 ROUNDUP POWERMAX	22 fl oz/a A	102	50	.
N-PAK AMS	2.5 % v/v A	302	.	50
		314	50	80
		413	.	70
		Mean =	50	67
3 SHREDDER LV4	24 fl oz/a A	103	40	40
ACTIVATOR 90-NIS	0.25 % v/v A	304	.	70
N-PAK AMS	2.5 % v/v A	315	.	70
		512	40	60
		Mean =	40	57
4 STERLING BLUE	12 fl oz/a A	104	.	25
ACTIVATOR 90-NIS	0.25 % v/v A	206	50	60
N-PAK AMS	2.5 % v/v A	311	.	60
		510	.	50
		Mean =	50	49
5 SHREDDER LV4	24 fl oz/a A	105	35	20
STERLING BLUE	12 fl oz/a A	214	70	70
ACTIVATOR 90-NIS	0.25 % v/v A	405	.	95
N-PAK AMS	2.5 % v/v A	503	60	60
		Mean =	55	50

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Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	LAMAM	ERICA	LAMAM
Pest Scientific Name	Conyza canadensis	Lamium amplexicaule	Conyza canadensis	Lamium amplexicaule
Pest Name	Canada horseweed	Henbit	Canada horseweed	Henbit
Crop Code				
BBCH Scale				
Crop Scientific Name				
Crop Name				
Rating Date	Nov-25-2015	Nov-25-2015	Dec-10-2015	Dec-10-2015
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Crop Stage Majority				
SE Group No.	1	2	3	4
Days After First/Last Applic.	15 15	15 15	30 30	30 30
Trt-Eval Interval	15 DA-A	15 DA-A	30 DA-A	30 DA-A
Plant-Eval Interval	-187 DP-1	-187 DP-1	-172 DP-1	-172 DP-1
Days After Emergence	-192 DE-1	-192 DE-1	-177 DE-1	-177 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code Plot	1	2
6 SHREDDER LV4	24 fl oz/a A	106	70	70
DIMETRIC	6 oz/a A	301	.	.
PRIME OIL-COC	1 % v/v A	316	.	85
N-PAK AMS	2.5 % v/v A	502	70	90
		Mean =	70	63
7 STERLING BLUE	12 fl oz/a A	107	.	60
DIMETRIC	6 oz/a A	307	.	60
PRIME OIL-COC	1 % v/v A	406	.	55
N-PAK AMS	2.5 % v/v A	509	.	50
		Mean =	.	56
8 ROUNDUP POWERMAX	22 fl oz/a A	108	65	65
SHREDDER LV4	24 fl oz/a A	216	70	60
N-PAK AMS	2.5 % v/v A	404	.	.
		501	.	60
		Mean =	68	62
9 ROUNDUP POWERMAX	22 fl oz/a A	109	70	70
STERLING BLUE	12 fl oz/a A	213	55	70
N-PAK AMS	2.5 % v/v A	310	70	60
		504	90	70
		Mean =	71	68
10 ROUNDUP POWERMAX	22 fl oz/a A	110	.	70
SHREDDER LV4	24 fl oz/a A	208	70	60
CANOPY EX @ 1.5 OZ/A		407	50	60
CLASSIC	1.36 oz/a	508	.	50
EXPRESS	0.2 oz/a		.	.
N-PAK AMS	2.5 % v/v A			
		Mean =	60	60
11 ROUNDUP POWERMAX	22 fl oz/a A	111	.	70
STERLING BLUE	12 fl oz/a A	215	70	60
CANOPY EX @ 1.5 OZ/A		401		40
CLASSIC	1.36 oz/a A	415	.	70
EXPRESS	0.2 oz/a A		.	.
N-PAK AMS	2.5 % v/v A			
		Mean =	70	60
12 ROUNDUP POWERMAX	22 fl oz/a B	112		
N-PAK AMS	2.5 % v/v B	211		
		412		
		414		
		Mean =	.	.

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	W Weed ERICA	W Weed LAMAM	W Weed ERICA	W Weed LAMAM
Pest Type	Conyza canadens>	Lamium amplexi>	Conyza canadens>	Lamium amplexi>
Pest Code	Canada horsewe>	Henbit	Canada horsewe>	Henbit
Pest Scientific Name				
Pest Name				
Crop Code				
BBCH Scale				
Crop Scientific Name				
Crop Name				
Rating Date	Nov-25-2015	Nov-25-2015	Dec-10-2015	Dec-10-2015
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Crop Stage Majority				
SE Group No.	1	2	3	4
Days After First/Last Applic.	15 15	15 15	30 30	30 30
Trt-Eval Interval	15 DA-A	15 DA-A	30 DA-A	30 DA-A
Plant-Eval Interval	-187 DP-1	-187 DP-1	-172 DP-1	-172 DP-1
Days After Emergence	-192 DE-1	-192 DE-1	-177 DE-1	-177 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment				
No. Name	Rate Unit Code Plot			
		1	2	3
		4		
13 SHREDDER LV4	24 fl oz/a B 113			
ACTIVATOR 90-NIS	0.25 % v/v B 305			
N-PAK AMS	2.5 % v/v B 408			
	416			
	Mean =	.	.	.
14 ROUNDUP POWERMAX	22 fl oz/a B 114			
SHREDDER LV4	24 fl oz/a B 303			
N-PAK AMS	2.5 % v/v B 402			
	515			
	Mean =	.	.	.
15 ROUNDUP POWERMAX	22 fl oz/a B 115			
SHARPEN	1 fl oz/a B 210			
MSO ULTRA	1 % v/v B 411			
N-PAK AMS	2.5 % v/v B 514			
	Mean =	.	.	.
16 ROUNDUP POWERMAX	22 fl oz/a B 116			
SHREDDER LV4	24 fl oz/a B 212			
SHARPEN	1 fl oz/a B 410			
MSO ULTRA	1 % v/v B 513			
N-PAK AMS	2.5 % v/v B			
	Mean =	.	.	.
17 ROUNDUP POWERMAX	22 fl oz/a B 201			
SHREDDER LV4	24 fl oz/a B 207			
CANOPY BLEND @ 5 OZ/A	309			
Canopy	2.915 oz ai/a B 506			
N-PAK AMS	2.5 % v/v B			
	Mean =	.	.	.
18 ROUNDUP POWERMAX	22 fl oz/a B 202			
SHARPEN	1 fl oz/a B 306			
DIMETRIC	6 oz/a B 409			
MSO ULTRA	1 % v/v B 511			
N-PAK AMS	2.5 % v/v B			
	Mean =	.	.	.
19 ROUNDUP POWERMAX	22 fl oz/a C 203			
SHARPEN	1 fl oz/a C 205			
CANOPY BLEND @ 5 OZ/A	313			
Canopy	2.915 oz ai/a C 516			
MSO ULTRA	1 % v/v C			
N-PAK AMS	2.5 % v/v C			
	Mean =	.	.	.

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03	Location: CORTLAND Trial Year: 2015
Protocol ID: 15F-CORT-SOY-03	Investigator: Dr. Bill Johnson
Project ID:	Study Director: Dustin Johnson
	Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	LAMAM	ERICA	LAMAM
Pest Scientific Name	Conyza canadensis	Lamium amplexicaule	Conyza canadensis	Lamium amplexicaule
Pest Name	Canada horseweed	Henbit	Canada horseweed	Henbit
Crop Code				
BBCH Scale				
Crop Scientific Name				
Crop Name				
Rating Date	Nov-25-2015	Nov-25-2015	Dec-10-2015	Dec-10-2015
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Crop Stage Majority				
SE Group No.	1	2	3	4
Days After First/Last Applic.	15 15	15 15	30 30	30 30
Trt-Eval Interval	15 DA-A	15 DA-A	30 DA-A	30 DA-A
Plant-Eval Interval	-187 DP-1	-187 DP-1	-172 DP-1	-172 DP-1
Days After Emergence	-192 DE-1	-192 DE-1	-177 DE-1	-177 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment				
No. Name	Rate Unit Code Plot			
		1	2	3
20 GRAMOXONE 2SL	3 pt/a C 204			
SHREDDER LV4	16 fl oz/a C 308			
FIERCE XLT	3.75 oz/a C 312			
ACTIVATOR 90-NIS	0.25 % v/v C 507			
N-PAK AMS	2.5 % v/v C			
Mean =		.	.	.

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03	Location: CORTLAND Trial Year: 2015
Protocol ID: 15F-CORT-SOY-03	Investigator: Dr. Bill Johnson
Project ID:	Study Director: Dustin Johnson
	Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	LAMAM	ERICA	ERICA
Pest Scientific Name	<i>Conyza canadensis</i>	<i>Lamium amplexicaule</i>	<i>Conyza canadensis</i>	<i>Conyza canadensis</i>
Pest Name	Canada horseweed	Henbit	Canada horseweed	Canada horseweed
Crop Code				
BBCH Scale				
Crop Scientific Name				
Crop Name				
Rating Date	Apr-5-2016	Apr-5-2016	Apr-14-2016	Apr-20-2016
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Crop Stage Majority				
SE Group No.	5	6	7	8
Days After First/Last Applic.	147 147	147 147	156 9	162 15
Trt-Eval Interval	147 DA-A	147 DA-A	156 DA-A	
Plant-Eval Interval	-55 DP-1	-55 DP-1	-46 DP-1	-40 DP-1
Days After Emergence	-60 DE-1	-60 DE-1	-51 DE-1	-45 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code Plot	5	6
1 UNTREATED		AB 101	0	0
		209	0	0
		403	0	0
		505	0	0
		Mean =	0	0
2 ROUNDUP POWERMAX	22 fl oz/a A	102	30	50
N-PAK AMS	2.5 % v/v A	302	40	30
		314	50	20
		413	65	50
		Mean =	46	33
3 SHREDDER LV4	24 fl oz/a A	103	50	70
ACTIVATOR 90-NIS	0.25 % v/v A	304	90	90
N-PAK AMS	2.5 % v/v A	315	90	90
		512	85	85
		Mean =	79	81
4 STERLING BLUE	12 fl oz/a A	104	90	90
ACTIVATOR 90-NIS	0.25 % v/v A	206	90	70
N-PAK AMS	2.5 % v/v A	311	90	70
		510	80	70
		Mean =	88	80
5 SHREDDER LV4	24 fl oz/a A	105	90	90
STERLING BLUE	12 fl oz/a A	214	60	70
ACTIVATOR 90-NIS	0.25 % v/v A	405	90	90
N-PAK AMS	2.5 % v/v A	503	90	90
		Mean =	83	85

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

				W Weed ERICA	W Weed LAMAM	W Weed ERICA	W Weed ERICA
Pest Type				Conyza canadens>	Lamium amplexi>	Conyza canadens>	Conyza canadens>
Pest Code				Canada horsewe>	Henbit	Canada horsewe>	Canada horsewe>
Pest Scientific Name							
Pest Name							
Crop Code							
BBCH Scale							
Crop Scientific Name							
Crop Name							
Rating Date				Apr-5-2016	Apr-5-2016	Apr-14-2016	Apr-20-2016
Rating Type				CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit				%	%	%	%
Number of Subsamples				1	1	1	1
Crop Stage Majority							
SE Group No.				5	6	7	8
Days After First/Last Applic.				147 147	147 147	156 9	162 15
Trt-Eval Interval				147 DA-A	147 DA-A	156 DA-A	
Plant-Eval Interval				-55 DP-1	-55 DP-1	-46 DP-1	-40 DP-1
Days After Emergence				-60 DE-1	-60 DE-1	-51 DE-1	-45 DE-1
ARM Action Codes				P	P	P	P
Number of Decimals				0	0	0	0
Trt Treatment	Rate	Appl					
No. Name	Rate Unit	Code Plot		5	6	7	8
6 SHREDDER LV4	24 fl oz/a	A 106		90	85	65	50
DIMETRIC	6 oz/a	A 301		60	65	40	40
PRIME OIL-COC	1 % v/v	A 316		90	60	90	85
N-PAK AMS	2.5 % v/v	A 502		90	90	90	80
		Mean =		83	75	71	64
7 STERLING BLUE	12 fl oz/a	A 107		40	95	60	60
DIMETRIC	6 oz/a	A 307		100	100	100	90
PRIME OIL-COC	1 % v/v	A 406		90	80	90	80
N-PAK AMS	2.5 % v/v	A 509		85	85	60	50
		Mean =		79	90	78	70
8 ROUNDUP POWERMAX	22 fl oz/a	A 108		70	80	60	60
SHREDDER LV4	24 fl oz/a	A 216		90	85	80	75
N-PAK AMS	2.5 % v/v	A 404		90	80	90	90
		501		90	90	85	80
		Mean =		85	84	79	76
9 ROUNDUP POWERMAX	22 fl oz/a	A 109		80	80	60	60
STERLING BLUE	12 fl oz/a	A 213		90	80	80	75
N-PAK AMS	2.5 % v/v	A 310		90	80	90	80
		504		90	90	90	85
		Mean =		88	83	80	75
10 ROUNDUP POWERMAX	22 fl oz/a	A 110		60	60	60	60
SHREDDER LV4	24 fl oz/a	A 208		90	90	90	75
CANOPY EX @ 1.5 OZ/A		407		90	80	90	80
CLASSIC	1.36 oz/a	508		80	80	50	50
EXPRESS	0.2 oz/a						
N-PAK AMS	2.5 % v/v	A					
		Mean =		80	78	73	66
11 ROUNDUP POWERMAX	22 fl oz/a	A 111		100	100	100	95
STERLING BLUE	12 fl oz/a	A 215		90	90	90	85
CANOPY EX @ 1.5 OZ/A		401		90	90	90	90
CLASSIC	1.36 oz/a	A 415		90	90	90	90
EXPRESS	0.2 oz/a	A					
N-PAK AMS	2.5 % v/v	A					
		Mean =		93	93	93	90
12 ROUNDUP POWERMAX	22 fl oz/a	B 112					20
N-PAK AMS	2.5 % v/v	B 211					0
		412					0
		414					0
		Mean =		.	.	.	5

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03	Location: CORTLAND Trial Year: 2015
Protocol ID: 15F-CORT-SOY-03	Investigator: Dr. Bill Johnson
Project ID:	Study Director: Dustin Johnson
	Sponsor Contact: Purdue University

	W Weed ERICA	W Weed LAMAM	W Weed ERICA	W Weed ERICA
Pest Type	Conyza canadens	Lamium amplexi	Conyza canadens	Conyza canadens
Pest Code	Canada horsewe	Henbit	Canada horsewe	Canada horsewe
Pest Scientific Name				
Pest Name				
Crop Code				
BBCH Scale				
Crop Scientific Name				
Crop Name				
Rating Date	Apr-5-2016	Apr-5-2016	Apr-14-2016	Apr-20-2016
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Crop Stage Majority				
SE Group No.	5	6	7	8
Days After First/Last Applic.	147 147	147 147	156 9	162 15
Trt-Eval Interval	147 DA-A	147 DA-A	156 DA-A	
Plant-Eval Interval	-55 DP-1	-55 DP-1	-46 DP-1	-40 DP-1
Days After Emergence	-60 DE-1	-60 DE-1	-51 DE-1	-45 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment				
No. Name	5	6	7	8
Rate				
Unit				
Appl Code				
Plot				
13 SHREDDER LV4				40
ACTIVATOR 90-NIS	24 fl oz/a			70
N-PAK AMS	0.25 % v/v			40
	2.5 % v/v			50
				416
				Mean =
				50
14 ROUNDUP POWERMAX				70
SHREDDER LV4	22 fl oz/a			75
N-PAK AMS	24 fl oz/a			70
	2.5 % v/v			50
				515
				Mean =
				66
15 ROUNDUP POWERMAX				80
SHARPEN	22 fl oz/a			90
MSO ULTRA	1 fl oz/a			95
N-PAK AMS	1 % v/v			90
	2.5 % v/v			514
				Mean =
				89
16 ROUNDUP POWERMAX				85
SHREDDER LV4	22 fl oz/a			95
SHARPEN	24 fl oz/a			95
MSO ULTRA	1 fl oz/a			90
N-PAK AMS	1 % v/v			513
	2.5 % v/v			B
				Mean =
				91
17 ROUNDUP POWERMAX				95
SHREDDER LV4	22 fl oz/a			75
CANOPY BLEND @ 5 OZ/A	24 fl oz/a			85
Canopy	2.915 oz ai/a			95
N-PAK AMS	2.5 % v/v			B
				Mean =
				88
18 ROUNDUP POWERMAX				98
SHARPEN	22 fl oz/a			95
DIMETRIC	1 fl oz/a			100
MSO ULTRA	6 oz/a			95
N-PAK AMS	1 % v/v			511
	2.5 % v/v			B
				Mean =
				97
19 ROUNDUP POWERMAX				
SHARPEN	22 fl oz/a			203
CANOPY BLEND @ 5 OZ/A	1 fl oz/a			205
Canopy	2.915 oz ai/a			313
MSO ULTRA	1 % v/v			516
N-PAK AMS	2.5 % v/v			C
				Mean =
				.

