



Yucca Ground Broadcast Herbicide Trials

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Allan McGinty, Prof. & Ext. Range Spec., San Angelo
Jerry Kidd, County Extension Agent, Menard

Summary

This project was designed to compare several new broadcast herbicide options for yucca control. A total of 11 treatments were included in these trials.

By two years following treatment most treatments produced only moderate control levels (39% to 63%). Only 3 treatments provided 70% or greater control 2 years following spraying, which included Cimarron (0.48 oz/ac), GF2050 + Remedy Ultra (3 oz/ac + 1 pt/ac) and the 3-way mixture of Cimarron + Weedmaster + 2,4-D (1/2 oz/ac + 2 pt/ac + 1 pt/ac).

Problem/Introduction

Yucca, also called beargrass or Spanish-bayonet, is a noxious plant that occurs on over 19 million acres of Texas rangeland. This plant is most common in the western two-thirds of the state. Yucca can reach densities as to compete with more desirable vegetation for water and nutrients. Yucca can be controlled with individual plant treatments. At the current time, the Texas AgroLife Extension Service only recommends Cimarron Max at Rate II plus 1 lb of 2,4-D as a broadcast control option for yucca. This treatment can be expected to kill 50% or more of the treated plants.

Objectives

The objective of this herbicide trial was to compare the efficacy of several new herbicide options for the broadcast control of yucca.

Materials/Methods

This herbicide trial was established August 3, 2007 on the Buddy Clark Ranch in Menard, County. A dense stand of yucca (*Yucca reverchonii*) was treated by ground broadcast using a 4-wheel ATV, equipped with 2-10 gal. tanks, a 1.8 gpm Surflow pump and a FieldJet KLC-9 boomless nozzle. Applications were made at 4 mph, 20 psi and 10 gpa.

All treatments were mixed with water with the addition of 1 pt/acre of MSO. Plot size was approximately 1/2 acre/replication.

Treatments were applied between 8:30 am and 11:00 am. The wind was from the south at 3 to 4 mph, relative humidity was 60% to 65%, and air temperature 78 to 85 F.

Results/Discussion/Economic Impact

One year following treatment the herbicides Surmount, Milestone, Milestone + GF1956, and GF2041 produced less than 30% apparent mortality of treated yucca (Table 1). The greatest apparent mortality was achieved with 3 oz/ac of GF2050 + 2 pt/ac of 2,4-D (80%), 1/2 oz/ac of Cimarron + 2 pt/ac of Weedmaster + 1 pt/ac of 2,4-D (83%) and 3 oz/ac of GF2050 + 1 pt/ac of Remedy Ultra (93%).

By two years following treatment (Table 2) some herbicide treatments improved in control (Surmount 4 pt/ac and Milestone 6.3 oz/ac), and some declined (GF2050 + 2,4-D) although most treatments produced only moderate control levels (39% to 63%). Only 3 treatments provided 70% or greater control 2 years following spraying, which included Cimarron (0.48 oz/ac), GF2050 + Remedy Ultra (3 oz/ac + 1 pt/ac) and the 3-way mixture of Cimarron + Weedmaster + 2,4-D (1/2 oz/ac + 2 pt/ac + 1 pt/ac).

Table 1. Percent apparent mortality of yucca one year following treatment.

Herbicide(s)	Rate(s)	% Apparent Mortality		
		Rep 1	Rep 2	Avg.
GF2050	2 oz	50	55	53 ^{c,d}
GF2050	3 oz	80	66	73 ^{def}
GF2050 + 2, 4-D	2 oz + 2 pt.	60	61	61 ^{d,e}
GF2050 + 2, 4-D	3 oz + 2 pt.	74	85	80 ^{e,f}
Cimarron + Weedmaster + 2,4-D	1/2 oz + 2 pt + 1 pt	70	95	83 ^{e,f}
Milestone	6.3 oz	10	19	15 ^{a,b}
Cimarron	.48 oz	60	75	68 ^{d,e}
GF2050 + Remedy Ultra	3 oz + 1 pt	96	90	93 ^f
Milestone + GF1956	7 oz + .375 lb	24	19	22 ^{a,b}
GF2041	3 pt	10	50	30 ^{b,c}
Surmount	4 pt	0	0	0 ^a

* - Means followed by the same letter are not significantly different at the 95% confidence level (LSD).

Table 2. Percent apparent mortality of yucca two years following treatment.

Herbicide(s)	Rate(s)	Rep 1	Rep 2	Avg.
GF2050	2 oz	52	60	56bcd
GF2050	3 oz	65	60	62.5bcde
GF2050 + 2, 4-D	2 oz + 2 pt.	59	53	56
GF2050 + 2, 4-D	3 oz + 2 pt.	74	53	63.5cde
Cimarron + Weedmaster + 2,4-D	1/2 oz + 2 pt + 1 pt	77	69	73e
Milestone	6.3 oz	52	51	51.5
Cimarron	.48 oz	72	68	70de
GF2050 + Remedy Ultra	3 oz + 1 pt	66	80	73e
Milestone + GF1956	7 oz + .375 lb	52	52	52abc
GF2041	3 pt	52	45	48.5ab
Surmount	4 pt	40	39	39.5a

* - Means followed by the same letter are not significantly different at the 95% confidence level (LSD).

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