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ID #17-4

UW – Madison Weed Science Renz Lab

2017 Evaluation of Common Tansy Control with Method – 2018 Update

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Objective:

Evaluate the effectiveness of Method (aminocyclopyrachlor) as compared to other recommended herbicides for control of Common Tansy (*Tanacetum vulgare*).

Summary:

As the Common Tansy population was so dense, it was difficult to assess effectiveness within the first 30 Days After Treatment (DAT). However, at 64 DAT, Method was providing high levels of control despite the challenging application with rates between 8-16 ounces per acre, similar to Escort. These results continued into 2018 with the higher rates of Method providing superior control compared to all other treatments at 1 year after treatment.

Research Plot Information:

Plot Dimensions: 10 feet x 25 feet

Design: Randomized Complete Block, 4 blocks

Soil Type: Cut and Fill

Notes:

7/24/17: Weed Species: Common Tansy (5' tall)

Mowed 20" wide alley through center of plots with brush hog as tansy was too thick to walk through plots with backpack sprayer.

Used 15 gpa boom, as 20 gpa boom set up needed repairs

8/24/17: A lot of Common Tansy biomass remains in plots (even if dead), making assessing grass populations difficult as grass plants were stunted from competition with tansy.

Common Milkweed (*Asclepias syriaca)* was present, but too sparse to analyze statistically. Low rates of method had no observable effect on the Common Milkweed, and the two higher rates had caused mild chlorosis (approximately 25%) on the Common Milkweed plants.

Herbicide Treatments:

Treatment Number	Treatment	Rate
1	Untreated Control (UTC)	-
2	Method 240SL NIS	4 ounces/acre (oz/A) 0.25% volume/volume (v/v)
3	Method 240SL NIS	8 oz/A 0.25% v/v
4	Method 240 SL NIS	12 oz/A 0.25% v/v
5	Method 240 SL NIS	16 oz/A 0.25% v/v
6	Milestone NIS	7 oz/A 0.25% v/v
7	Escort NIS	0.5 oz/A 0.25% v/v

Herbicide Application:

Date: July 24th, 2017, 2:30pm – 3:20pm

Equipment: Backpack sprayer (15 GPA); 10ft boom

Nozzles: Eight (8) Flat Tip TeeJet AIXR 110015; 15in nozzle spacing

Regulator PSI: 32

Boom PSI: 18

Plants Present:

Crown Vetch (*Coronilla varia*), Common Milkweed (*Asclepias syriaca*), Common Burdock (*Arcticum minus*)

Weather Data:

Weather Station	KWIMADIS119
Temperature	78.8°F
Wind Speed and Direction	2 mph NW
Relative Humidity	73%
Cloud Cover	50%
Previous Rain Event Within 48 Hours	06.23.18, 0.88 inches
When $\geq$ 0.25 inches of precipitation occurred after treatment	08.03.17, 0.38 inches

Index of Ratings and Results

Results:

31 DAT – August 24th, 2017

Rating:				C. Tansy Cover (%)	Broadleaf Cover (%)	Grass Cover (%)	Ground Cover (%)	C. Tansy Control (%)	Grass Injury (%)
Trt	Treatment	Rate							
1	Control			93.8 -	3.8 -	2.5 -	0 -	0 c	0 -
2	Method 240SL	4.0	oz/a						
	NIS	0.25	% v/v	70 -	2.5 -	23.8 -	3.8 -	21.3 b	0 -
3	Method 240SL	8.0	oz/a						
	NIS	0.25	% v/v	75 -	3.8 -	18.8 -	2.5 -	63.8 a	0 -
4	Method 240SL	12.0	oz/a						
	NIS	0.25	% v/v	77.5 -	2.5 -	17.5 -	2.5 -	71.3 a	0 -
5	Method 240SL	16.0	oz/a						
	NIS	0.25	% v/v	71.3 -	5.5 -	18.3 -	5 -	78.8 a	0 -
6	Milestone	7.0	oz /a						
	NIS	0.25	% v/v	71.3 -	3.8 -	22.5 -	2.5 -	21.3 b	0 -
7	Escort	0.5	oz wt/a						
	NIS	0.25	% v/v	72.5 -	5 -	18.8 -	3.8 -	76.3 a	0 -
				Statistics[1]					
LSD P=.05				15.98	7.45	14.3	4.66	14.32	.
Standard Deviation				10.76	5.01	9.63	3.13	9.64	0
CV				14.17	131.21	55.24	109.69	20.3	0
Treatment F				2.372	0.205	2.105	1	44.936	0
Treatment Prob(F)				0.0726	0.9709	0.1033	0.4552	0.0001	1
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.

