

Fall Applications of Herbicides on Creeping Red Fescue Seed Fields for Control of Group 2 Resistant Narrow-leaved hawk's-beard

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Introduction

Peace Region growers have reported increasing presence of narrow-leaved hawk's-beard in creeping red fescue seed fields. Narrow-leaved hawk's-beard is not a new weed to the Peace Region and grass seed growers are very familiar with it. Narrow-leaved hawk's-beard can grow as an annual or winter-annual. Seedlings that emerge prior to mid-July grow as summer annuals while those that germinate after mid-July behave as winter annuals. Winter annual plants are difficult to control with spring applications of herbicides on creeping red fescue seed fields since herbicides are applied the last two weeks of May. At this time narrow-leaved hawk's-beard plants have large rosettes, are beginning to bolt and are very difficult to control with most herbicides. Previous studies have shown fall herbicide applications provide much better and more consistent control over spring applications. Trials were conducted over a three year period to evaluate the control of narrow-leaved hawk's-beard with fall applied herbicides in creeping red fescue seed fields. Results from the trials proved very interesting.



Figure 1. Narrow-leaved hawk's-beard in creeping red fescue seed field.

Methods

Three trials were conducted from 2011 to 2013 on creeping red fescue seed fields in the Beaverlodge and Hythe area. The sites were Beaverlodge 2010 to 2011, Hythe 2011 to 2012 and Hythe 2012 to 2013. All sites had uniform populations of narrow-leaved hawk's-beard plants which were in the seedling to rosette stage at time of herbicide application. Experimental design for each study was a randomized complete block design with four replications and plots were 2m x 10m in size. Herbicides were applied with a hand held plot sprayer, calibrated to deliver 100 l/ha of water at 270 kPa. Herbicides were applied on September 23, 2010 (Beaverlodge), September 28, 2011 (Hythe) and September 20, 2012 (Hythe). Visual weed control ratings (percent control) were conducted the following spring.

Table 1. Visual percent control ratings of narrow-leaved hawk's-beard the year following FALL applied herbicides on creeping red fescue seed stands.

Treatment	Beaverlodge 2010 - 2011	Hythe 2011 - 2012	Hythe 2012 - 2013	Three Year Average
Check	0	0	0	0
Ally	0	0	0	0
Spectrum	100	84	97	94
Prestige	100	90	100	97
Express	0	0	0	0
Frontline 2,4-D	100	88	99	96
2,4-D ester	100	96	99	98
Express+2,4-D	100	76	88	88
Frontline XL	100	81	75	85
Curtail M	100	95	100	98

