Texas Cooperative EXTENSION
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Comparison of Tordon 22K®, Grazon P+D® and Mixtures of Picloram and Triclopyr with Fluroxypyr to Control Pricklypear

Haner Ranch 2002

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Summary:

Tordon 22K® is the recommended herbicide for pricklypear control on Texas rangelands. This herbicide provides a very high level of control, although it often takes 2 to 3 years for pricklypear to die following treatment. To evaluate other control options, herbicide trials were established during the summer of 2001 in Coleman, Irion, Lampasas, McCulloch, Mills, Runnels, Schleicher, Shackelford, Concho and Burnet counties. These trials included individual plant treatment rates of Tordon 22K®, Grazon P+D®, triclopyr plus fluroxypyr, and picloram plus fluroxypyr.

One year following treatment, apparent mortality averaged less than 15% for all treatments, with the exception of triclopyr plus fluroxypyr. This treatment provided 50% and 78% apparent mortality at concentrations of ½ % and 1%, respectively. The low control for all other treatments was expected due to severe drought conditions between the treatment date and the first evaluation date. With increased rainfall during the late summer and fall of 2002, efficacy is expected to improve significantly over the next year for these treatments. The high level of control with triclopyr plus fluroxypry as compared to other treatments was unexpected. The control data within this report should be considered preliminary. All plots will be evaluated again in 2003.

Pricklypear is a major noxious plant on Texas rangelands. This plant can reach high densities and interfere with the movement and handling of livestock, limit forage utilization, cause serious livestock health problems, and compete with more desirable vegetation for water and soil nutrients. Pricklypear does have value as a livestock feed during drought and serves as food and cover for wildlife such as quail, deer, and javelina.

Currently the herbicide Tordon 22K® is the most effective and cost-efficient treatment option to control pricklypear in most situations. This herbicide costs approximately $80/gallon and often requires 2 to 3 years before pricklypear dies following treatment.

In the past few years there have been several ranchers who have been using Grazon P+D® to control pricklypear and reporting satisfactory results. Most are using a 2% concentration of Grazon P+D®, mixed with water, for individual plant treatments. Cost to mix a 100 gallon batch would be approximately $52 for the herbicide as compared to $80 if Tordon 22K® was used at the recommended 1% concentration. This represents a considerable cost saving if Grazon P+D® can consistently produce comparable rootkills. Three concentrations of Grazon P+D® (1%, 2% and 3%) will be evaluated and compared to Tordon 22K® in these herbicide trials.

To reduce the time between treatment and until the pricklypear is dead, the only option currently is to add the herbicide Gramoxone® to the herbicide mix (1 oz Tordon 22K® + 3 oz Gramoxone®). This mix is very effective and provides "burn down" measured in months instead of years, but doubles the cost of control. Fluroxypyr is the common chemical name of a herbicide marketed by Dow AgroSciences that has considerable activity on pricklypear and may have the potential of providing acceptable control in a shorter period of time as compared to Tordon 22K® alone. Two of the study sites (Coleman and Irion counties) included mixtures of fluroxypyr plus picloram, one site included (Irion county) included a triclopyr plus fluroxypyr mixture (Picloram is the active ingredient in Tordon 22K®. Triclopyr is the active ingredient in Remedy®).

Objectives:

The objectives of these herbicide trials are to:

1) Document control of pricklypear achieved with various concentrations of Grazon P+D® and compare efficacy and cost of treatment to herbicide Tordon 22K®, when applied as an individual plant treatment.

2) Evaluate the new herbicide fluroxypyr when mixed with picloram or triclopyr for control of pricklypear, when applied as an individual plant treatment.

Materials and Methods:

Table 1 shows location and date of treatment for the ten treatment sites. Pricklypear at each site received the following treatments during the summer of 2001.

All sites included the following pad-stem sprays. One was a 1% concentration of Tordon 22K®. The other three were 1%, 2% and 3% concentrations of Grazon P+D®. The herbicides were mixed with water. Surfactant (0.25%) and spray marking dye (1/3 oz/gallon) were added to the spray mixture. Applications were made with a 4-wheel ATV equipped with a 12 volt pump, spray tank and spray wands. Spray wands were tipped with X-8 conejet nozzles. Individual pricklypear plants were sprayed to wet, making sure all pads were treated.

Coleman and Irion counties received additional treatments. The herbicide trials in both counties included ½ % and 1% concentrations of the herbicide LAF-004, which is a mixture of

the herbicides picloram and fluroxypyr (80 grams acid equivalent each/liter). The Irion county site also included ½ % and 1% concentrations of the herbicide Garlon GS®, which is a mixture of the herbicides triclopyr and fluroxypyr (180 grams acid equivalent/liter triclopyr and 60 grams acid equivalent/liter fluroxypyr). Applications were made using the same procedures and mixing as for Tordon 22K® and Grazon P+D®.

Table 1. County, ranch and application dates for the 10 treatment sites.

County	Ranch	Application Date
Burnet	Hohenberger Ranch	August 2, 2001
Coleman	Jack Horn Ranch	June 27, 2001
Concho	Jim Pfluger Ranch	July 24, 2001
Irion	Rocker B Ranch	June 1, 2001
Lampasas	Haner Ranch	July 27, 2001
McCulloch	Guy Phillips Ranch	July 23, 2001
Mills	Stanley Ranch	August 14, 2001
Runnels	Underwood Ranch	July 18, 2001
Schleicher	Ross Whitten Ranch	July 17, 2001
Shackelford	Winkler Ranch	August 8, 2001

Results and Discussion:

All locations and treatment plots were evaluated one year following treatment (summer 2002). As expected apparent mortality was low for most plots due to drought conditions during and after treatment (Table 2). Average apparent mortality ranged from 6% to 12% across the three Grazon P+D® concentrations, 11% to 14% for the two picloram plus fluroxypyr rates and 14% for Tordon 22K® at 1%. Surprisingly, the one location where triclopyr plus fluroxypyr was included provided 50% control at a ½ % concentration and 78% control at a 1% concentration. Because triclopyr is not known to have a high level of efficacy on pricklypear and the fact only one location used this herbicide mix, these results should be considered very preliminary. All locations and plots will be reevaluated in 2003. Control for many of these treatments are expected to improve significantly by that time.

Table 2. Percent apparent mortality of pricklypear one year following treatment with various concentrations of herbicides as an individual plant pad spray.

County	Grazon P+D®			Tordon 22K®	Picloram + Fluroxypyr		Triclopyr + Fluroxypyr	
	1%	2%	3%	1%	1/2%	1%	1/2%	1%
Burnet	0	0	0	5				
Coleman	5	7	11	4	0	11		
Concho	0	6	6	16				
Irion	16	21	31	25	21	17	50	78
Lampasas	0	0	5	0				
McCulloch	8	7	18	13				
Mills	3	24	16	27				
Runnels	13	10	23	19				
Schleicher	10	11	5	17				
Shackelford	a	a	a	a				
Average	6	10	12	14	11	14	50	78

[a] Heavy weed growth prevented accurate evaluation of these plots.

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