

2018 Selective Broadleaf Control Trials near Richmond

Introduction

One of the objectives of roadside vegetation management is the selective control of broadleaf weeds, without damaging desirable grasses, such as tall fescue. Other objectives include brush control and grass growth regulation. There are a number of herbicides and combinations of products available for roadside managers. This trial evaluated the efficacy some of these.

Materials and Methods

The trial was established June 29, 2018 on an area mowed periodically, after the first mowing of the season, along I75 near Richmond, KY. The trial had 14 treatments with 3 replications arranged in a randomized complete block design with 7 ft by 20 ft plots. Application was at 25 gallons per acre. The area had a mix of broadleaf weeds and still had some desirable grasses. Most plots had Canada thistle (9 inches tall) as well as johnsongrass (20 inch canopy). Some of the plots had flowering buckhorn plantain (6 inch canopy and 15 inch seedheads) as well as prickly lettuce (15 inches tall). There was also a patch of hemp dogbane (15 inches tall).

The treatments and active ingredients are listed in Table 1. Many were applied at the maximum annual rate which included Milestone (Treatment 1) and Opensight (Treatment 2). Perspective (Treatment 3) and Streamline (Treatment 4) were both applied at the maximum selective rate and both can be applied at higher rates for bareground. However, even the selective rate can result in turf yellowing and reduced growth. The reduced growth may even be desirable. Method (Treatments 6 to 8) is a new product with only the aminocyclopyrachlor component of Perspective and Streamline. Method at 7.2 fl oz per acre has the same amount of this a.i. as 4.5 oz per acre of Perspective and Streamline. Method by itself lists good plantain and brush control from 10 to 18 fl oz per acre. Combinations of Milestone or Method + Plateau (Treatments 11 and 12) had been suggested for grass growth reduction as well as weed control. A higher rate of Method + Plateau (Treatment 13) was suggested for grass growth regulation plus brush control behind guardrails.

Plots were assessed 31 (7/30/2018) and 68 (9/5/2018) days after treatment (DAT). Data were analyzed using ARM software and treatment means were compared using Fisher's LSD at $p = 0.05$.

Results and Discussion

Good initial control of a range of broadleaf weeds was observed (68 to 92%) 31 DAT (Table 2) for most of the treatments. The least control (63 to 65%) was with the two lowest rates of Method (Treatments 6 and 7). The greatest degree of grass damage (43 to 57%) was with the combinations including Plateau (Treatments 11 to 13) and Streamline (Treatment 4). There were also treatments that had little to no grass damage and these included Milestone (Treatment 1), Opensight (Treatment 2), Pyresta + ProClipse (Treatment 5), low rate of Method (Treatment 6),

Overdrive + Vastlan (Treatment 9), and Freelexx + Vastlan (Treatment 10). The greatest control of Canada thistle 31 DAT was with the high rate of Method (Treatment 8) and the combinations with Plateau (Treatments 11 to 13). The greatest initial control of johnsongrass was with the high rate of Method (Treatment 8) and the combinations with Plateau (Treatments 11 to 13).

By the second rating 68 DAT the site was overtaken by giant foxtail. There was also johnsongrass in most of the plots (Table 2). The plots with the least foxtail cover were the mid-rate of Method (Treatment 7) and the combinations with Plateau (Treatments 11 to 13). In future trials we may need to temporarily remove the plot flags and mow the plots on the same schedule to evaluate the broadleaf control under the standard mowing regime of three times per year. These plots will be evaluated in spring 2019 for Canada thistle control.

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Table 1. Herbicide Treatments, Active Ingredients and Application Rates.

