

“Ag Happenings”

BROUGHT TO YOU BY

Farley's

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Jim's Thoughts

Even though the calendar says March, it feels like January outside.

Let me start with the bad news. Milk prices are below the cost of production and cotton prices are lower than they have been in 5 years. A lot of farmers are trying to figure out what to plant this year. I don't have a clue what to do with my own farm, except take care of the wheat and oats that I planted behind cotton. I fertilized the small grains in mid February.

Weeds are going strong in bermudagrass hay fields. Now is a good time to spray them

with Roundup and a broadleaf herbicide. This application will save precious moisture and nutrients later on.

There is nearly always some good news. Let's start with the good moisture in the ground. It was bone dry this time last year. A good bottom season of moisture always bodes well for

the next summer.

Beef cattle prices are very good. Other than last fall, they are the highest that they have been in my lifetime. It certainly pays to take good care of cows and calves. One cow that doesn't breed can be very costly, when her calf would have a good chance of bringing over \$1000. Keeping her in good body condition so that she will breed back on time is very important. A good mineral program with high phosphorus content is helpful. We sell a lot of Nutrition Plus Mineral. I use the NP2 on my cows. Mix 30 liquid feed or MLS tubs can help to maintain a cow during these winter conditions.

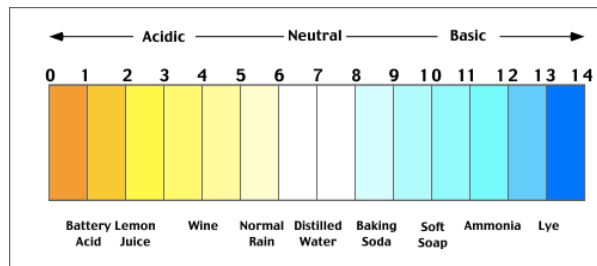
I certainly appreciate your business and look forward to working with you in 2015. Stay warm and remember, spring will be here before you know it.

Soil Test Results

Every year we collect and send off several hundred soil samples to A&L Labs. We get back results very quickly and we use those results to help make recommendations for everything from nursery trees to turfgrass.

Soil sample results contain information on pH, phosphorus, potassium, calcium, sulphur, magnesium and even more if you order trace elements like boron, or manganese or even zinc.

Since 2009 we have collected over **3816** samples. Since we have results from that many samples we can do some statistical analysis to tell us lots of information on what is going on in the 10



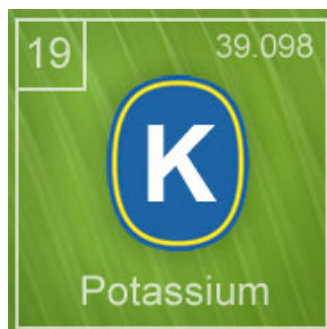
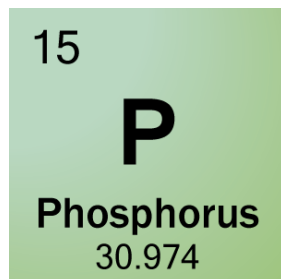
county area we serve. Here are a few of those results that I thought you might find interesting.

Soil pH affects the solubility of minerals or nutrients we find in soils. Fourteen of the seventeen essential plant nutrients are obtained from the soil. Before a nutrient can be used by plants it must be dissolved in the soil solution. Most minerals and nutrients are more soluble or available in acid soils than in neutral or slightly alkaline soils. Soil pH is measured on a scale from 0-14 with 7 being neutral. Plants generally do best when pH is between 6.5 and 7.5.

Of the 3816 samples the average pH was 6.59. The high was 9.1 and the low was 4.1 both of which would keep plants from growing! The problem is that 427 samples **(11%) were less than 5.5** which means that the crop will do poorly and the fertilizer is 30% less efficient. Also **761 samples (20%) were above 7.5** which can mean that iron is unavailable and there can be a toxic relationship with phosphorus. Low or unavailable iron results in yellowing called "iron chlorosis." When we have low soil pH we may talk to you about lime. Lime is calcium carbonate and it is a source of calcium that will kick off the hydrogen that is causing low pH.

