

Recovery of Dandelion from Sub-Lethal Doses of the Herbicide, Killex

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Summary

The objective of this study was to determine if there was re-growth from the root stock of dandelion following the application of the herbicide, Killex. This trial commenced in 2007 and will be completed in the fall of 2008. Results are preliminary at this time.

Introduction

A number of studies have been undertaken by the Prairie Turfgrass Research Centre over the last number of years to test the effects of agricultural by-products control of broadleaf weeds in turf. Many of these trials included an herbicide treatment for comparison purposes with these by-products. Most often the target weed was dandelion and on some occasions the effectiveness of the herbicide was questioned due to the fact that there appeared to be some recovery from the root stock (tap root) following application.

Therefore, the objective of this study was to determine if there was re-growth from the root stock of dandelion following the application of the herbicide, Killex.

Methodology

The study consisted of two tests, one located at the Prairie Turfgrass Research Centre (Olds College, Olds, Alberta) and the other in the City of Edmonton. It was thought that the application rates may be sub-lethal so it was determined that rates of applications of Killex 500 at Olds would be above label rates while rates in Edmonton, would be at the recommend rates (Table 1).

Test plots measuring 1x1 metres were laid out on low maintenance Kentucky bluegrass turf that had a high natural infestation of dandelion. Prior to the application of the treatments the number of pre-existing dandelion was determined. Five plants were selected within each plot and their growth stage was recorded. Field markers were placed next to the selected plants to allow for the monitoring of the plant's recovery over the course of the trial.

The Olds test was initiated on June 22 after the spring bloom of dandelion was completed. The plots that required a second application were retreated on June 29. The fall treatments were applied September 18 and September 24 respectively. The Edmonton trial which was not started until the fall, received its first application of product on September 17th and its second application 11 days later.

The treatments were applied as a foliar spray using a CO₂ compressed air sprayer. The applications were made at midday when the environmental conditions were most conducive to plant uptake of the herbicide.

Table 1 - Treatment schedule and application rates for study.

Site	Treatment	Rate(s)	Application Timing
Edmonton Study			
	Killex 500	24ml/100m ²	Once in the spring.
		24ml/100m ²	Twice in the spring.
		24ml/100m ²	Once in the fall.
		32ml/100m ²	Twice in the fall.
		32ml/100m ²	Once in the spring.
		32ml/100m ²	Twice in the spring.
		32ml/100m ²	Once in the fall.
		32ml/100m ²	Twice in the fall.
	Untreated control		
Olds Study			
	Killex 500	40ml/100m ²	Once in the spring.
		40ml/100m ²	Twice in the spring.
		40ml/100m ²	Once in the fall.
		40ml/100m ²	Twice in the fall.
		48ml/100m ²	Once in the spring.
		48ml/100m ²	Twice in the spring.
		48ml/100m ²	Once in the fall.
		48ml/100m ²	Twice in the fall.
	Untreated control		

Results

This study is in progress and results presented from the Olds portion of the study should be considered preliminary in nature. It appears that there was effective control from the herbicide applications that were applied in the spring. Evaluations at Olds will continue in the spring and an additional application will be applied in Edmonton in the spring of 2008.

Table 2 – Dandelion control with Killex 500, Olds 2007.

Rate	Timing	42 DAT	70 DAT	105 DAT
			% control	
40ml /100m ²	Once in the spring.	100a*	100a	100a
40ml /100m ²	Twice in the spring.	100a	100a	100a
48ml /100m ²	Once in the spring.	95a	95a	90b
48ml /100m ²	Twice in the spring.	100a	100a	100a
Untreated control		0c	0c	0c
LSD _{0.05} =		6	6	7

*Within a column, values followed by a different letter are considered significantly different with the probability that the results would occur similarly 19 out of 20 times (p=0.05.)

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