

2016 Knotweed Control Trial (near Smith's Grove)

Introduction

Japanese knotweed (*Polygonum cuspidatum* Siebold & Zucc.) is a problem for land managers and along roadsides due to its aggressive nature and reproductive potential. It is a tall perennial canelike shrub 3 to 12 feet (1 to 3.5 m) in height, freely branching and dense, with often clonal infestations. Hollow-jointed, reddish stems, similar to bamboos, survive only one season while rhizomes survive decades. Dead tops remain standing during winter. Japanese knotweed spreads along streams by stem and rhizome fragments and is also spread along roadsides by mowing (Miller, et al. 2010).

Materials and Methods

This trial was established beside guardrail along KY 80 (New Bowling Green Road) near Smith's Grove, KY. The trial had 5 treatments with 3 replications of each arranged in a randomized complete block design. On August 24, 2016, treatments were applied with a spray volume of 50 gallons/acre using a directed spray swath over the canopy beside the guardrail for a plot width of 5 ft and length of 12 ft (two areas between guardrail posts per plot). Canopy height was 4 to 5.5 ft. All herbicide treatments included Activator 90 at 0.25% v/v (Table 1). Milestone was applied at the broadcast rate (7 fl oz/ac) but the label allows for a spot treatment rate of 14 fl oz/ac if no more than 50% of the area is treated.

Visual assessments of percent knotweed control were done 26 (9/19/2016), 56 (10/19/2016), and 308 (6/28/2017) days after treatment (DAT) for the trial. Data were analyzed using ARM software and treatment means were compared using Fisher's LSD at $p = 0.05$.

Results and Discussion

All the treatments provided at least some control of knotweed either as leaf damage or leaf drop 26 DAT (Table 2). Rodeo had the greatest control (85%) while the broadcast rate of Milestone had the least (15%). A month later, the Milestone VM Plus, Polaris AC Complete, and Rodeo treatments had similar control ratings (88-95%) while the Milestone plots provided 65% control. Early the following summer, the Polaris AC Complete and Rodeo treatments gave the best control (88-90%) while the other treatments gave little control (7-12%). One of the advantages of the Rodeo treatment is there is no soil residual restricting seeding onto the site.

Literature Cited

Miller, J.H., S.T. Manning, and S.F. Enloe. 2010. A management guide for invasive plants in southern forests. USDA Forest Service Southern Research Station. GTR SRS-131.

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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	7	FL OZ/A	aminopyralid	1.8 oz ae
2	Milestone VM Plus	6	PT/A	aminopyralid + triclopyr	1.2 oz ae + 12 oz ae
3	Polaris AC Complete	2	PT/A	imazapyr	1 lb ae
4	Rodeo	8	QT/A	glyphosate	8 lb ae
5	Nontreated Check				

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

Table 2. Herbicide Treatments and % Control Data.

Trt. No.	Product Name	Rate	Rate Unit	% Control		
				26 DAT ¹	56 DAT	308 DAT
1	Milestone	7	FL OZ/A	15 <i>d</i> ²	65 <i>b</i>	7 <i>bc</i>
2	Milestone VM Plus	6	PT/A	53 <i>b</i>	90 <i>a</i>	12 <i>b</i>
3	Polaris AC Complete	2	PT/A	37 <i>c</i>	88 <i>a</i>	88 <i>a</i>
4	Rodeo	8	QT/A	85 <i>a</i>	95 <i>a</i>	90 <i>a</i>
5	Nontreated Check			0 <i>d</i>	0 <i>c</i>	0 <i>c</i>

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

¹ DAT = Days after treatment

² Means within a column followed by the same letter are not different according to Fisher's LSD at $P < 0.05$.