Phosphorus is one of the major plant nutrients and is known to be a major part of reproductive plant parts like seeds. We know it also plays a large role in seedlings and you can see a deficiency in seedlings when you they are purple to maroon in color.

Phosphorus (P) should be in the 50 to 100 lbs per acre range and of all the samples the average was 86, pretty good. But the range was from a low of 2 to a high of 1126, extremely high! Of all 3816 samples, **773 (20%) were low to very low and 2323 (61%) were medium or less.** Typically our sandy soils are moderate in P and heavier soils are low.



Potassium (K) is also one of the major nutrients for plants and is used in large quantities like nitrogen. For most grasses, K will be used at the same rate as N or just slightly less. The difference in the two is that our soils can have a lot of K in the soil naturally. Neither potassium or phosphorus are very mobile in soils so if we put it there it will

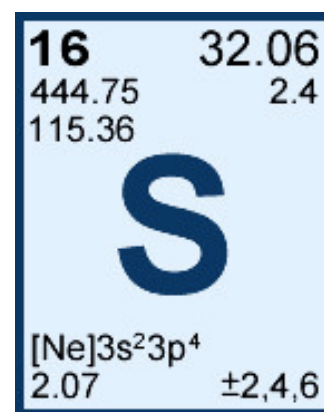
generally stay there.

The average K in soil samples is 314 lbs per acre which is good but the range is from 30 to 3780 lbs. Of all the samples we had tested, **1010 or 27% tested low or very low in potassium.**

Another element we test for is sulphur (S) called the 4th major element sometimes. It is used in fair amounts by plants but in the past with high sulphur in diesel and other fossil fuels we had pollution adding S through rain and air. Now that we have cleaner fuels our land has less S and we have to add it for plant use. We especially see a sulphur response if lots of dairy manure, slurry or even compost is used as soil amendments. Sulphur acts like nitrogen in that it can leach, can be volatile, is in organic matter and has a negative charge. Sulphur deficiencies can even look like nitrogen deficiencies in plants except that it will be on young leaves too.

Sulphur ranged from 2 to 1780 lbs per acre with the average at 27. In all 3816 soil samples **3399 (90%) were medium or less** in sulphur and **52% were low to very low.**

The last thing I will talk about is CEC, cation exchange capacity. Soil particles have a negative charge and they hold onto elements with a positive charge like calcium (Ca⁺⁺), magnesium (Mg⁺⁺), potassium (K⁺), ammonium



(NH₄⁺), hydrogen (H⁺) and sodium (Na⁺). Notice that some cations have more than one positive charge.

CEC is a measure of the soils ability to hold onto that element and keep it available for a plant root. Sands have a low CEC and clays have a high one as indicated by this chart.

Soil Type	CEC
Light colored sands	3-5
Dark colored sands	10-20
Light colored loams and silt loams	10-20
Dark colored loams and silt loams	15-25
Dark colored silty clay loams and silty loams	30-40
High organic soils	50-100

Of the 3816 soil samples we tested, 2790 (73%) had a CEC of less than 10 and 87% have a CEC less than 20! This means that most of the samples we take are from sandy fields which are what we call “poor.” They have little clay, very little organic matter and with so much sand, they have very little holding power for nutrients. Unfortunately for you this means that you must apply fertilizer to bring soil nutrient levels up to crop requirements, but all that fertilizer means higher yields. (Plus jobs for all of us!)

Now I don't want to be all negative about CEC since we did have 21 soil samples that came back with a CEC of over 50. Of these 21 samples we didn't sell the customer any fertilizer, their soil was just too good!

Worst Disease of Trees Ever!

