

DOWN AND DIRTY

An understanding of the basic tenets of proper soil testing gives turf a solid base to grow. by Sam Ferro

Soil testing reports can be the turf manager's best ally when evaluating the golf course, or it can be a confusing jumble of numbers and charts.

To ensure you get the most out of your soil tests it is important to understand some of the basics tenets of proper soil testing.

Whether performing routine testing for fertilizer recommendations, diagnosing turf problems, or anything in between, the most important role of the turf manager is to ensure proper samples are taken.

We recently worked with a golf course that was having problems with poor drainage. They couldn't understand why their new greens weren't draining, even though they had test results showing a sand with high drainage rates. Turned out the sand that was purchased by the golf course was different than the sand that they had test results for. Appropriate sampling and testing of the actual sand delivered to the golf course would have allowed the golf course to reject the sand prior to placing it.

Proper sample collection procedures vary based on the type of material being tested and the location of the material during sampling. In order to get a truly representative sample, a composite sampling technique is most desirable. A composite sample is comprised of material obtained from multiple locations that are combined to create a single sample.

Golf greens should be divided into sam-

pling subunits based on topography or directional areas. If there is concern about an entire green, the green can be divided into four to eight segments. Subsamples are then taken from each of the segments. The subsamples can be collected with a cup cutter, soil probe or shovel and combined in a plastic bucket. The combined sample is then mixed thoroughly to create the composite sample.

Large sample areas, such as fairways, should be divided into separate sampling units based on topography, vegetative cover, previous use, soil color and other visual differences. Small, non-uniform areas such as wet, rocky or eroded spots should always be a separate sampling unit.

When purchasing bunker sand, topdress sand or any high volume material that is stored in a stockpile, the stockpile should be tested before delivery to the golf course. A composite sample should be comprised of at least eight sampling locations. The eight locations should vary from the top to bottom and all around the pile. At least half of the samples should be taken from the lower third of the stockpile.

Most tissue samples are collected from mower clippings. To help prevent contamination wait at least two weeks from the last top dress application before sampling. Samples should be collected on actively growing turf. If growth patterns (yellow to lighter green color) are apparent, sample separately from "normal" growing areas. Let samples dry overnight to remove excess moisture before packing. Tissue samples should be shipped to the laboratory as soon as possible.

Once samples have been obtained, they should be labeled and a record of the samples should be kept by the golf course. The record should include sample locations and depths, and a map of sample locations. Sample names and identification should be written in permanent ink on the outside of each sample bag, bottle or container.

Sample submissions should include a letter or testing request form. Most laboratories can provide sample submittal forms and shipping labels that will help insure the sample submission process goes smoothly. Communicating with the lab can often help the lab to better tailor tests and reports to address golf course needs or concerns.

Lab test reports typically include an ex-

planation of tests results and recommendations for action. Therefore, samples should be sent to laboratories that specialize in the demands associated with growing and maintaining a golf course.

With proper sampling techniques and lab testing, you can be confident that the information contained in the test reports accurately reflects the conditions of the material that was sampled. The information gained from the report can then be combined with on-site observations to make knowledgeable golf management decisions. **GCI**

Sam Ferro is president of Turf Diagnostics & Design (TDD), an accredited soil physical testing laboratory serving golf, sports turf and landscapes world-wide.



LIST OF INGREDIENTS

Soil content affects soil behavior, including the retention capacity for nutrients and water. By Chris Wilczynski

Each and every golf course that exists in this world has some form of vegetation. Vegetation comes in many different forms: turfgrasses, trees, agricultural crops, etc. One element all vegetation requires for establishment is soil. There are many soil types, but for growing purposes there are three main soil compositions: sand, silt and clay. Soil content affects soil behavior, including the retention capacity for nutrients and water.

Clay soils are heavier and tend to stay wet. Sandy soils