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03	Location: CORTLAND Trial Year: 2015
Protocol ID: 15F-CORT-SOY-03	Investigator: Dr. Bill Johnson
Project ID:	Study Director: Dustin Johnson
	Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	LAMAM	ERICA	ERICA
Pest Scientific Name	Conyza canadensis	Lamium amplexicaule	Conyza canadensis	Conyza canadensis
Pest Name	Canada horseweed	Henbit	Canada horseweed	Canada horseweed
Crop Code				
BBCH Scale				
Crop Scientific Name				
Crop Name				
Rating Date	Apr-5-2016	Apr-5-2016	Apr-14-2016	Apr-20-2016
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Crop Stage Majority				
SE Group No.	5	6	7	8
Days After First/Last Applic.	147 147	147 147	156 9	162 15
Trt-Eval Interval	147 DA-A	147 DA-A	156 DA-A	
Plant-Eval Interval	-55 DP-1	-55 DP-1	-46 DP-1	-40 DP-1
Days After Emergence	-60 DE-1	-60 DE-1	-51 DE-1	-45 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment				
No. Name	Rate Unit Code Plot			
20 GRAMOXONE 2SL	3 pt/a C 204			
SHREDDER LV4	16 fl oz/a C 308			
FIERCE XLT	3.75 oz/a C 312			
ACTIVATOR 90-NIS	0.25 % v/v C 507			
N-PAK AMS	2.5 % v/v C			
Mean =	.	.	.	.

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03	Location: CORTLAND Trial Year: 2015
Protocol ID: 15F-CORT-SOY-03	Investigator: Dr. Bill Johnson
Project ID:	Study Director: Dustin Johnson
	Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	ERICA	ERICA	CHEAL
Pest Scientific Name	<i>Conyza canadensis</i>	<i>Conyza canadensis</i>	<i>Conyza canadensis</i>	<i>Chenopodium album</i>
Pest Name	Canada horsewee	Canada horsewee	Canada horsewee	common lambsqu
Crop Code				
BBCH Scale				
Crop Scientific Name				
Crop Name				
Rating Date	May-6-2016	May-18-2016	May-23-2016	May-23-2016
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Crop Stage Majority				
SE Group No.	9	10	11	12
Days After First/Last Applic.	178 31	190 43	195 48	195 48
Trt-Eval Interval				
Plant-Eval Interval	-24 DP-1	-12 DP-1	-7 DP-1	-7 DP-1
Days After Emergence	-29 DE-1	-17 DE-1	-12 DE-1	-12 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code Plot	9	10
1 UNTREATED		AB 101	0	0
		209	0	0
		403	0	0
		505	0	0
		Mean =	0	0
2 ROUNDUP POWERMAX	22 fl oz/a A	102	0	0
N-PAK AMS	2.5 % v/v A	302	20	20
		314	60	60
		413	50	50
		Mean =	33	33
3 SHREDDER LV4	24 fl oz/a A	103	0	0
ACTIVATOR 90-NIS	0.25 % v/v A	304	60	50
N-PAK AMS	2.5 % v/v A	315	80	75
		512	60	60
		Mean =	50	46
4 STERLING BLUE	12 fl oz/a A	104	40	10
ACTIVATOR 90-NIS	0.25 % v/v A	206	50	40
N-PAK AMS	2.5 % v/v A	311	75	75
		510	60	60
		Mean =	56	46
5 SHREDDER LV4	24 fl oz/a A	105	40	20
STERLING BLUE	12 fl oz/a A	214	50	50
ACTIVATOR 90-NIS	0.25 % v/v A	405	75	50
N-PAK AMS	2.5 % v/v A	503	80	80
		Mean =	61	50

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	ERICA	ERICA	CHEAL
Pest Scientific Name	Conyza canadens>	Conyza canadens>	Conyza canadens>	Chenopodium al>
Pest Name	Canada horsewe>	Canada horsewe>	Canada horsewe>	common lambsqu>
Crop Code				
BBCH Scale				
Crop Scientific Name				
Crop Name				
Rating Date	May-6-2016	May-18-2016	May-23-2016	May-23-2016
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Crop Stage Majority				
SE Group No.	9	10	11	12
Days After First/Last Applic.	178 31	190 43	195 48	195 48
Trt-Eval Interval				
Plant-Eval Interval	-24 DP-1	-12 DP-1	-7 DP-1	-7 DP-1
Days After Emergence	-29 DE-1	-17 DE-1	-12 DE-1	-12 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code Plot	9	10
6 SHREDDER LV4	24 fl oz/a A	106	40	30
DIMETRIC	6 oz/a A	301	40	40
PRIME OIL-COC	1 % v/v A	316	80	80
N-PAK AMS	2.5 % v/v A	502	70	70
	Mean =		58	55
7 STERLING BLUE	12 fl oz/a A	107	50	40
DIMETRIC	6 oz/a A	307	80	55
PRIME OIL-COC	1 % v/v A	406	75	60
N-PAK AMS	2.5 % v/v A	509	50	50
	Mean =		64	51
8 ROUNDUP POWERMAX	22 fl oz/a A	108	50	50
SHREDDER LV4	24 fl oz/a A	216	80	75
N-PAK AMS	2.5 % v/v A	404	80	70
	501	70	70	60
	Mean =		70	66
9 ROUNDUP POWERMAX	22 fl oz/a A	109	50	50
STERLING BLUE	12 fl oz/a A	213	65	65
N-PAK AMS	2.5 % v/v A	310	75	80
	504	80	80	70
	Mean =		68	69
10 ROUNDUP POWERMAX	22 fl oz/a A	110	60	50
SHREDDER LV4	24 fl oz/a A	208	60	50
CANOPY EX @ 1.5 OZ/A		407	70	50
CLASSIC	1.36 oz/a	508	50	50
EXPRESS	0.2 oz/a			
N-PAK AMS	2.5 % v/v A			
	Mean =		60	50
11 ROUNDUP POWERMAX	22 fl oz/a A	111	80	60
STERLING BLUE	12 fl oz/a A	215	75	65
CANOPY EX @ 1.5 OZ/A		401	80	70
CLASSIC	1.36 oz/a A	415	70	60
EXPRESS	0.2 oz/a A			
N-PAK AMS	2.5 % v/v A			
	Mean =		76	64
12 ROUNDUP POWERMAX	22 fl oz/a B	112	90	90
N-PAK AMS	2.5 % v/v B	211	80	60
	412	85	70	70
	414	75	60	50
	Mean =		83	70

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed		
Pest Code	ERICA	ERICA	ERICA	CHEAL		
Pest Scientific Name	Conyza canadens>	Conyza canadens>	Conyza canadens>	Chenopodium al>		
Pest Name	Canada horsewe>	Canada horsewe>	Canada horsewe>	common lambsqu>		
Crop Code						
BBCH Scale						
Crop Scientific Name						
Crop Name						
Rating Date	May-6-2016	May-18-2016	May-23-2016	May-23-2016		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%		
Number of Subsamples	1	1	1	1		
Crop Stage Majority						
SE Group No.	9	10	11	12		
Days After First/Last Applic.	178 31	190 43	195 48	195 48		
Trt-Eval Interval						
Plant-Eval Interval	-24 DP-1	-12 DP-1	-7 DP-1	-7 DP-1		
Days After Emergence	-29 DE-1	-17 DE-1	-12 DE-1	-12 DE-1		
ARM Action Codes	P	P	P	P		
Number of Decimals	0	0	0	0		
Trt Treatment	Rate	Appl				
No. Name	Rate Unit	Code Plot	9	10	11	12
13 SHREDDER LV4	24 fl oz/a B	113	100	95	95	80
ACTIVATOR 90-NIS	0.25 % v/v B	305	100	95	90	50
N-PAK AMS	2.5 % v/v B	408	90	90	90	70
		416	90	90	90	.
		Mean =	95	93	91	67
14 ROUNDUP POWERMAX	22 fl oz/a B	114	100	100	98	50
SHREDDER LV4	24 fl oz/a B	303	100	90	90	90
N-PAK AMS	2.5 % v/v B	402	100	90	90	90
		515	100	90	90	20
		Mean =	100	93	92	63
15 ROUNDUP POWERMAX	22 fl oz/a B	115	100	100	100	70
SHARPEN	1 fl oz/a B	210	100	100	98	90
MSO ULTRA	1 % v/v B	411	100	99	99	20
N-PAK AMS	2.5 % v/v B	514	100	100	100	100
		Mean =	100	100	99	70
16 ROUNDUP POWERMAX	22 fl oz/a B	116	100	98	98	80
SHREDDER LV4	24 fl oz/a B	212	100	100	100	80
SHARPEN	1 fl oz/a B	410	100	100	100	.
MSO ULTRA	1 % v/v B	513	100	100	100	.
N-PAK AMS	2.5 % v/v B					
		Mean =	100	100	100	80
17 ROUNDUP POWERMAX	22 fl oz/a B	201	100	95	90	.
SHREDDER LV4	24 fl oz/a B	207	100	100	100	100
CANOPY BLEND @ 5 OZ/A		309	100	100	100	.
Canopy	2.915 oz ai/a B	506	100	100	100	.
N-PAK AMS	2.5 % v/v B					
		Mean =	100	99	98	100
18 ROUNDUP POWERMAX	22 fl oz/a B	202	100	100	100	20
SHARPEN	1 fl oz/a B	306	100	100	100	.
DIMETRIC	6 oz/a B	409	100	100	100	.
MSO ULTRA	1 % v/v B	511	100	100	100	80
N-PAK AMS	2.5 % v/v B					
		Mean =	100	100	100	50
19 ROUNDUP POWERMAX	22 fl oz/a C	203				
SHARPEN	1 fl oz/a C	205				
CANOPY BLEND @ 5 OZ/A		313				
Canopy	2.915 oz ai/a C	516				
MSO ULTRA	1 % v/v C					
N-PAK AMS	2.5 % v/v C					
		Mean =	.	.	.	.

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

	W Weed ERICA	W Weed ERICA	W Weed ERICA	W Weed CHEAL
Pest Type	Conyza canadensis	Conyza canadensis	Conyza canadensis	Chenopodium album
Pest Code	ERICA	ERICA	ERICA	CHEAL
Pest Scientific Name	Conyza canadensis	Conyza canadensis	Conyza canadensis	Chenopodium album
Pest Name	Canada horseweed	Canada horseweed	Canada horseweed	common lambsquarters
Crop Code				
BBCH Scale				
Crop Scientific Name				
Crop Name				
Rating Date	May-6-2016	May-18-2016	May-23-2016	May-23-2016
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Crop Stage Majority				
SE Group No.	9	10	11	12
Days After First/Last Applic.	178 31	190 43	195 48	195 48
Trt-Eval Interval				
Plant-Eval Interval	-24 DP-1	-12 DP-1	-7 DP-1	-7 DP-1
Days After Emergence	-29 DE-1	-17 DE-1	-12 DE-1	-12 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment				
No. Name	9	10	11	12
20 GRAMOXONE 2SL	3 pt/a			
SHREDDER LV4	16 fl oz/a			
FIERCE XLT	3.75 oz/a			
ACTIVATOR 90-NIS	0.25 % v/v			
N-PAK AMS	2.5 % v/v			
Mean =	.	.	.	.

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03	Location: CORTLAND Trial Year: 2015
Protocol ID: 15F-CORT-SOY-03	Investigator: Dr. Bill Johnson
Project ID:	Study Director: Dustin Johnson
	Sponsor Contact: Purdue University

Pest Type				W Weed	W Weed	W Weed	W Weed
Pest Code				ERICA	CHEAL	ERICA	CHEAL
Pest Scientific Name				<i>Conyza canadensis</i>	<i>Chenopodium album</i>	<i>Conyza canadensis</i>	<i>Chenopodium album</i>
Pest Name				Canada horsewee	common lambsqu	Canada horsewee	common lambsqu
Crop Code							
BBCH Scale							
Crop Scientific Name							
Crop Name							
Rating Date				May-30-2016	May-30-2016	Jun-8-2016	Jun-8-2016
Rating Type				CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit				%	%	%	%
Number of Subsamples				1	1	1	1
Crop Stage Majority							
SE Group No.				13	14	15	16
Days After First/Last Applic.				202 7	202 7	211 16	211 16
Trt-Eval Interval							
Plant-Eval Interval				0 DP-1	0 DP-1	9 DP-1	9 DP-1
Days After Emergence				-5 DE-1	-5 DE-1	4 DE-1	4 DE-1
ARM Action Codes				P	P	P	P
Number of Decimals				0	0	0	0
Trt Treatment	Rate	Appl					
No. Name	Rate Unit	Code Plot		13	14	15	16
1 UNTREATED		AB 101		0	0	0	0
		209		0	0	0	0
		403		0	0	0	0
		505		0	0	0	0
		Mean =		0	0	0	0
2 ROUNDUP POWERMAX	22 fl oz/a A	102		60	85	50	100
N-PAK AMS	2.5 % v/v A	302		40	70	60	100
		314		50	70	60	90
		413		50	80	50	90
		Mean =		50	76	55	95
3 SHREDDER LV4	24 fl oz/a A	103		60	80	60	100
ACTIVATOR 90-NIS	0.25 % v/v A	304		50	85	60	95
N-PAK AMS	2.5 % v/v A	315		80	80	70	90
		512		60	80	80	90
		Mean =		63	81	68	94
4 STERLING BLUE	12 fl oz/a A	104		50	85	40	100
ACTIVATOR 90-NIS	0.25 % v/v A	206		40	80	30	100
N-PAK AMS	2.5 % v/v A	311		75	.	80	.
		510		60	80	70	100
		Mean =		56	82	55	100
5 SHREDDER LV4	24 fl oz/a A	105		60	85	50	100
STERLING BLUE	12 fl oz/a A	214		50	85	50	100
ACTIVATOR 90-NIS	0.25 % v/v A	405		50	75	40	90
N-PAK AMS	2.5 % v/v A	503		80	75	75	90
		Mean =		60	80	54	95

