USGA Green Section Record. Sept 3, 2010
TGIF Record Number: 168681

Summer of 2010: From Bad to Worse

By the USGA Green Section staff

Summer survival of bentgrass and *Poa annua* putting greens took on a whole new meaning throughout a great deal of the country in the summer of 2010. Much of what a golf course superintendent does throughout the year is designed to get the putting greens through the summer. This fall will be dedicated to bringing back a great deal of turf that was damaged by the challenging conditions. Depending on location, budget, and conditions, the following are items that your golf course superintendent may implement to help the golf course conditioning.

- *Core Aeration* – One of the cornerstones of successful putting greens over a long period of time is the management of the organic layer in the upper root zone. Core aeration and sand topdressing are the two best tools to manage organic matter and promote acceptable soil physical properties.
- *Surface Topdressing Applications*- The regular topdressing of the putting greens with sand dilutes organic matter accumulation and promotes smoother, firmer surfaces.
- *Rootzone Construction* – Properly constructed sand-based putting greens with functioning internal drainage and the absence of excessive organic matter in the upper rootzone are better able to handle frequent and excessive rainfall.
- *Summer Venting* – This practice involves punching small holes in the putting greens with ¼" hollow tines, water-injection aeration, small ¼" solid tines or slicing type machines. These treatments improve oxygen exchange between the rootzone and the atmosphere, which helps to prevent the surface from sealing. This practice is essential in a summer with high temperatures and frequent rainfall. As a bentgrass or *Poa annua* root system dies back in the summer, fresh organic matter in the form of dead roots can and will reduce air and water infiltration. Poorly-timed summer rains further intensifies surface sealing, which adds another layer of stress to the plant.
- *Water Management* – Overwatering is the enemy of putting greens in the summer, especially in the South. In a rainy summer, superintendents lose control of the amount of water the putting greens receive. In areas of the

region that fare better, smart water management has worked, providing not too much or too little.

- *Fans* – The use of fans to promote surface drying and increased evapotranspiration has been proven by turfgrass researchers to improve turfgrass quality and summer survivability in the summer months. Fans are now common on putting greens at many golf courses. In certain areas, trees may need to be removed to improve air movement and sunlight patterns to improve turfgrass health.
- *Mowing Practices* – Researchers have proven that by increasing the mowing height during the summer months, it increases summer survivability. Solid front rollers, used during the summer months, also further reduce mower stress. In hindsight for 2010, the first week of June was the time to raise the mowing height.
- *Disease Control* – Bentgrass and *Poa annua* are cool season turfgrasses, and therefore highly susceptible to disease injury during the hot summer months. The use of fungicides is a necessity, in most cases, to help prevent severe turf loss. However, during a summer like 2010, disease pressure can be so intense and prolonged that fungicides may only reduce the damage rather than prevent it altogether.
- *Experienced Staff* – The best agronomic plan can be written, but unless a trained staff is in place to carry out the plan, the desired results will not be achieved. Continuity in staff and low turnover are invaluable in a difficult summer.
- *Patience* – It will take some time for the recovery techniques to take hold, recover and return to good playability. The conditioning will improve, but course officials and golfers need to remember that recovery will not happen overnight.

Moving Forward

When a golf course has a difficult summer, what's a superintendent to do? The answer is to evaluate the factors that can be improved and start planning now for the next one.

Below is a matrix of several factors directly related to summer survival. The best use of this tool is to get course officials or ownership involved as both a teaching and learning opportunity. Take the time to complete it as a group. Evaluate how these factors can be addressed to increase the chance for summer survival in years to come. Get all the issues out on the table and consider each item under your particular set of circumstances. The list is not comprehensive, so add more if needed.

Stress Factor	Yes/No	Comments	Recommendations for 2011
High temps			
Excess wetness			
Organic matter levels (aeration and topdressing issues)			
Mowing practices			
Disease issues			
Soil-borne pests			
Poor air movement			
Shade			
Turf variety			
Water quality			
Mechanical injury			
Fertility issues			

Traffic/green size issues			
Equipment needs			
Experience of staff			

If assistance is desired with this task, by all means call and schedule a USGA Turf Advisory Service visit.

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