

WARDletter

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Cropping Systems and Varieties Lead to Lower Nitrogen Needs

After 25 years of operations in Kearney, Nebraska, Dr. Ray Ward of Ward Laboratories, Inc. is changing his nitrogen recommendation downward on some crops.

Dr. Ward said that modern cropping systems and seed varieties available to producers are much more efficient in using available nitrogen than ever before. Therefore, Dr. Ward says, the need for nitrogen in some crops is lower. Dr. Ward introduced the new recommendations in September.

In particular, Dr. Ward is lowering his nitrogen recommendations for corn, milo, sugar beets and silages. Nitrogen recommendations for other crops remain the same as before.

A complete listing of the new recommendations can be found on Ward Laboratories website - www.wardlab.com - then click on the Wardguide section where the new crop N requirements can be found on page 61.

Raymond C. Ward, Ph.D.
President

Jolene F. Ward, B.S.
Corporate Secretary



Kearney Native Al Baker Joins Ward Laboratories' Professionals

Long time Kearney resident Al Baker has joined Ward Laboratories, Inc. as marketing manager according to company President Ray Ward. Baker will serve as a liaison between the Kearney laboratory and its customers throughout the Great Plains, Dr. Ward said.

Baker is a Kearney native and graduate of the University of Nebraska at Kearney with a Bachelor of Arts in Industrial Technology. He has owned and managed businesses in the Kearney area including Door Openers Ltd. and Overhead Door of Kearney. He also served as membership director of the Kearney Area Chamber of Commerce.

More recently, Baker was with Horner Lieske Horner Mortuary as a Family Services Coordinator with emphasis in Funeral Planning and Monument Sales. He continues to be involved with the Mortuary in monument sales.

"We are excited to have Al join our professional team at Ward Laboratories", Dr. Ward said. "He brings a commitment to customer service that mirrors our company's philosophy perfectly."

Baker is married and with his wife Jan have two grown children. He is active in the Chamber of Commerce Colonels Club and other chamber activities, the Noon Kiwanis Club, Juvenile Diabetes Research Foundation, Fort Kearney Shooting Sports Association and is a member of First Lutheran Church.

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New Equipment Spells Benefits For Ward Laboratories' Customers

Things are heating up, literally, at Ward Laboratories, Inc. in Kearney.

The heat is being caused by a new Inductively Coupled Argon Plasma (ICAP) testing system that heats samples to 6000° C. That extra heat, in a round about way, means even more accurate, reliable testing for Ward customers, some possible cost savings and continued fast “turn around” time for customer’s samples.



According to Ward Laboratories' Operations Manager Duane Osmanski, the ICAP technology has been around for nearly 30 years but only recently have the Ward professionals felt the technology was advanced enough to be reliable and a benefit to customers.

Ward Laboratories has invested more than \$250,000 in two ICAP instruments plus some other equipment associated with the new technology including a large 1000 gallon tank for Argon, which is used extensively in the process.

In previous years Ward used “Flame Atomic Absorption” (AA) instruments to test samples. This technology heated samples to 2,000-3,000° C. The heating of AA samples excites atoms which absorbs light for a particular element in the sample. And

while the technology has served Ward customers very well over the years, the new ICAP technology is, well ... light years ahead.

The ICAP instrument heats samples to 6,000° C which allows light to be emitted indicating elements in a given sample. The old instrument showed one color or element at a time while ICAP can show all wave lengths, as many as 256,000 at one time. For Ward customers ICAP technology speeds up the testing process dramatically. In fact, Osmanski said the new technology will allow skilled analysts to see the entire periodic table of elements in 15 seconds. Osmanski said that the technology allows technicians to see elements that aren't even being tested.

Further, Osmanski said ICAP also enhances reliability and accuracy. The former technology provided accuracy to 1-2 parts/million (ppm), which is generally accepted as being very precise and accurate. ICAP's accuracy is less than 0.5 part/billion (ppb). The difference in the new equipment's precision is very evident, Osmanski said.

And, to insure even greater customer benefits, Ward Laboratories have added some auto samplers to their equipment mix. The old samplers allowed for 240 samples to be tested at a time over a few hours. The new auto samplers have the capability of analyzing 480 samples in 2 1/2 hours meaning Ward Laboratories could test three sets of 480 samples in one work day and have another set running in the evening. Osmanski said it took 50 seconds for the old sampler to read sulfur, for example. The new auto samplers can read five elements in 15-20 seconds.