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

				W Weed ERICA	W Weed CHEAL	W Weed ERICA	W Weed CHEAL
				Conyza canaden>	Chenopodium al>	Conyza canaden>	Chenopodium al>
				Canada horsewe>	common lambsqu>	Canada horsewe>	common lambsqu>
Pest Type							
Pest Code							
Pest Scientific Name							
Pest Name							
Crop Code							
BBCH Scale							
Crop Scientific Name							
Crop Name							
Rating Date				May-30-2016	May-30-2016	Jun-8-2016	Jun-8-2016
Rating Type				CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit				%	%	%	%
Number of Subsamples				1	1	1	1
Crop Stage Majority							
SE Group No.				13	14	15	16
Days After First/Last Applic.				202 7	202 7	211 16	211 16
Trt-Eval Interval							
Plant-Eval Interval				0 DP-1	0 DP-1	9 DP-1	9 DP-1
Days After Emergence				-5 DE-1	-5 DE-1	4 DE-1	4 DE-1
ARM Action Codes				P	P	P	P
Number of Decimals				0	0	0	0
Trt Treatment	Rate	Appl					
No. Name	Rate Unit	Code Plot		13	14	15	16
6 SHREDDER LV4	24 fl oz/a A	106		40	85	60	90
DIMETRIC	6 oz/a A	301		60	.	70	.
PRIME OIL-COC	1 % v/v A	316		85	80	80	95
N-PAK AMS	2.5 % v/v A	502		60	85	50	90
		Mean =		61	83	65	92
7 STERLING BLUE	12 fl oz/a A	107		40	85	60	90
DIMETRIC	6 oz/a A	307		50	85	60	90
PRIME OIL-COC	1 % v/v A	406		60	75	60	95
N-PAK AMS	2.5 % v/v A	509		50	80	60	100
		Mean =		50	81	60	94
8 ROUNDUP POWERMAX	22 fl oz/a A	108		50	80	60	90
SHREDDER LV4	24 fl oz/a A	216		70	90	80	100
N-PAK AMS	2.5 % v/v A	404		60	80	40	90
		501		60	80	60	95
		Mean =		60	83	60	94
9 ROUNDUP POWERMAX	22 fl oz/a A	109		40	80	65	90
STERLING BLUE	12 fl oz/a A	213		50	85	60	95
N-PAK AMS	2.5 % v/v A	310		80	.	85	.
		504		60	90	55	100
		Mean =		58	85	66	95
10 ROUNDUP POWERMAX	22 fl oz/a A	110		50	80	65	90
SHREDDER LV4	24 fl oz/a A	208		40	75	30	90
CANOPY EX @ 1.5 OZ/A		407		50	75	50	90
CLASSIC	1.36 oz/a	508		50	75	60	90
EXPRESS	0.2 oz/a						
N-PAK AMS	2.5 % v/v A						
		Mean =		48	76	51	90
11 ROUNDUP POWERMAX	22 fl oz/a A	111		50	90	40	100
STERLING BLUE	12 fl oz/a A	215		60	.	60	.
CANOPY EX @ 1.5 OZ/A		401		60	90	50	90
CLASSIC	1.36 oz/a A	415		40	.	40	.
EXPRESS	0.2 oz/a A						
N-PAK AMS	2.5 % v/v A						
		Mean =		53	90	48	95
12 ROUNDUP POWERMAX	22 fl oz/a B	112		90	80	90	95
N-PAK AMS	2.5 % v/v B	211		50	.	40	.
		412		70	.	65	.
		414		50	.	60	.
		Mean =		65	80	64	95

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

				W Weed ERICA	W Weed CHEAL	W Weed ERICA	W Weed CHEAL	
				Conyza canadens>	Chenopodium al>	Conyza canadens>	Chenopodium al>	
				Canada horsewe>	common lambsqu>	Canada horsewe>	common lambsqu>	
Pest Type								
Pest Code								
Pest Scientific Name								
Pest Name								
Crop Code								
BBCH Scale								
Crop Scientific Name								
Crop Name								
Rating Date	May-30-2016		May-30-2016		Jun-8-2016		Jun-8-2016	
Rating Type	CONTRO		CONTRO		CONTRO		CONTRO	
Rating Unit	%		%		%		%	
Number of Subsamples	1		1		1		1	
Crop Stage Majority								
SE Group No.	13		14		15		16	
Days After First/Last Applic.	202 7		202 7		211 16		211 16	
Trt-Eval Interval								
Plant-Eval Interval	0 DP-1		0 DP-1		9 DP-1		9 DP-1	
Days After Emergence	-5 DE-1		-5 DE-1		4 DE-1		4 DE-1	
ARM Action Codes	P		P		P		P	
Number of Decimals	0		0		0		0	
Trt Treatment	Rate	Appl						
No. Name	Rate Unit	Code Plot	13	14	15	16		
13 SHREDDER LV4	24 fl oz/a B	113	95	90	95	100		
ACTIVATOR 90-NIS	0.25 % v/v B	305	90	100	97	100		
N-PAK AMS	2.5 % v/v B	408	100	100	95	100		
		416	90	.	97	.		
		Mean =	94	97	96	100		
14 ROUNDUP POWERMAX	22 fl oz/a B	114	100	90	97	100		
SHREDDER LV4	24 fl oz/a B	303	90	100	97	100		
N-PAK AMS	2.5 % v/v B	402	90	90	99	100		
		515	100	85	97	100		
		Mean =	95	91	98	100		
15 ROUNDUP POWERMAX	22 fl oz/a B	115	100	90	97	100		
SHARPEN	1 fl oz/a B	210	98	100	99	100		
MSO ULTRA	1 % v/v B	411	100	90	98	100		
N-PAK AMS	2.5 % v/v B	514	95	100	97	100		
		Mean =	98	95	98	100		
16 ROUNDUP POWERMAX	22 fl oz/a B	116	100	70	90	20		
SHREDDER LV4	24 fl oz/a B	212	90	80	85	50		
SHARPEN	1 fl oz/a B	410	95	.	90	.		
MSO ULTRA	1 % v/v B	513	100	.	90	.		
N-PAK AMS	2.5 % v/v B							
		Mean =	96	75	89	35		
17 ROUNDUP POWERMAX	22 fl oz/a B	201	80	.	60	.		
SHREDDER LV4	24 fl oz/a B	207	95	100	97	100		
CANOPY BLEND @ 5 OZ/A		309	95	.	90	.		
Canopy	2.915 oz ai/a B	506	100	.	95	.		
N-PAK AMS	2.5 % v/v B							
		Mean =	93	100	86	100		
18 ROUNDUP POWERMAX	22 fl oz/a B	202	90	20	90	20		
SHARPEN	1 fl oz/a B	306	90	.	90	.		
DIMETRIC	6 oz/a B	409	95	.	80	.		
MSO ULTRA	1 % v/v B	511	95	90	95	100		
N-PAK AMS	2.5 % v/v B							
		Mean =	93	55	89	60		
19 ROUNDUP POWERMAX	22 fl oz/a C	203	90	90	95	100		
SHARPEN	1 fl oz/a C	205	85	.	90	.		
CANOPY BLEND @ 5 OZ/A		313	80	80	90	99		
Canopy	2.915 oz ai/a C	516	80	.	80	.		
MSO ULTRA	1 % v/v C							
N-PAK AMS	2.5 % v/v C							
		Mean =	84	85	89	100		

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03	Location: CORTLAND Trial Year: 2015
Protocol ID: 15F-CORT-SOY-03	Investigator: Dr. Bill Johnson
Project ID:	Study Director: Dustin Johnson
	Sponsor Contact: Purdue University

	W Weed ERICA	W Weed CHEAL	W Weed ERICA	W Weed CHEAL
Pest Type	Conyza canaden>	Chenopodium al>	Conyza canaden>	Chenopodium al>
Pest Code	Canada horsewe>	common lambsqu>	Canada horsewe>	common lambsqu>
Pest Scientific Name				
Pest Name				
Crop Code				
BBCH Scale				
Crop Scientific Name				
Crop Name				
Rating Date	May-30-2016	May-30-2016	Jun-8-2016	Jun-8-2016
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Crop Stage Majority				
SE Group No.	13	14	15	16
Days After First/Last Applic.	202 7	202 7	211 16	211 16
Trt-Eval Interval				
Plant-Eval Interval	0 DP-1	0 DP-1	9 DP-1	9 DP-1
Days After Emergence	-5 DE-1	-5 DE-1	4 DE-1	4 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment				
No. Name	13	14	15	16
Rate				
Unit				
Appl				
Code Plot				
20 GRAMOXONE 2SL	70	.	80	.
SHREDDER LV4	40	.	60	.
FIERCE XLT	40	.	50	.
ACTIVATOR 90-NIS	60	.	80	.
N-PAK AMS	.	.	.	.
Mean =	53	.	68	.

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03	Location: CORTLAND Trial Year: 2015
Protocol ID: 15F-CORT-SOY-03	Investigator: Dr. Bill Johnson
Project ID:	Study Director: Dustin Johnson
	Sponsor Contact: Purdue University

Pest Type									
Pest Code									
Pest Scientific Name									
Pest Name									
Crop Code									
BBCH Scale									
Crop Scientific Name									
Crop Name									
Rating Date									
Rating Type									
Rating Unit									
Number of Subsamples									
Crop Stage Majority									
SE Group No.									
Days After First/Last Applic.									
Trt-Eval Interval									
Plant-Eval Interval									
Days After Emergence									
ARM Action Codes									
Number of Decimals									
Trt Treatment	Rate	Appl							
No. Name	Rate	Unit	Code	Plot					
					17	18	19	20	21
1 UNTREATED			AB	101	0	0	0	0	0
				209	0	0	0	0	0
				403	0	0	0	0	0
				505	0	0	0	0	0
				Mean =	0	0	0	0	0
2 ROUNDUP POWERMAX	22 fl oz/a	A		102	0	70	100	0	70
N-PAK AMS	2.5 % v/v	A		302	0	50	100	0	50
				314	0	50	90	0	40
				413	0	35	100	0	20
				Mean =	0	51	98	0	45
3 SHREDDER LV4	24 fl oz/a	A		103	0	70	100	0	70
ACTIVATOR 90-NIS	0.25 % v/v	A		304	0	60	100	0	40
N-PAK AMS	2.5 % v/v	A		315	0	70	95	0	45
				512	0	75	95	0	60
				Mean =	0	69	98	0	54
4 STERLING BLUE	12 fl oz/a	A		104	0	30	100	0	20
ACTIVATOR 90-NIS	0.25 % v/v	A		206	0	20	100	0	20
N-PAK AMS	2.5 % v/v	A		311	0	75	.	0	80
				510	0	70	100	0	70
				Mean =	0	49	100	0	48
5 SHREDDER LV4	24 fl oz/a	A		105	0	35	100	0	20
STERLING BLUE	12 fl oz/a	A		214	0	50	100	0	40
ACTIVATOR 90-NIS	0.25 % v/v	A		405	0	35	100	0	20
N-PAK AMS	2.5 % v/v	A		503	0	75	95	0	60
				Mean =	0	49	99	0	35

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

Pest Type		W Weed	W Weed		W Weed		
Pest Code		ERICA	CHEAL		ERICA		
Pest Scientific Name		Conyza canadens	Chenopodium al		Conyza canadens		
Pest Name		Canada horsewee	common lambsqu		Canada horsewee		
Crop Code	GLXMA			GLXMA			
BBCH Scale	BSOY			BSOY			
Crop Scientific Name	Glycine max			Glycine max			
Crop Name	Soybean			Soybean			
Rating Date	Jun-8-2016	Jun-14-2016	Jun-14-2016	Jun-14-2016	Jun-21-2016		
Rating Type	PHYGEN	CONTRO	CONTRO	PHYGEN	CONTRO		
Rating Unit	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1		
Crop Stage Majority							
SE Group No.	17	18	19	20	21		
Days After First/Last Applic.	211 16	217 22	217 22	217 22	224 29		
Trt-Eval Interval							
Plant-Eval Interval	9 DP-1	15 DP-1	15 DP-1	15 DP-1	22 DP-1		
Days After Emergence	4 DE-1	10 DE-1	10 DE-1	10 DE-1	17 DE-1		
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	17	18	19	20	21
6 SHREDDER LV4	24 fl oz/a A	106	0	65	95	0	60
DIMETRIC	6 oz/a A	301	0	60	.	0	50
PRIME OIL-COC	1 % v/v A	316	0	75	100	0	40
N-PAK AMS	2.5 % v/v A	502	0	50	100	0	40
	Mean =		0	63	98	0	48
7 STERLING BLUE	12 fl oz/a A	107	0	60	95	0	60
DIMETRIC	6 oz/a A	307	0	50	100	0	50
PRIME OIL-COC	1 % v/v A	406	0	55	100	0	30
N-PAK AMS	2.5 % v/v A	509	0	60	100	0	60
	Mean =		0	56	99	0	50
8 ROUNDUP POWERMAX	22 fl oz/a A	108	0	60	95	0	50
SHREDDER LV4	24 fl oz/a A	216	0	75	100	0	45
N-PAK AMS	2.5 % v/v A	404	0	30	100	0	20
	501		0	60	100	0	40
	Mean =		0	56	99	0	39
9 ROUNDUP POWERMAX	22 fl oz/a A	109	0	65	90	0	70
STERLING BLUE	12 fl oz/a A	213	0	50	100	0	40
N-PAK AMS	2.5 % v/v A	310	0	85	.	0	80
	504		0	50	100	0	40
	Mean =		0	63	97	0	58
10 ROUNDUP POWERMAX	22 fl oz/a A	110	0	65	90	0	70
SHREDDER LV4	24 fl oz/a A	208	0	20	95	0	10
CANOPY EX @ 1.5 OZ/A		407	0	40	100	0	20
CLASSIC	1.36 oz/a	508	0	60	100	0	50
EXPRESS	0.2 oz/a						
N-PAK AMS	2.5 % v/v A						
	Mean =		0	46	96	0	38
11 ROUNDUP POWERMAX	22 fl oz/a A	111	0	30	100	0	20
STERLING BLUE	12 fl oz/a A	215	0	50	.	0	30
CANOPY EX @ 1.5 OZ/A		401	0	45	100	0	20
CLASSIC	1.36 oz/a A	415	0	30	.	0	20
EXPRESS	0.2 oz/a A						
N-PAK AMS	2.5 % v/v A						
	Mean =		0	39	100	0	23
12 ROUNDUP POWERMAX	22 fl oz/a B	112	0	90	95	0	80
N-PAK AMS	2.5 % v/v B	211	0	40	.	0	30
	412		0	60	.	0	30
	414		0	50	.	0	30
	Mean =		0	60	95	0	43

