Timing of Burn Down Herbicides Before Overseeding

Burn down herbicide trial at Toscana Country Club, Indian Wells, CA. Picture taken on 17 October 2012, one day before overseeding and prior to scalping of burn down herbicide treatments that were applied 3, 6, and 8 days before overseeding.

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Jim Baird, Turfgrass Specialist
Alea Miehls, Graduate Assistant
Tyler Mock, Graduate Assistant
University of California, Riverside

Rick Sall, Superintendent
Humberto Cardenas, Assistant Superintendent
Delfino Rivera, Assistant Superintendent
Toscana Country Club, Indian Wells

The Bottom Line: Application of Scythe, Reward, or Finale at 3, 6, or 8 days before overseeding with or without prior application of Turflon Ester Ultra did not adversely impact perennial ryegrass germination or establishment on fairways, nor did they affect bermudagrass re-growth or spring transition. Given the conditions of this study, Scythe and Reward provided the best combination of speed of activity and bermudagrass suppression in combination with Turflon. Results confirmed that Scythe is best applied within 3 days of overseeding due to rapid but short-lived burn down activity. Application of Reward is recommended between 3-6 days before scalping and overseeding while maintaining irrigation prior to overseeding.

Introduction

Burn down herbicides can aid in overseeding by reducing cultivation practices during seedbed preparation, costs associated with green waste production and disposal, and related air quality concerns. Scythe (pelargonic acid) is both safe and effective, but can be cost prohibitive if extended outward to fairways or rough. Reward (diquat) is equally effective and considerably less expensive, but there have been instances when the herbicide adversely affected ryegrass germination and establishment. Finale (glufosinate) is largely untested for this use. It has slower burn down activity relative to Scythe and Reward, but provides longer bermudagrass suppression that is important during ryegrass establishment. And, like Reward, it is cost effective for large-scale use.

The objectives of this research were to compare timing of application of Scythe, Reward, and Finale applied alone in succession with Turflon Ester Ultra (triclopyr) on establishment of overseeded perennial ryegrass, suppression of bermudagrass during establishment, and transition back to bermudagrass in spring.

Location:	18 North Fairway, Toscana Country Club, Indian Wells, CA
Species:	'Tifway II' hybrid bermudagrass
Application Dates:	Burn down herbicides (10, 12, 15 Oct 2012) Turflon Ester Ultra (16 oz/A; 5 days prior to above dates)
Mowing Height:	0.425 inches 0.250 inches (scalping) on 17 Oct 2012

Spray Information: CO_2-powered bicycle sprayer
TeeJet 11004 flat fan nozzles
50 GPA

Design: Randomized strip block; 4 replications
Burn down herbicides (main plots); Turflon (sub-plots)

Plot Size: 7 ft x 15 ft; 5-ft alleys

Overseeding: Perennial ryegrass, 800 lbs/A, 18 Oct 2012

Results:

- ✓ Turflon Ester Ultra was effective in suppressing bermudagrass prior to and after overseeding and in conjunction with use of burn down herbicides (Fig. 1 and Table 1).

- ✓ Scythe and Reward were equally effective in rapid burn down of bermudagrass; however, without Turflon, greater longevity of bermudagrass suppression was observed for Reward five days after application (6 days before overseeding) (Table 1). These results suggested that Scythe should be applied within 3 days of overseeding; whereas Reward can be applied between 3 and 6 days before overseeding for best results and maximum safety to ryegrass.

- ✓ Use of Finale as a burn down herbicide appeared to require an interval longer than 8 days between application and overseeding for bermudagrass suppression during germination. Also, it appeared that pre-treatment with Turflon resulted in less bermudagrass suppression compared to use of Finale alone (Table 1). Although slower in activity, results from this and previous research have shown that Finale exhibits the longest period of bermudagrass suppression of these burn down herbicides.

- ✓ None of the herbicides or herbicide combinations delayed or reduced germination or establishment of perennial ryegrass (Fig. 2). Moreover, none of the treatments, including the untreated control minus Turflon, resulted in the resurgence of bermudagrass once the ryegrass had germinated (data not shown). To confirm this, we evaluated the plots for dormant bermudagrass cover in early January and none was found.

- ✓ None of the herbicide treatments adversely affected spring transition back to bermudagrass (data not shown).

- ✓ Although burn down herbicides can play an important role in overseeding (e.g., reducing verticutting required for seedbed preparation and cool-season turf establishment on greens), results from 2011-12 at Toscana CC showed that scalping alone was equally as effective as scalping + burn down herbicides in both green waste reduction (compared to flail mowing) and ryegrass establishment on fairways. Although green waste reduction was not measured in

this study, perennial ryegrass establishment and cover were equal among the untreated control and burn down herbicides (+ or – Turflon).

