

Effect of Velocity SP Herbicide on Annual Bluegrass Populations in Creeping Bentgrass

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Summary

This trial was established to assess the effectiveness of Velocity SP for the removal of annual bluegrass in creeping bentgrass turf. A second objective was to evaluate the use of a backpack sprayer for application of the product. Applications commenced July 8, 2010 and were applied weekly for a period of six weeks. Product applications did not result in the reduction of annual bluegrass spots or overall percentage. It was thought that the rate of application of the product may not have been insufficient to reduce the annual bluegrass populations. Application to small plots with a backpack sprayer was not an effective method to apply this product.

Introduction

The product, Velocity SP Herbicide (active ingredient bispyribac-sodium), has been registered for use in Canada to remove annual bluegrass (*Poa annua*) from creeping bentgrass. A condition of the registration is that the product not be applied to bentgrass that is mowed lower than 9mm. Unfortunately, the majority of bentgrass grown in western Canada is for use on golf course putting greens, which is typically mowed at a height of 3-5mm.

In earlier studies conducted by the PTRC at the Carstairs Community Golf Club, creeping bentgrass maintained at a height of 3.2mm (0.125") was noticeably discoloured after applications of Velocity SP Herbicide at the label rate or lower. Discolouration was thought to be a phytotoxic reaction to the applications and was high enough to be of concern. This discolouration appeared after the second application and was particularly noticeable at the two higher rates (0.23g and 0.31g/100m²). As a result, applications were discontinued after the third application. The lower rates of application (0.08g and 0.16g/100m²) produced good control of annual bluegrass with less discolouration.

The objective of this trial was to determine if multiple low rate applications of Velocity SP could gradually reduce annual bluegrass populations without significant discolouration to the creeping bentgrass. A second objective was to evaluate the use of a backpack sprayer for application of the product.

Methodology

The eight week trial (July 8- September 1) was conducted at the Windermere Golf & Country Club (Edmonton, Alberta). The Plot sizes were 0.5 X 0.5 meters and were replicated four times in a completely randomized block design. The treatments were applied as six weekly applications commencing July 8th. A backpack sprayer equipped with a single Teejet 8002 even flat fan nozzle was calibrated to deliver 15L/100m². Premeasured amounts of the product were weighed and placed in small vials so that they could be added to each spray tank prior to application.



(Insert Photo Caption)

Table 1 - Application Rates of Velocity SP Herbicide.

Application Rate

1. Untreated Control
2. ¼ Label rate 0.08g/100m²
3. ½ Label rate 0.16g/100m²
4. ¾ Label rate 0.23g/100m²

Results

The plots were rated every two weeks throughout the trial period. Although no visible turf discolouration was observed, there was also no control of the annual bluegrass. In fact, the number of spots and the percent infestation of annual bluegrass increased over the test period (Tables 2&3).



(Insert Photo Caption)

Table 2 - Number of spots of annual bluegrass per plot.

Treatment Rate	July 8	July 23	August 6	September 1
	spots per ¼ m ² plot			
Untreated Control	15a	21a	19a	27a
¼ X rate 0.08g/100m ²	13a	20a	19a	29a
½X rate 0.16g/100m ²	12a	14a	15a	21a
¾ X rate 0.23g/100m ²	16a	23a	18a	28a
LSD _{0.05} =	n/s	n/s	n/s	n/s

Table 3 – Percent of infestation of annual bluegrass.

Treatment Rate	July 8	July 23	August 6	September 1
	% of plot area			
Untreated Control	9.2a	7.2a	8.5a	13.7a
¼ X rate 0.08g/100m ²	10.5a	8.5a	9.7a	17.5a
½X rate 0.16g/100m ²	4.5a	3.5a	4.5a	8.5a

$\frac{3}{4}$ X rate 0.23g/100m ²	10.5a	11.7a	9.5a	18.0a
LSD _{0.05} =	n/s	n/s	n/s	n/s

Discussion

There was no obvious reason why the applications did not reduce the incidence of annual bluegrass. In order to apply the calibrated spray volume it was to take three seconds to make the application across each of the plots. A possible explanation why the applications were not effective could be that it was very easy to reduce the time of application and consequently reduce the application rate. This showed that the method of application on such small plots was impractical. Subsequent studies should attempt to scale up the applications so that product rates can be applied with typical golf course spray equipment.