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

Pest Type		W Weed	W Weed		W Weed
Pest Code		ERICA	CHEAL		ERICA
Pest Scientific Name		Conyza canadens	Chenopodium al		Conyza canadens
Pest Name		Canada horsewe>	common lambsqu>		Canada horsewe>
Crop Code	GLXMA			GLXMA	
BBCH Scale	BSOY			BSOY	
Crop Scientific Name	Glycine max			Glycine max	
Crop Name	Soybean			Soybean	
Rating Date	Jun-8-2016	Jun-14-2016	Jun-14-2016	Jun-14-2016	Jun-21-2016
Rating Type	PHYGEN	CONTRO	CONTRO	PHYGEN	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Crop Stage Majority					
SE Group No.	17	18	19	20	21
Days After First/Last Applic.	211 16	217 22	217 22	217 22	224 29
Trt-Eval Interval					
Plant-Eval Interval	9 DP-1	15 DP-1	15 DP-1	15 DP-1	22 DP-1
Days After Emergence	4 DE-1	10 DE-1	10 DE-1	10 DE-1	17 DE-1
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	17	18	19
13 SHREDDER LV4	24 fl oz/a B	113	0	95	100
ACTIVATOR 90-NIS	0.25 % v/v B	305	0	95	100
N-PAK AMS	2.5 % v/v B	408	0	95	100
		416	0	97	0
Mean =			0	96	100
14 ROUNDUP POWERMAX	22 fl oz/a B	114	0	95	100
SHREDDER LV4	24 fl oz/a B	303	0	95	100
N-PAK AMS	2.5 % v/v B	402	0	95	100
		515	0	97	100
Mean =			0	96	100
15 ROUNDUP POWERMAX	22 fl oz/a B	115	0	95	100
SHARPEN	1 fl oz/a B	210	0	99	100
MSO ULTRA	1 % v/v B	411	0	95	100
N-PAK AMS	2.5 % v/v B	514	0	97	100
Mean =			0	97	100
16 ROUNDUP POWERMAX	22 fl oz/a B	116	0	80	0
SHREDDER LV4	24 fl oz/a B	212	0	85	20
SHARPEN	1 fl oz/a B	410	0	90	0
MSO ULTRA	1 % v/v B	513	0	90	0
N-PAK AMS	2.5 % v/v B		0	90	0
Mean =			0	86	10
17 ROUNDUP POWERMAX	22 fl oz/a B	201	0	60	0
SHREDDER LV4	24 fl oz/a B	207	0	90	100
CANOPY BLEND @ 5 OZ/A		309	0	90	0
Canopy	2.915 oz ai/a B	506	0	95	0
N-PAK AMS	2.5 % v/v B		0	95	0
Mean =			0	84	100
18 ROUNDUP POWERMAX	22 fl oz/a B	202	0	80	0
SHARPEN	1 fl oz/a B	306	0	85	0
DIMETRIC	6 oz/a B	409	0	80	0
MSO ULTRA	1 % v/v B	511	0	95	100
N-PAK AMS	2.5 % v/v B		0	95	0
Mean =			0	85	50
19 ROUNDUP POWERMAX	22 fl oz/a C	203	0	95	100
SHARPEN	1 fl oz/a C	205	0	90	0
CANOPY BLEND @ 5 OZ/A		313	0	90	100
Canopy	2.915 oz ai/a C	516	0	75	0
MSO ULTRA	1 % v/v C		0	75	0
N-PAK AMS	2.5 % v/v C		0	75	0
Mean =			0	88	100

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03	Location: CORTLAND Trial Year: 2015
Protocol ID: 15F-CORT-SOY-03	Investigator: Dr. Bill Johnson
Project ID:	Study Director: Dustin Johnson
	Sponsor Contact: Purdue University

Pest Type		W Weed	W Weed		W Weed
Pest Code		ERICA	CHEAL		ERICA
Pest Scientific Name		<i>Conyza canadensis</i>	<i>Chenopodium album</i>		<i>Conyza canadensis</i>
Pest Name		Canada horseweed	common lambsquarters		Canada horseweed
Crop Code	GLXMA			GLXMA	
BBCH Scale	BSOY			BSOY	
Crop Scientific Name	Glycine max			Glycine max	
Crop Name	Soybean			Soybean	
Rating Date	Jun-8-2016	Jun-14-2016	Jun-14-2016	Jun-14-2016	Jun-21-2016
Rating Type	PHYGEN	CONTRO	CONTRO	PHYGEN	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Crop Stage Majority					
SE Group No.	17	18	19	20	21
Days After First/Last Applic.	211 16	217 22	217 22	217 22	224 29
Trt-Eval Interval					
Plant-Eval Interval	9 DP-1	15 DP-1	15 DP-1	15 DP-1	22 DP-1
Days After Emergence	4 DE-1	10 DE-1	10 DE-1	10 DE-1	17 DE-1
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	17	18	19
20 GRAMOXONE 2SL	3 pt/a C	204	0	70	.
SHREDDER LV4	16 fl oz/a C	308	0	50	.
FIERCE XLT	3.75 oz/a C	312	0	40	.
ACTIVATOR 90-NIS	0.25 % v/v C	507	0	75	.
N-PAK AMS	2.5 % v/v C				.
Mean =			0	59	.
					0
					43

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03	Location: CORTLAND Trial Year: 2015
Protocol ID: 15F-CORT-SOY-03	Investigator: Dr. Bill Johnson
Project ID:	Study Director: Dustin Johnson
	Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed	W Weed
Pest Code	CHEAL	ERICA	CHEAL
Pest Scientific Name	Chenopodium al>	Conyza canadens>	Chenopodium al>
Pest Name	common lambsqu>	Canada horsewe>	common lambsqu>
Crop Code		GLXMA	
BBCH Scale		BSOY	
Crop Scientific Name		Glycine max	
Crop Name		Soybean	
Rating Date	Jun-21-2016	Jun-21-2016	Jul-8-2016
Rating Type	CONTRO	PHYGEN	CONTRO
Rating Unit	%	%	%
Number of Subsamples	1	1	1
Crop Stage Majority			
SE Group No.	22	23	25
Days After First/Last Applic.	224 29	224 29	241 46
Trt-Eval Interval			
Plant-Eval Interval	22 DP-1	22 DP-1	39 DP-1
Days After Emergence	17 DE-1	17 DE-1	34 DE-1
ARM Action Codes	P	P	P
Number of Decimals	0	0	0
Trt Treatment	Rate	Appl	
No. Name	Rate Unit	Code Plot	
			22
1 UNTREATED		AB 101	23
		209	24
		403	25
		505	
		Mean =	
2 ROUNDUP POWERMAX	22 fl oz/a A	102	
N-PAK AMS	2.5 % v/v A	302	
		314	
		413	
		Mean =	
3 SHREDDER LV4	24 fl oz/a A	103	
ACTIVATOR 90-NIS	0.25 % v/v A	304	
N-PAK AMS	2.5 % v/v A	315	
		512	
		Mean =	
4 STERLING BLUE	12 fl oz/a A	104	
ACTIVATOR 90-NIS	0.25 % v/v A	206	
N-PAK AMS	2.5 % v/v A	311	
		510	
		Mean =	
5 SHREDDER LV4	24 fl oz/a A	105	
STERLING BLUE	12 fl oz/a A	214	
ACTIVATOR 90-NIS	0.25 % v/v A	405	
N-PAK AMS	2.5 % v/v A	503	
		Mean =	

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed	W Weed
Pest Code	CHEAL	ERICA	CHEAL
Pest Scientific Name	Chenopodium al>	Conyza canadens>	Chenopodium al>
Pest Name	common lambsqu>	Canada horsewe>	common lambsqu>
Crop Code	GLXMA		
BBCH Scale	BSOY		
Crop Scientific Name	Glycine max		
Crop Name	Soybean		
Rating Date	Jun-21-2016	Jun-21-2016	Jul-8-2016
Rating Type	CONTRO	PHYGEN	CONTRO
Rating Unit	%	%	%
Number of Subsamples	1	1	1
Crop Stage Majority			
SE Group No.	22	23	24
Days After First/Last Applic.	224 29	224 29	241 46
Trt-Eval Interval			
Plant-Eval Interval	22 DP-1	22 DP-1	39 DP-1
Days After Emergence	17 DE-1	17 DE-1	34 DE-1
ARM Action Codes	P	P	P
Number of Decimals	0	0	0
Trt Treatment	Rate	Appl	
No. Name	Rate Unit Code Plot		
		22	23
		24	25
6 SHREDDER LV4	24 fl oz/a A 106	98	0
DIMETRIC	6 oz/a A 301	100	0
PRIME OIL-COC	1 % v/v A 316	100	0
N-PAK AMS	2.5 % v/v A 502	100	0
	Mean =	100	0
7 STERLING BLUE	12 fl oz/a A 107	95	0
DIMETRIC	6 oz/a A 307	100	0
PRIME OIL-COC	1 % v/v A 406	100	0
N-PAK AMS	2.5 % v/v A 509	100	0
	Mean =	99	0
8 ROUNDUP POWERMAX	22 fl oz/a A 108	95	0
SHREDDER LV4	24 fl oz/a A 216	.	0
N-PAK AMS	2.5 % v/v A 404	100	0
	501	100	0
	Mean =	98	0
9 ROUNDUP POWERMAX	22 fl oz/a A 109	95	0
STERLING BLUE	12 fl oz/a A 213	100	0
N-PAK AMS	2.5 % v/v A 310	.	0
	504	100	0
	Mean =	98	0
10 ROUNDUP POWERMAX	22 fl oz/a A 110	95	0
SHREDDER LV4	24 fl oz/a A 208	100	0
CANOPY EX @ 1.5 OZ/A	407	100	0
CLASSIC	1.36 oz/a 508	100	0
EXPRESS	0.2 oz/a		
N-PAK AMS	2.5 % v/v A		
	Mean =	99	0
11 ROUNDUP POWERMAX	22 fl oz/a A 111	100	0
STERLING BLUE	12 fl oz/a A 215	100	0
CANOPY EX @ 1.5 OZ/A	401	100	0
CLASSIC	1.36 oz/a A 415	.	0
EXPRESS	0.2 oz/a A		
N-PAK AMS	2.5 % v/v A		
	Mean =	100	0
12 ROUNDUP POWERMAX	22 fl oz/a B 112	95	0
N-PAK AMS	2.5 % v/v B 211	.	0
	412	100	0
	414	.	0
	Mean =	98	0

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed	W Weed
Pest Code	CHEAL	ERICA	CHEAL
Pest Scientific Name	Chenopodium al>	Conyza canadens>	Chenopodium al>
Pest Name	common lambsqu>	Canada horsewe>	common lambsqu>
Crop Code		GLXMA	
BBCH Scale		BSOY	
Crop Scientific Name		Glycine max	
Crop Name		Soybean	
Rating Date	Jun-21-2016	Jun-21-2016	Jul-8-2016
Rating Type	CONTRO	PHYGEN	CONTRO
Rating Unit	%	%	%
Number of Subsamples	1	1	1
Crop Stage Majority			
SE Group No.	22	23	25
Days After First/Last Applic.	224 29	224 29	241 46
Trt-Eval Interval			
Plant-Eval Interval	22 DP-1	22 DP-1	39 DP-1
Days After Emergence	17 DE-1	17 DE-1	34 DE-1
ARM Action Codes	P	P	P
Number of Decimals	0	0	0
Trt Treatment	Rate	Appl	
No. Name	Rate Unit	Code Plot	
			22 23 24 25
13 SHREDDER LV4	24 fl oz/a B	113	100 0 100 100
ACTIVATOR 90-NIS	0.25 % v/v B	305	100 0 100 100
N-PAK AMS	2.5 % v/v B	408	100 0 100 100
		416	. 0 100 .
		Mean =	100 0 100 100
14 ROUNDUP POWERMAX	22 fl oz/a B	114	100 0 100 100
SHREDDER LV4	24 fl oz/a B	303	100 0 100 100
N-PAK AMS	2.5 % v/v B	402	100 0 100 100
		515	100 0 100 100
		Mean =	100 0 100 100
15 ROUNDUP POWERMAX	22 fl oz/a B	115	100 0 100 100
SHARPEN	1 fl oz/a B	210	100 0 100 98
MSO ULTRA	1 % v/v B	411	100 0 100 100
N-PAK AMS	2.5 % v/v B	514	100 0 100 100
		Mean =	100 0 100 100
16 ROUNDUP POWERMAX	22 fl oz/a B	116	0 0 100 90
SHREDDER LV4	24 fl oz/a B	212	0 0 95 95
SHARPEN	1 fl oz/a B	410	100 0 100 100
MSO ULTRA	1 % v/v B	513	. 0 100 .
N-PAK AMS	2.5 % v/v B		. . . .
		Mean =	33 0 99 95
17 ROUNDUP POWERMAX	22 fl oz/a B	201	. 0 97 .
SHREDDER LV4	24 fl oz/a B	207	100 0 100 100
CANOPY BLEND @ 5 OZ/A		309	. 0 100 .
Canopy	2.915 oz ai/a B	506	. 0 100 .
N-PAK AMS	2.5 % v/v B		. . . .
		Mean =	100 0 99 100
18 ROUNDUP POWERMAX	22 fl oz/a B	202	. 0 . .
SHARPEN	1 fl oz/a B	306	. 0 100 .
DIMETRIC	6 oz/a B	409	. 0 100 .
MSO ULTRA	1 % v/v B	511	. 0 100 .
N-PAK AMS	2.5 % v/v B		100 0 100 100
		Mean =	100 0 100 100
19 ROUNDUP POWERMAX	22 fl oz/a C	203	100 0 100 100
SHARPEN	1 fl oz/a C	205	. 0 100 .
CANOPY BLEND @ 5 OZ/A		313	100 0 100 100
Canopy	2.915 oz ai/a C	516	. 0 100 .
MSO ULTRA	1 % v/v C		. . . .
N-PAK AMS	2.5 % v/v C		. . . .
		Mean =	100 0 100 100

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03	Location: CORTLAND Trial Year: 2015
Protocol ID: 15F-CORT-SOY-03	Investigator: Dr. Bill Johnson
Project ID:	Study Director: Dustin Johnson
	Sponsor Contact: Purdue University

	W Weed CHEAL		W Weed ERICA	W Weed CHEAL
Pest Type	Chenopodium al>		Conyza canadens>	Chenopodium al>
Pest Code	common lambsqu>		Canada horsewe>	common lambsqu>
Pest Scientific Name		GLXMA		
Pest Name		BSOY		
Crop Code		Glycine max		
BBCH Scale		Soybean		
Crop Scientific Name				
Crop Name				
Rating Date	Jun-21-2016	Jun-21-2016	Jul-8-2016	Jul-8-2016
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Crop Stage Majority				
SE Group No.	22	23	24	25
Days After First/Last Applic.	224 29	224 29	241 46	241 46
Trt-Eval Interval				
Plant-Eval Interval	22 DP-1	22 DP-1	39 DP-1	39 DP-1
Days After Emergence	17 DE-1	17 DE-1	34 DE-1	34 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment				
No. Name	Rate Unit Code Plot			
		22	23	24
		25		
20 GRAMOXONE 2SL	3 pt/a C 204	.	0	100
SHREDDER LV4	16 fl oz/a C 308	100	0	100
FIERCE XLT	3.75 oz/a C 312	.	0	100
ACTIVATOR 90-NIS	0.25 % v/v C 507	.	0	95
N-PAK AMS	2.5 % v/v C	.	0	.
	Mean =	100	0	99
				100

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed
Pest Code	ERICA	CHEAL
Pest Scientific Name	<i>Conyza canadensis</i>	<i>Chenopodium album</i>
Pest Name	Canada horsewee	common lambsqu
Crop Code		
BBCH Scale		
Crop Scientific Name		
Crop Name		
Rating Date	Jul-26-2016	Jul-26-2016
Rating Type	CONTRO	CONTRO
Rating Unit	%	%
Number of Subsamples	1	1
Crop Stage Majority	CANOPY	CANOPY
SE Group No.	26	27
Days After First/Last Applic.	259 64	259 64
Trt-Eval Interval		
Plant-Eval Interval	57 DP-1	57 DP-1
Days After Emergence	52 DE-1	52 DE-1
ARM Action Codes	P	P
Number of Decimals	0	0
Trt Treatment	Rate	Appl
No. Name	Rate Unit	Code Plot
		26
		27
1 UNTREATED		AB 101
		209
		403
		505
		Mean =
2 ROUNDUP POWERMAX	22 fl oz/a A	102
N-PAK AMS	2.5 % v/v A	302
		314
		413
		Mean =
3 SHREDDER LV4	24 fl oz/a A	103
ACTIVATOR 90-NIS	0.25 % v/v A	304
N-PAK AMS	2.5 % v/v A	315
		512
		Mean =
4 STERLING BLUE	12 fl oz/a A	104
ACTIVATOR 90-NIS	0.25 % v/v A	206
N-PAK AMS	2.5 % v/v A	311
		510
		Mean =
5 SHREDDER LV4	24 fl oz/a A	105
STERLING BLUE	12 fl oz/a A	214
ACTIVATOR 90-NIS	0.25 % v/v A	405
N-PAK AMS	2.5 % v/v A	503
		Mean =

