Renz Weed Science
COLLEGE OF AGRICULTURAL & LIFE SCIENCES
UNIVERSITY OF WISCONSIN-MADISON

Extension
UNIVERSITY OF WISCONSIN-MADISON

ID #17-9

UW – Madison Weed Science Renz Lab

2017 Valerian – 2018 Update

Lead Investigator: Dr. Mark Renz

Contact: mrenz@wisc.edu – 357 Moore Hall, 1575 Linden Drive, Madison, WI, 53706

Study Directors: Christopher Bloomingdale, Leo Roth

Contact: nlroth2@wisc.edu – 236 Moore Hall, 1575 Linden Drive, Madison, WI, 53706

Objective:

Evaluate control of Garden Valerian (*Valeriana officinalis*) with a variety of herbicide treatments.

Summary:

Treatments were applied to areas with and without hay piled. The presence of the hay impacted valerian cover at the time of treatment and could impact effectiveness of the herbicide treatment. Garden Valerian cover at 286 Days After Treatment (DAT) was highest (12%) in the Clarity treatment without hay present, all other treatments resulted in similar and lower levels of cover. Garden Valerian with hay cover at 286 DAT was lowest in the Escort and Chaparral treatments (4.5%). Garden Valerian cover at 349 DAT remained lowest in the Escort treatment (4%) and Chaparral treatment (5.8%). Results suggest that while a range of treatments are effective in season, long-term control was maximized with treatments containing metsulfuron.

Research Plot Information:

Plot Dimensions: 10 by 25 feet

Design: Randomized Complete Block, 4 blocks

Soil Type: 75% Amnicon-Cuttre complex, 0 to 4 percent slope, 25% Amnicon-Rock outcrop complex, 2 to 15 percent slope

Herbicide Treatments:

Treatment Number	Treatment	Rate
1	Untreated Control (UTC)	-
2	2,4-D	2 pints per acre (pt/A)
3	Clarity	2 pt/A
4	Escort	0.5 ounces of dry product per acre (oz wt/A)
5	Remedy	2 pt/A
6	Transline	1.33 pt/A
7	Chaparral	3.33 oz wt/A
8	Milestone	7 oz/A
9	Milestone	5 oz/A

Herbicide Application:

Date: September 12th, 2017

Equipment: Backpack Sprayer (15 gallons per acre), 10-foot boom

Nozzles: Eight flat tip TeeJet AIXR 110015, 15-foot nozzle spacing

Regulator PSI: 32

Boom PSI: 18

Plants Present/Stage of Development:

September 12th, 2017:

Garden Valerian, 4 – 10 inches tall; resprouted from mowing the previous month

June 28th, 2018:

Buttercup species (*Ranunculus sp.*)

Caraway (*Carum carvi*)

Field Horsetail (*Equisetum arvense*)

Goldenrod species (*Solidago sp.*)

Reed Canarygrass (*Phalaris arundinacea*)

Sedge species (*Carex sp.*)

Timothy Grass (*Phleum sp.*)

Weather Data:

Weather Station	KWIPOPLA2
Temperature	67°F
Wind Speed and Direction	2 mph SSE
Relative Humidity	69%
Previous Rain Event Within 48 Hours	-
When ≥ 0.25 inches of precipitation occurred after treatment	09.20.17 – 0.95 inches

Index of Ratings and Results

Results:

0 DAT (PRE-TREATMENT ASSESSMENT) – September 12th, 2017

Trt. No.	Treatment	Rate	Valerian Cover (%)	Grass Cover (%)	Bareground Cover (%)
1	UTC	-	17.5 -	82.5 -	0.0 -
2	2,4-D	2 pt/A	15.0 -	85.0 -	0.0 -
3	Clarity	2 pt/A	16.3 -	83.8 -	0.0 -
4	Escort	0.5 oz wt/A	10.3 -	89.3 -	0.5 -
5	Remedy	2 pt/A	13.8 -	86.3 -	0.0 -
6	Transline	1.33 pt/A	12.5 -	87.5 -	0.0 -
7	Chaparal	3.33 oz wt/A	13.0 -	85.8 -	1.3 -
8	Milestone	7 oz/A	14.5 -	85.0 -	0.5 -
9	Milestone	5 oz/A	15.0 -	85.0 -	0.0 -
Statistics					
LSD P=.05			6.22	5.82	1.26
Standard Deviation			4.26	3.99	0.87
CV			30.01	4.66	346.41
Treatment Prob(F)			0.4558	0.4692	0.4613

Note: Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).

