



Finally A Light—But Don't Get Caught Staring

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Finally the weather has cooled down and some rain has fallen throughout the Northeast. In fact, some courses have already experienced [frost](#). The first frost is an excellent reminder that winter is coming and preparations should begin if they have not already. [Winter injury](#) is a complex problem that can be caused by multiple factors. Even though fall is project season, make time to implement the following winter preparation strategies:

- Raise heights of cut – Whether you are managing bentgrass, *Poa annua* or bermudagrass, raising the height of cut on putting greens and fairways can help reduce the risk of winter injury. More leaf surface increases the ability of plants to capture and store carbohydrates, which is critical for winter survival.
- Tree removal and leaf cleanup – Trees are often examined and discussed during summer because of the turf stress they create by blocking morning sunlight and air movement. It is also important to consider their fall and



Shade limits the ability of plants to harden off and store energy before winter. Removing trees now will reduce your chances of severe winter injury.

winter shade patterns. Fall sunlight is critical for the hardening-off process. The sun angle is much lower at this time of year than during summer. Consequently, trees that are not a problem during summer may now be causing issues. Plants that do not sufficiently harden off before winter are more susceptible to winter injury. Trees also create maintenance headaches when their leaves drop, necessitating leaf cleanup. Leaves are just one of many tree-related issues among the [hidden cost of trees](#) that often are not considered.

- **Nutrients** – Nutrient applications, or the ratio of nutrients, should shift away from a nitrogen-based regime to one consisting of more phosphorus and potassium. Research indicates that 50 to 100 parts per million of soil potassium can reduce the likelihood of winter injury. The same research indicates that insufficient potassium levels can enhance winter injury. However, there is no evidence that a surplus of potassium helps prevent winter injury.
- **Traffic** – Traffic is always a concern on golf courses because of the added stress on turf. Pay attention to traffic management during fall because plants that are stressed by consistent traffic may not recover before winter. Turf that enters winter stressed is more susceptible to winter injury. A policy of limited cart use, or cart-path-only policies, may be necessary depending on turf health. This is especially true of bermudagrass turf areas. Bermudagrass is not actively growing in much of the Northeast; therefore, it cannot withstand traffic.

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