Looking Ahead - Life and Labs Beyond 2010
And 300 Bushel Corn

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Last month I traded my 2002 pickup with 265,000 miles for a new vehicle. That alone should tell you I get the most out of what I buy and that I have had plenty of time behind a steering wheel over the years to think.

Lately my thoughts have turned to "where do we go from here" in terms of a professional laboratory. Some of my thinking was prompted by a customer who asked if it is possible to consistently grow 300 bushel corn. To grow 300 bushel corn, everyone in the production chain will have to do something better, maybe extraordinary, including those of us in nutrient management. We simply must think differently about "feeding" our crops.

To highlight the point, consider the following analogy. If I were to eat a two layer chocolate cake lathered in rich frosting at one sitting and not eat again for a week, how would I likely perform? The same thing can be questioned about our application of nitrogen which is achieved all at one time. Maybe we need to give some serious thought and research into spreading out applications of N fertilizer throughout the growing season.

And, instead of just "chocolate cake" maybe we need to evaluate our crop's "diet" and look at all the nutrients needed to optimize growth.

My years of windshield time has also given me pause to think about how other testing could benefit crop production and help us achieve 300 bushel corn, or at least ever increasing yields.

We know that soil testing helps determine the nutrient health of the soil and provides us with a way to help the crop grow. In the near future, maybe a soil analysis will simply serve as a baseline to evaluate performance throughout the growing season.

If we believe feeding the crop regularly instead of at one time only, then maybe we should consider a plant analysis at the 4-5 leaf stage to see how the plant is performing compared to the baseline. This analysis may reveal the need for additional nitrogen or some other important nutrient at critical plant development stages.

Further, as the crop advances, a similar plant analysis could be done at shoulder height or 10-14 leaf stage. The point is, we don't perform better by eating more - both portion and timing are important to us, maybe plants require the same attention to portion and timing as well.

Additional time behind the steering wheel, and urging from colleagues, has led to pondering the merits of some new tests. One such test is the ASNT or Amino Sugar Nitrogen Test. In essence, this test helps establish how much N is in the organic matter of the soil and whether it could enhance crop growth and development. As a laboratory, we will be looking at ASNT for possible implementation in 2011.

A second test that we will consider in the year ahead is a phospholipid or fatty acids test. This test would allow us to identify microbes in the soil, quantify the microbes and compare them with other microbes present in the soil. The ultimate purpose of the test is to determine if the soil biological life will benefit the crop and to what degree.

It is hoped that Ward Laboratories, Inc. can improve soil testing by identifying soil microbe populations that can help create "free nitrogen" for plant growth. The air we inhale is 79% nitrogen and we know that some microbes can convert nitrogen gas into useable plant nitrogen or "free nitrogen" forms.

The soil microbe or biological test will indicate soil health. The more biological diversity we have in the soil to greater potential for good soil health. Good soil health is an indicator of good soil structure,

good nutrient availability, good water holding capacity and excellent plant health. The test will be best if comparison samples are taken. Take samples from different cropping systems, different fertilizer systems, with and without cover crop, etc.

In short, this test and others are just another way for us to get more out of the soil without damaging the soil. Essentially, the goal is to create a "happy" soil through better soil fertility. In the end, happy soil may be the answer to growing 300 bushel corn consistently.