

# WARDletter

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## **Longevity, Technology, Customer Knowledge Lead to Ward Laboratories' Success**

It's not often that the phone at Ward Laboratories is not ringing, or its 35 employees are not processing samples from customers across the Great Plains. But, for a moment, Dr. Ray Ward, President of Ward Laboratories, Inc., leaned back in his desk chair and thought about everything that has allowed his business to grow over the years ... and become particularly busy in the last six months.

Dr. Ward, who has 48 years experience at four different agricultural testing laboratories, says Ward Laboratories' longevity, technology changes in agriculture and producer's increased knowledge have spurred his business to record year after record year.

First, Dr. Ward says the fact that Ward Laboratories has successfully assisted producers by enhancing their production and profitability for 26 years has led to a long and growing client base. Dr. Ward and his staff have traveled hundreds of thousands of miles and have talked to individual producers and groups across the Great Plains in an effort to spread the word about the importance of timely and accurate soil, water, feed, plant and manure analysis. That longevity and persistence has helped grow the lab from a start of 14,000 samples annually in 1984 to 200,000 samples last year.

Secondly, Dr. Ward says technology has fueled growth and success at the lab as well. Ward Laboratories has provided leadership and support for the emergence of grid sampling, which by sheer numbers, has spurred growth at the lab. The benefits of enhanced production and better input management has also made grid sampling an important technology advancement for producers.

Plus, Ward Laboratories has invested thousands of dollars in new equipment to insure more accurate and rapid sample results. The efficiency, accuracy, usefulness and quick turn around time has further enhanced the efforts of Ward customers and the lab itself.

Finally, farmers and producers are now "sold" on the benefits that a quality testing program can have on their bottom line. Farmers are especially keen on the importance of soil fertility as an effective way to enhance yields while controlling input costs.

"We know there are lots of reasons for our growth and we are just very grateful for the trust and confidence that thousands and thousands of customers have put in us over the years," Dr. Ward said. And as he leaned forward, "and, our customers can expect the same type of professionalism as we continue to grow in the years ahead."

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## **Mother Nature and Man Create Large Science Project In Soil**

Mother Nature is a powerful thing. And when you combine her with man, the results can be a staggering science project in our fields according to Dr. Ray Ward, a certified soil scientist and President of Ward Laboratories, Inc. in Kearney, Nebraska.

In this particular case, the science project Dr. Ward is talking about takes place continually in our soil and is impacted by naturally occurring processes, how man treats the soil and what he adds to the soil. The process is nutrient cycling and it helps define your soil profile, impacts your yields and guides your fertilizer program.

Simply stated by Dr. Ward, nutrient cyclings are the natural and man made processes that “define” your soil. Because nutrients of all types are used by plants to grow, the removal of the grain or forage from the site impacts the nutrient levels in the soil. Plus, there are nutrients continually added to the soil from the air and through microorganisms that decompose organic matter. And, even more nutrients come in the form of soil minerals, soil microbes, manures and fertilizer.

In short, these processes impact your soil which further impacts your potential yields. As a result, a producer’s fertilizer program is more important than ever, Dr. Ward said.

To begin, Dr. Ward said, it is important to know how nutrients are used. Simply stated nutrient loss, including nitrogen, happens when the grain or forage is removed from the field, when nutrient applications are poorly timed resulting in leaching of soluble nutrients, loss due to poor soil aeration or denitrification and through small losses of certain nutrients in plant leaves during growth.

Nitrogen is the most prevalent nutrient lost through these processes but sulfur, phosphorus, potassium and zinc are lost as well, Dr. Ward said.

Many would suggest that these nutrients can be applied after harvest to insure a crop’s maximum production the next year. But with input costs being scrutinized now, Dr. Ward suggests other methods to retain some of the nutrient and reduce future input costs. Among Dr. Ward’s suggestions:

- No till practices will leave much of the residue and nutrients within the residue for future use and save soil from erosion. Plus, the natural decomposition of the residue creates more “life” in your soil via microbes and other organisms.
- Consider cover crops that are left on the soil to recycle and enhance the nutrient makeup. Legume cover crops add even more nutrients to the soil profile.

In short, Dr. Ward says, soil tests after harvest will guide your fertilizer program to insure maximum control of input costs.

For a more analytical look at the nutrient cycling process go to [www.wardlab.com](http://www.wardlab.com) and click on Dr. Ward’s nutrient cycle power point presentation on line by clicking WardUpdate and then Nutrient Cycles.

## **Dr. Ward Recognized For Service to Agriculture**

Dr. Ray Ward, President of Ward Laboratories, Inc., has been recognized recently by two Nebraska organizations for his service.

He was awarded the Dr. Ray Starostka Award of Excellence by the Nebraska Agri Business Association for his service and support to the State’s Certified Crop Advisory (CCA) program. The award pays homage to Dr. Starostka, a Silver Creek native, who was instrumental in the success of the CCA program.

