

**Preparing for winter: UNL research summary**

November 3, 2015

Winter desiccation has been a challenge for much of the golf turf across the state of Nebraska the last two winters. The dry conditions reduced crown moisture content to lethal levels for many grass species, including creeping bentgrass. The crown is the growing point, and is essential for regrowth in the spring. Through generous grant funding from the USGA, Idaho GSCAA, and Peaks & Prairies GSCAA, we conducted field research at six different sites across the state of Nebraska and South Dakota last winter. This allowed us to evaluate winter survival practices of fairway turf in various winter environments. Our primary focus was to evaluate the effectiveness of winter preparation practices through examination of crown moisture and spring recovery. Practices evaluated included permeable and impermeable covers, heavy sand topdressing, and spray-based applications including a horticultural oil (Civitas), an antitranspirant (Transfilm), colorants (Foursome or Harmonizer, and a wetting agent applied in late fall.

The most conclusive evidence was observed at the JSA Turfgrass Research Center in Mead, NE and at Awarii Dunes Golf Club in Axtell, NE. At Mead, crown moisture was monitored monthly and was found to be stable until February, which may have implications on winter watering timing (Figure 1). Permeable and impermeable covers, along with heavy sand topdressing sustained crown moisture throughout the winter compared to other treatments. Treatments with a crown moisture above 45% were able to recover fully in the spring while less than 45% saw significant damage and delayed greening up. While the winter was noticeably harsher at the Axtell site with negligible snow events, we did notice similar trends that the impermeable and permeable cover along with the sand topdressing had the highest crown moisture and recovered the fastest in the spring while other treatments were significantly damaged with delayed spring green-up (Figure 2). While other treatments may improve turf winter survival during less harsh conditions, we observed inconsistent results and further research will be conducted to further evaluate their effectiveness.

With thatch and elevated crowns being a significant contributor to winterkill, protecting the crowns is imperative for turfgrass survival. While tarping large portions of your golf course may be cost and time prohibitive, consider making your last yearly topdressing your heaviest application and place extra emphasis on historically problematic areas. The topdressing rate we chose for our studies nearly buried the entire turf canopy with just leaf tips showing through. While this rate may appear excessive the turf was able to grow through the sand layer in the early spring at all locations and you gain the added benefit of topdressing.

If you have further questions regarding the research or are interested in having research conducted at your site this winter feel free to contact either of us.

This research would not be possible without the support from the following individuals:

Doug Hausman- Dakota Dunes Country Club

Kyle Hegland- Sand Hills Golf Club

Brent Racer- Awarii Dunes Golf Club

Dave Swift- Minnehaha Country Club

Tom Walsh- Monument Shadows Golf Course

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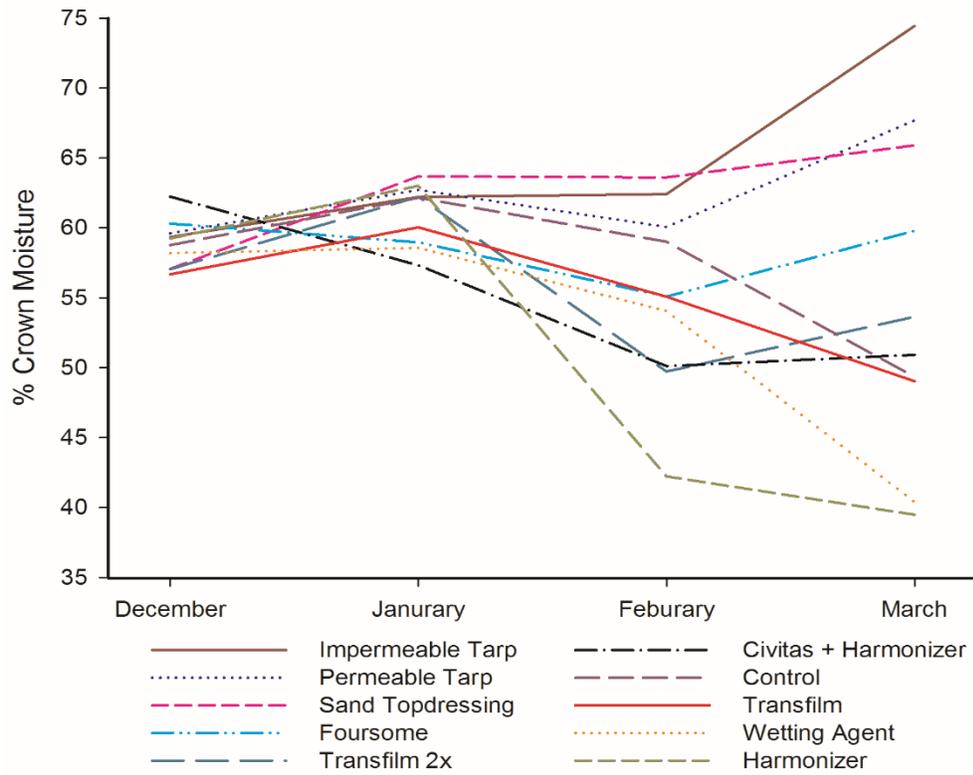


Figure 1. Crown moisture content monitored monthly at the John Seaton Anderson Turfgrass Research Center in Mead, NE. Treatments providing physical protection of the crown were able to retain moisture in the crown opposed to other treatments.

Figure 2. Crown moisture content in March at Axtell, NE. Much like the Mead site, treatments that provided a physical protective barrier kept turf above the 45% crown moisture content and recovered quicker in the spring. A different letter above the bar denotes significant difference.

