

New Faces and Custom Testing Packages at the University of Minnesota Soil Testing Laboratory

By Brian Barber, Keith Piotrowski, Angela Gunglogson, Sam Bauer and Dr. Brian Horgan

As golf course superintendents, you strive to maintain the best possible playing conditions day-in and day-out. This requires a solid understanding of the art and science of turfgrass management. Possessing skills in the art alone can leave you missing a big piece of the puzzle. To better understand the science of plant and soil health, turfgrass managers have been analyzing soil, tissue, and water samples for almost as long as turfgrass management has been a profession. Today, testing laboratories have become more advanced, timely, and economical, opening the door for a wide range of

Minnesota Soil Testing & Research Analytical Laboratory (STRAL) is opening its doors as well. The new staff, along with the UMN Turfgrass



Keith Piotrowski
Assistant Scientist
Manager of STRAL
22 years with the UMN

Science group, has designed several packages specifically to meet the needs of professional turfgrass managers. The new packages offered

Brian L. Barber
Scientist
Director of STRAL
23 years with UMN



Angela Gunlogson
Junior Scientist
STRAL
5 years with the UMN



testing services offered specifically for golf courses. The University of

include 3 soil testing options, tissue testing, and water quality analysis;

these are listed in greater detail below. However before we detail that, an introduction to the laboratory and new staff is in order.

About the University of Minnesota STRAL and Staff

Housed in the University of Minnesota's Department of Soil, Water, and Climate and in place for over 43 years, the Soil Testing & Research Analytical Laboratory is a service analytical lab providing Universities, State and Federal agencies, private industries, and the general public with environmental analyses of the highest quality. The laboratory offers over 100 tests for soil, water, plant, animal, agricultural lime and other specialized materials.

In early 2012, STRAL underwent significant staffing changes, and the new personnel have the experience and expertise to meet the needs of golf course superintendents. The new Director, Brian Barber, has 23 years of

research experience in soil-pesticide interactions and contaminants of emerging concern, as well as the analytical expertise to conduct a multitude of wet-lab analyses. The new Laboratory Manager, Keith Piotrowski, has 22 years of analytical experience dealing with many facets of environmental quality and the third core member of our staff is Angela Gunlogson, who has been with STRAL for five years, and has primary responsibility for our soil testing program.



STRAL is loosely divided into three separate labs; focusing on soil, water, and plant materials

respectively. In the STRAL soil lab, we measure the composition of samples and provide fertilizer recommendations based on most standard micro- and macro-nutrients. In the plant lab, we use combustion analyzers to determine N, P, and S levels in plant material, and we perform digests and ICP analyses for other elements detectable down to the parts-per-billion (ppb) level. Finally, in the STRAL water lab, we perform

routine testing of fundamental indicators such as pH, alkalinity, electrical conductivity, and various classes of solids. Over the last two years, we have also invested nearly \$100,000 in equipment that allows us to conduct colorimetric analyses for Ammonium⁺, Chloride⁻, Nitrite⁻, Nitrate⁻, various pools of Phosphate³⁻, and Total P. Our system is modular and expandable, allowing us to add new methods to meet the emerging analytical needs required to conduct a comprehensive water quality monitoring program.

The Soil Testing and Research Analytical Lab is trusted by corporations, universities, and private individuals to provide high quality analyses on nearly any kind of environmental sample. We have the equipment and experience needed to conduct analyses on all your golf course soil, plant, and water samples. Please see our website: <http://soiltest.cfans.umn.edu/>, or call 612-625-3101 for more information, or to discuss your specific analytical needs.

New Offerings at the STRAL

The 5 new packages being offered are outlined here. New profes-

sional turfgrass testing request forms will be available on the STRAL website at: <http://soiltest.cfans.umn.edu/>. In addition to offering new packages, results can be emailed for faster turn around time and credit cards will now be accepted. Tissue results will be emailed out within 48 hours. Soil and water tests will be completed within 7 days.

Recommendations given will be based on nitrogen, phosphorus, potassium. For further consultation on the results of professional soil, tissue, and water tests contact Sam Bauer (sjbauer@umn.edu) or Dr. Brian Horgan (bphorgan@umn.edu).

We are excited about this new offering at the University of Minnesota and look forward to assisting you with testing services in the future. After all, today's turfgrass manager requires science-based information in order to make even slight adjustments in their management programs. These adjustments can often lead to cost savings, improved turfgrass health, and a more enjoyable golfing experience.

Soil Package 1: \$18.50

Phosphorus, potassium, calcium, magnesium, pH, organic matter %, texture

Soil Package 2: \$49.75

Phosphorus, potassium, calcium, magnesium, pH, organic matter %, texture

Zinc, copper, iron, manganese, boron, sulfur

E.C. soluble salts (1:1 slurry)

Nitrate and ammonium

Soil Package 3: \$99.75

Phosphorus, potassium, calcium, magnesium, pH, organic matter %, texture

Zinc, copper, iron, manganese, boron, sulfur

CEC and base saturation (sum)

E.C. saturated paste, ESP, SAR

Nitrate and ammonium

Chloride

Plant Tissue Package: \$22.50

Total nitrogen

Aluminum, boron, calcium, cadmium, chromium, copper, iron, potassium, magnesium, manganese, sodium, nickel, phosphorus, lead, zinc

Water Package: \$72.25

pH and Electrical Conductivity

Hardness

Nitrate and ammonium

Sulfate and chloride

Carbonate and bicarbonate

Salt concentration (TDS)