286 DAT – June 25th, 2018

Trt. No.	Treatment	Rate	No Hay Valerian Cover (%)	No Hay Grass Cover (%)	No Hay Broadleaf Cover (%)	No Hay Bareground Cover (%)
1	UTC	-	26.3a	52.5ab	4.5 -	16.8c
2	2,4-D	2 pt/A	6.8bc	37.5b	13.3 -	42.5ab
3	Clarity	2 pt/A	12.0b	47.5ab	10.0 -	30.5bc
4	Escort	0.5 oz wt/A	0.5c	42.5ab	3.3 -	53.8a
5	Remedy	2 pt/A	5.8bc	42.5ab	16.8 -	35.0bc
6	Transline	1.33 pt/A	8.8bc	57.5ab	4.3 -	29.5bc
7	Chaparal	3.33 oz wt/A	0.8c	50.0ab	2.3 -	47.0ab
8	Milestone	7 oz/A	11.3bc	62.5a	5.5 -	20.8c
9	Milestone	5 oz/A	9.5bc	55.0ab	7.3 -	28.3bc
Statistics						
LSD P=.05			7.07	13.81	11.24	12.68
Standard Deviation			4.84	9.46	7.70	8.69
CV			53.5	19.04	103.5	25.72
Treatment Prob(F)			0.0001	0.0209	0.1672	0.0001

Note: Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).

286 DAT, Continued – June 25th, 2018

Trt. No.	Treatment	Rate	With Hay Valerian Cover (%)	With Hay Grass Cover (%)	With Hay Broadleaf Cover (%)	With Hay Bareground Cover (%)
1	UTC	-	41.3a	45.0 -	6.3 -	7.5ab
2	2,4-D	2 pt/A	27.5ab	48.8 -	18.8 -	5.0ab
3	Clarity	2 pt/A	28.8ab	60.0 -	9.3 -	2.0b
4	Escort	0.5 oz wt/A	4.5c	68.8 -	5.8 -	21.0a
5	Remedy	2 pt/A	21.3b	53.8 -	17.5 -	7.5ab
6	Transline	1.33 pt/A	17.0bc	73.8 -	6.0 -	3.3ab
7	Chaparal	3.33 oz wt/A	4.5c	72.5 -	5.5 -	17.5ab
8	Milestone	7 oz/A	22.5b	71.3 -	4.8 -	1.5b
9	Milestone	5 oz/A	22.5b	67.5 -	6.8 -	3.3ab
Statistics						
LSD P=.05			11.54	19.82	13.98	11.78
Standard Deviation			7.90	13.58	9.58	8.07
CV			37.49	21.77	107.07	106.03
Treatment Prob(F)			0.0001	0.0355	0.3128	0.0176

Note: Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).

349 DAT – August 27th, 2018

Trt. No.	Treatment	Rate	Valerian Cover (%)
1	UTC	-	27.5a
2	2,4-D	2 pt/A	20.0abc
3	Clarity	2 pt/A	28.8a
4	Escort	0.5 oz wt/A	4.0d
5	Remedy	2 pt/A	16.3bc
6	Transline	1.33 pt/A	11.6cd
7	Chaparal	3.33 oz wt/A	5.8d
8	Milestone	7 oz/A	25.0ab
9	Milestone	5 oz/A	15.5bc
Statistics			
LSD P=.05			7.18
Standard Deviation			4.91
CV			28.34
Treatment Prob(F)			0.0001

Note: Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).