FIELD TIPS

Forget the tea leaves, read soil cores instead

WHEN YOU ARE TAKING SOIL SAMPLES, take a few minutes to take the next step: examine the soil cores that you have taken and record your observations. If you take the soil samples at the same time each year and you make and record the same observations each year, you will develop an ongoing data source that will give you a strong indication of the effectiveness of your soil chemistry monitoring and correction activities, the success or failure of your thatch control strategies, and the outcome of your efforts to grow and protect your turf's root structure.

The time you use to take soil samples is an excellent time to monitor the success of your other turf management efforts. Recording observations on the health of your soil and the plants that grow in it can pay major benefits in as little time as a year. You can examine the core samples for thatch depth, condition and level of decomposition, root mass, distribution and health, soil layering, compaction and pan formation and soil structure, particle size and distribution, and pore space size and quantity.

These observations of the current physical soil conditions combined with the results of the soil testing, the field

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Turf Grass TRENDS

CORE SAMPLE OBSERVATION FORM

SITE _____ FACILITY _____

LOCATION _____ STREET _____

DATE _____ CITY _____

TAKEN BY _____ STATE _____

■ **Thatch**

Depth _____(mm/in.)		**Condition:**	❑ Dry	❑ Normal	❑ Wet
Root invasion	❑ None	❑ Light	❑ Medium	❑ Heavy	
Decomposition	❑ None	❑ >25%	❑ >50%	❑ >75%	❑ 100%

■ **Roots**

Mass	❑ Thin	❑ Medium	❑ Dense
Depth _____(mm/in.)			
Distribution:	❑ Poor	❑ Fair	❑ Good
Color	❑ White	❑ Tan	❑ Dark
Health	❑ Vigorous	❑ Static	❑ Damaged

■ **Soil structure**

Compaction	Starts at _____ (mm/in.)		Ends at _____ (mm/in.)
Compaction density:	❑ Light	❑ Medium	❑ Heavy
Layering:	Starts at _____ (mm/in.)		Ends at _____ (mm/in.)
Layering material:	❑ Stone	❑ Clay	❑ Organic
Layer density:	❑ Light	❑ Medium	❑ Heavy
Pan formation:	Starts at _____ (mm/in.)		Ends at _____ (mm/in.)
Particle size:	❑ Fine	❑ Medium	❑ Coarse
Particle distribution:	❑ Uniform	❑ Migrating	❑ Stratified
Pore space size:	❑ Small	❑ Medium	❑ Large

Good soil chemistry *continued from page 9*

observations of foliar conditions during the past year and the projected use of the turf site year provide the raw data from which you distill your turf management strategies for the coming year.

What observations to make

IN GENERAL TERMS, you should record any observation that you feel will facilitate making turf management decisions. To be more specific, you may want to consider the following:

- THATCH
- ROOTS
- SOIL STRUCTURE

Why are these observations important?

THE ABOVE OBSERVATIONS ARE IMPORTANT, because they can lead to specific management decisions. Thatch depth gives an overall indication of an increasing or decreasing problem. Thatch condition indicates the direction that a thatch layer is headed (dry—no decomposition, normal—possible decomposition) and if turf rooting is becoming a problem. Thatch decomposition indicates what level of decomposition is currently taking place and what will probably occur in the future:

- NONE TO >25%= POOR
- >50%= GOOD
- >75% TO 100%= EXCELLENT

Root mass gives an overall picture of root health, while root depth indicates the turf's ability to survive stress periods. It also is a good indicator of possible disease or percolation problems. Root distribution gives an indication of where problems may exist, while color and health give specific indicators of current or future problems.

Soil structure provides indications of why turf problems exist. Compaction, layering and pan formation give specific information on causes of poor root mass, distribution and depth, while particle size, particle distribution, pore size and distribution can also indicate poor water percolation, which can exacerbate diseases and other pest problems.

Roots, roots, roots!

THE SECRET OF GOOD TURF MANAGEMENT is a lot like the secret of good retailing. For retailing success, the three secrets are location, location, location. For turf management success, the three secrets are roots, roots, roots. If you keep these secrets of good turf management in mind, a little extra time expended while taking soil samples is time well spent. ■

ASK THE EXPERT

HAVE A QUESTION on any aspect of turf management? Send it to: Ask the Expert, Turf Grass Trends, 2070 Naamans Rd., Suite 110, Wilmington DE 19810-2644 or fax it to (302) 475-8450. If we can't answer your question, we will put it to the best available expert on the subject.

TERMS TO KNOW

alkaline materials ..... Matter with a pH that is basic, instead of acidic; such as, hydrated lime, magnesium (epsom salts), and gypsum.
actinomycetes ..... A class of microorganism that lives in the soil.
aggregation ..... A process of particle accumulation in the soil, which is influenced by the presence of humic acid and leads to a stable soil structure.
anion ..... Ions that have a net, overall negative electrical charge.
buffer pH ..... A measure of the reserve acidity or akalinity of soil.
calcareous materials ..... Alkaline matter, such as limestone, that contains large quantities of calcium.
cation ..... Ions that have a net, overall positive electrical charge.
C.E.C. ..... Cation Exchange Capacity is a measurement of a soil sample's capacity for holding plant available nutrients.
humic acid ..... A by-product of the decomposition of soil humus and organic matter.
ions ..... Electrically charged molecules.
ion exchange sites ..... Locations on soil and organic matter particles and on root surfaces where chemical interactions involving ions take place.
microarthropods ..... A class of microscopic animals that live in the soil.
plant available nutrients ..... Chemicals that plants need for healthy growth and reproduction, which are in a form that plants can absorb and use.
percent(%) base saturation .... A measurement of the amount of a nutrient element available in a soil sample.
soil pH ..... A measure of the active acidity or alkalinity of soil.