

ICE - THE WINTER OF 1979 - 1980

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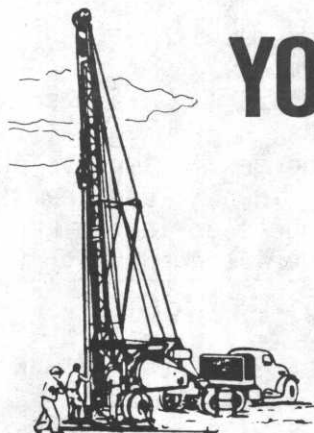
While it's too early to say that winter disease will be down from the high level in 78-79 it does appear that most turf areas went into the winter season in good to excellent condition. The long warm fall was quite dry and the turf was completely dormant when our first snow arrived. Little snow cover persisted and slowly but surely the winter is becoming an open dry type. Little moisture and the warm winter season now has developed another potential problem, ICE - reports of 2-3" and up to 6" at some locations.

An ice cover is often related to winter injury. Ice is believed to function as a barrier to gas exchange. The lack of oxygen, i.e. suffocation or the presence of toxic gases, i.e. poisons like CO₂ or cyanide from respiration or oxidation of organic matter. The production of hydrogen cyanide gas in plant tissue is known for some low temperature fungi in the snow mold group.

Direct injury from ice cover has not been a major cause of winter injury when compared to desiccation and snow molds. Most perennial, cool season turfgrasses can tolerate continuous ice coverage for more than 60 days without significant loss of turf plants. Creeping bentgrass is quite resistant to ice cover injury. Kentucky bluegrass is less tolerant and annual bluegrass can be thinned when ice cover persists for longer than 75 days.

The degree that ice prevents gas exchange varies greatly. Clear ice stops air movement much more than ice that is white or granular. Also less injury is reported from ice cover when snow is layered in or below the ice. Turfgrass injury from ice cover may be indirect also. If water drainage is restricted - surface or internal, the plants may become saturated and then temperatures dropping below 20°F will kill the meristem. Fungi can also be active under ice for a long time period as the moisture level remains high.

Ice cover disruption should be considered if continuous ice cover exists for more than 60 days. The creeping bentgrasses can tolerate over 100 days of ice coverage. Ice cover removal should be considered if melting snow and ice will cause saturated crown tissues and a greater probability of spring low temperature kill. Up to 1" of ice should be left to minimize damage to turf and to provide protection from desiccation. Removal should be done prior to thaw. If removal is impossible, improve surface drainage by creating channels for water to move off the green area. Secondly, encourage thawing by punching holes in the remaining ice every 2-3ft. and/or apply a dark organic material - solar power.



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