



NEWS REPORT

A & L GREAT LAKES LABORATORIES, INC. FALL 2002

List of Contacts at A&L Great Lakes

Agronomy:

**Randall Warden,
Jerry Hohla, Dan Kite,
Gary Elliott
& Myron Warner**

Billing & Accounting:

**Sharon Topp
& Shawn Tinnel**

Land Application:

Keith Henley

Quality Assurance:

Greg Neyman

GPS Mapping:

Dan Kite

Telecommunications:

**Randall Warden
& Greg Neyman**

Soil Trak:

**Randall Warden,
Greg Neyman
& Dan Kite**

Feed Testing:

**Lois Parker
& Randall Warden**

Water Analysis:

Keith Henley

Pesticide Residues:

**Keith Henley
& Dan Kite**

Fertilizer Analysis:

Jo Ann Nichols

Compost Analysis:

Lois Parker

Area Agronomists:

**Gary Elliott
& Myron Warner**

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FACT SHEETS—*Information To Go*

One of the significant benefits A&L Great Lakes Labs offers to clients is the information and knowledge accumulated by our staff over the years. We understand the importance of knowing how to interpret the laboratory data you receive. Our staff is frequently challenged with new situations, and they strive to provide up-to-date information to help answer these questions.

One of the resources we use to relay information on common issues is our **Fact Sheet** series. We maintain a library of these instructional sheets that cover a wide range of subjects such as interpreting soil test results, collecting samples for pesticide analysis, or reducing soil pH levels.

Each **Fact Sheet** is devoted to a particular topic so you can quickly find the information you need. It's also convenient to have them available for your clients when they have questions about something you don't work with routinely, or if they want more detailed information.

All of the **Fact Sheets** have been recently updated and new ones added to the library. There is no charge for this information and we can send them by mail, fax, or e-mail. They can also be downloaded from our website (www.algreatlakes.com).

New Instrumentation for Environmental Department

As the Environmental Department continues to grow, we need to add new instrumentation. This helps us maintain, and hopefully improve, analysis turnaround time and quality.

We just purchased and installed a new atomic absorption spectrometer (AA) that is dedicated to the analysis of arsenic, mercury and selenium. The AA auto-sampler reduces the hands-on requirement of the chemists, allowing them to focus even more on the quality aspects of the analysis. Improved software enables our chemists to closely monitor quality control samples and spot potential problems.

A new MICRO DIST® system (Lachat Instruments) for total cyanide analysis was also recently added. This replaced the midi distillation system. The USEPA-approved method of the MICRO DIST® system reduces the volume of both the sample and reagents needed to complete the analysis. The new system uses a disposable, polypropylene distillation tube assembly instead of glass, which eliminates the possibility of carry-over contamination from the prior sample.

Both of these new instruments will enhance our laboratory productivity and, most importantly, they will allow A & L Great Lakes to continue to provide our clients with quick and accurate analytical results. Contact Keith Henley for additional information on our methods of analysis.

3505 Conestoga Dr., Fort Wayne, IN 46808-4413 • 260 483 4759 • Fax 260 483 5274




Illinois Amino Sugar Nitrogen Soil Test Available

A lot of attention has been focused on the new Illinois Nitrogen Test (INT) during the past year. Dr. Richard Mulvaney and Dr. Saeed Khan of the University of Illinois developed a test for nitrogen (N) contained in soil amino sugars which, in their research, did a very good job of identifying soils that were not responsive to application of any fertilizer N.

The INT shows good promise as a tool to better determine potentially available soil N and estimate crop response to N fertilization. The more commonly used pre-plant nitrate test (PPNT) and pre-sidedress nitrate test (PSNT) measure N that has been converted to nitrate, but do not measure sources of organic N that could become available during the season.

Soils in the initial Illinois research did not need any N fertilizer if the INT was greater than 240 ppm, based on a 12" sample depth. Subsequent work indicates that 0-7" cores can be used, but the critical value increases from 240 ppm N to 270-280 ppm N. It was also found that the INT could be performed on soil samples collected from fall to early spring, but not on samples taken during the growing season.

Research is currently underway to determine the incremental nitrogen recommendations when INT levels are less than the critical level. Studies also continue on the time and depth of sampling, soil processing and additional field calibration. Dr. Kahn reports that they hope to release their new soil test for public and commercial use in late 2003 or early 2004.

A & L Great Lakes Laboratories can analyze your soils using the Illinois Nitrogen Soil Test. We have validated our procedure using soils from the University of Illinois study. If you are interested in learning more about this new testing tool, please request the A & L Fact Sheet # 22 – Illinois Amino Sugar Nitrogen Soil Test. 

SoilTrak[®] for Efficient Soil Sampling

Our **SoilTrak[®]** software is a great tool to help with the soil sampling and data management process. It can be used to print sample submittal forms and bag labels, eliminating a lot of tedious writing. Soil test data received by e-mail from the lab can be stored in the **SoilTrak[®]** database. Fertilizer recommendations can be generated for over 60 crops. Reports can be printed in several formats. Data can be exported for use with precision ag mapping and other software.

The current version is **SoilTrak[®] 3.0**. Contact us to order a copy or for more information.

MEET JULIE BRUGGNER

Julie Bruggner joined the A & L Team back in 1978 as a part-time soil testing technician. Her ability to master and streamline laboratory processes soon became apparent, and she was quickly added as a full-time employee.