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03	Location: CORTLAND Trial Year: 2015
Protocol ID: 15F-CORT-SOY-03	Investigator: Dr. Bill Johnson
Project ID:	Study Director: Dustin Johnson
	Sponsor Contact: Purdue University

Pest Type				W Weed	W Weed
Pest Code				ERICA	CHEAL
Pest Scientific Name				Conyza canadens>	Chenopodium al>
Pest Name				Canada horsewe>	common lambsqu>
Crop Code					
BBCH Scale					
Crop Scientific Name					
Crop Name					
Rating Date				Jul-26-2016	Jul-26-2016
Rating Type				CONTRO	CONTRO
Rating Unit				%	%
Number of Subsamples				1	1
Crop Stage Majority				CANOPY	CANOPY
SE Group No.				26	27
Days After First/Last Applic.				259 64	259 64
Trt-Eval Interval					
Plant-Eval Interval				57 DP-1	57 DP-1
Days After Emergence				52 DE-1	52 DE-1
ARM Action Codes				P	P
Number of Decimals				0	0
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code Plot		26	27
6 SHREDDER LV4	24 fl oz/a A	106		100	100
DIMETRIC	6 oz/a A	301		100	100
PRIME OIL-COC	1 % v/v A	316		100	100
N-PAK AMS	2.5 % v/v A	502		100	100
		Mean =		100	100
7 STERLING BLUE	12 fl oz/a A	107		100	100
DIMETRIC	6 oz/a A	307		100	100
PRIME OIL-COC	1 % v/v A	406		100	100
N-PAK AMS	2.5 % v/v A	509		100	100
		Mean =		100	100
8 ROUNDUP POWERMAX	22 fl oz/a A	108		100	100
SHREDDER LV4	24 fl oz/a A	216		100	100
N-PAK AMS	2.5 % v/v A	404		100	100
		501		100	100
		Mean =		100	100
9 ROUNDUP POWERMAX	22 fl oz/a A	109		100	100
STERLING BLUE	12 fl oz/a A	213		100	100
N-PAK AMS	2.5 % v/v A	310		100	100
		504		100	100
		Mean =		100	100
10 ROUNDUP POWERMAX	22 fl oz/a A	110		100	100
SHREDDER LV4	24 fl oz/a A	208		99	100
CANOPY EX @ 1.5 OZ/A		407		100	100
CLASSIC	1.36 oz/a	508		100	100
EXPRESS	0.2 oz/a				
N-PAK AMS	2.5 % v/v A				
		Mean =		100	100
11 ROUNDUP POWERMAX	22 fl oz/a A	111		95	100
STERLING BLUE	12 fl oz/a A	215		100	100
CANOPY EX @ 1.5 OZ/A		401		100	100
CLASSIC	1.36 oz/a A	415		100	
EXPRESS	0.2 oz/a A				
N-PAK AMS	2.5 % v/v A				
		Mean =		99	100
12 ROUNDUP POWERMAX	22 fl oz/a B	112		100	100
N-PAK AMS	2.5 % v/v B	211		100	
		412		100	100
		414		100	
		Mean =		100	100

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03	Location: CORTLAND	Trial Year: 2015
Protocol ID: 15F-CORT-SOY-03	Investigator: Dr. Bill Johnson	
Project ID:	Study Director: Dustin Johnson	
	Sponsor Contact: Purdue University	

					W Weed ERICA	W Weed CHEAL
Pest Type					Conyza canadens>	Chenopodium al>
Pest Code					Canada horsewe>	common lambsqu>
Pest Scientific Name						
Pest Name						
Crop Code						
BBCH Scale						
Crop Scientific Name						
Crop Name						
Rating Date					Jul-26-2016	Jul-26-2016
Rating Type					CONTRO	CONTRO
Rating Unit					%	%
Number of Subsamples					1	1
Crop Stage Majority					CANOPY	CANOPY
SE Group No.					26	27
Days After First/Last Applic.					259 64	259 64
Trt-Eval Interval						
Plant-Eval Interval					57 DP-1	57 DP-1
Days After Emergence					52 DE-1	52 DE-1
ARM Action Codes					P	P
Number of Decimals					0	0
Trt Treatment		Rate	Appl			
No. Name		Rate Unit	Code Plot		26	27
13 SHREDDER LV4		24 fl oz/a B	113		100	100
ACTIVATOR 90-NIS		0.25 % v/v B	305		100	100
N-PAK AMS		2.5 % v/v B	408		100	100
			416		100	.
			Mean =		100	100
14 ROUNDUP POWERMAX		22 fl oz/a B	114		100	100
SHREDDER LV4		24 fl oz/a B	303		100	100
N-PAK AMS		2.5 % v/v B	402		100	100
			515		100	100
			Mean =		100	100
15 ROUNDUP POWERMAX		22 fl oz/a B	115		100	100
SHARPEN		1 fl oz/a B	210		100	100
MSO ULTRA		1 % v/v B	411		100	100
N-PAK AMS		2.5 % v/v B	514		100	100
			Mean =		100	100
16 ROUNDUP POWERMAX		22 fl oz/a B	116		100	80
SHREDDER LV4		24 fl oz/a B	212		100	100
SHARPEN		1 fl oz/a B	410		100	100
MSO ULTRA		1 % v/v B	513		100	.
N-PAK AMS		2.5 % v/v B				
			Mean =		100	93
17 ROUNDUP POWERMAX		22 fl oz/a B	201		85	.
SHREDDER LV4		24 fl oz/a B	207		100	100
CANOPY BLEND @ 5 OZ/A			309		100	.
Canopy		2.915 oz ai/a B	506		100	.
N-PAK AMS		2.5 % v/v B				
			Mean =		96	100
18 ROUNDUP POWERMAX		22 fl oz/a B	202		.	.
SHARPEN		1 fl oz/a B	306		100	.
DIMETRIC		6 oz/a B	409		100	.
MSO ULTRA		1 % v/v B	511		100	100
N-PAK AMS		2.5 % v/v B				
			Mean =		100	100
19 ROUNDUP POWERMAX		22 fl oz/a C	203		100	100
SHARPEN		1 fl oz/a C	205		100	.
CANOPY BLEND @ 5 OZ/A			313		100	100
Canopy		2.915 oz ai/a C	516		100	.
MSO ULTRA		1 % v/v C				
N-PAK AMS		2.5 % v/v C				
			Mean =		100	100

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03	Location: CORTLAND Trial Year: 2015
Protocol ID: 15F-CORT-SOY-03	Investigator: Dr. Bill Johnson
Project ID:	Study Director: Dustin Johnson
	Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed
Pest Code	ERICA	CHEAL
Pest Scientific Name	Conyza canadens>	Chenopodium al>
Pest Name	Canada horsewe>	common lambsqu>
Crop Code		
BBCH Scale		
Crop Scientific Name		
Crop Name		
Rating Date	Jul-26-2016	Jul-26-2016
Rating Type	CONTRO	CONTRO
Rating Unit	%	%
Number of Subsamples	1	1
Crop Stage Majority	CANOPY	CANOPY
SE Group No.	26	27
Days After First/Last Applic.	259 64	259 64
Trt-Eval Interval		
Plant-Eval Interval	57 DP-1	57 DP-1
Days After Emergence	52 DE-1	52 DE-1
ARM Action Codes	P	P
Number of Decimals	0	0
Trt Treatment		
No. Name	26	27
20 GRAMOXONE 2SL	3 pt/a C 204	100 .
SHREDDER LV4	16 fl oz/a C 308	100 100
FIERCE XLT	3.75 oz/a C 312	100 .
ACTIVATOR 90-NIS	0.25 % v/v C 507	95 .
N-PAK AMS	2.5 % v/v C	
Mean =	99	100

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

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

Pest Code
 ERICA, Conyza canadensis, = ERICA, Conyza canadensis,
 LAMAM, Lamium amplexicaule, = US
 CHEAL, Chenopodium album, = US

Crop Code
 GLXMA, BSOY, Glycine max, = US

Rating Type
 CONTRO = control / burndown or knockdown
 PHYGEN = phytotoxicity - general / injury

Rating Unit
 % = percent

Plant-Eval Interval
 -187 DP-1 = 1 GLXMA May-30-2016
 -172 DP-1 = 1 GLXMA May-30-2016
 -55 DP-1 = 1 GLXMA May-30-2016
 -46 DP-1 = 1 GLXMA May-30-2016
 -40 DP-1 = 1 GLXMA May-30-2016
 -24 DP-1 = 1 GLXMA May-30-2016
 -12 DP-1 = 1 GLXMA May-30-2016
 -7 DP-1 = 1 GLXMA May-30-2016
 0 DP-1 = 1 GLXMA May-30-2016
 9 DP-1 = 1 GLXMA May-30-2016
 15 DP-1 = 1 GLXMA May-30-2016
 22 DP-1 = 1 GLXMA May-30-2016
 39 DP-1 = 1 GLXMA May-30-2016
 57 DP-1 = 1 GLXMA May-30-2016

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

Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	LAMAM	ERICA	LAMAM
Pest Scientific Name	Conyza canadensis	Lamium amplexicaule	Conyza canadensis	Lamium amplexicaule
Pest Name	Canada horseweed	Henbit	Canada horseweed	Henbit
Crop Code				
BBCH Scale				
Crop Scientific Name				
Crop Name				
Rating Date	Nov-25-2015	Nov-25-2015	Dec-10-2015	Dec-10-2015
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Crop Stage Majority				
SE Group No.	1	2	3	4
Days After First/Last Applic.	15 15	15 15	30 30	30 30
Trt-Eval Interval	15 DA-A	15 DA-A	30 DA-A	30 DA-A
Plant-Eval Interval	-187 DP-1	-187 DP-1	-172 DP-1	-172 DP-1
Days After Emergence	-192 DE-1	-192 DE-1	-177 DE-1	-177 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code	1	2
1 UNTREATED		AB	0 b	0 b
2 ROUNDUP POWERMAX	22 fl oz/a	A	50 a	67 a
N-PAK AMS	2.5 % v/v	A		80 a
3 SHREDDER LV4	24 fl oz/a	A	40 a	57 a
ACTIVATOR 90-NIS	0.25 % v/v	A		73 a
N-PAK AMS	2.5 % v/v	A		75 a
4 STERLING BLUE	12 fl oz/a	A	50 a	49 a
ACTIVATOR 90-NIS	0.25 % v/v	A		85 a
N-PAK AMS	2.5 % v/v	A		58 a
5 SHREDDER LV4	24 fl oz/a	A	55 a	50 a
STERLING BLUE	12 fl oz/a	A		82 a
ACTIVATOR 90-NIS	0.25 % v/v	A		65 a
N-PAK AMS	2.5 % v/v	A		

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

				W Weed ERICA	W Weed LAMAM	W Weed ERICA	W Weed LAMAM
				Conyza canadensis> Canada horsewee>	Lamium amplexi> Henbit	Conyza canadensis> Canada horsewee>	Lamium amplexi> Henbit
Pest Type	Pest Code	Pest Scientific Name	Pest Name				
Crop Code	BBCH Scale	Crop Scientific Name	Crop Name				
Rating Date				Nov-25-2015	Nov-25-2015	Dec-10-2015	Dec-10-2015
Rating Type				CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit				%	%	%	%
Number of Subsamples				1	1	1	1
Crop Stage Majority							
SE Group No.				1	2	3	4
Days After First/Last Applic.				15 15	15 15	30 30	30 30
Trt-Eval Interval				15 DA-A	15 DA-A	30 DA-A	30 DA-A
Plant-Eval Interval				-187 DP-1	-187 DP-1	-172 DP-1	-172 DP-1
Days After Emergence				-192 DE-1	-192 DE-1	-177 DE-1	-177 DE-1
ARM Action Codes				P	P	P	P
Number of Decimals				0	0	0	0
Trt No.	Treatment Name	Rate	Appl Unit	1	2	3	4
6	SHREDDER LV4 DIMETRIC PRIME OIL-COC N-PAK AMS	24 fl oz/a 6 oz/a 1 % v/v 2.5 % v/v	A A A A	70 a	63 a	95 a	82 a
7	STERLING BLUE DIMETRIC PRIME OIL-COC N-PAK AMS	12 fl oz/a 6 oz/a 1 % v/v 2.5 % v/v	A A A A		56 a	60 a	70 a
8	ROUNDUP POWERMAX SHREDDER LV4 N-PAK AMS	22 fl oz/a 24 fl oz/a 2.5 % v/v	A A A	68 a	62 a	88 a	80 a
9	ROUNDUP POWERMAX STERLING BLUE N-PAK AMS	22 fl oz/a 12 fl oz/a 2.5 % v/v	A A A	71 a	68 a	84 a	84 a
10	ROUNDUP POWERMAX SHREDDER LV4 CANOPY EX @ 1.5 OZ/A CLASSIC EXPRESS N-PAK AMS	22 fl oz/a 24 fl oz/a 1.36 oz/a 0.2 oz/a 2.5 % v/v	A A A A A	60 a	60 a	80 a	81 a
11	ROUNDUP POWERMAX STERLING BLUE CANOPY EX @ 1.5 OZ/A CLASSIC EXPRESS N-PAK AMS	22 fl oz/a 12 fl oz/a 1.36 oz/a 0.2 oz/a 2.5 % v/v	A A A A A	70 a	60 a	90 a	73 a
12	ROUNDUP POWERMAX N-PAK AMS	22 fl oz/a 2.5 % v/v	B B				
13	SHREDDER LV4 ACTIVATOR 90-NIS N-PAK AMS	24 fl oz/a 0.25 % v/v 2.5 % v/v	B B B				
14	ROUNDUP POWERMAX SHREDDER LV4 N-PAK AMS	22 fl oz/a 24 fl oz/a 2.5 % v/v	B B B				
15	ROUNDUP POWERMAX SHARPEN MSO ULTRA N-PAK AMS	22 fl oz/a 1 fl oz/a 1 % v/v 2.5 % v/v	B B B B				