Trt. No.	Product Name	Rate	Rate Unit	Active Ingredient(s)	ai Rate (per acre)
1	Milestone VM	7	FL OZ/A	aminopyralid	1.8 OZ AE/A
2	Opensight	3.3	OZ/A	aminopyralid + metsulfuron	1.7 OZ AE + 0.3 OZ/A
3	Perspective	4.5	OZ/A	aminocyclopyrachlor + chlorsulfuron	1.8 OZ + 0.7 OZ/A
4	Streamline	4.5	OZ/A	aminocyclopyrachlor + metsulfuron	1.8 OZ + 0.6 OZ/A
5	Pyresta	24	FL OZ/A	2,4-D + pyraflufen-ethyl	0.66 LB AE + 0.05 OZ/A
	Proclipse	2	LB/A	prodiamine	1.3 LB/A
6	Method	4	FL OZ/A	aminocyclopyrachlor	1 OZ AE/A
7	Method	6	FL OZ/A	aminocyclopyrachlor	1.5 OZ AE/A
8	Method	12	FL OZ/A	aminocyclopyrachlor	3 OZ AE/A
9	Overdrive	5	OZ/A	diflufenzopyr + dicamba	1 OZ AE + 2.5 OZ AE/A
	Vastlan	16	FL OZ/A	triclopyr	8 OZ AE/A
10	Freelexx	48	FL OZ/A	2,4-D	22.8 OZ AE/A
	Vastlan	32	FL OZ/A	triclopyr	16 OZ AE/A
11	Milestone VM	6	FL OZ/A	aminopyralid	3 OZ AE/A
	Plateau	3	FL OZ/A	imazapic	0.75 OZ AE/A
12	Method	6	FL OZ/A	aminocyclopyrachlor	1.5 OZ AE/A
	Plateau	3	FL OZ/A	imazapic	0.75 OZ AE/A
13	Method	12	FL OZ/A	aminocyclopyrachlor	3 OZ AE/A
	Plateau	3	FL OZ/A	imazapic	0.75 OZ AE/A
14	Nontreated Check				

All herbicide treatments contained the adjuvant, Activator 90 at 0.25% v/v.

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Table 2. Herbicide Treatments, Application Rates, and Data.

Trt. No.	Product Name	Rate	Rate Unit	Broadleaf Control (%)	Grass Damage (%)	Johnsongrass Control (%)	Canada Thistle Control (%)	Giant Foxtail Cover (%)	Johnsongrass Cover (%)
				31 DAT				68 DAT	
1	Milestone VM	7	FL OZ/A	72 abc ¹	13 cde	25 defg	88 ab	85 a	9
2	Opensight	3.3	OZ/A	70 abc	3 de	35 def	92 a	75 ab	18
3	Perspective	4.5	OZ/A	92 a	37 b	35 def	90 a	52 abc	13
4	Streamline	4.5	OZ/A	92 a	43 ab	40 cde	92 a	67 abc	17
5	Pyresta	24	FL OZ/A	68 abc	3 de	10 fg	65 b	50 abc	22
	Proclipse	2	LB/A						
6	Method	4	FL OZ/A	63 c	15 cde	30 def	72 ab	88 a	10
7	Method	6	FL OZ/A	65 bc	18 cd	47 bcd	65 b	35 bc	33
8	Method	12	FL OZ/A	90 a	28 bc	68 ab	93 a	47 abc	27
9	Overdrive	5	OZ/A	73 abc	15 cde	20 efg	77 ab	72 ab	20
	Vastlan	16	FL OZ/A						
10	Freelexx	48	FL OZ/A	83 abc	0 e	15 efg	80 ab	63 abc	30
	Vastlan	32	FL OZ/A						
11	Milestone VM	6	FL OZ/A	72 abc	45 ab	65 abc	70 ab	27 c	37
	Plateau	3	FL OZ/A						
12	Method	6	FL OZ/A	73 abc	43 ab	80 a	73 ab	40 bc	17
	Plateau	3	FL OZ/A						
13	Method	12	FL OZ/A	88 ab	57 a	80 a	91 a	40 bc	12
	Plateau	3	FL OZ/A						
14	Nontreated Check			0 d	0 e	0 g	0 c	48 abc	35

All herbicide treatments contained the adjuvant, Activator 90 at 0.25% v/v.

¹ Means within a column followed by the same letter are not different according to Fisher's LSD at $P < 0.05$.