

Late Fall Issue

Winter is just around the corner and for many it can't come soon enough! Before the snow flies, superintendants are concentrating on completing aeration; planning snow mold applications; blowing leaves; and winterizing equipment and irrigation systems.

While you are doing all of these things with minimal staffing, perhaps here are a few ideas to ensure healthy turf in the coming spring.

Here in Southwestern Ontario, winterkill from desiccation and crown hydration injury can be more of a concern than damage from snow mold.

Desiccation occurs when air temperatures are above the freezing point. Evapotranspiration is still occurring though the turfgrass plant during these periods and there is not enough available moisture for this process. Desiccation on turf in winter may be caused by either soil or atmospheric drought.

Desiccation from lack of soil moisture often occurs when inadequate levels of precipitation have occurred and the soil is dry. Sites that are elevated, exposed to prevailing winds and have a high incidence of surface runoff usually are most affected.

Desiccation can also occur when the soil has adequate moisture. This occurs when the air favours rapid evapotranspiration. Though the soil may hold adequate moisture, but it is not readily available to the plant if the soil water is frozen. Root membranes are less permeable at lower temperatures and the viscosity of water is greater at lower temperatures.

What is crown hydration?

Damage occurs when water freezes in open spaces around individual plant cells in the crown portion of the plant. The ice crystals forming around the plant cell pull water out of the cell causing dehydration inside the cell. This causes irreversible damage to cell membranes and death of individual cells.

Crown hydration damage usually occurs when warm temperatures are followed by quick drops in soil temperatures below 7 degrees C.

This form of winterkill is more likely to occur in early spring once the snow begins to melt and there is

excessive moisture present. Making this problem worse can be low lying areas where water sits, heavy soils or poor drainage.



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The Benefits of a Late Fall Surfactant Application

Most cool-season turfgrass managers stop using soil surfactants (wetting agents) for the year in early fall when the summer stress period is over. However, a late season application of Revolution® and right before you blow out your irrigation system can provide many important turf benefits before the ground freezes in winter and after the ground thaws in early spring.

Late Fall Benefit

If it gets dry after you blow out your irrigation system, a late fall Revolution application will help ensure maximum penetration of any rainfall or snow melts that occur, and will improve soil moisture levels before the ground freezes. More favourable soil moisture levels in late fall will reduce moisture stress on turfgrass going into the winter, and will maximize photosynthesis and root growth until the ground freezes.

Winter Benefit

If a thaw occurs in winter and the soil thaws, a late fall surfactant application with newer chemistries like Revolution can also help free water drain off the turf surface faster. Crown hydration injury occurs when free water on the turf surface hydrates the crowns of turfgrass plants and if a freeze occurs the turfgrass plant can be killed. So if less free water remains on the turf surface prior to a freeze, the amount of crown hydration damage may be lessened.

Spring Benefit

When the rootzone thaws in early spring, Revolution will still be present in the soil. This will give the same benefit as in late fall - maximizing penetration of snow melt and any precipitation that occurs to improve soil moisture levels and maximize photosynthesis and root growth coming out of winter. This can be especially important if it gets warm and dry before you can get your irrigation system up and running in the spring.

Apply 6 oz/M to greens and tees just before you blow out your irrigation system. For sand rootzones, water in with at least 1/3 inch of water. For native, soil push-up greens with less than a four-inch sand topdressing layer, water in with at least 1/2 inch of water.



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LeafShield™ is a wax emulsion concentrate, that when applied to foliage, dries to a thin flexible waxy layer. LeafShield™ holds moisture in the leaves and will reduce transpiration stress associated with winter desiccation.

Use 30-60 ml of LeafShield™ per 100 sq m in as little water as necessary to coat leaf blades.