ARKANSAS PLANT FOOD ASSOCIATION

Newsletter December 2009

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QUOTE OF THE DAY

"Life is 10% of what happens to me and 90% of how I react to it."

John Maxwell

Dan Gladden has been named Executive Director of the APFA.

-UPCOMING EVENTS-

Annual Crop Management Conference

January 19-22, 2010

Wyndham Riverfront

North Little Rock, AR

Reservations 866-657-4458

-IN THIS ISSUE-

Check out the new APFA website at www.arkplantfood.com . It is a work in progress.

MESSAGE FROM THE PRESIDENT

I know that this has been an extremely challenging year for some of us and many of our customers have struggled to finish harvesting in the midst of an unusually wet year. As we approach the close of the 2009 crop year, we will soon begin to direct our focus on the upcoming season ahead of us. I would like to invite you to take advantage of some of the resources that we are working to make available through our new website, www.arkplantfood.com. There you will find information about upcoming meetings, links to other organizations, current information related to soil fertility and the fertilizer Industry.

I would also like to remind you about the 2010 Arkansas Crop Management Conference which will be returning to the Wyndham River Front Hotel in North Little Rock on January 19th-22nd. If you have never attended this conference in the past, I urge you to take advantage of the opportunity to network with others in the industry, earn continuing education credits, and catch up on what is going on in the agricultural industry and policy that affects all of our businesses.

The Arkansas Plant Food Association has been a leader in the State of Arkansas for many years representing the agricultural community of fertilizer suppliers, dealers, growers, and university research. We can only continue to do so with participation from people like you. If you are interested in participating, please feel free to attend our general membership meeting in North Little Rock during the January conference. It is open to all sustaining members and representatives of those organizations. We look forward to seeing you there.

Sincerely,

Clint Jayroe, APFA President

MESSAGE FROM THE EXECUTIVE DIRECTOR

Since serving two terms as President of the old APFES in 1979 & 1980, I've followed the business of the Association even though I've lived out-of-state most of the past 30 years. During that time, the industry has changed vastly, and I'm proud to see that the group has changed with it.

I look forward to working with those that serve the Arkansas fertilizer industry once again.

Dan Gladden, APFA Executive Director

Can phosphorus and potassium fertilizers be applied in fall/early winter?

Nathan Slaton, University of Arkansas - Professor of Soil Testing

Each year we are asked whether P and K fertilizers can be applied in the fall and winter months to fields that will be planted the following spring - a practical and simple question. Purchasing and applying P and K fertilizer in the fall can reduce fertilizer costs if the dealer discounts prices to reduce end-of-year fertilizer inventories or fertilizer prices are anticipated to increase substantially in the spring. Unfortunately, simple questions don't always have simple answers. Our answers to such questions have always been based on research or, when research is not available, fundamental concepts that apply to soil nutrient availability.

Growers/consultants should ask several questions and use the answers to decide whether fall/early winter P and K fertilizer application is an acceptable practice for individual fields. The answers to these questions provide insight concerning the soil's fertility status, the accuracy of the soil sampling and testing process, the grower's philosophy on fertilization, and whether land management practices or features may influence the availability or loss of fertilizer nutrients.

Have P and/or K deficiencies been diagnosed as problems in this field during the past 5 to 10 years? If so, have P and K been applied routinely at recommended rates? Has the field been leveled recently?

If nutrient deficiencies have been diagnosed in a field, soil nutrient availability (or fertilization practices) has been limiting plant growth and yield and the field is not a good candidate for fall fertilization. Inorganic fertilizers are manufactured to contain high levels of soluble nutrients. The nutrients in highly soluble fertilizers are immediately available for plant uptake when they are applied. Although this is desirable for plant nutrient uptake, it also means that a portion of the fertilizer nutrient is susceptible to being lost (e.g., runoff and/or leaching) or 'fixed' in the soil. As a general rule, fertilizer nutrient availability is greatest at the time the fertilizer is applied and its availability declines as the time between application and crop uptake increases. Soils that have been precision graded or have 'Low' and 'Very Low' soil-test levels may have a greater capacity to rapidly fix fertilizer nutrients into less plant available forms. Subsoil exposed during the land leveling process often has 'Low' soil-test P and K levels, low organic matter, and greater clay content - all factors that tend to enhance nutrient fixation. If fields have experienced P and/or K deficiencies and/or been recently leveled, fall/early winter application of P and K fertilizer is not advised.

