Musk Thistle Control With Herbicides Applied at the Late Bolting Growth Stage at Scottsbluff, Nebraska During the 2008 Growing Season.

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A field study was initiated near Scottsbluff, Nebraska to compare different herbicides for control of musk thistle in the late bolt stage of development. The experimental design was a randomized complete block with three replications. Plots were 11 feet wide by 25 feet long and were located on a sandy loam soil with a pH of 8 and organic matter content of 2.5%. Herbicides were applied with a backpack sprayer calibrated to deliver 20 gallons of water per acre at 36-psi pressure with Spraying Systems 11002 VS nozzles. Environmental conditions at the time of herbicide application are given in Table 1.

There were two objectives in the study; one was to evaluated the control of musk thistle that were growing at the time of treatment and the second objective was to evaluate the control of seedling musk thistle plants in each plot in early fall. On June 30, 10 days after treatment, herbicide injury was observed in all treated plots. (Table 2). Cimarron alone only caused minor injury to musk thistle plants however the addition of Weedmaster dramatically improved control. Plots were again evaluated on July 17, 27 days after treatment, and at this time only Milestone at 0.065 lb/acre and Forefront at 0.75 lb/acre provided 90% or more control of musk thistle. Herbicides did not completely kill musk thistle but prevented the plant from flowering. By September 2 most of the musk thistle plants that were originally treated in June had died. However, plants that were treated with Cimarron were partially growing. Growth was initiated at a lower node of the main stem where a petiole was attached. Musk thistle treated with Cimarron alone or in combination with Weedmaster or with Milestone at 0.032 lb/acre had a small amount of regrowth. All treatments except Cimarron alone provided 90% or more control of seedling musk thistle.

Table 1. Environmental conditions at the time of herbicide application.

Date	Air temperature	Humidity	Wind speed & direction	Time of day	Alfalfa
	(F)	(%)	(mph)		
June 20	72	66	4 NW	10:00 am	late bolt

Rainfall and irrigation before and after herbicide application

Date	Amount	Date	Amount
	- (inches) -		- (inches) -
June 19	0.07	June 20	0.39

Rainfall occurred 4 hours following application.

Table 2. Musk Thistle Control with Herbicides Applied at the Late Bolting Growth Stage at Scottsbluff, Nebraska During the 2008 Growing Season.

		Musk Thistle Control			Fall rosette control
Herbicide treatment [1]	Rate	6/30	7/17	Plants with regrowth 9/2	9/2
	(lb/acre)	- - - - (%) - - - -		- - - (%) - - -	- - - (%) - - -
Nontreated	—	0	0	0	0
GF-2050 + Activator 90	0.038	92	60	0	99
GF-2050 + Activator 90	0.058	93	60	0	99
GF-2050 + Activator 90	0.077	98	77	0	99
GF-2050 + 2,4-D amine + Activator 90	0.038 + 0.5	98	75	0	97
Cimarron + Activator 90	0.006	15	23	27	63
Cimarron _ Activator 90	0.009	37	25	18	78
Cimarron + Activator 90	0.011	10	28	18	67
Milestone + Activator 90	0.032	92	53	8	97
Milestone + Activator 90	0.048	98	77	0	99
Milestone + Activator 90	0.065	98	92	0	99
Cimarron + Weedmaster + Activator 90	0.009 + 0.48	93	72	8	93
Forefront R & P + Activator 90	0.56	97	85	0	99
Forefront R & P + Activator 90	0.74	97	92	0	99
LSD at 5%	—	14	11	10	15

[1] Herbicide treatments applied on June 20, 2008 when musk thistle was in the late-bolt growth stage. The adjuvant Activator 90 was combined with the herbicide at a rate of 0.25% v/v.