



## Winter Turfgrass Management

by Dean Musbach  
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One thing for sure—winter is long in the northwoods. Having turf under snow and ice for 130 to 160 days is common. Every superintendent in Wisconsin has concerns about the winter. Snow mold, ice damage and desiccation can be devastating. Despite years of research, superintendents still struggle to control turf damage during the winter.

It is especially important for northern superintendents to control every factor they can. Cultural practices are the key. A sound fertility program, proper water management, attentive pest control, and an aggressive aeration and thatch control program will minimize damage during most winters. Other factors that need to be considered are: soil structure; turf variety; and the age, style and topography of the golf course.

Much of the soil in northern Wisconsin is a sandy loam. Unfortunately, when the pioneers of golf course construction built greens, they dredged river beds and bogs in search of rich black soil. Little did they know that fifty years later superintendents would still be struggling to grow turf on that "black gold." At least the pioneers of golf course construction had an excuse; USGA golf green specifications were not yet conceived.

Like the rest of the country, Northern Wisconsin is enjoying the golf boom. Unfortunately, in an effort to save money, people continue to ignore the USGA green specification, and they replaced it with the so-called "modified USGA green." This is like calling a Yugo a "modified Mercedes." Both cars have similar components, but when it comes to performance, the Mercedes easily wins. Like the Mercedes, the USGA green speaks for itself. The bottom line is, "you get what you pay for."

In the late 1970's, Wadsworth built Timber Ridge. At the developer's request, Wadsworth built two types of "modified USGA greens" during two construction phases. Phase one greens were built with medium course sands mixed with decomposed saw dust. Phase two greens were built with medium fine sands mixed with peat. In

both phases, the choker layer, gravel base and drain tile were omitted.

Needless to say, neither modified green works properly (i.e., no perched water table). Phase one greens drain too rapidly, and phase two greens drain poorly.

In northern Wisconsin, many superintendents are trying to maintain *Poa annua* and bentgrass on heavy, poorly drained soil. They are making progress thanks to modern technology. Deep tine aerifying, improved green covers and improved fungicides have helped improve turf quality.

Years before deep tine aerifying, many northern superintendents stripped a row of sod through drainage contours and low pockets to facilitate better surface drainage on greens. The following spring they replaced the sod, and the greens were ready to play.

Recently, some superintendents have reported excellent results with deep tine aerifying. An improved infil-

tration rate has eliminated pockets of water that were destructive in the past. Deep tine aerifying has improved both the infiltration rate and the root structure.

The development of the green cover has also had an impact in the north. Superintendents tried using clear and opaque PVC tarps during the early 1970's, but these materials proved to be inadequate because conditions beneath the tarps were difficult to control.

Today many superintendents use new improved green covers to prevent desiccation and ice damage. These green covers are also used for spring renovations.

Last year, I attended an excellent turf symposium about winter kill in Iron Mountain, Michigan. Superintendents who were using covers said that the geotextile cover works best for desiccation while the light polyethylene cover is superior for controlling ice. They said the ice is easily removed by snow blowing the covered area; then using a shovel handle, the ice is shattered and easily pushed off the cover. For many superintendents in the northwoods, this is a common practice.

Despite manufacturers' claims, green covers have not minimized snow mold; to the contrary, if covers are not carefully managed during the spring and fall, snow mold can be severe.

Snowmold continues to be the most devastating disease in northern Wisconsin. Many courses spend their entire fungicide budget to prevent damage to their greens. No single combination of fungicides consistently gives positive results, especially combinations that do not include mercury. Many fungicides boast that they control snow mold, but they are barely adequate in the northern snow belt.

At this time, only a few northern courses have the budget to treat tees and fairways for snow mold. Most courses are maintaining *Poa/bluegrass/ryegrass* tees and fairways. PCNB at various rates has been the fungicide of choice, but the results have been minimally adequate.

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Minnesota is banning the use of mercury in 1994. This is terrible news for northern golf courses. There is a definite need for an effective alternative to mercury and it is needed now. If an alternative is not found, the spoiled American golfers will need to lower their standards.

Wisconsin finally has a permanent research facility that will benefit all turfgrass managers, but it will not eliminate the need for field research. If a real replacement for mercury is to be found,

it must perform under the extreme conditions of the snow belt.

I think everyone agrees that winter can be devastating to turf. Spring can be especially stressful for superintendents because many times they receive the blame for winter kill. One observation that I have made since moving to the northwoods is that golfers here expect winter kill. Unlike many golfers in southern Wisconsin, golfers here do not hold superintendents accountable for the weather. In fact, when the course comes through the winter

with minimal damage, they consider the superintendent a savior.

It is obvious that all golf course superintendents in Wisconsin have the same concerns about winter. Without question, sound cultural practices, modern technology and human ingenuity are the keys to success.

I have learned much from my innovative colleagues in the north. I think superintendents in the northwoods have been and will continue to be in the forefront of winter turfgrass management. Climate and location dictate this.

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