Further, Dr. Ward was recognized with an Honorary State FFA Degree by the Nebraska FFA Association for his support of FFA programs and the Foundation that provides financial assistance to the programs which provide practical, hands on learning experience for young people.

## **Phosphorus and Potassium Applications In The Spring** (From The University of Illinois)

The late harvest last fall coupled with high fertilizer costs meant many fields have not received typical applications of phosphorus (P) and potassium (K) which may impact yields.

Studies clearly indicate that fall or spring applications of P and K produce similar results in terms of yield ... so spring applications are recommended when fall applications were not made. Of course, the application must make economic sense for the producer. Will the application result in yield growth that, at least, covers the cost of the application?

Even if your budget does not allow for a "full" application, producers should consider some P and K to enhance yields.

A good, reliable soil analysis will determine if your P and K levels are at acceptable levels. Acceptable P and K levels, or what is defined as the "maintenance range" vary from region to region and state to state, so a high quality analysis of your soil's fertility will help you determine the "state of your soil".

Not applying P and K may not only impact your yields in the immediate year but impact your soil's health over the long term. Crops will take P and K from the soil to grow and develop. So, negligence in applying P and K annually may result in a shortage of those nutrients which are essential to optimum growth in corn and soybeans.

If your fields show P and K levels at the maintenance level (as shown on the chart below), you can likely forgo the application for one year and levels in the very high range may allow for a two or more year "break" from P and K applications. In short, reliable soil data annually will guide your applications.

Below is a chart indicating the Illinois range of P and K levels necessary to insure maximum yields and reflect recommendations that Ward Laboratories, Inc. have been advocating for producers.

<b>Illinois P &amp; K Soil Test Levels - ppm</b>			
	<b>Critical Level</b>	<b>Maintenance Range</b>	<b>No Application Needed If Test Greater Than</b>
<b>Phosphorus (P)</b>			
Low supply power	22	25-35	35
Medium supply power	20	22-32	32
High supply power	15	20-30	30
<b>Potassium (K)</b>			
High CEC	150	150-200	200
Low CEC	130	130-180	180

## **Phosphorus Fertilizer Essential For Maximum Profits, Yields** (From the University of Minnesota)

Today, producers are naturally looking to stretch their input dollars as far as they will go while trying to impact yield growth and profit.

As a consequence, one way to stretch those dollars is to understand soil phosphorus (P) tests, P application rates and methods of application. A multi year study in Minnesota may shed some light on P in the soil. The study reinforces recommendations that Ward Laboratories, Inc. have been providing to clients to maximize yields and profit.

Two studies in Waseca, Minnesota confirm that very high P testing soils (Bray P > 22 ppm) produced better yields and more profitable corn without additional P fertilizer applications when compared with low P testing soils where recommended rates of P were applied.

In one study of 30 plots in Waseca, the soil was maintained at Bray P1 values that ranged from 4 ppm to over 40 ppm in a corn-soybean rotation where no P application was made the year corn was grown. Corn reached optimum yields with P greater than 12 ppm in 2006 (warm spring) and greater than 22 ppm in cool spring seasons of 2004 and 2008. The 30 plot Waseca study clearly indicates that producers can reduce the risk of reduced corn yields ( and less profit) by insuring P levels are maintained at greater than 22 ppm.

A second study evaluated low and very high P testing soils and optimum placement methods including in furrow, 6" deep band and broadcast. Corn was grown at low and very high P levels in '05, '06 and '07 with phosphorus applied to corn at 0, 25 and 50 lb. P205/A. Soybeans were planted the following years with no additional P application in an effort to determine residual impact of P on corn. The soil test P levels averaged 7 ppm at three low testing plots and 25 ppm on three higher testing sites.

Three year corn yields averaged 193 bu/A on the very high testing P soils with no yield response to added fertilizer. Only 167 bu/A yields were averaged on the low testing sites when banded with 50 lb P205/A. Soybeans yields the following year averaged 49 bu/A on very high testing soil and 39 bu/A on low testing sites. When you analyze the corn and soybean yield differences of 26 and 10 bu/A for very high testing soils it clearly points out the financial penalty of up to \$100/acre/year associated with low P testing soils even with P fertilizer applications.

In short, producers need reliable soil fertility data to accurately gauge the economic benefits of P applications.

### **Ward Laboratories Worldwide**

While most people were spending Christmas with family and friends, Dr. Ray Ward, his wife Jolene and two other Ward professionals were in South Africa helping upgrade an agriculture testing laboratory.



The Ward professionals spent one week providing advice and counsel to the owners of a laboratory in Brits, SA.

Two years ago Dr. Ward traveled to the Ukraine for a similar experience. And, Dr. Ward routinely fields questions from producers, scientists and laboratory operators worldwide including recent calls to help in opening new labs in Iraq and Thailand.

And, while Dr. Ward enjoys helping advance the soil science industry worldwide, he says he still enjoys helping producers right next door even more.

**[www.wardlab.com](http://www.wardlab.com)**