I can't tell you how many times I have been called out to diagnose a tree disease and what you see in the picture on the next page is the problem. Most people are good at looking up and seeing dead or dying branches but they fail to look down to see the real cause. This is



simply weed-eater or even mower deck damage to the bark which eventually will lead to tree death.

Trees have a cambium that causes annual growth rings in the wood - we all know that, it is how we age a tree. But, you may not know that trees also have bark cambium that produces bark or skin for a tree. This bark is very important just like our skin. It is tough but when damaged can allow diseases or insects to enter in and allow sap to flow out. None of this is good for the tree.

What can you do? Well first stop injuring your tree and then do all you can to provide some TLC. Remove grass growing near the trunk and mulch 3-4 foot in diameter around the trunk. Water the tree every week in summer and when you fertilize your lawn go an extra time around the trees drip-line with the spreader in Spring.

Henbit in Pastures, Lawns and Fields

I am positive you have seen the weed in the picture on the next page. Henbit is an annual weed that comes back every fall from seed produced this spring. It is invasive and difficult to control with chemicals but overall there are much worse weeds than Henbit. Cattle and wildlife won't eat it and it grows and flowers quickly.

We can control it with herbicides but generally we need more than one type mixed together. The earlier you control the plant the



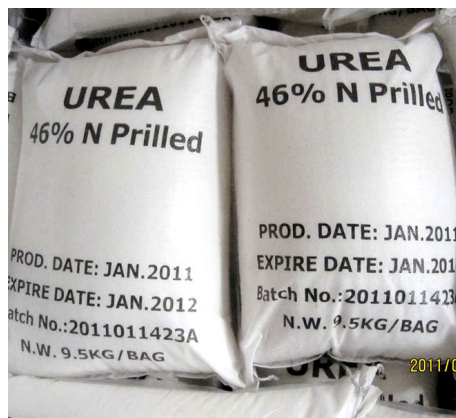
better but we do see new seedlings germinating all winter and even into the spring.

It is one of those weeds that can be plowed and eliminated and even shredding or mowing can have an effect on its growth. In turf we mow it and see it decline rapidly. So remember it is a tough weed but controllable!

Urease Inhibitors for Urea

Urea based nitrogen fertilizers are an organic commercial form that requires a biological enzyme, **urease**, to promote degradation to ammonia.

Ammonia exists as a gas at normal temperature and pressure, thus it may be lost by volatilization if not exposed to water. Ammonia loss potential by volatilization for incorporated urea products is negligible because soil holds enough water to capture ammonia as ammonium that can be held on the soil's cation exchange complex. Surface applications of urea are at risk of loss because there is no opportunity to capture the ammonia as it is produced.



Urease inhibitors can have different modes of action, and the first question we should ask is do they work? The active ingredient in the inhibitor can act as a substrate for the urease enzyme, thereby protecting free urea by allowing it to stay in solution longer, or the inhibitor can inactivate the enzyme. Agrotain® is the most common commercially available urease inhibitor. The active ingredient in Agrotain® is N-(n-butyl) thiophosphoric triamide. The mode of action is not clearly defined, but it is thought to act as a substrate for the urease enzyme. Regardless of the mode of action, laboratory evidence has shown that it does allow urea to be retained in the soil longer, at least 14 days.

There are other, newer urease inhibitors marketed besides Agrotain, and we have tried them in tests as have others. At this time they do seem to work and we will continue to look at how they will benefit you the producer.

Why are we interested in these products?

For many years we have used ammonium nitrate with great success. Ammonium nitrate, commonly known as "nitrate", is not volatile like urea and so we don't see losses to the air if conditions are warm and humid. We like nitrate and producers have come to trust it but getting and using ammonium nitrate is becoming harder and harder. We are having trouble getting it delivered because of greater regulations on hauling and if you picked any up you know you need to fill out a form and let us copy your drivers license. This means we need to be ready for the day when ammonium nitrate is

not available and it is possible that these new products may be the answer.

