



## **REGARDING: TURFGRASS WINTER KILL**

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Agents and Turf Professionals:

This year, we have experienced considerable turf green-up issues, or “winter kill,” in the mid-South. Questions about cause and how to recover have been frequent. I have seen or heard about hundreds of affected lawns throughout the mid-South. Northern Mississippi and the Memphis area were heavily affected. In the Memphis region (including Desoto, Marshall, Tate, and Tunica Counties), it has been estimated that roughly 1 of every 200 professionally managed home lawns has severe symptoms, including brown or very thin turf. This issue affects not just home lawns, but also sod farms, sports fields, golf courses, and municipal turf. There does not seem to be a distinct pattern as to why some properties are affected and others are not.

### **My Lawn’s Not Greening-Up!**

Recent fall and winter weather conditions have contributed to a regional occurrence of “winter-kill” throughout much of the mid-South. Fall and winter 2016 weather negatively affected turf health leading to slow green-up and complete death of turf stands. The key contributors were likely prolonged heat and drought throughout the fall, as well as lack of winter dormancy followed by freezing temperatures in February and March.

Cooler fall temperatures and timely precipitation typically allows turf to grow roots and store up carbohydrates that it will need during the winter. Conditions were too warm and dry for many lawns last fall. For this reason, carbohydrate reserves were relatively depleted and root growth was not adequate to sustain spring green-up. Furthermore, most warm-season turf didn’t go truly dormant. Dormancy is an avoidance mechanism for tough winter months (when plants can suffer from cold damage, saturated soil conditions, and even desiccation due to dry winds). It should not go without saying that many of the winter-kill areas I have observed were shaded and on north-facing slopes. Hence, in these instances, the cooler soil conditions combined with limited light are believed to be lead contributors to the observed symptoms.

The effects of these conditions may have been exacerbated by poor plant nutrition, plant pathogens and insects, as well as herbicide injury.

To date, no one plant pathogen or insect has been identified as a key contributor to winter-kill conditions. Herbicides applied in fall and spring, can affect rooting of turf, especially when weakened by environmental factors listed previously. Many herbicides affect plant roots of weeds and desired turf alike. In isolated incidences, weakened roots from the dry/hot fall may have been more susceptible to herbicide injury than normal.

## **What to Do Now?**

In most instances, affected lawns will recover with time. A small minority will have to be reestablished. Sodding and sprigging are effective as long as adequate rain-fall and irrigation are available. Seeding into lawns that have been treated with a spring preemergence herbicide could be challenging due to residual effects of the chemicals used. Most herbicide labels give recommendations for deactivation of herbicide prior to establishment.

## **What Should I Do Different in the Future?**

These events highlight the importance of plant health. Supplemental fertility applications should generally follow basic soil test report recommendations (performed yearly if possible). Spring applications of fertility can be used judiciously to promote early green-up, but too much too early may lead to sensitivity to late freezes.

Fall applications of nitrogen are typically discouraged; however, fall applications of potassium are sometimes recommended to promote winter hardiness.

What about summer or early fall aerification? We know that root health depends upon adequate soil drainage and gas exchange. There are many lawns, if not most, that would benefit from aerification to relieve compaction and promote root growth.

Over watering is a common mistake. Proper soil moisture management means irrigation cycles should only occur when needed. Irrigation can be a double edged sword. In some instances, irrigation mitigates drought stress, but in excess, it causes disease, shallow roots, and scalping. Typical summer irrigation should be approximately one inch of water applied once per week (not every day) in lieu of natural precipitation (a rain gauge or coffee can works for measuring amount applied). Grass needs to suffer just enough that it is forced to grow roots downward to explore for water and nutrients. If roots are too shallow due to frequent irrigation, they may suffer from cold injury or other stresses imposed at the soil surface.

Mowing height is possibly the most important yet overlooked cultural practice. Information about basic cultural practices to manage different grasses can be found in our MSU Extension Publication [Establish and Manage Your Home Lawn](#).

## **In Conclusion**

There are many factors that may have contributed to isolated winter kill. Attention to proper cultural practices remains key to managing turfgrass.

Attendance at Extension events, such as our August 22 Field Day, are important avenues for turf professionals and Extension agents to learn about these complicated issues. Homeowners can find out more information about managing their lawn within our MSU Extension Publication [Establish and Manage Your Home Lawn](#) or by participating in our agent deliverable program “**Sustainable Home Lawn Management.**”

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