



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:

Jerry Hohla
& Keith Henley

Quality Assurance:

Greg Neyman

GPS Mapping:

Dan Kite

Telecommunications:

Randall Warden
& Greg Neyman

Soil Trak:

Jerry Hohla,
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

Area Agronomists:

Gary Elliott
& Myron Warner

Soil Nitrate Testing

The pre-sidedress nitrate test can help the corn grower to make a decision as to additional nitrogen fertilizer needs for the rest of the season. Soil samples are taken in May or June prior to the application of sidedress nitrogen, and sent to the laboratory for analysis. Test results are compared with standard levels, and a decision on how much nitrogen is needed for the rest of the season can then be made. The lab can simultaneously test the soil for ammonium-N if required.

- **Time** – Take soil samples when the corn is 6-12 inches tall.
- **Depth** – Soil samples should be 12" in depth in order to use published interpretive guidelines. Composite 10 to 15 cores per sample.
- **Place** – Areas of different soil types or management histories should be sampled separately. Avoid starter bands or unusual areas. Samples should not exceed 10-15 acres.
- **Handling** – Thoroughly mix the subcores and remove 1 cup of soil for analysis. Ship immediately to the laboratory.
- **Results** – A & L Great Lakes Laboratories will prepare your samples and have results available to you the day following receipt. Include phone number, Fax number or E-Mail address for quickest response.
- **Interpretation** – Request A & L Brochure #18 for interpretations and more information on In-Season Soil Nitrate Testing.

Potato Petiole Nitrate – Interpretation By Variety

We now offer plant analysis reports with variety-specific potato petiole nitrate interpretations. These interpretations are based on recent research at the University of Wisconsin that established optimum nitrate levels by growth stage (days after emergence). Information is available for the following Potato varieties: Norkotah, Norland, Atlantic, Kennebec, Shepody, Russet Burbank, Snowden, Onaway and Superior. Contact us for a special plant sample submittal form for this program.

PLANT TISSUE TESTING

The growing season is just around the corner, and it's time to think about your plant tissue testing requirements for this summer. A & L Great Lakes Laboratories offers next day reporting on all plant tissue nutrient analyses. Results can be Faxed or E-Mailed directly to you.

Please include all relevant sample information when submitting plants to the laboratory, including your account number, crop identification, variety, sampling date, plant part and test package requested. Refer to the A & L Plant Analysis Brochure for the correct sampling time, plant part and number of plants to sample.



PLANT TISSUE QUALITY CONTROL

Clients frequently ask us about what measures we take in the laboratory to assure that our data is correct. Plant tissues are analyzed with a variety of check samples including:


In-house alfalfa check samples. Pelletized alfalfa is ground and run once every 20 samples. This assures that our sample preparation and digestion procedure is done correctly.

NIST peach leaves or soybean meal samples. Certified check samples from outside sources are analyzed once every 20 samples. This assures that our digestion procedure and instrument calibrations are done correctly.

Blank procedure samples. Method blanks are run through the procedure to assure that reagents are not contaminated. Blanks are analyzed once every 20 samples.


Internal calibration samples. Separate source calibration standards are placed in the run to facilitate our quality control monitoring. External calibration standards are also analyzed to assure instrument calibration. Internal calibration samples are analyzed once every 50 samples. External calibrations are checked at least once every 20 samples.

Potato petiole check samples. We maintain a potato petiole check sample which we analyze concurrently with potato petiole samples. Potato petioles require special attention and handling due to the high potassium and nitrate-nitrogen concentrations, and this check sample assures that the petioles are prepared and analyzed correctly.

By totalling up the number of check samples you will discover that more than 20% of our samples analyzed are quality control samples. This high level of quality control will assure you that our analyses are being done correctly. 


COMPOST TESTING

A & L Great Lakes Laboratories is prepared to analyze your compost samples according to the official "Test Methods for the Evaluation of Composting" (TMECC). Whether you need nutrient testing, physical measurements or maturity assessments, we are able to fulfill your analytical requirements.

Our recommended compost package (C6) includes Moisture, Total Solids, Total Nitrogen, Phosphorous, Potassium, Sulfur, Magnesium, Calcium, Sodium, Aluminum, Boron, Copper, Iron, Manganese, Zinc, Organic Matter and Organic Carbon, C:N Ratio, Soluble Salts and pH determinations. We can add Sieve size classifications, Total Man-made Inerts, CO₂ Respiration, Self-Heating (maturity) assessments or other state specific DOT requirements. Call the laboratory for further information and pricing. 

Manure Analysis

Laboratory analysis of manures will be required as regional farmers start to implement nutrient management plans. A & L Great Lakes Laboratories is participating in a manure testing certification program sponsored by the Minnesota Department of Agriculture, and is already certified to do your manure analyses.

If you require basic fertilizer components, nitrogen source breakdowns or complete nutrient testing, we are able to give you quality results and quick turnaround. Contact the laboratory for sampling supplies and submittal forms. 

Soil and Plant Data by E-Mail

If you need to receive soil and plant analysis data electronically, e-mail is the way! Many of our customers have found the Internet to be the most convenient and reliable means to receive data. We send data to your e-mail address after reports are completed and approved (usually by 4:00 pm). It arrives almost immediately in your mailbox ready for processing without you having to remember and make a phone call to retrieve from our BBS (Bulletin Board System). Contact us for more information.

AGRONOMIC REVIEW

How does Nitrogen Fertilizer affect Soil Microorganisms?

We occasionally receive questions about the effect of nitrogen fertilizers, especially anhydrous ammonia, on soil microorganisms (bacteria and fungi). Some hold the perception that anhydrous ammonia will "kill" bacteria and fungi causing the soil to be less productive. Is this the case?

