Post Emergence Control Of Fowl Meadowgrass In Forages

(Wentworth SCIA Major Grant Project)

Purpose:

Purchasers of hay for the horse feed market will not buy bales contaminated with a coarse, yellowish perennial grass called Fowl Meadowgrass. Not only is this grass unsightly, it also matures very early in the spring and, as such, becomes unpalatable to horses due to increased lignin content. Preliminary trials in 2007 identified Achieve Liquid as a potential option for the control of Fowl Meadowgrass in an alfalfa/timothy forage stand. For producers to legally use Achieve Liquid to control Fowl Meadowgrass in an alfalfa/timothy crop, it must be registered by the Pest Management Regulatory Agency (PMRA). In 2008, three trials were conducted to collect weed efficacy and crop tolerance data with the intent to pursue a product registration with the PMRA through a collaborative effort between the University of Guelph, Wentworth Soil and Crop Improvement Association and the Ontario Ministry of Agriculture, Food and Rural Affairs.

Methods:

A heavy infestation of Fowl Meadowgrass was identified in an established alfalfa/timothy hay crop near Jerseyville, Ontario in 2007. Three trials were placed at this location in 2008 to evaluate the efficacy of Fowl Meadowgrass and the tolerance of alfalfa and timothy to 0.5 L/ha (0.2 L/ac) and 1 L/ha (0.4 L/ac) rates of Achieve (Tralkoxydim). An industry standard treatment of Poast Ultra (Sethoxydim) at 0.32 L/ha or (0.13 L/ac) was also included. All treatments were applied in early May when Fowl Meadowgrass was 5-10 cm (2-4") tall.

Results:

Visual ratings for percent injury (alfalfa and timothy grass) and percent control of Fowl Meadowgrass (as compared to the untreated check and the industry standard) were recorded at 14 and 30 days after treatment (DAT) application. Each data point represents the average of 4 replicates. Results are summarized in Table 1, 2 and 3 for each site.

Table 1: Visual crop injury and weed control ratings for Site 1.

Treatment	14 Days After Treatment			30 Days After Treatment		
	Alfalfa Injury (%)	Timothy Injury (%)	Fowl Meadowgrass Control (%)	Alfalfa Injury (%)	Timothy Injury (%)	Fowl Meadowgrass Control (%)
Untreated check	0 a[1]	0 c	0 c	0 a	0 c	0 b
Achieve (0.5 L/ha)	0 a	4 c	84 b	0 a	0 c	82 a
Achieve (1 L/ha)	0 a	28 b	90 b	0 a	9 b	85 a
Poast Ultra	0 a	96 a	98 a	0 a	100 a	100 a

[1]Means followed by same letter do not significantly differ 95 times out of 100

Table 2: Visual crop injury and weed control ratings for Site 2.

Treatment	14 Days After Treatment			30 Days After Treatment		
	Alfalfa Injury (%)	Timothy Injury (%)	Fowl Meadowgrass Control (%)	Alfalfa Injury (%)	Timothy Injury (%)	Fowl Meadowgrass Control (%)
Untreated check	0 a	0 c	0 c	0 a	0 b	0 c
Achieve (0.5 L/ha)	0 a	0 c	79 b	0 a	0 b	79 b
Achieve (1 L/ha)	0 a	14 b	88 a	0 a	0 b	91 a
Poast Ultra	0 a	97 a	92 a	0 a	100 a	100 a

[1]Means followed by same letter do not significantly differ 95 times out of 100

Table 3: Visual crop injury and weed control ratings for Site 3.

Treatment	14 Days After Treatment			30 Days After Treatment		
	Alfalfa Injury (%)	Timothy Injury (%)	Fowl Meadowgrass Control (%)	Alfalfa Injury (%)	Timothy Injury (%)	Fowl Meadowgrass Control (%)
Untreated check	0 a	0 d	0 d	0 a	0 c	0 c
Achieve (0.5 L/ha)	0 a	8 c	61 c	0 a	0 c	68 b
Achieve (1 L/ha)	0 a	15 b	81 b	0 a	8 b	91 a
Poast Ultra	0 a	99 a	95 a	0 a	100 a	100 a

[1]Means followed by same letter do not significantly differ 95 times out of 100

Summary:

Post emergence applications of Achieve provided suppression of Fowl Meadowgrass (61-84% at 14 DAT and 68-82% at 30 DAT across all trials). This was not unexpected as Achieve Liquid is efficacious on a number of grassy weeds. What was surprising was the level of tolerance that timothy grass had to 0.5 and 1 L/ha rates of Achieve Liquid. However, this trend has been consistently seen on four replicated trials over two growing seasons. The acceptable tolerance of both alfalfa and timothy to Achieve Liquid, along with the suppression of Fowl Meadowgrass make Achieve Liquid a suitable option for producers of dry hay for the horse feed market.

Next Steps:

To advance this treatment into the minor use program of Agriculture and Agri-food Canada, certain criteria must be met if this treatment is to become registered for use in Ontario. Analysis of crop samples to determine residual levels of herbicide may be necessary.

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Location of Project Final Report:

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