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U of M Turfgrass Science- 2017 Spring Golf Course Report

Sam Bauer and Dr. Brian Horgan

The winter of 2016/17 was anything but normal and it feels like we're getting used to saying that every spring. An exceptionally warm November, over an inch of rainfall (and therefore ice) on Christmas, golf in mid-February, a general lack of snow cover, and temperatures more than 10 degrees below average in early-March are just a few of the ups and downs that we've experienced in the Twin Cities metro region this winter. So, what does this mean for turf and golf courses, you might ask?

Ultimately, the best winter we could have for golf course turf would be a gradual cool down in the fall, which helps to harden off grasses for winter (a process known as acclimation), followed by good insulating snow cover on frozen soils, and a gradual warm up in the spring causing de-hardening (deacclimation) of our grasses. This winter was anything but that. Initially, we were concerned about the early accumulation of ice on turf surfaces from the late-December rain, as extended periods of ice cover can cause suffocation and a toxic buildup of gases under impermeable ice sheets; annual bluegrass is reported to die in as little as 20-30 days under ice while bentgrass will survive for much longer. Fortunately, the mid-February thaw meant that a majority of the ice cover issues were behind us, but another challenge was looming. Annual bluegrass is known to initiate growth, or deacclimate, sooner in the spring than creeping bentgrass. This has been reported by researchers at the University of Massachusetts in Dr. Michelle DaCosta's program (see: <http://usgatero.msu.edu/v13/n3-6.pdf>). The concern here, relates to a winter injury phenomenon known as crown hydration. If annual bluegrass were to come out of dormancy during the warmup in February, it would take up water, and ultimately succumb to ice crystal formation in the crowns of plants causing most certain death.

For golf course superintendents with uncovered annual bluegrass, we started to ask the question "is there anything you can do to protect your annual bluegrass if it did come out of dormancy?" Superintendents Erin McManus (Medina Country Club) and Brent Belanger (U of M Golf Course) allowed us to place both Excelsior and Evergreen covers on their annual bluegrass that was suspected to have woken up during this warm stretch; our goal being to protect it from the impending cold. The covers were initially placed on February 22nd before the cool-down, and removed on March 27th. Pictured below are the results after removing covers from this turf.

For golf courses with covered putting greens, patience became more of a factor. Covered turf tends to heat up more during extended warm periods, so deacclimation would be accelerated in this situation, but ultimately the covers would moderate the extreme reduction in temperatures going forward. We've visited several golf courses this spring with covered putting greens and

the results vary from vibrant green, to turf that lost a majority of its color and has yet to show much life.



Medina C.C (March 27th)



U of M G.C (March 27th)

Patience is the key at this time of year. For many golf courses with concerns of winter injury, mainly on putting greens, we suggest to pull samples and put them under lights in your maintenance facility to assess the extent of possible damage. Turfgrass death from crown hydration, low temperature injury, desiccation, or ice cover will generally give the appearance of a straw-like color or black in some cases. If you find green tissue near the crowns of your turf, chances are good that it's still alive and will resume growth when temperatures increase. The extended forecast looking out as far as Friday, April 7th has us optimistic about the resumption of growth. At this point it is not a case of brown = dead. Golfing members, greens committees, general managers and golf professionals will be asking the question of why the course across the street looks different from yours, and why "are they open and we're not". Everything comes into play here, including fall cultural practices, cover and topdressing programs, turf species and variety, rootzone composition, microclimates – to name a few – but keep in mind, a loss of green color over the winter does not mean you're worse or better at your job than the next guy. It's still March, and hopefully the temperatures this March helped to put that into perspective for your stakeholders. Your turfgrass management programs are aimed at providing the healthiest environment for your playing surfaces throughout the year given budget constraints and member expectations. Members who expected green speeds of 12 feet throughout November need to be educated on the potential consequence of stressful turf practices, such as low mowing heights and frequent rolling, that are required to achieve this. We are here to help with this type of education.

Our best recommendation at this point is to be patient. If you've determined that significant death of turf surfaces has occurred (which in our opinion it is pretty early to determine that), then prepare for seedbed preparation, overseeding, dark sands and fertilizers, pigments, and likely covering to generate heat. These practices could be carried out as soon as next week. However, for your turf that simply lost color over the winter, these practices have the potential to do more harm than good for your dominant greens grasses that are only waiting for warmer temperatures. For the golfing members, greens committees, and other stakeholders that are reading this report, we can assure you that no one has higher expectations for your property than your golf course superintendent and his/her key agronomic staff. Ultimately, the worst

thing that you could do is pressure them into pushing the turf with agronomic practices or encouraging them to aerate and throw seed, when the turf just needs some time to resume growth. Do not open the golf course if it isn't ready, as there is no reason to sacrifice your entire golfing season or the integrity of the course that you respect so much for a couple weeks of early golf in late-March or early-April. Enjoy The Masters from the comfort of your couch- the Minnesota golf season is just around the corner, but it isn't here yet!

Respectfully,

Sam Bauer and Dr. Brian Horgan

University of Minnesota Turfgrass Science

Sam Bauer can be reached at: 904-271-0250 (cell) or sjbauer@umn.edu