Herbicide IPT Leaf Spray Trials for Woody Plant Control

2012

Summary

This project is designed to screen rates and combination of herbicides using the experimental herbicide aminocyclopyrachlor (MAT28), as a leaf spray option for "hard to kill" rangeland woody plants. Specifically, these herbicide trials target greenbriar, whitebrush, agarito, lotebush, and Texas persimmon.

Two years after treatment, aminocyclopyrachlor provided over 90% apparent mortality of agarito, Texas persimmon, lotebush, whitebrush, and greenbriar at one or more of the rates used. When applied at the highest rate as Concept 1 (mixed with triclopyr) apparent lotebush mortality was 78%, Texas persimmon 51%, and greenbriar 18%. Agarito and whitebrush were more sensitive to the mixture averaging between 98% and 100% control.

Control with 2% Surmont averaged 56%, 66%, 69%, 66% and 15% for agarito, Texas persimmon, lotebush, whitebrush and greenbriar, respectively.

This herbicide is not currently labeled for rangeland or pasture use. Registration is expected in 2013.

Problem/Introduction

There are several species of woody plants on rangeland that are particularly difficult to control with herbicides, especially with leaf sprays. Examples include greenbriar, whitebrush, lotebush, agarito and persimmon. Although these species can be desirable under certain circumstances, they represent a management problem when they become too dense or grow within fence lines.

Aminocyclopyrachlor (MAT28) is a new DuPont Crop Protection herbicide that may provide a control option when applied as a leaf spray to these rangeland woody plants. This herbicide is not currently labeled for use on rangeland and pasture, although registration is expected in 2013.

Objectives

The objective of these herbicide trials is to evaluate various rates and herbicide combinations of the herbicide MAT28 when applied as an individual plant leaf spray to persimmon, agarito and lotebush.

Materials/Methods

The herbicide trials were established at 12 locations during the summer of 2010 (Table 1). All treatments were applied as an individual plant leaf spray using a Gator UTV mounted sprayer and spray wand tipped with an X-12 adjustable conejet nozzle. All herbicide treatments were mixed with water and included 4 rates of MAT28 by itself, 2 rates mixed with triclopyr and a 2% rate of the herbicide Surmount as a standard. Surfactant was added to all treatments at a concentration of ¼%. Hi-Light Blue Dye was added at a rate of 1/3 oz/gal of spray mix. Leaves of the target plants were sprayed to wet but not to the point of dripping.

Table 1. Location and date established for each replication.

County	Date	Ranch	Species
Coke	6/1/2010	Cervenka	Agarito/catclaw
Concho	6/29/2010	Willberg	Agarito
Burnet	7/16/2010	D + Duncan	Agarito
Llano	7/9/2010	McGinty	Greenbriar
Llano	7/9/2010	McGinty	Greenbriar
Mills	7/22/2010	Meaney/Strickler	Whitebrush
Mason	6/3/2010	Geistweidt	Tx. Persimmon
Menard	5/28/2010	Wright	Tx. Persimmon
Burnet	7/16/2010	Jones	Tx. Persimmon
Mills	7/22/2010	Lawson	Lotebush
Tom Green	7/26/2010	Tex. A&M Ctr.	Lotebush

Results/Discussion/Economic Impact

Two years after treatment, aminocyclopyrachlor provided over 90% apparent mortality of agarito, Texas persimmon, lotebush, whitebrush, and greenbriar at one or more of the rates used (Table 2). When applied at the highest rate as Concept 1 (mixed with triclopyr) apparent lotebush mortality was 78%, Texas persimmon 51%, and greenbriar 18%. Agarito and whitebrush were more sensitive to the mixture averaging between 98% and 100% control.

Control with a 2% concentration of the herbicide Surmont averaged 56%, 66%, 69%, 66% and 15% for agarito, Texas persimmon, lotebush, whitebrush and greenbriar, respectively.

This herbicide is not currently labeled for rangeland or pasture use. Registration is expected in 2013.

Table 2. Apparent mortality 2 years after treatment using IPT leaf spray.

Species	Herbicide(s)	Rate(s)	County			Average
			Coke	Concho	Burnet	
			6/1/2010	6/29/2010	7/16/2010	
Agarito	MAT28	Rate 1	90	95	11	65
		Rate 2	100	77	50	76
		Rate 3	100	100	100	100
		Rate 4	100	95	100	98
	Concept 1	Rate 1		83	13	48
		Rate 2	100	100	93	98
	Surmount	2.00%	30	44	95	56
Species	Herbicide(s)	Rate(s)	County			Average
			Menard	Mason	Burnet	
			5/28/2010	6/3/2010	7/16/2010	
Tx. Persimmon	MAT28	Rate 1	14	10	33	19
		Rate 2	88	66	20	58
		Rate 3	100	90	100	97
		Rate 4	100	100	100	100
	Concept 1	Rate 1			64	64
		Rate 2	36	50	68	51
	Surmount	2.00%	50	65	82	66
Species	Herbicide(s)	Rate(s)	County			Average
			Mills	Tom Green		
			7/22/2010	7/26/2010		
Lotebush	MAT28	Rate 1	55	36		46
		Rate 2	100	95		98
		Rate 3	100	95		98
		Rate 4	95	100		98
	Concept 1	Rate 1	15	70		43
		Rate 2	77	79		78
	Surmount	2.00%	70	67		69
Species	Herbicide(s)	Rate(s)	County			Average
			Mills			
			7/22/2010			
Whitebrush	MAT28	Rate 1	92			92
		Rate 2	95			95
		Rate 3	100			100
		Rate 4	100			100
	Concept 1	Rate 1	100			100
		Rate 2	100			100
	Surmount	2.00%	66			66

Table 2. Continued.

			County			
Species	Herbicide(s)	Rate(s)	Llano 7/9/2010	Llano 7/9/2010		Average
Greenbriar	MAT28	Rate 1	20	5		13
		Rate 2	10	40		25
		Rate 3	50	50		50
		Rate 4	95	100		98
	Concept 1	Rate 1				
		Rate 2	25	10		18
	Surmount	2.00%	5	25		15

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