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

				W Weed ERICA	W Weed LAMAM	W Weed ERICA	W Weed LAMAM	
				Conyza canadensis Canada horseweed	Lamium amplexicaule Henbit	Conyza canadensis Canada horseweed	Lamium amplexicaule Henbit	
Pest Type	Pest Code	Pest Scientific Name	Pest Name					
Crop Code	BBCH Scale	Crop Scientific Name	Crop Name					
Rating Date				Nov-25-2015	Nov-25-2015	Dec-10-2015	Dec-10-2015	
Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	
Rating Unit				%	%	%	%	
Number of Subsamples				1	1	1	1	
Crop Stage Majority								
SE Group No.				1	2	3	4	
Days After First/Last Applic.				15 15	15 15	30 30	30 30	
Trt-Eval Interval				15 DA-A	15 DA-A	30 DA-A	30 DA-A	
Plant-Eval Interval				-187 DP-1	-187 DP-1	-172 DP-1	-172 DP-1	
Days After Emergence				-192 DE-1	-192 DE-1	-177 DE-1	-177 DE-1	
ARM Action Codes				P	P	P	P	
Number of Decimals				0	0	0	0	
Trt No.	Treatment Name	Rate	Unit	Appl Code				
					1	2	3	4
16	ROUNDUP POWERMAX SHREDDER LV4 SHARPEN MSO ULTRA N-PAK AMS	22 fl oz/a 24 fl oz/a 1 fl oz/a 1 % v/v 2.5 % v/v	B B B B B					
17	ROUNDUP POWERMAX SHREDDER LV4 CANOPY BLEND @ 5 OZ/A Canopy N-PAK AMS	22 fl oz/a 24 fl oz/a 2.915 oz ai/a 2.5 % v/v	B B B B					
18	ROUNDUP POWERMAX SHARPEN DIMETRIC MSO ULTRA N-PAK AMS	22 fl oz/a 1 fl oz/a 6 oz/a 1 % v/v 2.5 % v/v	B B B B B					
19	ROUNDUP POWERMAX SHARPEN CANOPY BLEND @ 5 OZ/A Canopy MSO ULTRA N-PAK AMS	22 fl oz/a 1 fl oz/a 2.915 oz ai/a 1 % v/v 2.5 % v/v	C C C C C					
20	GRAMOXONE 2SL SHREDDER LV4 FIERCE XLT ACTIVATOR 90-NIS N-PAK AMS	3 pt/a 16 fl oz/a 3.75 oz/a 0.25 % v/v 2.5 % v/v	C C C C C					
LSD	P=.05				17.3	18.4	22.8	21.5
	Standard Deviation				10.9	12.7	14.5	14.8
	CV				38.25	26.96	38.75	24.95
	Bartlett's X2				2.014	16.313	5.638	9.847
	P(Bartlett's X2)				0.57	0.061	0.343	0.363
	Skewness				-0.9587	-1.5683*	-1.3746*	-1.487*
	Kurtosis				-0.0415	1.5513*	0.622	1.3097
	Replicate F				0.785	0.367	0.574	3.127
	Replicate Prob(F)				0.5291	0.7773	0.6450	0.0436
	Treatment F				13.061	8.592	11.297	10.203
	Treatment Prob(F)				0.0002	0.0001	0.0003	0.0001

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed		
Pest Code	ERICA	LAMAM	ERICA	ERICA		
Pest Scientific Name	Conyza canadensis	Lamium amplexicaule	Conyza canadensis	Conyza canadensis		
Pest Name	Canada horseweed	Henbit	Canada horseweed	Canada horseweed		
Crop Code						
BBCH Scale						
Crop Scientific Name						
Crop Name						
Rating Date	Apr-5-2016	Apr-5-2016	Apr-14-2016	Apr-20-2016		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%		
Number of Subsamples	1	1	1	1		
Crop Stage Majority						
SE Group No.	5	6	7	8		
Days After First/Last Applic.	147 147	147 147	156 9	162 15		
Trt-Eval Interval	147 DA-A	147 DA-A	156 DA-A			
Plant-Eval Interval	-55 DP-1	-55 DP-1	-46 DP-1	-40 DP-1		
Days After Emergence	-60 DE-1	-60 DE-1	-51 DE-1	-45 DE-1		
ARM Action Codes	P	P	P	P		
Number of Decimals	0	0	0	0		
Trt Treatment	Rate	Appl				
No. Name	Rate Unit	Code	5	6	7	8
1 UNTREATED		AB	0 c	0 c	0 c	0 d
2 ROUNDUP POWERMAX	22 fl oz/a	A	46 b	33 b	33 b	28 c
N-PAK AMS	2.5 % v/v	A				
3 SHREDDER LV4	24 fl oz/a	A	79 a	81 a	63 a	49 bc
ACTIVATOR 90-NIS	0.25 % v/v	A				
N-PAK AMS	2.5 % v/v	A				
4 STERLING BLUE	12 fl oz/a	A	88 a	80 a	75 a	68 ab
ACTIVATOR 90-NIS	0.25 % v/v	A				
N-PAK AMS	2.5 % v/v	A				
5 SHREDDER LV4	24 fl oz/a	A	83 a	85 a	80 a	74 ab
STERLING BLUE	12 fl oz/a	A				
ACTIVATOR 90-NIS	0.25 % v/v	A				
N-PAK AMS	2.5 % v/v	A				

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

				W Weed ERICA	W Weed LAMAM	W Weed ERICA	W Weed ERICA
				Conyza canadensis> Canada horsewee>	Lamium amplexi> Henbit	Conyza canadensis> Canada horsewee>	Conyza canadensis> Canada horsewee>
Pest Type							
Pest Code							
Pest Scientific Name							
Pest Name							
Crop Code							
BBCH Scale							
Crop Scientific Name							
Crop Name							
Rating Date							
Rating Type							
Rating Unit							
Number of Subsamples							
Crop Stage Majority							
SE Group No.							
Days After First/Last Applic.							
Trt-Eval Interval							
Plant-Eval Interval							
Days After Emergence							
ARM Action Codes							
Number of Decimals							
Trt No.	Treatment Name	Rate	Appl Unit	5	6	7	8
6	SHREDDER LV4	24 fl oz/a	A	83 a	75 a	71 a	64 ab
	DIMETRIC	6 oz/a	A				
	PRIME OIL-COC	1 % v/v	A				
	N-PAK AMS	2.5 % v/v	A				
7	STERLING BLUE	12 fl oz/a	A	79 a	90 a	78 a	70 ab
	DIMETRIC	6 oz/a	A				
	PRIME OIL-COC	1 % v/v	A				
	N-PAK AMS	2.5 % v/v	A				
8	ROUNDUP POWERMAX	22 fl oz/a	A	85 a	84 a	79 a	76 ab
	SHREDDER LV4	24 fl oz/a	A				
	N-PAK AMS	2.5 % v/v	A				
9	ROUNDUP POWERMAX	22 fl oz/a	A	88 a	83 a	80 a	75 ab
	STERLING BLUE	12 fl oz/a	A				
	N-PAK AMS	2.5 % v/v	A				
10	ROUNDUP POWERMAX	22 fl oz/a	A	80 a	78 a	73 a	66 ab
	SHREDDER LV4	24 fl oz/a	A				
	CANOPY EX @ 1.5 OZ/A						
	CLASSIC	1.36 oz/a					
	EXPRESS	0.2 oz/a					
	N-PAK AMS	2.5 % v/v	A				
11	ROUNDUP POWERMAX	22 fl oz/a	A	93 a	93 a	93 a	90 a
	STERLING BLUE	12 fl oz/a	A				
	CANOPY EX @ 1.5 OZ/A						
	CLASSIC	1.36 oz/a	A				
	EXPRESS	0.2 oz/a	A				
	N-PAK AMS	2.5 % v/v	A				
12	ROUNDUP POWERMAX	22 fl oz/a	B				5 d
	N-PAK AMS	2.5 % v/v	B				
13	SHREDDER LV4	24 fl oz/a	B				50 bc
	ACTIVATOR 90-NIS	0.25 % v/v	B				
	N-PAK AMS	2.5 % v/v	B				
14	ROUNDUP POWERMAX	22 fl oz/a	B				66 ab
	SHREDDER LV4	24 fl oz/a	B				
	N-PAK AMS	2.5 % v/v	B				
15	ROUNDUP POWERMAX	22 fl oz/a	B				89 a
	SHARPEN	1 fl oz/a	B				
	MSO ULTRA	1 % v/v	B				
	N-PAK AMS	2.5 % v/v	B				

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed				
Pest Code	ERICA	LAMAM	ERICA	ERICA				
Pest Scientific Name	Conyza canadensis	Lamium amplexicaule	Conyza canadensis	Conyza canadensis				
Pest Name	Canada horseweed	Henbit	Canada horseweed	Canada horseweed				
Crop Code								
BBCH Scale								
Crop Scientific Name								
Crop Name								
Rating Date	Apr-5-2016	Apr-5-2016	Apr-14-2016	Apr-20-2016				
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO				
Rating Unit	%	%	%	%				
Number of Subsamples	1	1	1	1				
Crop Stage Majority								
SE Group No.	5	6	7	8				
Days After First/Last Applic.	147 147	147 147	156 9	162 15				
Trt-Eval Interval	147 DA-A	147 DA-A	156 DA-A					
Plant-Eval Interval	-55 DP-1	-55 DP-1	-46 DP-1	-40 DP-1				
Days After Emergence	-60 DE-1	-60 DE-1	-51 DE-1	-45 DE-1				
ARM Action Codes	P	P	P	P				
Number of Decimals	0	0	0	0				
Trt No.	Treatment Name	Rate	Unit	Appl Code	5	6	7	8
16	ROUNDUP POWERMAX	22 fl oz/a	B					91 a
	SHREDDER LV4	24 fl oz/a	B					
	SHARPEN	1 fl oz/a	B					
	MSO ULTRA	1 % v/v	B					
	N-PAK AMS	2.5 % v/v	B					
17	ROUNDUP POWERMAX	22 fl oz/a	B					88 a
	SHREDDER LV4	24 fl oz/a	B					
	CANOPY BLEND @ 5 OZ/A							
	Canopy	2.915 oz ai/a	B					
	N-PAK AMS	2.5 % v/v	B					
18	ROUNDUP POWERMAX	22 fl oz/a	B					97 a
	SHARPEN	1 fl oz/a	B					
	DIMETRIC	6 oz/a	B					
	MSO ULTRA	1 % v/v	B					
	N-PAK AMS	2.5 % v/v	B					
19	ROUNDUP POWERMAX	22 fl oz/a	C					
	SHARPEN	1 fl oz/a	C					
	CANOPY BLEND @ 5 OZ/A							
	Canopy	2.915 oz ai/a	C					
	MSO ULTRA	1 % v/v	C					
	N-PAK AMS	2.5 % v/v	C					
20	GRAMOXONE 2SL	3 pt/a	C					
	SHREDDER LV4	16 fl oz/a	C					
	FIERCE XLT	3.75 oz/a	C					
	ACTIVATOR 90-NIS	0.25 % v/v	C					
	N-PAK AMS	2.5 % v/v	C					
LSD P=.05		18.6		14.0		25.8		19.8
Standard Deviation		12.9		9.7		17.9		14.0
CV		17.65		13.68		27.21		21.96
Bartlett's X2		15.124		7.741		17.569		32.531
P(Bartlett's X2)		0.088		0.56		0.041*		0.009*
Skewness		-1.6061*		-1.5894*		-1.2088*		-1.0229*
Kurtosis		1.5622*		1.4326*		1.3085		-0.0109
Replicate F		2.862		0.579		4.309		2.825
Replicate Prob(F)		0.0533		0.6330		0.0122		0.0478
Treatment F		17.619		34.342		8.802		16.213
Treatment Prob(F)		0.0001		0.0001		0.0001		0.0001

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03	Location: CORTLAND Trial Year: 2015
Protocol ID: 15F-CORT-SOY-03	Investigator: Dr. Bill Johnson
Project ID:	Study Director: Dustin Johnson
	Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	ERICA	ERICA	CHEAL
Pest Scientific Name	Conyza canadensis	Conyza canadensis	Conyza canadensis	Chenopodium album
Pest Name	Canada horseweed	Canada horseweed	Canada horseweed	common lambsquarters
Crop Code				
BBCH Scale				
Crop Scientific Name				
Crop Name				
Rating Date	May-6-2016	May-18-2016	May-23-2016	May-23-2016
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Crop Stage Majority				
SE Group No.	9	10	11	12
Days After First/Last Applic.	178 31	190 43	195 48	195 48
Trt-Eval Interval				
Plant-Eval Interval	-24 DP-1	-12 DP-1	-7 DP-1	-7 DP-1
Days After Emergence	-29 DE-1	-17 DE-1	-12 DE-1	-12 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment				
No. Name	9	10	11	12
Rate				
Rate Unit				
Appl Code	AB			
1 UNTREATED	0 e	0 e	0 d	0 b
2 ROUNDUP POWERMAX	33 d	33 d	33 c	24 ab
N-PAK AMS				
2.5 fl oz/a A				
2.5 % v/v A				
3 SHREDDER LV4	50 cd	46 cd	45 c	21 ab
ACTIVATOR 90-NIS				
0.25 fl oz/a A				
0.25 % v/v A				
2.5 % v/v A				
4 STERLING BLUE	56 bc	46 cd	41 c	23 ab
ACTIVATOR 90-NIS				
0.25 fl oz/a A				
0.25 % v/v A				
2.5 % v/v A				
5 SHREDDER LV4	61 bc	50 cd	48 c	33 ab
STERLING BLUE				
12 fl oz/a A				
ACTIVATOR 90-NIS				
0.25 fl oz/a A				
0.25 % v/v A				
2.5 % v/v A				

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed			
Pest Code	ERICA	ERICA	ERICA	CHEAL			
Pest Scientific Name	Conyza canadensis	Conyza canadensis	Conyza canadensis	Chenopodium album			
Pest Name	Canada horseweed	Canada horseweed	Canada horseweed	common lambsquarters			
Crop Code							
BBCH Scale							
Crop Scientific Name							
Crop Name							
Rating Date	May-6-2016	May-18-2016	May-23-2016	May-23-2016			
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO			
Rating Unit	%	%	%	%			
Number of Subsamples	1	1	1	1			
Crop Stage Majority							
SE Group No.	9	10	11	12			
Days After First/Last Applic.	178 31	190 43	195 48	195 48			
Trt-Eval Interval							
Plant-Eval Interval	-24 DP-1	-12 DP-1	-7 DP-1	-7 DP-1			
Days After Emergence	-29 DE-1	-17 DE-1	-12 DE-1	-12 DE-1			
ARM Action Codes	P	P	P	P			
Number of Decimals	0	0	0	0			
Trt Treatment No. Name	Rate	Unit	Appl Code	9	10	11	12
6 SHREDDER LV4	24 fl oz/a	A		58 bc	55 cd	51 c	23 ab
DIMETRIC	6 oz/a	A					
PRIME OIL-COC	1 % v/v	A					
N-PAK AMS	2.5 % v/v	A					
7 STERLING BLUE	12 fl oz/a	A		64 bc	51 cd	43 c	8 ab
DIMETRIC	6 oz/a	A					
PRIME OIL-COC	1 % v/v	A					
N-PAK AMS	2.5 % v/v	A					
8 ROUNDUP POWERMAX	22 fl oz/a	A		70 bc	66 bc	63 bc	50 ab
SHREDDER LV4	24 fl oz/a	A					
N-PAK AMS	2.5 % v/v	A					
9 ROUNDUP POWERMAX	22 fl oz/a	A		68 bc	69 bc	64 bc	48 ab
STERLING BLUE	12 fl oz/a	A					
N-PAK AMS	2.5 % v/v	A					
10 ROUNDUP POWERMAX	22 fl oz/a	A		60 bc	50 cd	40 c	5 b
SHREDDER LV4	24 fl oz/a	A					
CANOPY EX @ 1.5 OZ/A							
CLASSIC	1.36 oz/a						
EXPRESS	0.2 oz/a						
N-PAK AMS	2.5 % v/v	A					
11 ROUNDUP POWERMAX	22 fl oz/a	A		76 abc	64 bc	54 c	90 ab
STERLING BLUE	12 fl oz/a	A					
CANOPY EX @ 1.5 OZ/A							
CLASSIC	1.36 oz/a	A					
EXPRESS	0.2 oz/a	A					
N-PAK AMS	2.5 % v/v	A					
12 ROUNDUP POWERMAX	22 fl oz/a	B		83 ab	70 bc	68 abc	60 ab
N-PAK AMS	2.5 % v/v	B					
13 SHREDDER LV4	24 fl oz/a	B		95 a	93 ab	91 ab	67 ab
ACTIVATOR 90-NIS	0.25 % v/v	B					
N-PAK AMS	2.5 % v/v	B					
14 ROUNDUP POWERMAX	22 fl oz/a	B		100 a	93 ab	92 ab	63 ab
SHREDDER LV4	24 fl oz/a	B					
N-PAK AMS	2.5 % v/v	B					
15 ROUNDUP POWERMAX	22 fl oz/a	B		100 a	100 a	99 a	70 ab
SHARPEN	1 fl oz/a	B					
MSO ULTRA	1 % v/v	B					
N-PAK AMS	2.5 % v/v	B					