What are the soil-test P and K levels? Soil pH?

The concept of soil-testing is that soils with low nutrient levels are less fertile and require more fertilizer to produce maximum agronomic crop yield than soils with 'Medium' or 'Optimum' nutrient levels. Fertilizer management philosophy differs among growers/consultants or may be dictated by whether the field in question is owned or rented/leased. I would be more apt to advocate fall/early winter fertilizer application on soils that have 'Medium' or 'Optimum' soil-test P and K levels since fertilization is being performed to help maintain soil fertility rather than ensure that nutrient availability is not a yield-limiting factor.

What crop will be grown?

Knowledge of the crop that will be grown the following summer is important since one crop may be more prone to nutrient deficiencies than another. A classic example of this consideration is P availability as influenced by soil pH in fields used for rice and soybean production. Soils with slightly acidic soil pH values (<6.0) are unlikely to respond to P fertilization when cropped to rice, but P deficiency may significantly limit soybean growth and production. In contrast, field observations and research in Arkansas show that P deficiency of rice is most likely to occur on alkaline soils (pH >7.0). So fall/early winter application of P fertilizer might be acceptable for soybean grown on alkaline soils or rice grown on slightly acidic soils, but not vice versa.

Is the field located in a flood prone area, on highly erodible land, or will the field be winter-flooded for waterfowl habitat?

Anytime that fertilizer is applied far in advance of the time that plants need the nutrients, the risk of losing the fertilizer nutrients increases. Losses may be direct from leaching, runoff, and erosion or indirect, loss of availability due to soil fixation. Alternating

flood-drain cycles cause fluctuations in soil P availability.

For example, flooding usually enhances P availability for rice, but after the flood is drained, P availability may be limited, especially on soils with pH <6.5. Wheat grown following rice usually shows P deficiency (reddish coloration of leaves) and responds positively to P fertilization. The 'old' rice levees stand out in these wheat following rice fields due to greater P and N availability on the soil that was not previously flooded. Fields that may be flooded, regardless of the reason and duration, are not good candidates for fall fertilization.

Making fall fertilization decisions based on fundamental concepts in soil science and plant nutrition is a good practice. Applied research should be used to supplement or verify these basic concepts. In December 2008, we initiated rice and soybean research to address fall fertilization questions. In the next newsletter, we will review the first year of the research results.

APFA Program
Arkansas Crop Mangement Conference
Tuesday January 19, 2010
1:00 - 5:00 PM

1:00-1:50	Fertilizer Industry Outlook Toby Hlavinka, Nat'l Dir. of Fertilizer Helena Chemical Company
1:50-2:40	Current Legislative Issues & Farm Bureau updates. Randy Veach, President, Arkansas Farm Bureau
2:40-3:00	Break
3:00-4:00	Removal of P, K, and Micros Cliff Snyder, IPNI
4:00-4:45	Overview of Soil Testing & Analysis Morteza Mozaffari, Director UofA Soils Lab
4:45-5:00	Questions?

Soil Electrical Conductivity and Electromagnetic Induction

Leo Espinoza – Soil Specialist

The high price of fertilizers has resulted on a significant increase in the numbers of samples received by the Soil Test Lab in Marianna. Some farmers take soil samples on 5-acre grids; some others take samples based on soil types or yield maps, while others are using zones/maps generated from electrical conductivity (EC) sensors. Soil EC – or more properly said—"apparent" Soil EC provides an indirect method to distinguish changes in soil texture across a field, as clay particles tend to conduct more electricity than lager sand and silt particles. The EC readings are not sensitive enough to distinguish between a silt loam and a sandy loam soil, the use of EC is based on its positive correlation to clay content. Factors such as moisture content, temperature, and salinity will influence the readings significantly. There is limited value to the actual readings, since we look at the trends or patterns in a particular field. Most farmers and consultants are familiar with the Veris units, which consist of a set of coulters that inject a known voltage into the soil, and with a second set measuring the drop in such voltage. The coulters are dragged across the field, typically on a 60-ft swath, with the resultant information used to generate maps of variability in texture. The spacing among the coulters determines the depth at which readings are collected -- typically 1 and 3 ft deep.

