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UNIVERSITY OF WISCONSIN-MADISON

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UW – Madison Weed Science Renz Lab

2017 Buckthorn and Honeysuckle Control with Grazing and Triclopyr – 2018 Update

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Objective:

Compare the cost, effectiveness, and impact to existing vegetation of cut-stump and foliar triclopyr herbicide treatments for managing invasive shrubs.

Summary:

Both foliar and cut stump applications of triclopyr resulted in high levels of Buckthorn (*Rhamnus sp.*) and Honeysuckle (*Lonicera sp.*) control at 59 Days After Treatment (DAT), with >90% control. Treatment results proved more mixed at 341 DAT with cut stump proving more effective than foliar applications, but by 403 DAT both treatments proved similarly effective at >80% control.

The foliar triclopyr treatment cost $88 per acre ($15 herbicide + $73 applicator), while the cut stump triclopyr treatment cost $75 per acre ($5 herbicide + $70 applicator).

The cover of existing vegetation in the understory was not impacted by either the foliar or cut stump treatment 3 or 12 months after treatment. The number of species detected was similar among all of the treatments.

Results confirm that cut stump and foliar treatment of individual Buckthorn and Honeysuckle plants can be a cost-effective management option with no observable impact to other vegetation.

Research Plot Information:

Plot Dimensions: 50 feet x 50 feet

Design: Randomized Complete Block, 3 blocks

Soil Type: 79% Rubicon-Sayner Complex, 6 to 15 percent slopes, 21% Sayner loamy sand, 0 to 6% slope

Herbicide Treatments:

Treatment Number	Treatment	Rate
1	Triclopyr (foliar application)	2% volume by volume (v/v)
2	Triclopyr (cut-stump application) Basal Oil Carrier with Dye	30% v/v
3	Untreated Control (UTC)	-

Herbicide Application:

Date: July 20th, 2017

Equipment: Hand Held sprayer set to deliver 40-50 Gallons per Acre

Nozzles: Adjustable

Regulator PSI: NA

Plants Present:

Avens species (*Geum sp.*), Bedstraw species (*Galium sp.*), Bracken Fern (*Pteridium aquilinum*), Canada Mayflower (*Maianthemum canadense*), Common Blackberry (*Rubus allegheniensis*), Common Tansy (*Tanacetum vulgare*), Common Dandelion (*Taraxacum* officinale), Creeping Charlie (*Glechoma hederacea)*, False Soloman's Seal (*Maianthemum racemosum*), Jack-in-the-Pulpit (*arisaema triphyllum*), Large-Leaved Aster (*Eurybia* macrophylla), Lily-of-the-Valley (*Convallaria majalis*), Poison Ivy (*Toxicodendron radicans*), Round-Lobed Hepatica (*Anemone Americana*), Sedge species (*Carex sp.*), Starflower (*Trientalis borealis*), Violet species (*Viola sp.*), Virginia Creeper (*Parthenocissus quniquefolia*), White Snakeroot (*Ageratina altissima)*, Wood Anemone (*Anemone quinquefolia*), Woodland Agrimony (*Agrimonia striata*)

Weather Data:

Weather Station	KWISOLON6
Temperature	73.2°F
Wind Speed and Direction	1 mph E
Relative Humidity	74%
Previous Rain Event Within 48 Hours	07.18.17 – 0.04 inches
When $\geq$ 0.25 inches of precipitation occurred after treatment	07.21.17 – 0.67 inches

Index of Ratings and Results

Results:

59 DAT – September 17th, 2017

Trt. No.	Treatment	Rate	Buckthorn and Honeysuckle Combined Control (%)	Buckthorn and Honeysuckle Combined Defoliation (%)
1	Triclopyr (foliar)	2% v/v	93.3a	100.0 -
2	Triclopyr (cut-stump) Basal Oil	30% v/v	93.3a	100.0 -
3	Untreated Control (UTC)	-	0.0b	0.0 -
Statistics[1]				
Least Significant Difference (LSD) P=.05			11.95	.
Standard Deviation			5.27	0.00
Coefficient of Variation (CV)			8.47	0.0
Treatment Prob(F)			0.0001	1.0000

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

[1] All statistical analyses were conducted in ARM software and assumptions of ANOVA were not evaluated.

341 DAT – June 26th, 2018

Trt. No.	Treatment	Rate	Buckthorn Control (%)	Buckthorn Defoliation (%)	Honeysuckle Control (%)	Honeysuckle Defoliation (%)
1	Triclopyr (foliar)	2% v/v	56.7b	53.3 -	40.0 -	40.0 -
2	Triclopyr (cut-stump) Basal Oil	30% v/v	78.3a	53.3 -	55.0 -	44.3 -
3	Untreated Control (UTC)	-	0.0c	3.3 -	0.0 -	3.5 -
Statistics						
LSD P=.05			18.51	47.19	381.19	362.13
Standard Deviation			8.16	20.82	30.00	28.50
CV			18.14	56.77	100.0	96.94
Treatment Prob(F)			0.0007	0.0663	0.4472	0.4950

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

403 DAT – August 27th, 2018

Trt. No.	Treatment	Rate	Buckthorn and Honeysuckle Combined Control (%)
1	Triclopyr (foliar)	2% v/v	83.3a
2	Triclopyr (cut-stump) Basal Oil	30% v/v	91.7a
3	Untreated Control (UTC)	-	0.0b
Statistics			
LSD			18.51
Standard Deviation			8.16
CV			14.0
Treatment Prob(F)			0.0003

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