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	ERICA	ERICA	CHEAL
Pest Scientific Name	Conyza canadens	Conyza canadens	Conyza canadens	Chenopodium al
Pest Name	Canada horsewe	Canada horsewe	Canada horsewe	common lambsqu
Crop Code				
BBCH Scale				
Crop Scientific Name				
Crop Name				
Rating Date	May-6-2016	May-18-2016	May-23-2016	May-23-2016
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Crop Stage Majority				
SE Group No.	9	10	11	12
Days After First/Last Applic.	178 31	190 43	195 48	195 48
Trt-Eval Interval				
Plant-Eval Interval	-24 DP-1	-12 DP-1	-7 DP-1	-7 DP-1
Days After Emergence	-29 DE-1	-17 DE-1	-12 DE-1	-12 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code	9	10
16 ROUNDUP POWERMAX	22 fl oz/a B		100 a	100 a
SHREDDER LV4	24 fl oz/a B			
SHARPEN	1 fl oz/a B			
MSO ULTRA	1 % v/v B			
N-PAK AMS	2.5 % v/v B			80 ab
17 ROUNDUP POWERMAX	22 fl oz/a B		100 a	99 a
SHREDDER LV4	24 fl oz/a B			
CANOPY BLEND @ 5 OZ/A				
Canopy	2.915 oz ai/a B			
N-PAK AMS	2.5 % v/v B			100 a
18 ROUNDUP POWERMAX	22 fl oz/a B		100 a	100 a
SHARPEN	1 fl oz/a B			
DIMETRIC	6 oz/a B			
MSO ULTRA	1 % v/v B			
N-PAK AMS	2.5 % v/v B			50 ab
19 ROUNDUP POWERMAX	22 fl oz/a C			
SHARPEN	1 fl oz/a C			
CANOPY BLEND @ 5 OZ/A				
Canopy	2.915 oz ai/a C			
MSO ULTRA	1 % v/v C			
N-PAK AMS	2.5 % v/v C			
20 GRAMOXONE 2SL	3 pt/a C			
SHREDDER LV4	16 fl oz/a C			
FIERCE XLT	3.75 oz/a C			
ACTIVATOR 90-NIS	0.25 % v/v C			
N-PAK AMS	2.5 % v/v C			
LSD P=.05	18.1	19.6	21.9	41.2
Standard Deviation	12.8	13.8	15.5	28.7
CV	18.06	20.99	24.69	94.92
Bartlett's X2	20.643	65.644	58.161	17.762
P(Bartlett's X2)	0.037*	0.001*	0.001*	0.123
Skewness	-1.0513*	-0.7248*	-0.4993	0.3016
Kurtosis	0.4922	-0.2423	-0.7796	-1.5504*
Replicate F	6.161	6.313	5.802	0.428
Replicate Prob(F)	0.0012	0.0010	0.0017	0.7344
Treatment F	18.168	16.111	13.757	2.903
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0037

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed	
Pest Code	ERICA	CHEAL	ERICA	CHEAL	
Pest Scientific Name	Conyza canadensis	Chenopodium album	Conyza canadensis	Chenopodium album	
Pest Name	Canada horseweed	common lambsquarters	Canada horseweed	common lambsquarters	
Crop Code					GLXMA
BBCH Scale					BSOY
Crop Scientific Name					Glycine max
Crop Name					Soybean
Rating Date	May-30-2016	May-30-2016	Jun-8-2016	Jun-8-2016	Jun-8-2016
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	PHYGEN
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Crop Stage Majority					
SE Group No.	13	14	15	16	17
Days After First/Last Applic.	202 7	202 7	211 16	211 16	211 16
Trt-Eval Interval					
Plant-Eval Interval	0 DP-1	0 DP-1	9 DP-1	9 DP-1	9 DP-1
Days After Emergence	-5 DE-1	-5 DE-1	4 DE-1	4 DE-1	4 DE-1
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	13	14	15
1 UNTREATED		AB	0 c	0 c	0 d
2 ROUNDUP POWERMAX	22 fl oz/a	A	50 b	76 ab	55 c
N-PAK AMS	2.5 % v/v	A			95 a
3 SHREDDER LV4	24 fl oz/a	A	63 b	81 ab	68 bc
ACTIVATOR 90-NIS	0.25 % v/v	A			94 a
N-PAK AMS	2.5 % v/v	A			
4 STERLING BLUE	12 fl oz/a	A	56 b	82 ab	55 c
ACTIVATOR 90-NIS	0.25 % v/v	A			100 a
N-PAK AMS	2.5 % v/v	A			
5 SHREDDER LV4	24 fl oz/a	A	60 b	80 ab	54 c
STERLING BLUE	12 fl oz/a	A			95 a
ACTIVATOR 90-NIS	0.25 % v/v	A			
N-PAK AMS	2.5 % v/v	A			

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed	
Pest Code	ERICA	CHEAL	ERICA	CHEAL	
Pest Scientific Name	Conyza canadens	Chenopodium al	Conyza canadens	Chenopodium al	
Pest Name	Canada horsewe	common lambsqu	Canada horsewe	common lambsqu	
Crop Code					GLXMA
BBCH Scale					BSOY
Crop Scientific Name					Glycine max
Crop Name					Soybean
Rating Date	May-30-2016	May-30-2016	Jun-8-2016	Jun-8-2016	Jun-8-2016
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	PHYGEN
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Crop Stage Majority					
SE Group No.	13	14	15	16	17
Days After First/Last Applic.	202 7	202 7	211 16	211 16	211 16
Trt-Eval Interval					
Plant-Eval Interval	0 DP-1	0 DP-1	9 DP-1	9 DP-1	9 DP-1
Days After Emergence	-5 DE-1	-5 DE-1	4 DE-1	4 DE-1	4 DE-1
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	13	14	15
6 SHREDDER LV4	24 fl oz/a A	A	61 b	83 a	65 bc
DIMETRIC	6 oz/a A	A			92 a
PRIME OIL-COC	1 % v/v A	A			0 -
N-PAK AMS	2.5 % v/v A	A			
7 STERLING BLUE	12 fl oz/a A	A	50 b	81 ab	60 bc
DIMETRIC	6 oz/a A	A			94 a
PRIME OIL-COC	1 % v/v A	A			0 -
N-PAK AMS	2.5 % v/v A	A			
8 ROUNDUP POWERMAX	22 fl oz/a A	A	60 b	83 ab	60 bc
SHREDDER LV4	24 fl oz/a A	A			94 a
N-PAK AMS	2.5 % v/v A	A			0 -
9 ROUNDUP POWERMAX	22 fl oz/a A	A	58 b	85 a	66 bc
STERLING BLUE	12 fl oz/a A	A			95 a
N-PAK AMS	2.5 % v/v A	A			0 -
10 ROUNDUP POWERMAX	22 fl oz/a A	A	48 b	76 ab	51 c
SHREDDER LV4	24 fl oz/a A	A			90 a
CANOPY EX @ 1.5 OZ/A					0 -
CLASSIC	1.36 oz/a				
EXPRESS	0.2 oz/a				
N-PAK AMS	2.5 % v/v A	A			
11 ROUNDUP POWERMAX	22 fl oz/a A	A	53 b	90 a	48 c
STERLING BLUE	12 fl oz/a A	A			95 a
CANOPY EX @ 1.5 OZ/A					0 -
CLASSIC	1.36 oz/a A	A			
EXPRESS	0.2 oz/a A	A			
N-PAK AMS	2.5 % v/v A	A			
12 ROUNDUP POWERMAX	22 fl oz/a B	B	65 b	80 ab	64 bc
N-PAK AMS	2.5 % v/v B	B			95 a
13 SHREDDER LV4	24 fl oz/a B	B	94 a	97 a	96 a
ACTIVATOR 90-NIS	0.25 % v/v B	B			100 a
N-PAK AMS	2.5 % v/v B	B			0 -
14 ROUNDUP POWERMAX	22 fl oz/a B	B	95 a	91 a	98 a
SHREDDER LV4	24 fl oz/a B	B			100 a
N-PAK AMS	2.5 % v/v B	B			0 -
15 ROUNDUP POWERMAX	22 fl oz/a B	B	98 a	95 a	98 a
SHARPEN	1 fl oz/a B	B			100 a
MSO ULTRA	1 % v/v B	B			0 -
N-PAK AMS	2.5 % v/v B	B			

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed	
Pest Code	ERICA	CHEAL	ERICA	CHEAL	
Pest Scientific Name	Conyza canadens>	Chenopodium al>	Conyza canadens>	Chenopodium al>	
Pest Name	Canada horsewe>	common lambsqu>	Canada horsewe>	common lambsqu>	
Crop Code					GLXMA
BBCH Scale					BSOY
Crop Scientific Name					Glycine max
Crop Name					Soybean
Rating Date	May-30-2016	May-30-2016	Jun-8-2016	Jun-8-2016	Jun-8-2016
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	PHYGEN
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Crop Stage Majority					
SE Group No.	13	14	15	16	17
Days After First/Last Applic.	202 7	202 7	211 16	211 16	211 16
Trt-Eval Interval					
Plant-Eval Interval	0 DP-1	0 DP-1	9 DP-1	9 DP-1	9 DP-1
Days After Emergence	-5 DE-1	-5 DE-1	4 DE-1	4 DE-1	4 DE-1
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		13	14	15
16 ROUNDUP POWERMAX	22 fl oz/a B		96 a	75 ab	89 ab
SHREDDER LV4	24 fl oz/a B				35 c
SHARPEN	1 fl oz/a B				
MSO ULTRA	1 % v/v B				
N-PAK AMS	2.5 % v/v B				0 -
17 ROUNDUP POWERMAX	22 fl oz/a B		93 a	100 a	86 ab
SHREDDER LV4	24 fl oz/a B				100 a
CANOPY BLEND @ 5 OZ/A					
Canopy	2.915 oz ai/a B				
N-PAK AMS	2.5 % v/v B				0 -
18 ROUNDUP POWERMAX	22 fl oz/a B		93 a	55 b	89 ab
SHARPEN	1 fl oz/a B				60 b
DIMETRIC	6 oz/a B				
MSO ULTRA	1 % v/v B				
N-PAK AMS	2.5 % v/v B				0 -
19 ROUNDUP POWERMAX	22 fl oz/a C		84 a	85 a	89 ab
SHARPEN	1 fl oz/a C				100 a
CANOPY BLEND @ 5 OZ/A					
Canopy	2.915 oz ai/a C				
MSO ULTRA	1 % v/v C				
N-PAK AMS	2.5 % v/v C				0 -
20 GRAMOXONE 2SL	3 pt/a C		53 b		68 bc
SHREDDER LV4	16 fl oz/a C				
FIERCE XLT	3.75 oz/a C				
ACTIVATOR 90-NIS	0.25 % v/v C				
N-PAK AMS	2.5 % v/v C				0 -
LSD P=.05			14.7	13.2	17.3
Standard Deviation			10.4	9.2	12.2
CV			15.64	15.56	18.01
Bartlett's X2			30.498	42.643	52.433
P(Bartlett's X2)			0.033*	0.001*	0.001*
Skewness			-0.5913*	-2.5314*	-0.8524*
Kurtosis			0.1735	5.8862*	0.6278
Replicate F			2.474	1.318	0.370
Replicate Prob(F)			0.0708	0.2836	0.7752
Treatment F			21.771	19.531	14.355
Treatment Prob(F)			0.0001	0.0001	0.0001
					1.116
					0.3552
					21.715
					0.0001
					0.000
					1.0000
					0.000
					1.0000

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03	Location: CORTLAND Trial Year: 2015
Protocol ID: 15F-CORT-SOY-03	Investigator: Dr. Bill Johnson
Project ID:	Study Director: Dustin Johnson
	Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	CHEAL		ERICA
Pest Scientific Name	Conyza canadens>	Chenopodium al>		Conyza canadens>
Pest Name	Canada horsewe>	common lambsqu>		Canada horsewe>
Crop Code			GLXMA	
BBCH Scale			BSOY	
Crop Scientific Name			Glycine max	
Crop Name			Soybean	
Rating Date	Jun-14-2016	Jun-14-2016	Jun-14-2016	Jun-21-2016
Rating Type	CONTRO	CONTRO	PHYGEN	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Crop Stage Majority				
SE Group No.	18	19	20	21
Days After First/Last Applic.	217 22	217 22	217 22	224 29
Trt-Eval Interval				
Plant-Eval Interval	15 DP-1	15 DP-1	15 DP-1	22 DP-1
Days After Emergence	10 DE-1	10 DE-1	10 DE-1	17 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment				
No. Name	18	19	20	21
Rate				
Unit				
Appl Code				
1 UNTREATED	0 d	0 c	0 -	0 g
2 ROUNDUP POWERMAX	51 c	98 a	0 -	45 def
N-PAK AMS				
3 SHREDDER LV4	69 abc	98 a	0 -	54 b-f
ACTIVATOR 90-NIS				
N-PAK AMS				
4 STERLING BLUE	49 c	100 a	0 -	48 c-f
ACTIVATOR 90-NIS				
N-PAK AMS				
5 SHREDDER LV4	49 c	99 a	0 -	35 f
STERLING BLUE				
ACTIVATOR 90-NIS				
N-PAK AMS				

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03
 Protocol ID: 15F-CORT-SOY-03
 Project ID:

Location: CORTLAND Trial Year: 2015
 Investigator: Dr. Bill Johnson
 Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