64 DAT – September 26th, 2017

Rating:			C. Tansy Cover (%)	Broadleaf Cover (%)	Grass Cover (%)	Ground Cover (%)	C. Tansy Control (%)	Grass Injury (%)
Trt	Treatment	Rate						
1	Control		66.3 a	2.8 -	13.8 -	17.3 b	0 d	0 -
2	Method 240SL NIS	4.0 oz/a 0.25 % v/v	4.3 b	0 -	45 -	50.8 ab	70 c	0 -
3	Method 240SL NIS	8.0 oz/a 0.25 % v/v	0 b	2 -	51.3 -	46.8 ab	91.3 ab	0 -
4	Method 240SL NIS	12.0 oz/a 0.25 % v/v	0 b	1.8 -	41.3 -	57 a	92.5 ab	0 -
5	Method 240SL NIS	16.0 oz/a 0.25 % v/v	0 b	2.5 -	52.5 -	45 ab	96.3 a	0 -
6	Milestone NIS	7.0 oz /a 0.25 % v/v	11.3 b	2.5 -	48.8 -	37.5 ab	62.5 c	0 -
7	Escort NIS	0.5 oz wt/a 0.25 % v/v	5.5 b	2.5 -	57.5 -	34.5 ab	81.3 b	0 -
Statistics								
LSD P=.05			10.67	3.36	26.74	22.8	10.4	.
Standard Deviation			7.18	2.26	18	15.34	7	0
CV			57.62	112.99	40.65	37.2	9.92	0
Treatment F			44.94	0.702	2.577	2.883	91.518	0
Treatment Prob(F)			0.0001	0.6521	0.0557	0.0378	0.0001	1
Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)								

94 DAT – October 26th, 2017

Rating:			C. Tansy Cover (%)	Broadleaf Cover (%)	Grass Cover (%)	Ground Cover (%)	C. Tansy Control (%)	Grass Injury (%)
Trt	Treatment	Rate						
1	Control	-	1.3 -	12.5 b	65 a	21.3 -	0 c	0 -
2	Method 240SL NIS	4.0 oz/a 0.25 % v/v	1.3 -	45 a	3 b	50.8 -	86.3 ab	0 -
3	Method 240SL NIS	8.0 oz/a 0.25 % v/v	5.3 -	51.3 a	1.3 b	42.3 -	95 ab	0 -
4	Method 240SL NIS	12.0 oz/a 0.25 % v/v	1.3 -	46.3 a	1.5 b	51 -	93.5 ab	0 -
5	Method 240SL NIS	16.0 oz/a 0.25 % v/v	3.3 -	55 a	0 b	41.8 -	100 a	0 -
6	Milestone NIS	7.0 oz /a 0.25 % v/v	1.3 -	55 a	10.8 b	33 -	78.8 ab	0 -
7	Escort NIS	0.5 oz wt/a 0.25 % v/v	1.3 -	53.8 a	10 b	35 -	71.3 b	0 -
			Statistics					
LSD P=.05			5.06	25.75	9.77	23.33	17.04	.
Standard Deviation			3.41	17.33	6.57	15.71	11.47	0
CV			161.77	38.06	50.29	39.98	15.3	0
Treatment F			0.852	3.044	50.256	1.802	36.226	0
Treatment Prob(F)			0.547	0.031	0.0001	0.1554	0.0001	1

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

295 DAT – May 15th, 2018

Trt No	Treatment	Rate	C. Tansy Control (%)	C. Tansy Cover (%)	Broadleaf Cover (%)	Grass Cover (%)
1	UTC	-	0c	55a	5.3 -	12.8b
2	Method 240SL NIS	4 oz/A 0.25% v/v	81.3a	5.5b	1.3 -	53.8a
3	Method 240SL NIS	8 oz/A 0.25% v/v	87.5a	3.8b	3.3 -	50a
4	Method 240 SL NIS	12 oz/A 0.25% v/v	97.5a	0.5b	3.8 -	68.8a
5	Method 240 SL NIS	16 oz/A 0.25% v/v	94.8a	2.8b	2.5 -	70a
6	Milestone NIS	7 oz/A 0.25% v/v	47.5b	17.5b	5 -	52.5a
7	Escort NIS	0.5 oz/A 0.25% v/v	81.3a	8b	3.3 -	60a
Statistics						
LSD P=.05			23.53	13.89	5.6	26.42
Standard Deviation			15.84	9.35	3.77	17.78
CV			22.64	70.39	108.88	33.85
Treatment Prob(F)			0.0001	0.0001	0.7700	0.0050

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

391 DAT – August 19th, 2018

Trt No	Treatment	Rate	C. Tansy Control (%)	C. Tansy Cover (%)	Perennial Broadleaf Cover (%)	Biennial Broadleaf Cover (%)	Perennial Grass Cover (%)	Bareground Cover (%)
1	UTC	-	0b	70a	10 -	5 -	10b	5 -
2	Method 240SL NIS	4 oz/A 0.25% v/v	65a	18.8c	11.3 -	11.3 -	46.3a	7.5 -
3	Method 240SL NIS	8 oz/A 0.25% v/v	95.8a	3c	13 -	13 -	61.3a	9.3 -
4	Method 240 SL NIS	12 oz/A 0.25% v/v	74.5a	4.3c	12.5 -	17.5 -	48.5a	11.3 -
5	Method 240 SL NIS	16 oz/A 0.25% v/v	99.5a	0.5c	8 -	17.5 -	63.5a	8.8 -
6	Milestone NIS	7 oz/A 0.25% v/v	16.3b	43.8b	13.8 -	6.3 -	30ab	6.3 -
7	Escort NIS	0.5 oz/A 0.25% v/v	72.5a	15c	20 -	20.5 -	38.8a	8.8 -
Statistics								
Least Significant Difference (LSD) P=.05			26.55	8.99	11.24	15.13	22.91	5.95
Standard Deviation			17.87	6.05	7.57	10.19	15.42	4
Coefficient of Variation (CV)			29.54	27.27	59.84	78.37	36.19	49.39
Treatment Prob(F)			0.0001	0.0001	0.4544	0.2888	0.0016	0.4217

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