

## Preparing golf course turf for winter

### Now is the time to prepare golf course turfgrass for surviving the upcoming winter.

Posted on **October 2, 2014** by **Kevin Frank** ([http://msue.anr.msu.edu/experts/kevin\\_frank](http://msue.anr.msu.edu/experts/kevin_frank)), Michigan State University Extension, Department of Plant, Soil and Microbial Sciences

The winter of 2013-2014 shattered weather records and *Poa annua* putting greens. Ice cover that endured from early January through mid-March was a significant factor in causing winterkill, but there were certainly situations where crown hydration freeze injury or even desiccation injury on exposed sites also caused damage. With winter on the horizon, there is plenty of discussion on what to do now and what to do during winter to minimize the risk of winterkill.

### Shade

Following last winter, it was clear that any turf that was weak or simply not as healthy was exposed and killed. In many instances, the winterkill patterns mirrored shade patterns on greens.

Turfgrass growing in the shade is simply not as healthy as turfgrass growing in full sunlight. To compound the problem, trying to reestablish damaged greens in the shade resulted in longer recovery time than greens recovering in full sunlight. Improving sunlight penetration to greens by removing or thinning tree canopies will improve turfgrass health and ultimately may improve the odds of turfgrass surviving winterkill events.

### Covers

Covers are not widely used throughout Michigan, especially southeast Michigan. There are probably several reasons including cost, storage, lifespan and unpredictable winter weather. Last winter was extreme with ice, snow and cold temperatures. The winter of 2012, if it's remembered at all, is remembered for the mild temperatures that resulted in golf being played almost all winter long.

Keep in mind that all covers are not the same. The permeable covers that were purchased by many golf courses this spring provided a tremendous advantage in reestablishment, but will not provide absolute protection in the winter from thick ice cover. Permeable covers will certainly provide some buffer or protection from low temperatures and desiccation and should be used if available, but if this winter delivers another dose of lengthy ice cover, permeable covers can't be counted on to prevent damage.

Impermeable covers will protect the turf from ice cover damage, but are not necessarily a panacea for all your winter worries. Impermeable covers need to be "tucked down" tightly to the surface to prevent any water from getting under the cover. Impermeable covers will prevent gas exchange with the atmosphere, so in that respect they actually mirror thick ice sheets. Venting (exchanging air under the cover) impermeable covers throughout winter reduces the risk of anoxia developing under the cover.

To use or not use covers, especially impermeable covers, can be a hotly debated topic. Ultimately, the golf course superintendent is the person that should make the decision. After all, no person knows the golf course, the environment and the turf better.



In some cases, winterkill mirrors shade patterns. Photo credit: Kevin Frank, MSU



Covers can be used for winter protection and reestablishment. Photo credit: Kevin Frank, [MSU](#)

## Snow mold and covers

It is important to remember that greens covers act similar to snow cover when it comes to snow mold activity. The covers provide the same environmental conditions for the development of snow mold as the snow does. So if greens covers are placed on the greens in November and not removed until March, they will create the same environmental conditions for the development snow mold as golf courses in northern Michigan experience where snow covers the turf for three or more months.

It is important that adequate levels of snow mold fungicides be applied to protect the turf for three or more months if covers will be used for this length of time. This usually means applying three-way fungicide combinations at full label rates.

*Microdochium* patch will occur throughout the fall. It is most active when the temperatures are in the 60s and combined with wet weather. Therefore, it is important to make fungicide applications throughout the fall to prevent *Microdochium* patch from developing. If *Microdochium* patch is active at the time the covers are placed on the greens, it will continue to develop under the covers in spite of any fungicide applications.

## Winter snow and ice removal: To remove or not to remove?

This question might make the cover debate seem tame. Should you remove snow and ice and if so, when should you start? Last year was an anomaly with thick ice sheets that were in place for 90 days or greater in many areas. Although some courses have been successful with removing snow throughout the winter, this may not be feasible for some courses due to either lack of personnel or snow moving equipment.

Instead of being concerned with removing snow from the first event to the last, consider developing a removal strategy that targets ice duration and snowmelt that could lead to crown hydration freeze injury. For example, if ice forms and is in place for greater than 30 days, I would definitely make attempts to remove. For crown hydration freeze injury, [Michigan State University Extension](#) ([/](#)) recommends to consider removing snow in late February/early March prior to anticipated snowmelt.



Removing snow from a putting green. Photo credit: Eric Davey

## Surface drainage

The key to preventing or reducing the incidence of crown hydration freeze injury is good drainage. For putting greens that lack adequate surface drainage, consideration may even be given to recontouring greens that are annual victims of crown hydration injury. Less dramatic measures include cutting cup cutter-sized holes in poorly draining areas and filling the cores with gravel or sand to try and move the water away from the surface. Another more common tactic is to cut sod strips from greens to facilitate water movement off the greens once snowmelt begins.



Help the melt by stripping sod to hasten surface drainage. Photo credit: Adam Garr

## Cultural practices – let it grow!

Fall is prime time for cultural practices to improve turfgrass health. In addition to core aeration and fall fertilization, consideration should be given to raise mowing heights as fall progresses. Higher mowing heights won't save the turf alone if winterkill is again an issue, but it could certainly be a factor in producing a healthier plant and if you think back, how many putting greens had winterkill, but the collar had no damage? Granted, the greens aren't going to look like collars going into winter, but maybe even a slight increase in height might help.

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**Date:** Oct 20, 2014

**Location:** GreenMark Equipment, Michigan 66, Three Rivers, MI 49011

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**Date:** Oct 23, 2014

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**Date:** Nov 7, 2014

**Location:** Matthaei Botanical Gardens & Nichols Arboretum, Ann Arbor, MI