Some 45 years ago (1954) researchers Eno and Blue were the first to evaluate this question. They found that anhydrous ammonia initially killed bacteria and fungi in the application zone, but 10 days after application bacteria populations were 6 to 25 times their original level. Fungi populations recovered more slowly, taking up to 7 weeks to return to their original level. This short-term reduction, and following recovery, in bacterial and fungi populations in the application zone has since been confirmed by several researchers.

The long term effect of nitrogen fertilizers on soil microorganisms continues to be an active research area, especially with changing cultural practices (e.g. reduced tillage). A 9-year research study at Southern Illinois University compared the effects of 10 different nitrogen fertilizer treatments. Microbial populations after 9 years were highly related to soil pH, which was influenced by the acidifying effect of the nitrogen fertilizer treatment. A recently published 10-year study from Canada found similar pH effects on microbial populations when they evaluated the effects of urea and anhydrous ammonia. Crop yields responded positively to nitrogen applications and were initially similar for the two fertilizer treatments. However, in the latter years of the study the anhydrous ammonia treatments yielded lower than the urea treatments because of the greater acidifying effect of anhydrous ammonia.

What are the main points to take from this? First, soil microbial populations are initially decreased in the application band after nitrogen fertilizer applications, but then recover (fungi) and even increase (bacteria). Second, nitrogen fertilizer applications decrease soil pH, and can lead to reduced crop yields if lime is not applied to counter the acidity created during conversion of ammonium to nitrate.

Get Ready for Nutrition Management Plans

As part of the present administration's Clean Water Action Plan, there is a joint USDA/EPA program to minimize agriculture's impact on water quality. A key component of the plan is the development of a Crop Nutrient Management Plan.

A Crop Nutrient Management Plan is a tool to increase the efficiency of all nutrient sources while reducing environmental risk. The plan consists of several components including soil and manure testing, handling of sensitive areas, record keeping and appropriate use of fertilizers and manures. Special attention is given to animal feeding operations (AFO's). Eventually all AFO's will need to develop comprehensive Nutrient Management Plans.

The NRCS has decided to certify third party vendors to provide advice and assistance to farmers and ranchers. Private consultants, employees of agribusinesses, and others who hold appropriate certifications through an approved independent certification organization or state licensing agency can become certified third party vendors. Financial assistance is available.

A & L stands ready to assist by providing both soil and manure testing services. We want to be able to partner with those third party vendors offering services to farmers and ranchers. Contact your local or state NRCS office for more detailed information on how to be placed on the approved vendor list.

Meet the Staff



Dan Kite has been an important member of the A & L Great Lakes Laboratories team since 1980 when he was hired to establish and manage our pesticide laboratory. A Purdue University graduate with a degree in Agronomy, Dan is now part of our customer service staff, where his is available to provide assistance to clients with lab data, interpretations



Dan Kite
Technical Service

and recommendations, sampling protocols and Precision Ag topics. Dan wears many A & L hats, as he coordinates the GPS mapping, oversees equipment and building maintenance, and designs and implements new lab equipment specific to our ever changing needs.

Dan and his wife, Patty, have two teenage children. Dan and his family have a small farm close to Fort Wayne where they raise saddle horses, rabbits and dogs. In Dan's spare time he enjoys assisting in local 4-H programs, woodworking, restoring antique furniture and farm equipment, gardening and fishing.

A&L E-mail Addresses

Communication and information exchange via the Internet continues to grow. We have found that e-mail is an efficient way to communicate and exchange information with customers. Following are e-mail addresses of the primary contacts at A&L Great Lakes Laboratories:

General office, billing	lab@algreatlakes.com
Jerry Hohla	hohla@algreatlakes.com
Randall Warden	rwarden@algreatlakes.com
Lois Parker	lparker@algreatlakes.com
Keith Henley	khenley@algreatlakes.com
Dan Kite	dkite@algreatlakes.com

Metals in Soils – New Fact Sheet

We frequently receive questions from vegetable gardeners in urban areas about lead, cadmium and other heavy metals in soil that might be taken up by their crop. A new A & L Great Lakes fact sheet entitled *Metal Concentrations of Natural Soils* lists the average concentrations of metals in soil. If the concentration of a metal is significantly higher than the average value, you should investigate further. Contact us if you have questions or would like a copy.

Just a Reminder

Please use your account number every time you are corresponding with A&L Great Lakes. Using your account number will ensure that you receive the fastest, quality service.

New Biosolid Rule Affects PCB Detection Limits

With the acceptance into law of 327 IAC 6.1 on land application of biosolids in Indiana, A & L Great Lakes Laboratories has had to overcome a new challenge for PCB determination. Under the rule, the reported detection limit for PCB must be less than 2 mg/kg on a dry weight basis. Since both liquid and dewatered biosolid is land applied, A & L was faced with the challenge of obtaining the required detection limit on liquid samples containing low solids. In order to obtain these detection limits, samples containing less than 2 percent solids are now analyzed as wastewaters, and samples containing 2 percent solids or greater are analyzed as solids. The determination of detection limit is then calculated based on the amount of sample used, 200 milliliters for wastewaters and 50 grams for solids. In addition, the sample extract final volume was reduced to obtain the required PCB detection limit. Current A & L Biosolid Reports for PCB list the type of biosolid analyzed as a wastewater or solid, and results are reported in both wet and dry weight format. For additional information on biosolid analysis and method detection limits, please contact Keith Henley at 219-483-4759.

Formula: $\text{mg/kg dry weight} = \text{mg/l wet weight} / (\% \text{ Total Solids} / 100)$



**GREAT LAKES
LABORATORIES,
INC.**

3505 Conestoga Drive
Fort Wayne, Indiana 46808-4413

BULK RATE
U.S. POSTAGE
PAID
Ft. Wayne, IN
Permit #1753