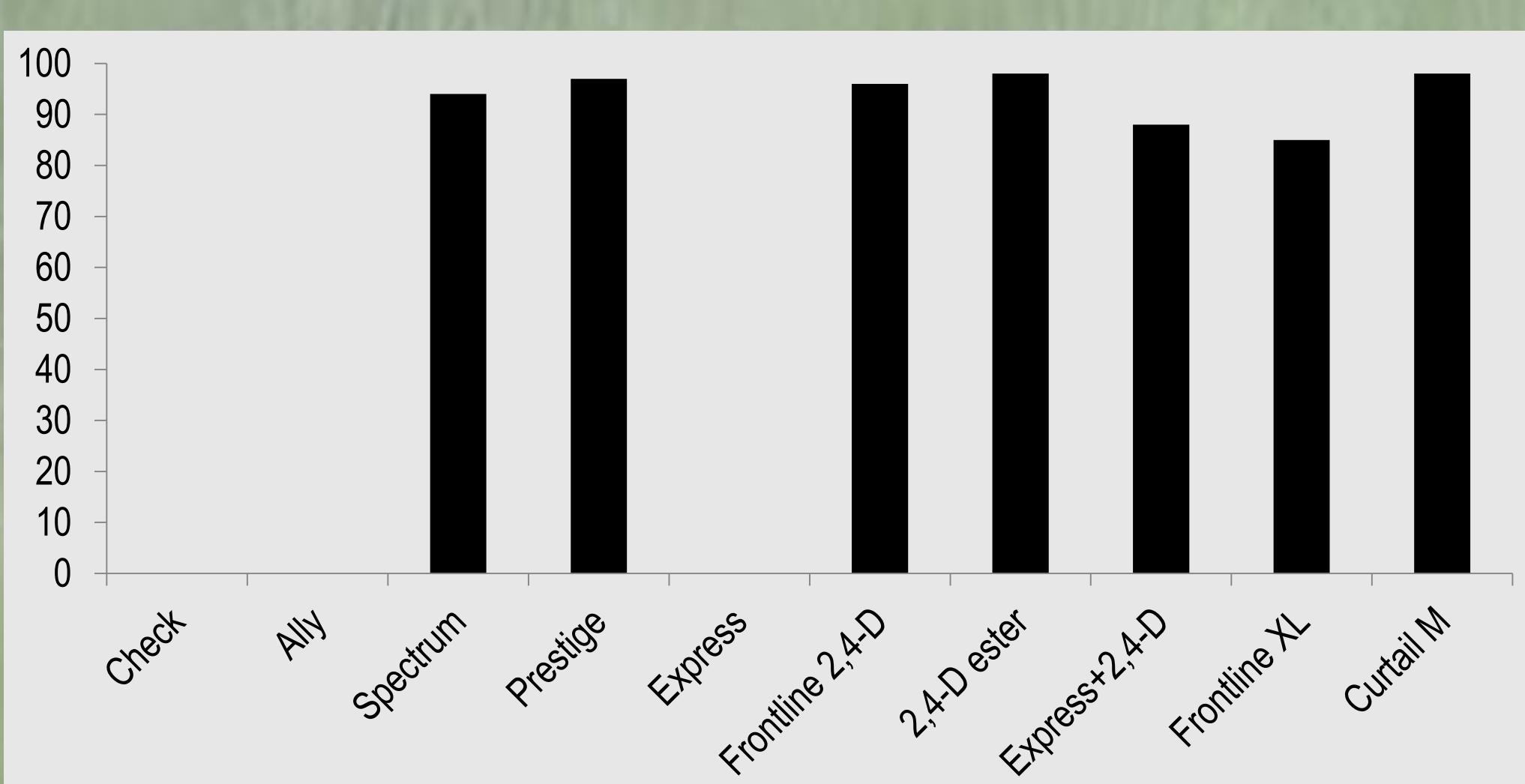


Figure 2. Visual % control of narrow-leaved hawk's-beard (group 2 resistant plants) following the application of fall applied herbicides in creeping red fescue seed fields (Average of 3 trials).

Results

Percent visual control ratings conducted on narrow-leaved hawk's-beard plants the spring following fall herbicide applications proved to be very interesting at all three sites, in all three years. Fall applications of Prestige, Curtail M, Frontline 2,4-D and 2,4-D ester alone provided excellent control of narrow-leaved hawk's-beard in all three years (Table 1). Spectrum and Frontline XL provided satisfactory control. Ally and Express applied alone did not provide any control of narrow-leaved hawk's-beard (Table 1 and Fig. 2). Previous studies had shown fall applied Ally to be very effective at controlling narrow-leaved hawk's-beard.

