

Aeration Timing and Topdressing Color to Enhance Creeping Bentgrass Green Recovery

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Objectives:

1. Determine the effect of date of aeration on recovery time.
2. Establish whether black sand topdressing can enhance recovery.

Start Date: 2008

Project Duration: 2 years

Total Funding: \$6,000

In the Intermountain Pacific Northwest, golf green aeration often occurs at the extreme ends of the growing season to avoid disruptive aeration practices during the peak golf season. To determine if topdressing timing and sand color could mitigate the effects of aeration, a 'T-1' creeping bentgrass (*Agrostis stolonifera* L.) research green was aerated with 1.27-cm hollow tines every two weeks from April 15 to November 1, 2008 and 2009. Tan sand (TS) or black sand (BS) was applied following aeration and brushed into aeration holes.

Tan sand topdressing treatments were applied at 40,000 kg/ha. Black sand topdressing treatments received TS at 20,000 kg/ha brushed in followed by BS at 20,000 kg/ha to duplicate how BS is commonly used by golf course superintendents in the Pacific Northwest. One week prior to each aeration date, each plot received 293 kg/ha fertilizer (10-4-16) (Micro 10, BEST Fertilizer, Lathrop, CA).

Data collected were days to recovery (DTR) from aeration injury, turfgrass quality, and soil temperature. Aeration injury recovery was rated twice weekly until full recovery on a scale of 1 to



Sand type resulted in turfgrass quality differences in the spring and fall. Black sand had as much as a 25% increase in quality over tan sand.

9, where 9 was no detectable damage from cultivation, and 1 was no recovery from treatment. Turfgrass quality was visually rated twice weekly until full recovery on a scale of 1 to 9 where 9 was ideal, dark green uniform turf, 6 was minimum acceptable quality, and 1 was dead turf. Soil temperature was recorded twice weekly until full recovery. Soil temperature was measured at a 7.5-cm depth in 2008 and a 2.5-cm depth in 2009 with a digital thermometer (Spectrum Technologies Inc., East-Plainfield, IL). Full recovery was determined when no visible damage from cultivation was observed in 95% of the plot.

The fastest recovery time ranged from 10 to 18 days and occurred at the June 15, July 1, or August 15, 2008 aeration dates and at six dates between May 15 and September, 15 2009. Black sand was able to reduce recovery by 2 to 9 days

compared to TS at nine aeration dates during the study. In addition, BS never resulted in more DTR than TS. Aeration treatments applied after October 1, 2008 and September 15, 2009 did not fully recover within that growing season.

There was a 0.3° C and 0.4° C increase in soil temperature from BS compared to TS when measured 4 days after treatment in 2008 and 2009, respectively. Black sand increased turfgrass quality over TS by as much as 25% and never resulted in lower quality ratings than TS.

Summary Points

- The best time to aerate in the Intermountain Pacific Northwest would be about May 15 and August 15.
- Black sand was able to reduce the number of days to recovery in the late fall.
- Black sand resulted in increased quality and color in the spring and fall.



Tan sand topdressing treatments (A) were applied at 40,000 kg/ha. Black sand topdressing treatments (B) received tan sand at 20,000 kg/ha brushed in followed by black sand at 20,000 kg/ha.