Winter Damage on Warm Season Turfgrasses

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After a colder than average winter, such as the winter of 2013-2014, many warm season turfgrass areas showed signs of winter damage. This was true in almost every turfgrass setting: golf courses, sod farms, lawns and athletic fields all reported more winter-related problems than usual. In many cases, even where there was not widespread turf death, warm season grasses still greened up and began to exhibit lateral growth later than usual. Most turfgrass came out of dormancy two to four weeks later than average, and even by the end of May many damaged areas were still not fully recovered.

This bermudagrass football field exhibits moderate winter damage in May, 2014 as areas that are slow to green up. The field will recover fully from this damage by mid-summer with adequate fertilization and irrigation. (Photo by D.Y. Han)
Winter damage on warm season turfgrasses takes several forms. Often, it is not simply exposure to cold temperatures that kills turfgrass directly, but the cold is one of a combination of factors contributing to grass death. Another factor which contributes to winter damage is desiccation, or drying out of the dormant turf. Areas that are exposed to cold, dry winds in the winter time often show more damage than sheltered areas, or turfgrass that is covered with fabric, pine straw or some other protection. Especially for sites that are already vulnerable, such as bermudagrass putting greens, covers are vital for preventing winter damage when prolonged periods of below freezing temperatures occur.

Another complicating factor can be diseases. Especially affected is bermudagrass, which is the primary host of the disease spring dead spot (SDS). SDS is a root infection caused by fungi that enter and feeds on roots in the fall, leaving the plant much less cold tolerant than plants with healthy roots. In general, SDS-infected bermudagrass exhibits much more winter kill after a harsh winter than a mild one. Because this infection happens in the fall, and the grass is already dead by the time symptoms are seen in the spring (spots that don’t green up), any fungicide applications aimed at reducing SDS must happen in the late summer and fall (August through October). Be sure to record any sites that exhibit SDS damage now, as by August bermudagrass generally fills in the dead areas and no damage will be visible when it is time to spray to prevent more damage next winter.

Newly-established areas are more prone to be affected by winter damage, especially turf that was established in the late summer or early fall, while the grass was still green. For example, a lawn sodded in September or October will be more susceptible to winter damage as it has not yet had time to fully establish its root system before winter dormancy. In contrast, healthy sod that is allowed to go dormant in the sod field, then transplanted while fully dormant, often greens up better in the spring after a hard winter.
Sod that was laid in spring or early summer also tends to fare better because it has had a full growing season to establish a new root system.

Although many home lawns and athletic fields are able to recover from mild winter damage, severe cases may require re-establishing the turf. Re-establishment, whether by seed, plugs, sprigs or sod, is best done early in the summer, to avoid a repeat of winter kill issues if the next winter is also unusually cold. For athletic fields, it is especially important to re-establish in June if possible so the field will be ready for fall practice and games.

If areas of turfgrass are to be re-planted, take advantage of the opportunity to soil test before planting. This is an excellent opportunity to incorporate any fertilizer or lime that may be needed throughout the rootzone before planting the new grass. During grow in, frequent applications of small amounts of nitrogen (ideally, ¼ to ½ pound of N per 1000 square feet weekly until the ground is fully covered) will produce the best results. If fertilizing weekly is impossible, then apply ½ to 1 pound of N per 1000 square feet monthly throughout the summer. Use soluble fertilizers during the grow-in phase; once the ground is covered slow release fertilizers can be used if desired. Be sure to have irrigation available if establishing from seed, plugs or sprigs.

Many turf areas were damaged, but not so extensively that a total replanting was needed. If there is enough grass left that recovery is possible without re-planting, rake all of the dead stems and organic matter out of the turfgrass then treat the area as if it were a new planting until the ground is again 100% covered. Then resume normal turfgrass maintenance practices.