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Testing Label Restrictions on Seeding Timings of Tall Fescue and Kentucky Bluegrass after Herbicide Application

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Abstract

During a lawn renovation, weeds are often a major problem because they grow more aggressively than seedling turf. Turfgrass seedlings need starter fertilizer and plenty of water for proper establishment, which makes an ideal environment for weeds to thrive as well. With current herbicide label restrictions, there are limited weed control strategies during the critical establishment period. Research trials were initiated in the fall of 2019 in Manhattan, KS, to determine if tall fescue (*Schedonorus arundinaceus*) and Kentucky bluegrass (*Poa pratensis*) could be seeded into a stand at different intervals after herbicide application before restrictions on the label. The results showed greater than 90% visual coverage of tall fescue seeded at 0, 3, 7, and 14 days after the application of Trimec Classic, Drive 75 DF, and SedgeHammer. Kentucky bluegrass had over 75% coverage at all seeding intervals when treated with Trimec Classic, Drive 75 DF, as well as plots seeded 3 days after the application of SedgeHammer in the Manhattan, KS, field study.

Keywords

tall fescue, Kentucky bluegrass, seeding, herbicide application

Authors

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Summary

During a lawn renovation, weeds are often a major problem because they grow more aggressively than seedling turf. Turfgrass seedlings need starter fertilizer and plenty of water for proper establishment, which makes an ideal environment for weeds to thrive as well. With current herbicide label restrictions, there are limited weed control strategies during the critical establishment period. Research trials were initiated in the fall of 2019 in Manhattan, KS, to determine if tall fescue (*Schedonorus arundinaceus*) and Kentucky bluegrass (*Poa pratensis*) could be seeded into a stand at different intervals after herbicide application before restrictions on the label. The results showed greater than 90% visual coverage of tall fescue seeded at 0, 3, 7, and 14 days after the application of Trimec Classic, Drive 75 DF, and SedgeHammer. Kentucky bluegrass had over 75% coverage at all seeding intervals when treated with Trimec Classic, Drive 75 DF, as well as plots seeded 3 days after the application of SedgeHammer in the Manhattan, KS, field study.

Rationale

Herbicide labels can be very unclear on seeding timings after the application. Most will recommend that seeding be delayed until 2 to 4 weeks after application while others depend on the species of turfgrass being seeded. Siduron (Tupersan) and mesotrione (Tenacity) are two preemergence herbicides labeled for use at seeding time. However, many postemergence herbicides have delayed seeding restrictions.

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Objective

The objective of this study was to determine if tall fescue and Kentucky bluegrass can be seeded into an area before the recommended time period indicated on the product label.

Study Description

Research trials were initiated in the fall of 2019 in Manhattan, KS, to determine if tall fescue and Kentucky bluegrass could be seeded into a stand at 0, 3, 7, and 14 days after herbicide application. The trial area was scalped and had multiple applications of a non-selective herbicide before initiation to ensure there was no live vegetation in order to demonstrate the same circumstances of a lawn renovation. Treatments were arranged in a 3-way factorial randomized complete block design with 4 replications. Factors were turfgrass species (tall fescue and Kentucky bluegrass), seeding interval, and 5 herbicides. Seeding intervals were 0 (4 hours after herbicide had dried), 3, 7, and 14 days after herbicide application. Herbicide treatments consisted of Trimec Classic (2,4-D + MCPP + dicamba) at 4 pt/a, Drive 75 DF (quinclorac) at 4 pt/a, SedgeHammer (halosulfuron-methyl) at 1.33 oz by wt./a, Dimension 2EW (dithiopyr) at 2 pt/a, and a nontreated control. Herbicide treatments were applied using a CO_2 pressurized backpack boom sprayer calibrated to deliver 43.6 GPA at 37 PSI. Data collection consisted of visual percent turfgrass cover (0--100%), shoot height (cm), and NDVI (normalized difference vegetation index), which is a simple graphical indicator of live green vegetation. Evaluations were conducted biweekly for 8 weeks after herbicide application. Analysis of variance (ANOVA) was performed in SAS 9.4 (SAS Institute Inc., Cary, NC) and means were separated according to Fisher's protected least significant difference (LSD) level at 0.05.

Results and Discussion

Trimec Classic (2,4-D + MCPP + dicamba), Drive 75 DF (quinclorac), and SedgeHammer (halosulfuron-methyl) in the Manhattan, KS, field study resulted in more than 90% visual coverage of tall fescue 8 weeks after herbicide application for all 4 seeding intervals. Kentucky bluegrass seeded at all 4 seeding intervals into Trimec Classic and Drive 75 DF treatments were not significantly different than the nontreated control, along with Kentucky bluegrass seeded at 3 days after the application of SedgeHammer. No seeding interval tested in this study after the application of Dimension 2EW resulted in acceptable emergence for either turfgrass species. Seeding resulted in successful establishment quickly in this study for most herbicides, possibly due to the warm soil temperatures in early September, likely causing rapid breakdown of the herbicide. Labels currently do not recommend seeding intervals before 3 to 4 weeks after the application of Trimec Classic and 3 months after Dimension 2EW. Kentucky bluegrass is not recommended to be seeded until 4 weeks after the application of Drive 75 DF, while the SedgeHammer label suggests allowing the turf to develop a good root system and uniform stand before application.

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Table 1. Cover of tall fescue eight weeks after seeding at 0, 3, 7, and 14 days after herbicide application in Manhattan, KS

	Days after herbicide application[a]			
	0	3	7	14
Herbicide treatment	% visual cover			
Nontreated control	100A[b]	98.75A	96.25A	97.5A
Trimec Classic	100A	100A	96.25A	97.5A
Drive 75 DF	100A	98.75A	98.75A	98.75A
SedgeHammer	93.75A	98.75A	96.25A	95A
Dimension 2EW	6.25D	18.75D	50C	76.25B

[a] All herbicide applications were made on September 6, 2019. Seed was sown September 6, 2019 (0 DAT), September 9, 2019 (3 DAT), September 13, 2019 (7 DAT), and September 20, 2019 (14 DAT).
[b] Treatment means followed by a common capital letter are not significantly different according to Fisher's protected LSD ($\alpha = 0.05$).

Table 2. Cover of Kentucky bluegrass eight weeks after seeding at 0, 3, 7, and 14 days after herbicide application in Manhattan, KS

	Days after herbicide application[a]			
	0	3	7	14
Herbicide treatment	% visual cover			
Nontreated control	92.5A[b]	90AB	90AB	78.75ABCD
Trimec Classic	85ABC	81.25ABC	91.25AB	76.25ABCD
Drive 75 DF	81.25ABC	77.5ABCD	86.25AB	78.75ABCD
SedgeHammer	75BCD	82.5ABC	70CD	63.75D
Dimension 2EW	1.35E	3.75E	5.0E	8.75E

[a] All herbicide applications were made on September 6, 2019. Seed was sown September 6, 2019 (0 DAT), September 9, 2019 (3 DAT), September 13, 2019 (7 DAT), and September 20, 2019 (14 DAT).
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