Surviving Winter Injury

by Steve and Suz Trusty

Sports turf managers across the country describe their athletic field winter survival strategy similarly: Prepare for the worst, and monitor, monitor, monitor.

El Niño turned normal weather conditions upside-down in 1997-98. The challenge continues with La Niña, and meteorologists predict a season of regional extremes in 1999.

Prepare for the worst

Fields that enter winter in top shape have the best chance of emerging from winter stress in playable condition. Survival strategies include a well-managed, year-round maintenance program, and as much fall preparation as field use schedules, weather, time, and funding allow.

Ideally, baseball and softball fields should be completely ready for play when they are put to bed for the winter. Repair lip areas and basepaths; prep batter's boxes and pitching mound areas; and where turf covers are available, blanket skinned areas prior to heavy snow cover. When basepath covers aren't in the budget, it may help to erect an upright screen of landscape-type fabric to reduce wind and storm damage.

Whenever possible, aerate turf to reduce compaction and improve water infiltration and percolation. Timing of core aeration is critical. This is especially true for uncovered fields with high exposure to winter winds because of the desiccation factor. Take into consideration existing field conditions, soil profile, turfgrass varieties and cultivars, traditional winter and early-spring weather conditions, and reliability of long-range weather forecasts.

Topdress after core aeration to reduce desiccation around core holes. Alternative aeration methods may be necessary to relieve late-season compaction in extremely harsh climates on fields where play starts before turf begins active growth in the spring.

Remove excess thatch prior to the onset of winter to avoid disease infestation. But be careful, too little thatch can expose turfgrass crowns to desiccation, especially in areas with multiple freeze-thaw cycles. On fields subjected to winter play or other traffic, some thatch is needed to cushion turfgrass crowns from wear.

A well-managed, year-round maintenance program will help your field survive harsh winter weather.
Courtesy: Trusty & Assoc.

Lower mowing heights late in the season to reduce surface injury from traffic, and to reduce disease susceptibility. But again, be careful. Dropping the height of cut too early may reduce leaf surface enough to drop carbohydrate production to an unacceptable level. The height of cut and timing of height reduction depends on the turfgrasses involved, soil profile, field use, and off-season traffic.

For late-season overseeding of cool-season turf, time your program based on whether you want germination during the current season or early the following spring. Some sports turf managers make one late-season overseeding with a mix of turfgrasses to cover both needs. High-use, multi-sport, low- to medium-maintenance fields can be overseeded with turf-type tall fescues, perennial ryegrasses, and bluegrasses. The fescues and ryegrasses will germinate late, while bluegrass germination will follow in the spring.

Evaluate late-season turf fertility before setting a fertilization strategy. Provide adequate phosphorus for strong root development and support of new seedlings. Adequate potash will help overall turf vigor and provide resistance to stress.

Late-season nitrogen (N) applications depend on existing levels, turf development, types of turfgrasses, type of N, and weather conditions. Cool-season turf needs a period of lower N levels to harden off, but levels must be sufficient to support fall growth and to start spring green-up.

Apply preventive fungicide for snow molds on high-profile, high-maintenance fields where air movement is restricted by a stadium enclosure, snow cover, or tarping. Moisture and temperature conditions leading into winter dictate the number and timing of applications.

Tarps protect turfgrasses from snow and ice buildup, excess moisture, extreme cold, and desiccation. They retain warmth, keeping turf growing longer into the fall and giving it an earlier start in the spring.

Monitor, monitor, monitor

Monitor conditions throughout the winter and into the spring to guard against potential problems. Remove excess snow periodically during the winter. This is especially beneficial where accumulated snow

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could produce enough moisture to delay spring field use. The process will impact the field less when the ground is frozen.

Sustained periods of above-normal temperatures can combine with lack of air movement to produce excess heat beneath a tarp. This promotes inappropriate turf growth and anaerobic decomposition in the thatch layer, and it creates favorable conditions for disease.

Temporarily increase air circulation across the turf to prevent these problems. You can lift a portion of the tarp to introduce air flow beneath it, or temporarily remove the tarp if conditions are severe enough to warrant it.

Drying winds moving across open fields may combine with lack of precipitation to produce damaging conditions. If temperatures are high enough to allow acceptable water penetration, irrigate to counteract the lack of moisture.

Check turf and soil conditions frequently as temperatures warm. If conditions are favorable for disease, consider alternatives to change one or more of the contributing factors. Increase air movement, reduce temperatures, or reduce moisture. If these conditions can't be changed and signs of disease are present, a preventive spray may be cost effective.

In cold-weather regions, periodic snow removal can be beneficial. *Courtesy: Dave Mellor*

Consider overseeding these areas in spring to counteract turf loss. Match spring tarp removal to appropriate weather conditions: cool, cloudy, and still. Too much sun, heat, or wind can desiccate newly uncovered turf, especially when soil temperatures are too cool to allow roots to replace surface moisture loss. Be prepared to syringe the field lightly, but frequently, to avoid desiccation.

A competent, vigilant sports turf manager is the greatest factor in winter field survival. ❑

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