Julie B. has viewed the changes in the Agricultural Department from a front row seat. She has the historical perspective of how things used to be done to compare

to the new technologies present in the laboratory today. The addition of a computer terminal integrated to her AA Spectrophotometer was a giant step in increasing laboratory efficiencies and quality control, and was the first of many steps

which allowed A & L Great Lakes to expand from analyzing 400 to over 5,000 routine agricultural soil samples per day.

While working full time, Julie B. decided to go back to school and get a Purdue University degree in Supervision, which she accomplished with honors in 1994. Julie assumed the official role of Agriculture Department Manager in 1999, and has tackled the resulting challenges with enthusiasm.

Julie enjoys talking with A & L Great Lakes clients and handling their special requests. When not at the laboratory, Julie enjoys the antics of her Siamese kittens, Tasha and Troi (she's a Star Trek fan!), reading, going out to eat, playing at the lake and just having fun.



AGRONOMIC REVIEW

Agricultural Liming Materials - Quality Considerations



Maintaining soil pH in a proper range for the crop(s) being grown is an essential part of a good soil fertility program. When the soil pH is lower than desired for the cropping system, lime should be applied. The recommended rate of lime on a soil test report is based on a “standard” liming material. Adjustment of a recommended lime application rate should be made based on the characteristics of the locally available lime.

The quality of a liming material is most often determined by two measurements: purity and fineness. **Purity** is the measure of the neutralizing capacity of a liming material compared to pure calcium carbonate (lime). Quarried lime may have significant impurities (e.g. clay) while byproduct lime may have been partially neutralized by the process it came from. **Fineness** is a measure of the particle size distribution of the lime. Smaller particles will react more rapidly than larger particles to neutralize soil acidity.

Most lime applied to fields in crop production is obtained from a local quarry. The purity and fineness of lime will depend on the purity of the rock formation and the crushing and handling processes at the quarry operation. Purity of lime from a quarry should be fairly consistent.

However, the particle size distribution of lime could vary significantly depending on how it is processed and handled. Since the combination of lime purity and fineness will determine its effectiveness in raising soil pH, it is important that the liming material be tested on a regular interval.

There is no national standard to describe liming material quality based on purity and fineness measures. Some states have laws which define lime quality standards while others do not. Where there is no lime quality law, state universities have established standards. Unfortunately, these standards usually differ from state to state in what is considered to be the standard purity and fineness values. The terminology used to express lime quality varies as well: neutralizing value (NV), total neutralizing value (TNV), relative neutralizing value (RNV), effective neutralizing value (ENV), calcium carbonate equivalent (CCE), effective calcium carbonate equivalent (ECCE), etc. These terms are used to describe purity or a combination of purity and fineness.

A & L Great Lakes makes recommendations based on lime with the following quality characteristics: purity – 90% calcium carbonate equivalent (CCE); fineness – 40% passing 100-mesh, 50% passing 60-mesh, 70% passing 20-mesh, and 95% passing 8-mesh. These A & L Great Lakes standard values are similar to those used in the Great Lakes states.

A lime producer should be able to provide purity and fineness information for their material. If it is not available, obtain a sample of the lime for the lab to test. Lime application rates indicated on a soil test report should then be adjusted for the purity and fineness of the lime. Information on adjusting lime application rates is available in our Fact Sheet #6 – Calculating Lime Rates.

Nitrate Danger in Drought-Stressed Crops

Drought-stressed corn and other crops are being harvested as green-chop or silage. Caution should be used when feeding these materials to animals because nitrate levels may be present at unsafe, even toxic, levels.

Nitrate accumulates to levels unsafe for animal consumption when the plant is unable to fully utilize its nitrogen supply. Weather stresses (drought, etc.) and over-fertilization are the most common causes of excess nitrate accumulation.

We can analyze animal feeds for nitrate to help determine if there is a problem. Our new **Fact Sheet #4** titled **Nitrate Toxicity in Feed** provides more information as well as interpretive guidelines.

Soil Sampling Supplies

Don't forget to order supplies so that you will be ready for soil sampling as soon as crops are harvested. A & L soil sample bags, shipping boxes and mailing labels are in stock and ready for shipping. You can place an order by phone (260-483-4759), fax (260-483-5274) or internet (www.algreatlakes.com).

USE YOUR SOIL SAMPLING HISTORY!

We have developed a **Soil Sampling History Report** to help make the soil sampling process more efficient. This report helps identify fields that were previously sampled, which now need to be re-sampled.

This report is organized alphabetically by grower name, farm name, and field name. It shows the date we received those samples and the number of samples in a field (report number).

Contact us if you are interested in receiving a custom **Soil Sampling History Report** to help with your soil sampling program. 

2002-2003 Tradeshow

2002:

Oct 31 - Nov 1	Great Lakes By-Products Mgt. Assoc. Annual Conference, W. Lafayette
Nov 18 - 20	Indiana Water Pollution Control Assoc. Annual Conference, Indianapolis
Dec 10 -12	Great Lakes Fruit, Vegetables & Farm Market Expo, Grand Rapids

2003:

Jan 7-8	Mid-America Ag Show, Dayton
Jan 13-15	Michigan Agri-Business Association Winter Conference, Lansing
Jan 14-16	Fort Wayne Farm Show, Fort Wayne
Jan 21-23	Wisconsin Fertilizer and Chemical Assoc. Annual Meeting, Madison
Jan 27-29	Illinois Fertilizer and Chemical Association Annual Conference, Peoria

New Area Code Reminder

Our area code change to **260** was final in June. We hope that you didn't forget to update your records.



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Fort Wayne, Indiana 46808-4413

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