



Course Maintenance During A Drought

October 2011

The drought of 2011 has been a record breaker in nearly all areas of the lower and central Midwest. Superintendents are directing their attention to the long term consequences of these extreme environmental factors to evaluate and prepare for 2012.

The more important issue now is how courses must be managed for the fall, winter, and early next spring. The same will be true even if significant rainfall begins this fall and winter.

There are long term consequences of the drought, and superintendents are putting priorities on certain management practices, such as raising cutting heights and restricting carts. Superintendents need golfer support for the more extreme management actions necessary to survive a drought of this magnitude. Points to consider:

The effects of drought on an irrigation system

The irrigation system is designed to supplement rainfall – not replace it. Even the most advanced and expensive irrigation systems may have dry and wet areas on the course – particularly during prolonged dry spells.

The proper management goal for an irrigation system is to provide water to the course based on the more wet areas, not dry areas. Then, when the irrigation system has completed its cycle, dry areas on the course are supplemented with spot or hand watering, which is typical for greens and surrounds. At best, the drier areas will be off-color and the soil conditions harder, but if the irrigation system supplied the demands of the drier area, the result would be an overwatered course and poor use of water.

Prioritization and planning

Golf courses must prioritize their water applications when availability becomes limited. This approach impacts the aesthetics, but also the turf health in roughs and possibly fairways, and tree health, depending on water availability. During a drought, most golf courses must cut back on water applications because of the expense involved. The result may be fairways and roughs that are less-than-desirable aesthetically, but the priority areas: tees, greens, and green surrounds, are irrigated. The result is a golf course that plays well and has saved a tremendous amount of water by properly prioritizing water allocations. The firm fairways provide greater ball roll – something many golfers enjoy.

Bermudagrass going into the winter season in a dormant state

Bermudagrass is most susceptible to winter damage when it goes semi-dormant or dormant as a result of drought stress. Wisely, some superintendents saved their water to use it more generously in the fall to provide as much soil moisture as possible during this critical time period.

Also, courses that utilize irrigation water that is laden with salts and bicarbonates, or those using recycled water, must periodically flush the soils to prevent salts from accumulating to levels that would be toxic to turf. More water is needed to keep salts moving downward and prevent its movement back up into the root zone through capillary action.

Evaluate the irrigation system

Golf courses should use the 2011 drought to seriously look at their irrigation system in terms of performance and the need for upgrading and expanding. Courses should thoroughly document the drought impacts and irrigation deficiencies through photographs. Now is the perfect time for an irrigation system audit to determine your system's performance and need for upgrade.

Other considerations

Other key management operations for drought include building soil moisture during the off-season as much as possible, raising cutting heights, and minimizing cart traffic. Carts can be devastating to drought-stressed bermudagrass during periods of dormancy.

Programs that deal with significant drought stresses include three components:

1. Make sure that potassium applications are made in late summer to improve winter hardiness.
2. Raise cutting heights earlier in mid-summer instead of late summer in preparation for winter hardiness.
3. Restrict cart traffic as much as possible to reduce bermudagrass damage.

Winterkill is a very likely the result of concentrated cart damage on drought-stressed golf courses, even for those that receive just an average number of golfing rounds. Damage from traffic at cart control signs or exit points is significant and shows why these areas must be especially protected this fall, winter and spring. Confining golf carts to the paths as much as possible is necessary for reducing the chance of bermudagrass damage if significant cold temperatures are experienced this winter.

Communication And Education

What is the best way to educate about the importance of these management practices? A presentation by the superintendent in a town hall-style meeting and giving a similar, more detailed presentation to the board, various committees or ownership are great ideas. These programs help course officials and golfers fully understand all facets of the drought, including consequences, management extremes, how drought impacts turf and trees, and the potential for future losses.