



Keeping Greens Dry In Winter

By Jim Skorulski, agronomist, Northeast Region | November 17, 2017



An impermeable cover tucked beneath a layer of turf prevents water from sheeting onto a putting green surface.

Standing water on any playing surface is never a good thing, especially during winter when it can contribute to various forms of winter injury. Fortunately, several techniques can be used to reduce the risk of winter injury by preventing water from collecting on putting greens.

Golf courses with a history of standing water and ice accumulation on their putting greens often utilize impermeable cover systems to prevent winter injury. These cover systems can stop water from collecting directly on turf surfaces. An impermeable cover can be used by itself or with an insulating material to provide further protection from cold temperatures. Typically, impermeable covers are draped over putting green edges, or tucked beneath a layer of sod, to prevent water from flowing under the cover and onto the covered surface. Although cover systems are not always effective, they improve the chances of keeping putting surfaces free of standing water.

Several cultivation techniques can also help prevent standing water from accumulating on putting surfaces during winter. Deep aeration during late fall can be particularly effective. The fractures or holes produced by deep aeration can extend 9-10 inches into the root zone, creating channels that facilitate internal drainage. For similar reasons, hollow- and solid-tine aeration can also be used to produce shallow holes in low-lying areas. Aeration

holes and fractures also provide additional air space that may improve gas exchange under impermeable covers.

Adding risers to subsurface drainage systems is another popular method of draining standing water during winter. The risers provide a pathway along which surface water can drain from low-lying areas and depressions. Marking the risers with a wire or metal cap will allow them to be located with a metal detector so they can be exposed before winter. Deep dry wells can also be installed in low areas to help prevent water accumulation. Although deep frosts may limit the effectiveness of risers and dry wells, in most cases they are beneficial and good options for poorly drained greens.

Temporarily removing sections of turf or cutting drainage trenches in a putting surface during late fall are other ways of promoting the free flow of surface water from areas that typically hold water. Though disruptive, these temporary modifications can reduce standing water in low-lying areas. Similarly, late fall is also a good time to lower collar dams. Although it may be too late in the season to initiate this kind of work in northern parts of the region, efforts can still be made by clearing pathways through deep snow or cutting trenches through ice sheets to help drain standing water from pocketed areas.

Many variables associated with winter injury are out of our control. Making every effort to keep putting greens free of standing water eliminates one factor, provides a little peace of mind and improves the odds of experiencing an injury-free winter.

Northeast Region Agronomists:

David A. Oatis, regional director – doatis@usga.org

Adam Moeller, director, Green Section Education – amoeller@usga.org

James E. Skorulski, agronomist – jskorulski@usga.org

Elliott Dowling, agronomist – edowling@usga.org

Addison Barden, agronomist – abarden@usga.org

Paul Jacobs, agronomist – pjacobs@usga.org

[Information on the USGA's Course Consulting Service](#)

[Contact the Green Section Staff](#)