BY **SAM FERRO**

MAKE YOUR SOIL SAMPLE COUNT

When you are having troubles with a field or doing some routine monitoring, it's probably time to send a sample into a laboratory for testing. Do you ever wonder if the testing results you get from the lab really represent what's present at your site? They may not if the sample wasn't taken correctly.

The most important role that the turf manager has in the testing process is insuring proper sample collection. Since all analyses and recommendations are based on the sample received in the lab, it is very important to take a representative sample. The ability to extrapolate the laboratory results to the field depends on how representative the sample is to the bulk material.

Sample collection procedures vary based on the location of the material during sampling (i.e. stockpiles, sports fields, etc.). Because of the variability in proper sampling techniques, the following outlines some general sampling techniques. For special issues not covered here, consult with your testing lab for advice.

The following sampling procedure is primarily for evaluation of existing sports fields, native soil, and turf areas in order to document the physical or chemical properties of the soil. Recommended tools for sample collection are a clean soil probe or shovel, a tarp or piece of canvas, and a plastic bucket.

Large areas 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. One sample can be submitted from each sampling unit and should consist of a composite of numerous randomly collected subsamples. The subsamples can be collected with a soil probe or a shovel and combined in a plastic bucket.

While the whole bucket can be sent in, a better approach is to portion out and remove one gallon as follows. Dump the bucket out on a tarp or canvas and mix thoroughly. Split the material into quarters and discard opposing quarters. Mix thoroughly, split and discard again. Continue to do this until one gallon remains and bag it.

For physical testing procedures, the average sample depth is 12 inches, but in some cases, it may be necessary to sample deeper. For chemical tests the appropriate sample depth is usually 4-8 inches. Any time there is a difference observed in the soil layers, it should be noted and the layers divided into separate samples. Record the depth of sampling. Label each sample appropriately with a permanent marker, and maintain a record or map of sample locations.

Diagnostic or profile core

This sample procedure is primarily for evaluation of existing sand-based sports fields in order to document the profile and/or diagnose physical problems.

A 2-3 inch diameter schedule 40 PVC pipe should be cut about 24-30 inches long to extend down through the profile into the sub-grade. Bevel the outside of one edge to provide a sharper end to cut into the green. Drill two opposing holes into the other end into which a metal rod or rope can be inserted to help pull out the core.

Drive the beveled end of the PVC pipe into the field far enough to reach sub-grade. Sub-grade is needed at the base of the core in order to hold in the gravel and/or choker layers. Pull the core out. Pack the ends with newspaper to prevent shifting and tape shut. Label the sample appropriately with a permanent marker.

Stockpiles

Stockpile sampling is performed during construction and renova-

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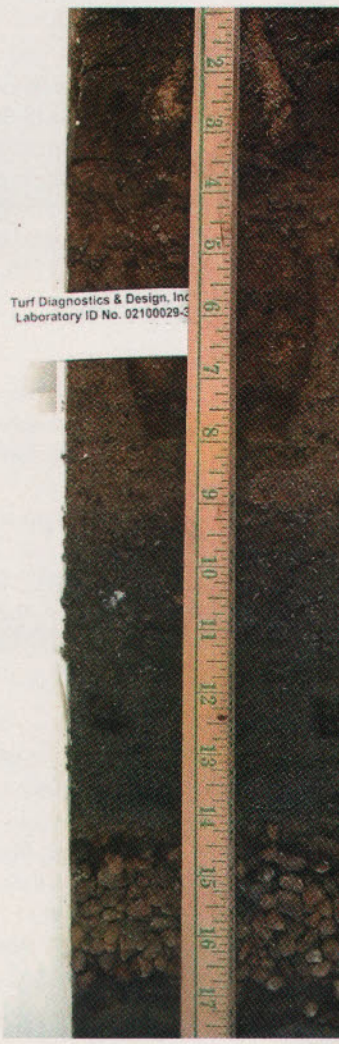

(continued from page 14) tion and quality control process. Stockpiled materials are tested before shipment to the project site to ensure they meet project specifications. The turf manager or some other owner's representative should be present during any construction materials sampling event.

To aid in sampling, a 2.5 inch schedule 40 PVC pipe about 45-50 inches long should be cut at a 45 degree angle at one end. The pipe acts as a sample collection tube. It is also useful to have a rubber mallet to tap samples out of the pipe.

At least eight sampling locations should be randomly selected for a 1,000-ton stockpile. The 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. Brush away the outer 6 inches of the pile and push the clean pipe as far as possible into the stockpile. Pull the pipe out and tap the sample into a clean bucket. Thoroughly mix the material after all samples are taken. Remove one gallon out of the bucket to fill a zip-lock bag. Label the composite sample appropriately with a permanent marker, and indicate from which stockpile the sample was taken.

To protect the samples during shipment, it's usually best to send the samples in a sturdy box with sufficient packing material included. Sample IDs should always be on the outside of the sample bag or container. A letter or testing request form should also be included with the sample submittal. The letter should include any pertinent sampling information, testing required, information on how to contact you, and info on where to send the report.

Follow these guidelines and you can take comfort in knowing that you have taken a good representative sample. **ST**

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(continued from page 18) last indefinitely), so the investment in the product is long-term. Also, manpower or equipment to install the covers can be a major limitation, in addition to the handling characteristics of the cover in wet, windy, and cold conditions. Covers differ greatly in handling characteristics. Another point to consider is the potential for leaving the cover in place for more than one day during the season. The non-woven turf blanket in this research allowed approximately 70 percent sunlight to pass through the blanket. This amount of radiation resulted in desirable turf color and appearance even when the cover was left in place days at a time. It will not always be possible (and realistically not even desirable) to install and remove a cover on a daily basis. **ST**

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