

## **Producing healthy turfgrass and how it affects you, the golfer**

There are six main components necessary to producing healthy turfgrass that golf course superintendents manage and manipulate to provide golfers with the best quality product possible. The components; Soil, Air, Temperature, Light, Water, and Traffic all seem fairly obvious on the surface when analyzing a healthy stand of turf such as a putting green, tee deck, or fairway. In reality each component is comprised of several intricate variables and management practices that can sway the health and overall quality of turfgrass in one direction or the other. Now what does this all mean to you the golfer who just wants a quality product? And how does it affect your daily rounds and overall enjoyment of the golf course? Let's take a deeper look into the six components of healthy turfgrass to try to tie in what a golf course superintendent and staff are doing out there on the course to you and your golf game.

**Soil** - The ideal soil composition for a putting green will resist compaction even under frequent close mowing and foot traffic. It will allow adequate water and air infiltration/ percolation while also retaining nutrients for plant uptake. It will hold moisture and make it available when the turfgrass needs it. Sounds simple enough, but I actually just described the characteristics of two completely different soil structures: sand based and soil based (also commonly referred to as pushup).

Sand based greens are an ideal profile for growing creeping bentgrass but it is not without its' challenges. Sand has less water and nutrient holding capacities compared to soil. Sand particles are largely homogeneous and stack on top of each other almost as if you are looking at the olympic rings that have been separated from one another. Soil particles vary in size and shape bonding together tighter much like the olympic rings creating a compacted soil profile. The homogenous shape of sand particles allow for open pore spaces that make root growth, water percolation, and air movement much easier than it would be on a soil based structure. The drawbacks are common nutrients (fertilizer) applied to the turfgrass are often watered into the profile and therefore move much quicker through the sand profile. If the plant hasn't uptaken the nutrient before it passes through the rootzone it is referred to as leached or wasted. Leaching is not only detrimental to your environment as the product is likely to end up in your water table, but it is also not an effective use of the maintenance budget (wasted materials).



There are all kinds of products superintendents can apply to the soil profile to make it more hospitable to turfgrass growth. Have you ever wondered why the sprinkler heads are running on the greens at 7:30 in the morning just before your 8 o'clock tee time? It might be an inconvenience to you the golfer as the greens roll slower when excess moisture is present. Chances are the superintendent has just applied a fertilizer product or wetting agent which must be watered into the soil profile for the product to work.

A wetting agent is a product used to make water molecules more adhesive to soil particles. They are a very effective product superintendents use to allow water (either rainfall or irrigation) to remain in the soil profile longer reducing the need for frequent irrigation. Golf

courses have come under heavy scrutiny in recent years for several issues pertaining to the environment and water conservation is at the top of the list. Wetting agents or surfactants as they are commonly referred to affects the golfer by reducing excess surface moisture on a playing surface (putting green) as the water is retained in the rootzone where it is needed. Reducing excess moisture allows the surface of putting greens to remain dryer creating a truer ball roll while allowing for quicker green speeds due to less friction. A dryer putting surface allows the mowers to cut cleaner and more accurately to the specific height of cut because the reels have less guttation and dew affecting the quality of the cut. This again leads to less surface friction producing quality ball roll and greens speeds.

As a whole, golf course superintendents are analyzing the entire golf course and all maintenance practices as one interconnected body of work. It starts with the soil, the foundation of your course, and grows from there to what you the golfer see and play on. Soil amendments, compaction, pH, water and nutrient retention and so on are always being reviewed, scrutinized, and corrected to provide the best playing conditions possible. At the end of the day we're creating healthier turf and roots and those help fight off pest pressures( disease, insects, and weeds). With less pest pressure and overall detriments to the turf comes less need for interruptions to the tee sheet from the maintenance staff. More golf less work! Next month we'll touch on the next four components of healthy turfgrass; air, temperature, light and water and how those components affect golf course maintenance practices and you the golfer.