Osmanski said the volume of samples that can now be handled will provide the fastest turn around time possible and some future cost savings. Osmanski added that the Ward staff can institute better quality control standards with the new automation and technology as well insuring customers the most accurate results possible.

Osmanski summed up Ward's significant investment by saying “in the 25 year history of Ward Laboratories, this new technology is a true turning point. It is very exciting for our customers and for all of us at Ward professionally.”

Dr. Ward Suggests Ways To Deal With Phosphorus Costs

It's no secret that production agriculture input costs have increased in the last 12-18 months, especially phosphorus fertilizer which has spiked dramatically.

And, the cost of phosphorus isn't expected to decrease much anytime soon because of China and India's increased usage of phosphorus in their burgeoning crop production operations. The increased cost for phosphorus is a simple matter of supply and demand according to Dr. Ray Ward, a certified soil scientist.

Dr. Ward says that American producers have a small advantage over Chinese, Indian or other producers in foreign countries because of the vast network of agricultural testing laboratories available to producers. These labs provide better, more efficient ways to measure phosphorus which, in turn, provides a better determination of where best to use phosphorus. With the prospects for continued high phosphorus prices, that knowledge is very valuable to producers and their bottom line, Dr. Ward said.

On the practical side, Dr. Ward is suggesting that producers consider the following guidelines relative to phosphorus this fall and into 2009.

- Based on the results of a quality soil analysis, do not apply any additional phosphorus if the P test is greater than 22 on dry land or 35 on irrigated land.
- Apply 30% less phosphorus than used in the past for one year.
- Consider the value of nutrients lost from crop removal when planning your 2009 phosphorus needs. If your soil test for P ranges from 12-22 on dry land or 12-35 on irrigated land, apply 50% of the phosphorus lost through crop removal. Each bushel of corn harvested removes .33 lb. of phosphorus (P_2O_5). On 200 bushel corn, 66 lbs. of phosphorus is lost from corn removal. Replacing half of that lost phosphorus would require an application of 33 lbs. of P_2O_5 /acre. Sixty bushel beans removes 46 lbs. of phosphorus requiring a 23 lbs. P_2O_5 /acre application. And 60 bushel wheat removes 31 lbs. of phosphorus through crop removal. Since wheat grows during the cool months and phosphorus is critical for wheat yield, Dr. Ward suggests applying all of crop removal.

Dr. Ward says that current crop removal nutrient information can be found on the company's website at www.wardlab.com under the Wardguide section on page 58.

Dr. Ward adds that he will not be changing the phosphorus recommendations on the company's computer but the aforementioned guidelines are offered for producers who seek input cost savings in the year ahead.

Ward Provides Recommendations From UN-Lincoln, SDSU Also

With the closing of the University of Nebraska agriculture testing laboratory, many producers are wondering where to turn for recommendations for the University of Nebraska-Lincoln.

Dr. Ray Ward, a certified soil scientist and President of Ward Laboratories, Inc. says the Kearney lab will provide recommendations from UNL and South Dakota State University as well as internal recommendations from Ward Laboratories.

Many conservation programs require recommendations derived from universities, Dr. Ward said. He added that most recommendations provided by Ward Laboratories and UNL or SDSU vary only slightly from one another.

**Some New Thinking
About Cover Crops**
By Dr. Ray Ward

Cover crops are a new concept for no-till farmers. The idea that we should have something growing on the soil at all times is somewhat different than the thought process of the past.

But as Gabe Brown of Bismark, ND remarked to me one time “Mother Nature does not have a monoculture system”.

Cover crops provide food for the microbes in the soil and microbes are needed to increase the biological life in the soil. Last fall at a Burleigh County, ND farm plot, the value of cover crops was studied. The result of growing a cover crop was about 20 days of grazing netting the producer \$66.00 per acre profit. In early May, soil moisture samples were taken from the cover crop area and from an adjacent field with no cover crop, just crop residue. The difference in soil moisture was only 0.04 inch in four feet of soil, proof that cover crops do not use much water, compared to allowing evaporation from crop residue.

Aside from increased profit from grazing, the cover crop included legumes that increase the available Nitrogen (N) supply for the future year’s corn crop. The estimated N supply was about 60 lbs. of N per acre from the legume.

Can we grow some of our N in non-crop periods to reduce the amount of N fertilizer is needed? We will keep you informed as we learn more about cover crops on no till fields.