



The Mountain State Greenletter

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WEST VIRGINIA GOLF COURSE SUPERINTENDENTS ASSOCIATION

PRESIDENT'S MESSAGE

Good Morning WVGCSA Members,

As another season closes and we start on winter projects, I would like to take time to thank everyone who attended this year's turf conference. Even though the number appears to be slightly down due to the event falling on Halloween, I feel the conference was a great success. There were several good speakers and a lot of credit from several different states. Looking forward we are going to be moving the show forward a week to where it was originally before. Also, we had submitted several bids for hosting next year's conference. Areas considered were Morgantown (Lakeview Resort), Charleston (Marriott and Embassy Suites) and Roanoke (Stonewall Resort). After much consideration, the Board voted to have the Conference November 5-7, 2018 at the Marriott Hotel in Charleston, WV.

During this year's show we gave out a couple of awards to some very deserving individuals. Marshall Klay received the Superintendent of the Year award for his work at Sleepy Hollow GC. Rich Puskavich of Wheeling Country Club received the Distinguished Service award for all his years on the board. Congratulations to the both of them for their dedication to the association.

Happy Thanksgiving!

Tony Coppa
Superintendent- Oglebay Resort



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Keeping Greens Dry In Winter

By Jim Skorulski, agronomist, Northeast Region

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.

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

MARK YOUR CALENDARS!

WVGCSA 2018 Turf Conference

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More Information will be released in the spring



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Winter Preparation Checklist For Putting Greens

By David Oatis, regional director, Northeast Region

As the days get shorter and daylight saving time ends, an extra hour of sleep is welcomed. Here are a few things to ponder as you reset your clocks:

Solar power is increasingly popular, but golf courses have relied on it forever. Turfgrass leaf blades – i.e., turf solar panels – collect sunlight and convert it to chemical energy that fuels growth. If anyone questions the need to perform tree work that increases putting green sunlight exposure, just ask them where they'd place solar panels: in the sun or in the shade?

Temperatures have been mild but the cold weather is just around the corner. Take the following steps now to help putting green turf prepare for winter:

Raise mowing heights:

~Large solar panels generate more energy than small solar panels. Increasing leaf surface area by raising mowing heights helps putting green turf generate and store energy for overwintering.

~Raising mowing heights reduces turf stress. Turf that enters winter in a weakened state is more likely to experience winter injury than healthy turf.

Evaluate winter sunlight penetration:

~Turf needs sunlight during fall to harden off properly so that it is better able to survive harsh winter weather.

~Sunlight is important even when turf isn't growing. Winter sunlight helps melt snow and ice. It can also reduce the frequency of freeze and thaw cycles that can cause winter injury.

~Morning shade receives a lot of consideration during the growing months, but afternoon shade during winter can result in rapid refreezing and winter injury.

Consider drainage:

~Turf needs dry conditions to harden off properly.

~If putting greens have collar dams, consider options for addressing them.

~If putting greens have surface depressions, consider these options to reduce the risk of winter injury:

~Remove strips of sod, creating channels that facilitate positive surface drainage of excess water from putting surfaces. Remember that infiltration rates are reduced when soils are frozen.

~Installing heating cables in drainage channels will help keep water flowing by melting any ice that forms.

~If putting greens have subsurface drainage, cutting holes from the surface to the top of drain lines in areas where water tends to collect will facilitate drainage throughout winter.

~Deep aeration can improve drainage. Better drainage can help turf harden off and reduces its susceptibility to winter injury.

Plan your fertility:

~Avoid excessive nitrogen applications. Lush growth increases the vulnerability of turf to winter injury. Applying nitrogen to putting greens that are covered with tarps is especially risky.

~Make sure potassium levels are adequate. Insufficient potassium levels can increase the potential for winter injury on *Poa annua* putting greens. Keep in mind, however, that turf can only use so much potassium and excessive levels won't help. Furthermore, extremely heavy late-fall potassium applications have been shown to increase snow mold incidence on creeping bentgrass putting green turf.

Ultimately, turf that goes into winter weak won't come out of winter any stronger. Now, don't forget to set your clock back on Saturday night.



Trees in full fall color signal that winter is approaching. Preparing playing surfaces for winter before it is too late can reduce the risk of winter injury and improve springtime playing conditions.

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Deep Root Zone Modification In Fall For Better Putting Greens In Summer

By Paul Jacobs, agronomist, Northeast Region

Deep root zone modification of soil-based putting greens can provide significant, long-lasting benefits and mid to late fall can be a great time to do the work. Conventional core aeration practices typically affect the upper 3 to 4 inches of the root zone profile and may not fully address internal drainage issues. Over time, conventional core aeration performed at the same depth can also leave the underlying soil compacted. Implementing a program that targets deeper portions of the root zone profile can improve internal drainage, turf rooting and overall putting green performance. Putting greens with drainage systems tend to benefit the most from deep root zone modification.

Several options exist for deep root zone modification and each has its unique benefits. While one technique may be highly beneficial in one situation, it may not be the best choice for others. Consider the following options to supplement your conventional cultivation practices:

Drill and fill – This process drills holes up to 12 inches deep into a putting green on 6-inch centers, removing soil and backfilling each hole with sand to create deep sand columns in the root zone profile. The process can be labor intensive, but it infuses a significant amount of sand deep into the root zone profile that provides long-lasting benefits.

- Ideal applications – Putting greens with poor internal drainage – e.g., soil-based putting greens.

Deep-tine aeration – Most commonly this process is performed with solid tines that can penetrate up to 10 inches deep. Solid tines do not remove material but they fracture, loosen and alleviate compaction in subsoils that are not reached by conventional core aeration. Deep-tine aeration generally requires no cleanup and surface disruption is minimal.

- Ideal applications – Relieving compaction in all soil types. Perform deep-tine aeration during late fall to create open columns for drainage during freeze and thaw cycles.

Sand injection – Machines can use high-pressure water to inject sand into a putting green root zone profile. The sand channels created by this process often mimic the shape of a water droplet – i.e., narrow near the top and wider at the bottom. This method does not infuse sand as deeply as drill and fill, but it is faster and much less disruptive to the playing surface. Performing sand injection immediately after deep-tine aeration will help infuse sand deeper into the profile; however, no material is removed from the profile during sand injection.

- Ideal applications – Putting greens with excess organic matter in the upper 2-6 inches of the soil profile and soil-based putting greens with a shallow – i.e., 1- to 3-inch deep – modified root zone.

Each of these practices can improve putting green performance when used in the right situation, but they are not replacements for conventional core aeration. However, implementing one of the above practices can improve drainage and alleviate compaction deep within your putting greens. For more information about which option is best for your facility, contact your regional USGA agronomist.



Drill-and-fill aeration is one of several options that can improve a putting green root zone profile beyond the capabilities of conventional core aeration.



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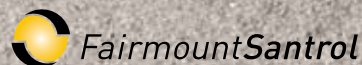
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