*Figure 3.*

*Figure 4.*

# The C - S - T - M Factor

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WHAT WAS the best turf tip I saw this year? It was Common Sense Turfgrass Management. If there is one positive aspect to a difficult growing season, it is that whatever weaknesses or strengths exist on your course or in your programs, they will be brought into clear focus during tough times.

Good, strong, healthy, deep-rooted turfgrasses survive. *Figure 1* illustrates the point. The only healthy, thriving grass is alive in the aerator holes. This is significant. Any number of causes could have affected the grass on this green, but when you study the picture, the implication is clear. Strong, healthy, and deep-rooted grass tolerates extremes of weather, heat and humidity, wet and dry wilt, plus the ravages of insects, nematodes, disease, traffic, and compaction. Grass is weaker when it is grown under compacted/layered soil conditions, a thatchy environment, or where the surface or sub-surface has drainage problems, where an inadequate irrigation system exists (with poor water control), where nutrient and pH levels are out of balance, etc. All these factors are aggravated further by greens, tees, or fairways located in pockets of shade, poor air circulation, or with tree roots sapping water and nutrients. It makes one wonder how grass survives at all. As the picture shows, sometimes it doesn't!

Look at your grass. Where has it grown and under what conditions? By properly diagnosing problems and situations, solutions come easier. If the soil is layered, aeration and filling the holes with a better material is the first step. It must be remembered that grass roots, as they extend down into the soil, must grow in between soil particles. *Figure 2* shows a typical situation of grass roots growing only in the aerator holes. This is a common occurrence on many golf courses. It should be one of the superintendent's goals to provide the grasses' roots with an opening, a space in which to grow. Aeration is a mechanical means of helping to modify the soil to grow better grass roots. This helps the grass to survive the summer stress period.

The second aspect for better healthier grass (and roots) is managing water and nutrients. Never overwater, especially during hot, humid weather. If it rains, good surface and sub-surface drainage must be achieved. If this does not exist, plan programs to solve the drainage problems. Sometimes good surface drainage, the fastest way to remove excess water, is overlooked on putting greens.

There has been so much soil modification with sand topdressing on greens, that chemical tests should be run frequently on the upper soil layer to compare it with the old soil deeper in the profile. You may be surprised at the difference. *Then* manage your fertility program for where the grasses' roots are growing, generally in the upper modified zone.

Finally, consider how much to fertilize. Obviously a course that receives 40,000 to 60,000 rounds of golf per year must be fertilized differently from a course receiving 10,000 to 20,000 rounds. Also, greens built with high sand content require more fertility than old topsoil-based greens. Look at the turf on your greens. If it looks thin and weak with old cup holes and ball marks, is slow to heal, and shows excessive spike marking, some additional fertilizer may need to be applied. In our quest for putting green speed, it is sometimes easy to forget that differences exist from course to course. Balanced fertility and enough total fertilizer applied during

the year are important ingredients in growing good, strong, healthy, deep-rooted grass. Generally, light and frequent applications of ⅛, ¼, or ½ pound N/1,000 square feet as needed throughout the growing season works best. You can always add more fertilizer. Managing an excess is difficult.

Therefore, what is my turf tip? It is that the best management philosophy is one of common sense. Doing what is best for you and your course, not what someone else is doing down the road. Manage your soils, water, and turf to grow strong, healthy, deep-rooted grass, and you just may find that turf holds up better during periods of stress and that the grass is naturally more resistant to disease, nematodes, wilt, and traffic. The turf even looks good and plays well. Sometimes it is easy to rely on a chemical to pull the grass through a difficult time. We seem to be relying more and more on chemicals to grow healthy grass. This is a fallacy.

For good grass you must manage the soil in which the grass is growing as your first priority; chemical applications are a secondary solution. *Figure 3* illustrates the key. Common sense management of the grass growing in the soil with a good root system.

*Figure 2.*

*Figure 3.*

*Figure 1.*