

Cultural cures for wet golf greens

Consider irrigation management, tree effects, traffic and drainage.

by JAMES T. SNOW, USGA Green Section

There are many factors that can contribute to a green being considered poorly-drained, and there are many things that can be done to shift a green from the "poor" to "satisfactory" category.

Irrigation management

Many greens diagnosed as having poor drainage are actually over-watered.

A new superintendent at a course is often able to eliminate poor drainage symptoms from certain greens by instituting a different irrigation program or by redesigning or remodeling the irrigation system.

Over-watering can be due to improper irrigation practices, poor irrigation system design or both.

Trees may block air

Poorly-drained greens are often located in a pocket of trees. Trees block air circulation through the area and may cast shadows on the turf, preventing the soil in the greens from drying as quickly as other greens on the course.

Possible solutions:

- ▶ remove or thin out a few of the nearby trees
- ▶ adjust the irrigation program
- ▶ traditional methods of drainage or reconstruction may have to be used.

Traffic leads to compaction

Many greens that exhibit adequate drainage characteristics under light to moderate use can develop poor drainage symptoms when subject to heavy traffic. The

cause of the problem in this situation is compaction in the upper part of the root zone.

Possible solutions include:

- ▶ Core cultivation, followed by core removal and topdressing with a sandy, compaction-resistant material
- ▶ Deep-tine cultivation may be needed on soils affected at a greater depth.
- ▶ Green design sometimes impacts the effects of traffic. For example, heavily-trafficked greens that lack adequate cupping area can show severe symptoms of surface compaction and poor drainage in the most common hole locations.

▶ When traffic problems occur on walk-on and walk-off areas, redesigning the green or the nearby sand bunkers can sometimes relieve the symptoms.

Clues to poor drainage

- ▶ Thin turf
- ▶ Shallow roots
- ▶ Compacted surfaces
- ▶ Greater disease
- ▶ Increased traffic injury
- ▶ Mower scalping
- ▶ Algae encroachment
- ▶ Foot printing
- ▶ A predominance of *Poa annua*.

▶ Walk-behind mowers for part or all of the time can reduce traffic effects.

Poor drainage solutions

If drainage symptoms persist, it could be:

- ▶ poor surface drainage
- ▶ poorly-drained soils
- ▶ layering problems.

Poor surface drainage is often recognizable by the surface puddling that occurs after light to moderate rainfall or irrigation.



Deep-tine aerification can be incorporated into a core cultivation program for faster results.

▶ Low spots can be eliminated by selectively topdressing the area on a light, frequent basis.

▶ Where a broader area is involved, sod may have to be removed, the subsurface regraded and the sod replaced. The entire surface may have to be stripped, regraded and resodded, or be rebuilt completely.

Layering problems caused by poor construction, topdressing inconsistencies or some other factor can sometimes be overcome by regular core cultivation or deep-tine cultivation, depending on the location of the layer. If the coring holes are filled with sand, real progress can be made in overcoming the effects of the layer. In a more severe case, it may be necessary to add drainage tile.

Greens that do not respond to these techniques should be rebuilt to USGA specifications. □

Adapted from an article by James T. Snow, national director of the USGA Green Section. An expanded version originally appeared in the January/February 1991 edition of the USGA's Green Section Record.

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