

Fall Timing of GameOn and Relzar Herbicide Application

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Introduction

Turfgrass managers have many options for broadleaf and grassy weed control, although new chemistries for the turf market are rare, especially in the case of weeds deemed as “hard-to-control.” Examples include ground ivy (*Glechoma hederacea*), thistle (various species), and wild violet (*Viola sororia*). Effective chemical control of this group is limited and cultural controls have minimal effect due to these weeds’ ability to persist in growing conditions unfavorable towards turfgrass. A new active ingredient, halauxifen-methyl, available to the turf manager in both GameOn and Relzar, shows promising results on both easy-to-control and hard-to-control turfgrass weeds.

The objective of this trial was to evaluate the effects of different rates of GameOn and Relzar on white clover (*Trifolium repens*) and common dandelion (*Taraxacum officinale*) compared with a non-treated control and two industry standard herbicides in a fall application in Iowa. A secondary objective was to evaluate turfgrass injury (chlorosis), if present, as the trial progressed.

Materials and Methods

This trial was conducted at the Iowa State University Horticulture Research Station, Ames, Iowa, on a mature stand of Kentucky bluegrass (*Poa pratensis*) and perennial ryegrass (*Lolium perenne*) with adequate and uniform weed pressure. Turf was cut twice/week at three inches using a riding rotary mower. Irrigation was applied as necessary to facilitate optimal growing

conditions. Fertility rate was 0.25 lb nitrogen/1,000 ft² each growing month using a granular slow release fertilizer. Treatments, rates, and timings for this trial are presented in Table 1. Experimental units were 5 ft x 10 ft, with one ft borders between all experimental units. Treatments were applied using a CO₂-pressurized backpack sprayer with TeeJet 8004XR nozzles calibrated to apply two gallons water carrier/1,000 ft². Treatments were applied October 1 and arranged as a randomized complete block design with four replications. Weed injury was visually evaluated at one and two weeks after application on a scale of 0-10, where 0 equals no symptomology and 10 equals death. Weed percent cover was visually evaluated at four, six, eight, and 12 weeks after application. Visual turfgrass injury was rated as necessary (data not presented).

Results and Discussion

Weed injury levels were significant at both rating dates (Table 2). The medium and high rates of GameOn (3.5 and 4.0 pts/acre, respectively) had significantly higher weed injury than Triplet SF and the control at one week after treatment (WAT). At two WAT Relzar, Speedzone, and all rates of GameOn had significantly higher weed injury than Triplet SF and the control. Although weed injury ratings for GameOn peaked at 7.5 out of 10 through two WAT, weed injury ratings may have reached full death if rated longer, which weather did not allow.

Percent weed cover ratings were only taken at four WAT because at six WAT the plots were covered in snow due to unseasonably cold weather. Temperatures were below freezing for a week despite seasonal averages in past years of 50-60°F or higher during this timeframe. By eight WAT, the snow had

melted but the turf and weeds were fully dormant, preventing further data collection.

At four WAT, all herbicide treatments had similar percent weed cover and all had significantly less weed cover than the control (Table 2). Unfortunately, due to the cold weather, we are missing the longevity aspect of weed control. Hopefully this trial can be

repeated in 2019 during a late summer/early fall timeframe for demonstration at the fall field day.

Acknowledgements

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Table 1. Treatment descriptions for Fall Timing of GameOn and Relzar Herbicide Application Trial, 2018.

Treatment number	Product	Rate (pints/ac)	Active ingredient(s)
1	GameOn	3.0	2,4-D, fluroxypyr-meptyl, halauxifen-methyl
2	GameOn	3.5	2,4-D, fluroxypyr-meptyl, halauxifen-methyl
3	GameOn	4.0	2,4-D, fluroxypyr-meptyl, halauxifen-methyl
4	Relzar	0.72 oz/A	Florasulam, halauxifen-methyl
5	Triplet SF	3.5	2,4-D, dicamba, mecoprop
6	Speedzone	4.0	2,4-D, carfentrazone-ethyl, dicamba, mecoprop-p
7	Untreated Control	---	---

Table 2. Weed injury and percent weed cover for Fall Timing of GameOn and Relzar Herbicide Application Trial, 2018.

Treatment	Weed injury ¹		Percent weed cover ²
	1 WAT ³	2 WAT	4 WAT
GameOn	3.00	7.25	8.75
GameOn	4.00	7.5	15.0
GameOn	3.75	7	10.0
Relzar	3.25	7.25	12.5
Triplet SF	2.25	4.50	7.5
Speedzone	2.75	6.50	13.75
Untreated Control	0	0	58.75
LSD (0.05) ⁴	1.36	1.57	11.37

¹Weed injury visual scale of 0-10, where 0 equals no symptomology and 10 equals death.

²Percent weed cover as determined visually on a 0-100 scale.

³WAT = weeks after treatment.

⁴Means were separated using Fisher's LSD.