



## Winter Injury Alert

By David Oatis, director, Northeast Region

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In recent weeks, Green Section agronomists have been speaking with superintendents all over the Northeast Region with respect to winter injury and various strategies associated with possible removal of snow and ice layers from putting green turf. Although we currently are still several weeks away from understanding the extent of injury, damage already has been documented at a few courses. As the snow and ice recedes and/or is removed, more damage likely will come to light.



*Once the turf was exposed to air, the foul odor of decomposition could be detected. As the ice melted, the water turned green, indicating cellular damage.*

At least at a couple of golf courses, it appears that significant injury occurred in late December and early January and likely can be attributed to crown hydration injury. A thick layer of ice has covered many putting greens since then, and some superintendents who have cut through the ice are discovering signs of anoxia. Toxic gases build up slowly under ice layers after prolonged cover, and even courses with ice layers intact for 35-40 days have discovered the tell-tale foul smells. On at least one course, the water from the melting ice quickly turned green, a sure sign that plant cells have been ruptured and the chlorophyll is leaking out.

Thus, if the “smell of death” is present under the ice layer on your greens, the ice should be removed as soon as possible. Unfortunately, some damage has already occurred, and the process of ice removal itself can further injure the turf. Exposing the turf to additional freeze/thaw cycles also can result in more

damage. However, leaving the ice alone with anoxic conditions would practically guarantee damage, too. Courses facing this dilemma clearly are in a no-win situation.

Recovery obviously is weeks and perhaps months away, so the only thing that can be done now is to assess damage by uncovering the turf and bringing plugs inside for incubation. Within a week or so, you should get a feel for whether or not damage is present and how extensive it might be. Taking plugs from low areas and high areas will provide an indication of the extent. Armed with this information, you can begin preparing your golfers and developing recovery strategies.

There are many different ways to promote recovery, and some courses quickly will resort to sod, whereas others will aerate and seed. Regardless of the chosen



***Ice can be chipped away in a variety of ways. Turf plugs can then be removed with a hole saw or Sawsall.***

method, keeping damaged greens closed until the turf has recovered is the most important first step. Damaged turf that is subjected to play will recover much more slowly, and this prolongs the aggravation. Furthermore, winter injury is an opportunity to establish new and improved bentgrasses in putting greens, so, although there clearly is plenty of short-term pain, there can be long-term gain.

If you have questions or would like to discuss damage prevention and/or recovery strategies, give us a call. We are always ready to help.

Mark your calendars for two upcoming USGA regional meetings: The New England Regional Turf Conference in Providence, RI is March 7-10 and the USGA/MGA conference at Wheatley Hills GC in East Williston, NY is Tuesday, March 22. See you there.

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