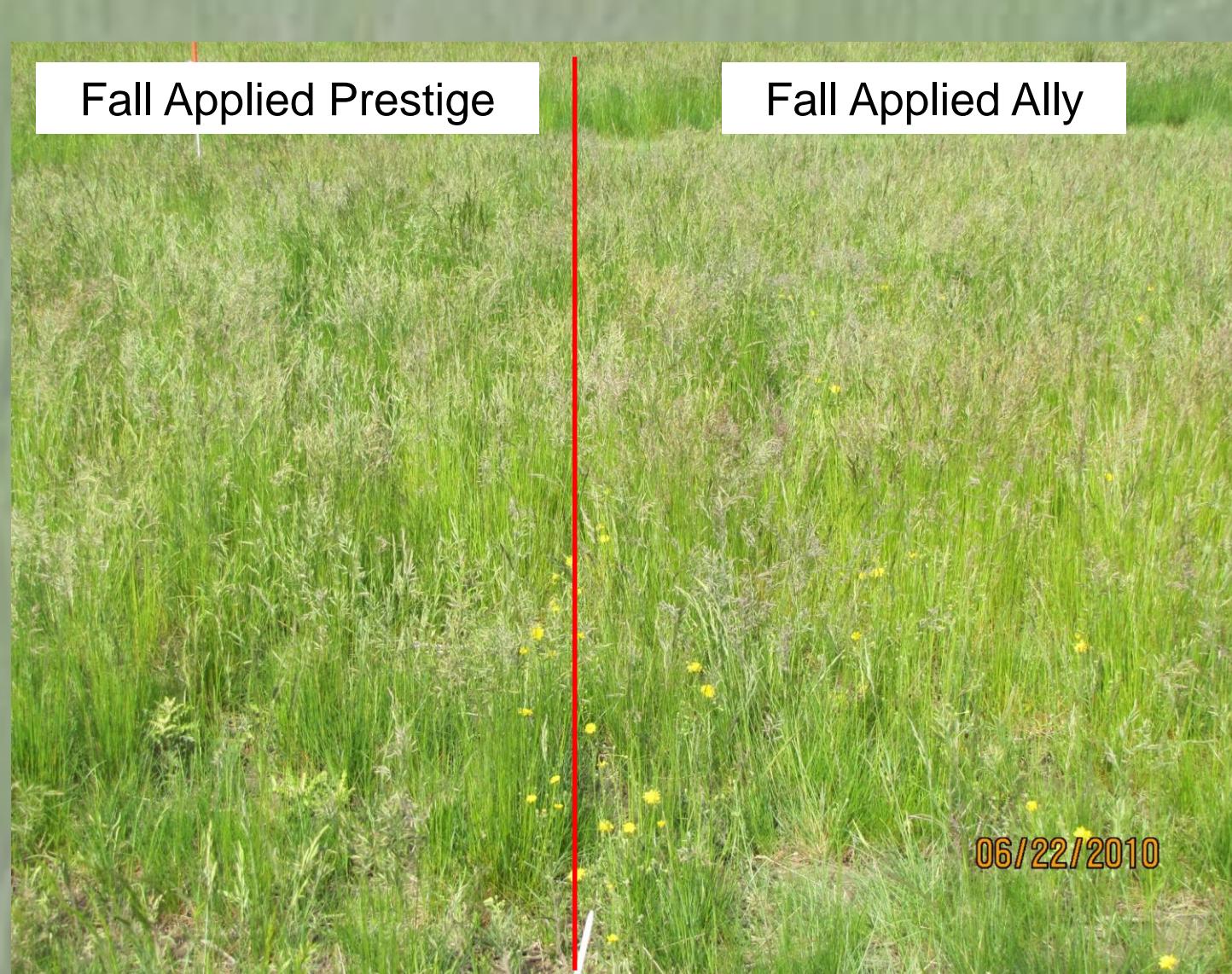


Figure 3. Effects of fall applied Prestige and Ally on narrow-leaved hawk's beard control, Beaverlodge, 2011.

Conclusions

Results from this three year study showed fall applications of Curtail M, Prestige, Frontline 2,4-D and 2,4-D ester effectively controlled narrow-leaved hawk's-beard plants. The study also identified the presence of narrow-leaved hawk's-beard populations resistant to Group 2 herbicides such as Ally, Express and Refine SG. Group 2 herbicides are used on seedling and established creeping red fescue seed fields throughout the Peace River Region. Growers must be aware of this issue and should rotate among different herbicide groups to prevent the appearance of additional herbicide resistant weeds.

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