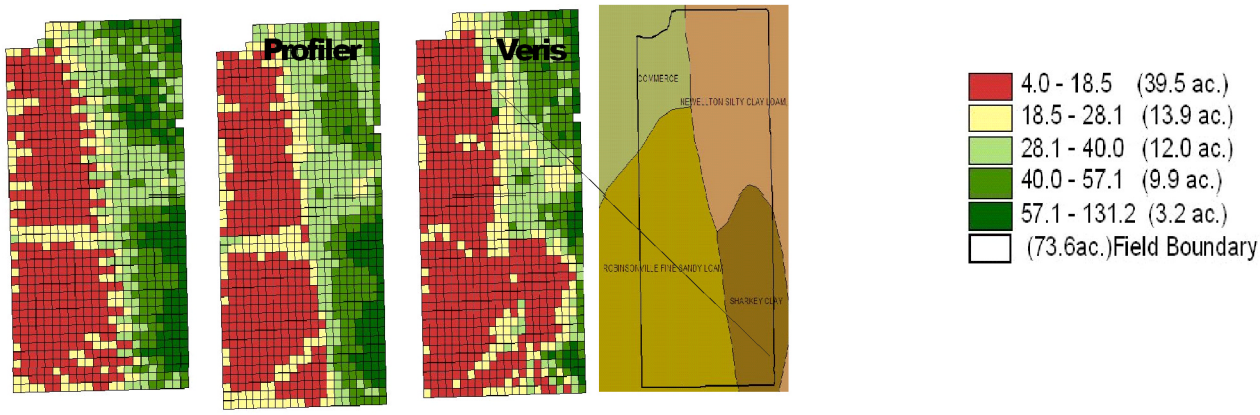
There are other alternatives, perhaps not as common as the Veris. These other units work on a different principle. They are based on the principle of electromagnetic induction (EMI). Some of such units include the Dual EM, EM-38 and the EMP-400. These units are portable, weighting no more than 20 lbs and consisting of a bar measuring 4-6 ft long by 6-8 inches wide. The EMI units are run on top of the soil and can be easily pulled with a small ATV, at a faster speed than a Veris unit. However, the presence of metallic materials will affect the readings significantly (nails, equipment, jewelry, etc). The other difference is that sensing depth can be easily changed on the EMI units, with readings obtained as deep as 5-6 ft, depending on soil type. Research has shown that such information can be used to determine water table depth, and depth of a clay pan. This technique has been successfully used to identify gas leaks, contamination plumes in landfills, and water leaks in underground water lines in golf courses. We recently compared the performance of three sensors in a field in Lee County, with variable soils. Setup of the sensors was relatively simple and took approximately 10 minutes. Once they were calibrated, we were able to map the 77 acre field in about 2 hours. The figures below show the resulting maps according to the different sensors. Dark green areas represent clayey soils; lighter green represent silty-clay and red represent silt and sandy loam soils

It appears that the three of them gave similar results and compare fairly well with the NRCS map on the far right. It is relatively easy to find providers of Veris mapping services in the state. As far as we know, there are only 1 or 2 providers of mapping services who use electromagnetic induction. At this point we don't have enough information to know whether or not EC maps are a better option than grids to guide soil sampling. Our initial goal was simply to compare the performance of these devices. We have started some research looking at the long terms implications of different sampling schemes and associated variable rate fertilization.

-INFO FROM TFI-

The Department of Transportation Pipeline and Hazardous Materials Saftey Administration (PHMSA) has issued a final rule making revisions to the emergency response information required on shipping papers. A copy of the final rule is available upon request at info@arkpantfood.com .

In the final rule, PHMSA will require shippers be claerly identified on shipping papers. The shipper's name and emergency contact telephone number must be on the shipping paper in a prominent, readily identifiable, and clearly visible manner so that it can be found quickly . This info will be required even if the shipper uses an emergeny response service, such as CHEMTREC. The effective date is October 1, 2010. Voluntary compliance is authorized beginning November 18, 2009. Questions regarding this final rule can be directed to Pam Guffain, TFI's VP of Member Services by telephone ar 202-515-2704 or by email at pguffain@tfi.org.



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