Acknowledgments

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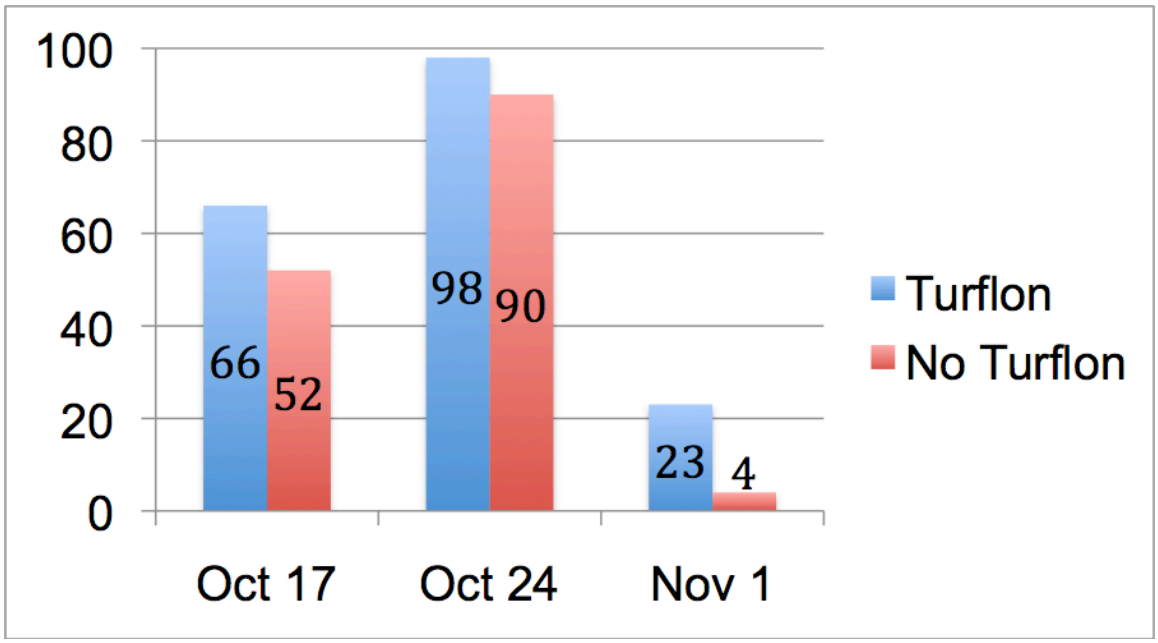

Figure 1. Bermudagrass suppression as measured by brown tissue (0-100%) combined across all burn down herbicide treatments in response to pre-treatment with Turflon Ester Ultra. Plots were scalped and overseeded with perennial ryegrass on October 18, 2012. Indian Wells, CA. Treatment differences at each rating date were significant ($\propto$ = 0.05).

Table 1. Effects of timing of application of burn down herbicides (with or without Turflon Ester Ultra) on bermudagrass suppression as measured by percentage of brown tissue in the turf canopy. Plots were scalped and overseeded with perennial ryegrass on October 18, 2012. Indian Wells, CA.

				Bermudagrass Brown Tissue (%)		
Treatment	Rate	Timing (DBO)	Turflon	10/17/12	10/24/12	11/01/12
Control	--	--	+	8.8 ef	97.2 a	18.8 a
Scythe Sprayfast	7.5% v/v 0.25% v/v	8	+	92.2 a	96.5 ab	22.5 a
Scythe Sprayfast	7.5% v/v 0.25% v/v	6	+	97.2 a	98.5 a	26.2 a
Scythe Sprayfast	7.5% v/v 0.25% v/v	3	+	100 a	97.8 a	25.0 a
Reward NIS	32 oz/A 0.25% v/v	8	+	96.5 a	98.8 a	27.5 a
Reward NIS	32 oz/A 0.25% v/v	6	+	99.0 a	98.0 a	26.2 a
Reward NIS	32 oz/A 0.25% v/v	3	+	100 a	98.2 a	23.8 a
Finale	32 oz/A	8	+	27.5 d	97.2 a	20.8 a
Finale	32 oz/A	6	+	27.5 d	97.8 a	21.2 a
Finale	32 oz/A	3	+	13.8 e	98.8 a	21.2 a
Control	--	--	-	1.8 f	83.8 f	4.5 b
Scythe Sprayfast	7.5% v/v 0.25% v/v	8	-	26.2 d	90.0 cde	5.0 b
Scythe Sprayfast	7.5% v/v 0.25% v/v	6	-	55.0 c	88.8 de	4.5 b
Scythe Sprayfast	7.5% v/v 0.25% v/v	3	-	96.2 a	87.5 ef	4.5 b
Reward NIS	32 oz/A 0.25% v/v	8	-	35.0 d	91.2 cde	6.2 b
Reward NIS	32 oz/A 0.25% v/v	6	-	73.8 b	90.0 cde	4.0 b
Reward NIS	32 oz/A 0.25% v/v	3	-	98.5 a	88.8 de	3.5 b
Finale	32 oz/A	8	-	73.8 b	92.5 cd	4.0 b
Finale	32 oz/A	6	-	61.2 c	93.0 bc	4.0 b
Finale	32 oz/A	3	-	3.8 f	96.5 ab	4.5 b

Means followed by the same letter in a column are not significantly different ($\propto$ = 0.05).
DBO = days before overseeding; NIS = non-ionic surfactant.
Burn down herbicides were applied on 10/10/12 (8 DBO); 10/12/12 (6 DBO); 10/15/12 (3 DBO); Turflon Ester Ultra applications were made 4-5 days prior to each application at 16 oz/A; for the control, Turflon applications were made at the same timing relative to burn down herbicides applied at 6 DBO.

Figure 2. Burn down herbicide trial at Toscana Country Club, Indian Wells, California. Picture taken on 1 November 2012, 14 days after overseeding. No effects on ryegrass establishment were observed among any of the herbicide treatments.