



# Widespread Winter Woes

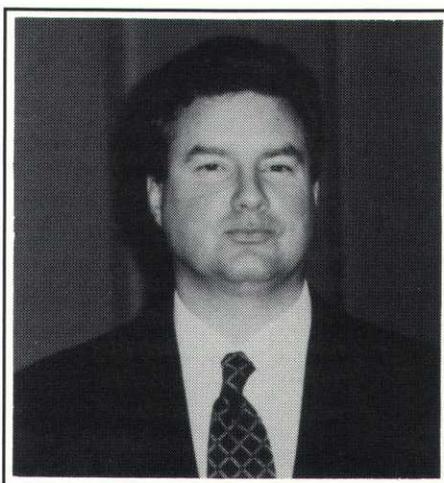
By **BOB VAVREK**  
*USGA Green Section*

There were over 75 participants at the recent Minnesota Golf Course Superintendents' Association monthly meeting hosted by John Harris at the Lafayette Club on April 29. The topic of discussion was the extent and severity of winterkill to turf that occurred on golf courses across Minnesota between November, 1996 and March 1997.

There were no positive responses to the first question of the evening. . . Who did *not* experience significant winter injury to turf this spring? Over 1/3 of the attendees believed that the extent of the injury was unusually severe. Other Minnesota superintendents I contacted during March and April responded in a similar manner. It was not a question of whether or not winterkill occurred; instead, the question was; (1) where did the injury occur? and (2) how extensive was the damage?

At least three weather events are partially to blame for the winterkill. Each of these events, alone, could account for significant losses of turf.

First of all, a heavy rainfall during late November was followed by a



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rapid drop in temperature. Some frost had already developed in the upper soil profile, so little of the rain soaked into the turf. This was an ideal scenario for severe crown hydration to *Poa annua* and perennial ryegrass turf. A thick layer of ice formed in low-lying portions of greens and fairways at this time. The ice cover remained all winter at a number of courses. I agree with many superintendents that a considerable amount of the injury seen in spring occurred during the November freeze/thaw event.

Secondly, The shallow frost in the upper soil profile quickly disappeared. The result was unfrozen turf buried and insulated by a layer of ice and snow. These conditions provided an ideal environment for snow mold activity.

Another rapid drop in temperature occurred in early April and, again, a heavy rain fell just before the freeze. Some additional turf that had been weakened by the earlier weather events may have been killed at this time.

Every superintendent I contacted this spring experienced injury to turf in poorly drained areas on fairways. Almost 100% loss of turf cover occurred on greens at other less fortunate courses. The pattern of injury seen during Turf Advisory Visits this season indicates crown hydration as the primary cause of damage. Significant thinning from snow mold also accompanied the crown hydration. Some superintendents believe that the heavy rain in late November reduced the effectiveness of the snow mold fungicide treatments, especially when the treatments were applied within a week of the rainfall event.

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## Winter Woes—

(Continued from Front Cover)

Removing the ice from greens during December or January did not seem to prevent winterkill. Several superintendents broke up or removed ice from greens during December and January and severe injury still occurred on the putting surface. The injury to turf on greens was not always limited to poorly drained or high traffic areas dominated by *poa annua*. The injury seen on greens at some visits in May was so extensive that a fair amount of bentgrass must have been killed as well.

According to many superintendents, clearing the snow from greens just before or during the first significant period of warmer weather in March did help prevent melting water from backing up on the turf and re-freezing at night. Clearing the snow from around the greens to give the water, from melting ice and snow, a clear path off the putting surfaces also seemed to produce positive results.

Without a doubt, covers helped prevent winterkill in 1997. The excelsior mats appeared to provide a bit more protection than the fabric types of covers. There were no reports of significant injury to turf on greens at courses that covered greens. On some courses that covered only a few of the greens, the covered greens entered the

spring in good to excellent condition while the uncovered greens usually sustained serious winterkill. There was at least one notable exception where a course that usually covers greens did not cover last winter and did not experience injury.

Unfortunately, cool weather this spring and many hard frosts during May have slowed down the rate of turfgrass recovery. Plastic sheeting and geotextile fabric covers have been used to raise soil temperatures on overseeded greens to encourage faster seed germination. Overseeding tools such as the Verti-Seed and Job Saver resulted in faster germination due to better seed-to-soil contact than verticutting and broadcast seeding operations. Pre-germinating bentgrass seed by repeatedly soaking then drying the seed while changing the water between soakings has produced good results in the past and should be considered whenever the soil temperatures are low. Pre-germinating seed, though, is a time-consuming task best suited for repairing relatively small areas of damage because the seed must be sown by hand or with a drop spreader.

If there is a positive side to the widespread winterkill, it perhaps emphasizes the importance of several basic turfgrass management principles to the golfers. It reminds us all that standard maintenance practices

that give the competitive edge to bentgrass over *Poa annua* such as aeration, keeping the playing surfaces on the dry side, overseeding and improving surface/subsurface drainage in wet areas are necessary to reduce the risk of winterkill in the future.

## Winter Disease—

(Continued from Page 5)

present time I do not expect to find resistant strains, but will try.

A survey of golf winter programs is being done by the MGCSA and when those results are available we should again review programs to determine what works and what did not. While I did not have plots this past year, reports from Michigan and Wisconsin are consistent in that many have had failures. The year was not good for winter disease control. I expect more will be learned in the next several months.

## Recognizing Distinguished Service

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Nominations for GCSAA's prestigious Distinguished Service Award (DSA) are being accepted through Sept. 1 for the 1998 DSA. The award will be presented at the Opening Session of the 69th International Golf Course Conference and Show next February in Anaheim, Calif.

Individuals who received a GCSAA Distinguished Service Award within the past 10 years are ineligible.

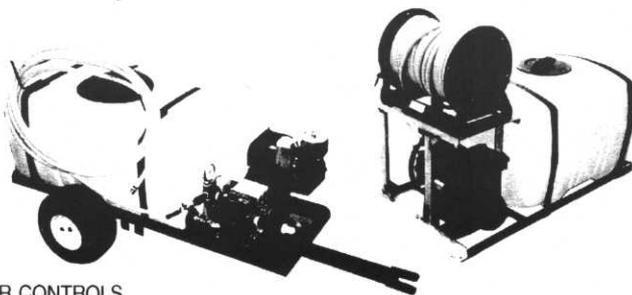
1997 DSA recipients were past president Gerald F. Faubel, CGCS; Joseph Vargas Jr., Ph.D.; and Coleman Y. Ward, Ph.D.

Nominations must be submitted to the board of directors on official DSA nomination forms. Members and chapter leaders may obtain an official form by contacting the executive management department at 913/832-3617, or [execmail@gcsaa.org](mailto:execmail@gcsaa.org).

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