

**Follow up on winter watering: How much water to apply? How often?
January 26, 2012**

Winterkill of turf is extremely complex, highly variable from location to location, difficult to study, and thus not well understood. I have had conversations with other turf professors, superintendents, USGA Agronomists, and other turf professionals over the last two weeks with a incredible number of collective shoulder shrugs and “I don’t know”s. Thus many of the recommendations are anecdotal or best guesses.

March 2011’s Turf iNfo at <http://turf.unl.edu/pdfctarticles/march%20winterkill.pdf> explains the various forms of winterkill. As noted in the last Turf iNfo at <http://turf.unl.edu/pdfctarticles/janwinterkill.pdf>, watering susceptible and high value turfs during the winter can limit the extent of damage. Since posting that Turf iNfo, temperatures have dropped slightly, but much of the North Central states have little to no snow cover. Therefore the chances of winter desiccation of turf are still high.

How much water should I apply?

Water should be applied in fairly low amounts to replace moisture in the turfgrass crown region. Watering enough to dampen the turf surface and rewet the top ¼ to ½ inch of soil is all that is needed. Using the greens or fairway sprayer equipped with a handgun or just a few rotations of the irrigation heads should suffice. Watering to rewet the whole profile is not necessary since water uptake deeper in the profile is inefficient during the winter. Water uptake by the roots is dependent on water loss by the leaves. During warm summer months, high evapotranspiration in the leaves creates a water gradient in the plant, and thus large amounts of water are drawn into the roots from throughout the soil profile and eventually to the leaf surface. The volume of water movement in the summer is reflected in the speed of turfgrass wilt and desiccation, which could occur within days or hours of the last irrigation. Conversely during winter months with limited green tissue and no need for cooling, water movement through the plant is extremely low and desiccation may take many weeks or months to occur after the last significant precipitation. Because of this limited upward movement of water during the winter, little water from deeper in the profile will actually be drawn into the plant. Furthermore, capillary action in frozen or almost frozen soils is very low and thus little water will be drawn from wet areas deeper in the soil to dry areas at the surface. Therefore, one cannot water deeply during the winter and effectively “bank” the water. That being said, watering to wet the entire profile will not hurt the plant, unless it creates standing water in low spots, leading to ice formation, and death from crown hydration (described in <http://turf.unl.edu/pdfctarticles/march%20winterkill.pdf>)

How often should I water?

This is extremely difficult to answer, but it’s better to be safe than sorry. I’d error on the side of too frequent rather than not frequent enough. If your high value areas are covered with winter covers, topdressing, and/or in areas with little wind movement, you may never have to water during the winter. Greens and other high value areas in windy sites, and/or on soils with low water holding potential may need watering as long as they have no consistent snow cover. Warm winter temperatures and high wind will maximize evaporation and thus light watering may be needed every 3 to 4 weeks.

Zac Reicher, Professor, Turfgrass Science, zreicher2@unl.edu