				W Weed ERICA	W Weed CHEAL		W Weed ERICA	W Weed CHEAL
Pest Type				Conyza canadens>	Chenopodium al>		Conyza canadens>	Chenopodium al>
Pest Code				Canada horsewe>	common lambsqu>		Canada horsewe>	common lambsqu>
Pest Scientific Name								
Pest Name								
Crop Code						GLXMA		
BBCH Scale						BSOY		
Crop Scientific Name						Glycine max		
Crop Name						Soybean		
Rating Date				Jun-14-2016	Jun-14-2016	Jun-14-2016	Jun-21-2016	Jun-21-2016
Rating Type				CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO
Rating Unit				%	%	%	%	%
Number of Subsamples				1	1	1	1	1
Crop Stage Majority								
SE Group No.				18	19	20	21	22
Days After First/Last Applic.				217 22	217 22	217 22	224 29	224 29
Trt-Eval Interval								
Plant-Eval Interval				15 DP-1	15 DP-1	15 DP-1	22 DP-1	22 DP-1
Days After Emergence				10 DE-1	10 DE-1	10 DE-1	17 DE-1	17 DE-1
ARM Action Codes				P	P	P	P	P
Number of Decimals				0	0	0	0	0
Trt No.	Treatment Name	Rate	Appl Unit Code	18	19	20	21	22
6	SHREDDER LV4 DIMETRIC PRIME OIL-COC N-PAK AMS	24 fl oz/a 6 oz/a 1 % v/v 2.5 % v/v	A A A A	63 bc	98 a	0 -	48 c-f	100 a
7	STERLING BLUE DIMETRIC PRIME OIL-COC N-PAK AMS	12 fl oz/a 6 oz/a 1 % v/v 2.5 % v/v	A A A A	56 bc	99 a	0 -	50 b-f	99 a
8	ROUNDUP POWERMAX SHREDDER LV4 N-PAK AMS	22 fl oz/a 24 fl oz/a 2.5 % v/v	A A A	56 bc	99 a	0 -	39 ef	98 a
9	ROUNDUP POWERMAX STERLING BLUE N-PAK AMS	22 fl oz/a 12 fl oz/a 2.5 % v/v	A A A	63 bc	97 a	0 -	58 a-f	98 a
10	ROUNDUP POWERMAX SHREDDER LV4 CANOPY EX @ 1.5 OZ/A CLASSIC EXPRESS N-PAK AMS	22 fl oz/a 24 fl oz/a 1.36 oz/a 0.2 oz/a 2.5 % v/v	A A A A A	46 c	96 a	0 -	38 f	99 a
11	ROUNDUP POWERMAX STERLING BLUE CANOPY EX @ 1.5 OZ/A CLASSIC EXPRESS N-PAK AMS	22 fl oz/a 12 fl oz/a 1.36 oz/a 0.2 oz/a 2.5 % v/v	A A A A A	39 c	100 a	0 -	23 fg	100 a
12	ROUNDUP POWERMAX N-PAK AMS	22 fl oz/a 2.5 % v/v	B B	60 bc	95 a	0 -	43 def	98 a
13	SHREDDER LV4 ACTIVATOR 90-NIS N-PAK AMS	24 fl oz/a 0.25 % v/v 2.5 % v/v	B B B	96 a	100 a	0 -	89 ab	100 a
14	ROUNDUP POWERMAX SHREDDER LV4 N-PAK AMS	22 fl oz/a 24 fl oz/a 2.5 % v/v	B B B	96 a	100 a	0 -	94 a	100 a
15	ROUNDUP POWERMAX SHARPEN MSO ULTRA N-PAK AMS	22 fl oz/a 1 fl oz/a 1 % v/v 2.5 % v/v	B B B B	97 a	100 a	0 -	94 a	100 a

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

Pest Type	W Weed	W Weed		W Weed	W Weed
Pest Code	ERICA	CHEAL		ERICA	CHEAL
Pest Scientific Name	Conyza canadens>	Chenopodium al>		Conyza canadens>	Chenopodium al>
Pest Name	Canada horsewe>	common lambsqu>		Canada horsewe>	common lambsqu>
Crop Code			GLXMA		
BBCH Scale			BSOY		
Crop Scientific Name			Glycine max		
Crop Name			Soybean		
Rating Date	Jun-14-2016	Jun-14-2016	Jun-14-2016	Jun-21-2016	Jun-21-2016
Rating Type	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Crop Stage Majority					
SE Group No.	18	19	20	21	22
Days After First/Last Applic.	217 22	217 22	217 22	224 29	224 29
Trt-Eval Interval					
Plant-Eval Interval	15 DP-1	15 DP-1	15 DP-1	22 DP-1	22 DP-1
Days After Emergence	10 DE-1	10 DE-1	10 DE-1	17 DE-1	17 DE-1
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	18	19	20
16 ROUNDUP POWERMAX	22 fl oz/a B	B	86 ab	10 c	0 -
SHREDDER LV4	24 fl oz/a B	B			80 a-e
SHARPEN	1 fl oz/a B	B			
MSO ULTRA	1 % v/v B	B			
N-PAK AMS	2.5 % v/v B	B			33 b
17 ROUNDUP POWERMAX	22 fl oz/a B	B	84 ab	100 a	0 -
SHREDDER LV4	24 fl oz/a B	B			55 a-f
CANOPY BLEND @ 5 OZ/A					
Canopy	2.915 oz ai/a B	B			
N-PAK AMS	2.5 % v/v B	B			100 a
18 ROUNDUP POWERMAX	22 fl oz/a B	B	85 ab	50 b	0 -
SHARPEN	1 fl oz/a B	B			82 a-d
DIMETRIC	6 oz/a B	B			
MSO ULTRA	1 % v/v B	B			
N-PAK AMS	2.5 % v/v B	B			100 a
19 ROUNDUP POWERMAX	22 fl oz/a C	C	88 ab	100 a	0 -
SHARPEN	1 fl oz/a C	C			86 abc
CANOPY BLEND @ 5 OZ/A					
Canopy	2.915 oz ai/a C	C			
MSO ULTRA	1 % v/v C	C			
N-PAK AMS	2.5 % v/v C	C			100 a
20 GRAMOXONE 2SL	3 pt/a C	C	59 bc		0 -
SHREDDER LV4	16 fl oz/a C	C			43 def
FIERCE XLT	3.75 oz/a C	C			
ACTIVATOR 90-NIS	0.25 % v/v C	C			
N-PAK AMS	2.5 % v/v C	C			100 a
LSD P=.05			19.7	16.6	.
Standard Deviation			13.9	11.6	0.0
CV			21.59	17.43	0.0
Bartlett's X2			52.198	58.642	0.0
P(Bartlett's X2)			0.001*	0.001*	.
Skewness			-0.6765*	-2.3843*	.
Kurtosis			-0.1275	3.9233*	.
Replicate F			0.716	1.686	0.000
Replicate Prob(F)			0.5467	0.1873	1.0000
Treatment F			11.728	21.406	0.000
Treatment Prob(F)			0.0001	0.0001	1.0000

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

Pest Type		W Weed	W Weed	W Weed	W Weed		
Pest Code		ERICA	CHEAL	ERICA	CHEAL		
Pest Scientific Name		Conyza canadens>	Chenopodium al>	Conyza canadens>	Chenopodium al>		
Pest Name		Canada horsewe>	common lambsqu>	Canada horsewe>	common lambsqu>		
Crop Code	GLXMA						
BBCH Scale	BSOY						
Crop Scientific Name	Glycine max						
Crop Name	Soybean						
Rating Date	Jun-21-2016	Jul-8-2016	Jul-8-2016	Jul-26-2016	Jul-26-2016		
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1		
Crop Stage Majority				CANOPY	CANOPY		
SE Group No.	23	24	25	26	27		
Days After First/Last Applic.	224 29	241 46	241 46	259 64	259 64		
Trt-Eval Interval							
Plant-Eval Interval	22 DP-1	39 DP-1	39 DP-1	57 DP-1	57 DP-1		
Days After Emergence	17 DE-1	34 DE-1	34 DE-1	52 DE-1	52 DE-1		
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		23	24	25	26	27
1 UNTREATED	AB		0 -	0 b	0 c	0 b	0 b
2 ROUNDUP POWERMAX N-PAK AMS	22 fl oz/a A 2.5 % v/v A		0 -	98 a	100 a	100 a	100 a
3 SHREDDER LV4 ACTIVATOR 90-NIS N-PAK AMS	24 fl oz/a A 0.25 % v/v A 2.5 % v/v A		0 -	99 a	100 a	99 a	100 a
4 STERLING BLUE ACTIVATOR 90-NIS N-PAK AMS	12 fl oz/a A 0.25 % v/v A 2.5 % v/v A		0 -	99 a	100 a	100 a	100 a
5 SHREDDER LV4 STERLING BLUE ACTIVATOR 90-NIS N-PAK AMS	24 fl oz/a A 12 fl oz/a A 0.25 % v/v A 2.5 % v/v A		0 -	98 a	100 a	96 a	100 a

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03
 Protocol ID: 15F-CORT-SOY-03
 Project ID:

Location: CORTLAND Trial Year: 2015
 Investigator: Dr. Bill Johnson
 Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

Pest Type		W Weed	W Weed	W Weed	W Weed
Pest Code		ERICA	CHEAL	ERICA	CHEAL
Pest Scientific Name		Conyza canadens>	Chenopodium al>	Conyza canadens>	Chenopodium al>
Pest Name		Canada horsewe>	common lambsqu>	Canada horsewe>	common lambsqu>
Crop Code	GLXMA				
BBCH Scale	BSOY				
Crop Scientific Name	Glycine max				
Crop Name	Soybean				
Rating Date	Jun-21-2016	Jul-8-2016	Jul-8-2016	Jul-26-2016	Jul-26-2016
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Crop Stage Majority				CANOPY	CANOPY
SE Group No.	23	24	25	26	27
Days After First/Last Applic.	224 29	241 46	241 46	259 64	259 64
Trt-Eval Interval					
Plant-Eval Interval	22 DP-1	39 DP-1	39 DP-1	57 DP-1	57 DP-1
Days After Emergence	17 DE-1	34 DE-1	34 DE-1	52 DE-1	52 DE-1
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	23	24	25
26					27
6 SHREDDER LV4	24 fl oz/a A		0 -	99 a	100 a
DIMETRIC	6 oz/a A				
PRIME OIL-COC	1 % v/v A				
N-PAK AMS	2.5 % v/v A				
7 STERLING BLUE	12 fl oz/a A		0 -	99 a	100 a
DIMETRIC	6 oz/a A				
PRIME OIL-COC	1 % v/v A				
N-PAK AMS	2.5 % v/v A				
8 ROUNDUP POWERMAX	22 fl oz/a A		0 -	100 a	100 a
SHREDDER LV4	24 fl oz/a A				
N-PAK AMS	2.5 % v/v A				
9 ROUNDUP POWERMAX	22 fl oz/a A		0 -	100 a	100 a
STERLING BLUE	12 fl oz/a A				
N-PAK AMS	2.5 % v/v A				
10 ROUNDUP POWERMAX	22 fl oz/a A		0 -	99 a	100 a
SHREDDER LV4	24 fl oz/a A				
CANOPY EX @ 1.5 OZ/A					
CLASSIC	1.36 oz/a				
EXPRESS	0.2 oz/a				
N-PAK AMS	2.5 % v/v A				
11 ROUNDUP POWERMAX	22 fl oz/a A		0 -	98 a	100 a
STERLING BLUE	12 fl oz/a A				
CANOPY EX @ 1.5 OZ/A					
CLASSIC	1.36 oz/a A				
EXPRESS	0.2 oz/a A				
N-PAK AMS	2.5 % v/v A				
12 ROUNDUP POWERMAX	22 fl oz/a B		0 -	98 a	100 a
N-PAK AMS	2.5 % v/v B				
13 SHREDDER LV4	24 fl oz/a B		0 -	100 a	100 a
ACTIVATOR 90-NIS	0.25 % v/v B				
N-PAK AMS	2.5 % v/v B				
14 ROUNDUP POWERMAX	22 fl oz/a B		0 -	100 a	100 a
SHREDDER LV4	24 fl oz/a B				
N-PAK AMS	2.5 % v/v B				
15 ROUNDUP POWERMAX	22 fl oz/a B		0 -	100 a	100 a
SHARPEN	1 fl oz/a B				
MSO ULTRA	1 % v/v B				
N-PAK AMS	2.5 % v/v B				

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03 Location: CORTLAND Trial Year: 2015
 Protocol ID: 15F-CORT-SOY-03 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: Purdue University

Pest Type		W Weed	W Weed	W Weed	W Weed
Pest Code		ERICA	CHEAL	ERICA	CHEAL
Pest Scientific Name		Conyza canadens>	Chenopodium al>	Conyza canadens>	Chenopodium al>
Pest Name		Canada horsewe>	common lambsqu>	Canada horsewe>	common lambsqu>
Crop Code	GLXMA				
BBCH Scale	BSOY				
Crop Scientific Name	Glycine max				
Crop Name	Soybean				
Rating Date	Jun-21-2016	Jul-8-2016	Jul-8-2016	Jul-26-2016	Jul-26-2016
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Crop Stage Majority				CANOPY	CANOPY
SE Group No.	23	24	25	26	27
Days After First/Last Applic.	224 29	241 46	241 46	259 64	259 64
Trt-Eval Interval					
Plant-Eval Interval	22 DP-1	39 DP-1	39 DP-1	57 DP-1	57 DP-1
Days After Emergence	17 DE-1	34 DE-1	34 DE-1	52 DE-1	52 DE-1
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		23	24	25
16 ROUNDUP POWERMAX	22 fl oz/a B		0 -	99 a	95 b
SHREDDER LV4	24 fl oz/a B				100 a
SHARPEN	1 fl oz/a B				
MSO ULTRA	1 % v/v B				
N-PAK AMS	2.5 % v/v B				93 a
17 ROUNDUP POWERMAX	22 fl oz/a B		0 -	99 a	100 a
SHREDDER LV4	24 fl oz/a B				96 a
CANOPY BLEND @ 5 OZ/A					
Canopy	2.915 oz ai/a B				
N-PAK AMS	2.5 % v/v B				100 a
18 ROUNDUP POWERMAX	22 fl oz/a B		0 -	100 a	100 a
SHARPEN	1 fl oz/a B				
DIMETRIC	6 oz/a B				
MSO ULTRA	1 % v/v B				
N-PAK AMS	2.5 % v/v B				
19 ROUNDUP POWERMAX	22 fl oz/a C		0 -	100 a	100 a
SHARPEN	1 fl oz/a C				
CANOPY BLEND @ 5 OZ/A					
Canopy	2.915 oz ai/a C				
MSO ULTRA	1 % v/v C				
N-PAK AMS	2.5 % v/v C				
20 GRAMOXONE 2SL	3 pt/a C		0 -	99 a	100 a
SHREDDER LV4	16 fl oz/a C				
FIERCE XLT	3.75 oz/a C				
ACTIVATOR 90-NIS	0.25 % v/v C				
N-PAK AMS	2.5 % v/v C				
LSD P=.05			.	2.5	1.6
Standard Deviation			0.0	1.7	1.1
CV			0.0	1.88	1.56
Bartlett's X2			0.0	10.378	5.31
P(Bartlett's X2)			.	0.583	0.021*
Skewness			.	-4.1374*	-3.6142*
Kurtosis			.	15.6359*	11.4799*
Replicate F			0.000	1.274	0.910
Replicate Prob(F)			1.0000	0.2922	0.4448
Treatment F			0.000	645.884	1544.561
Treatment Prob(F)			1.0000	0.0001	0.0001

Purdue Weed Science

Marestail Management Johnson/Young

Trial ID: 15F-CORT-SOY-03	Location: CORTLAND Trial Year: 2015
Protocol ID: 15F-CORT-SOY-03	Investigator: Dr. Bill Johnson
Project ID:	Study Director: Dustin Johnson
	Sponsor Contact: Purdue University

Pest Type

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

Pest Code

ERICA, Conyza canadensis, = ERICA, Conyza canadensis,

LAMAM, Lamium amplexicaule, = US

CHEAL, Chenopodium album, = US

Crop Code

GLXMA, BSOY, Glycine max, = US

Rating Type

CONTRO = control / burndown or knockdown

PHYGEN = phytotoxicity - general / injury

Rating Unit

% = percent

Plant-Eval Interval

-187 DP-1 = 1 GLXMA May-30-2016

-172 DP-1 = 1 GLXMA May-30-2016

-55 DP-1 = 1 GLXMA May-30-2016

-46 DP-1 = 1 GLXMA May-30-2016

-40 DP-1 = 1 GLXMA May-30-2016

-24 DP-1 = 1 GLXMA May-30-2016

-12 DP-1 = 1 GLXMA May-30-2016

-7 DP-1 = 1 GLXMA May-30-2016

0 DP-1 = 1 GLXMA May-30-2016

9 DP-1 = 1 GLXMA May-30-2016

15 DP-1 = 1 GLXMA May-30-2016

22 DP-1 = 1 GLXMA May-30-2016

39 DP-1 = 1 GLXMA May-30-2016

57 DP-1 = 1 GLXMA May-30-2016

ARM Action Codes

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