How often do you find yourself in a friendly argument with someone on an issue, to later find out the reason for the disagreement is a simple difference in definition? Recently, I found myself in such a situation on the issue of soil testing and fertilizer recommendation. I learned from the experience that providing a simple explanation of my personal definition could have resolved the issue. So in this article I hope to define soil testing and fertilizer recommendation and to explain the difference between them.

The simplest way for me to define soil testing, is that it is an extraction method (chemical mixtures) that is used to determine the amount of nutrients present within a soil. Different laboratories use different extraction methods, for example University of Missouri uses Bray 1 extraction for P and Ammonium acetate for K, Ca and Mg. A common extraction method used is Mehlich III which is widely accepted and most often referred to as the universal extraction method.

A fertilizer recommendation is a way or a philosophy for interpreting and drawing conclusions based on the soil test results. In general, there are two main philosophies behind fertilizer recommendations (mainly for P and K): 1) Buildup and maintenance and 2) Sufficiency Basic cation saturation ratio is also a minor philosophy that is gaining some interest by producers and laboratories.

Buildup and maintenance

This approach I liken to a savings account. The goal here is to maintain soil nutrient levels at certain levels for optimum yield for future years in other words fertilizing the soil. So to me it is like saving, you try to save and put away money for future yields. Fertilizer recommendation is made to apply enough nutrients to meet both the buildup (critical level for optimum yield) and to maintain at or above the critical level by replacing nutrients removed by the crop. Advantage of this approach is that the risk of nutrient deficiencies is decreased. Disadvantage is the risk of over-fertilizing.

Sufficiency

This approach I liken to a checking account. The goal here is to apply only to meet the nutrient requirements of the crop in other words fertilizing the crop. So to me it is like a checking account, only put in the required amount to take care of the bills. Fertilizer recommendation is made to meet the crop requirement that is most likely to result in a yield response. The advantage of this approach is that it tries to maximize yield while minimizing annual inputs and is well suited for short-term leases. The disadvantage to this
approach is that it is short-term and provides no protection against times of high fertilizer prices.

**Basic Cation Saturation**

The goal of this approach is concerned with maintaining a specific ratio of cations (positively charged ion) mainly calcium, magnesium and potassium within the soil. A desired proportion of 65-85% Ca, 6-12% Mg and 2-5% K is the goal of this approach. The use of this method is not well substantiated by research. See link for further reading [http://www.extension.umn.edu/agriculture/nutrient-management/soil-and-plant-sampling/soil-cation-ratios/;http://www.ianrpubs.unl.edu/epublication/live/ec155/build/ec155-4.pdf]

Regardless of the approach, producer should take soil samples regularly to ensure the amount of nutrients in the soil is known. For more information on soil testing and fertilizer recommendations contact your local Extension office. Remember if you don’t soil test you will be forced to guess!!!

A.J. Foster, Agronomy Specialist, University of Missouri, Bloomfield, MO

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**State Fair to Accept Online Competition Entries and Payment Starting May 7**

Exhibitors interested in competing at the Missouri State Fair will now be able to access new online entry and payment options, and online registration for the vendor input form, starting at 9 a.m. on Thursday, May 7. Missouri State Fair Director Mark Wolfe said that the new ShoWorks exhibitor and entries management software program will allow exhibitors to register and submit their entries along with their payment by using an easy online portal available at mostatefair.com.

“The online entry process will be quick and easy, and will save exhibitors time,” Wolfe said. “Online registration is encrypted for exhibitors’ security and is there to protect personal information.”

Among the list of notable features from ShoWorks is the ability for exhibitors with several entries to input their information in a more efficient manner. In addition, a group entry feature will allow parents, teachers, club leaders, coordinators and advisors to submit entries for multiple exhibitors.

Also new in 2015, a livestock entry will no longer be required at the time of submission of a camping reservation form. Livestock camping forms will be available at 9 a.m. on May 1. Reserved campsites open Sunday, Aug. 9, and are only available for livestock exhibitors, commercial vendors and persons with disabilities. Camping rules have been updated and are available on the Fair’s website.

Exhibitors under age 13 will be admitted free to the 11-day Fair again this year, while exhibitors age 13 and over will be able to purchase up to 40 single-day exhibitor admission tickets at a special price of $5. The discounted exhibitor tickets are available to order from the Fair business office at the time of competition entry through Aug. 12. These tickets will not be available at the gate, and they do not include exhibitor parking.

The 113th annual Missouri State Fair, themed “Show Offs Welcome” will be held Aug. 13-23 in Sedalia. More than 30,000 entries are expected for this year’s annual agriculture showcase. For more information about the year’s fair, visit www.mostatefair.com, follow the Missouri State Fair on Facebook and Twitter or call 1-800-422-FAIR (3247).
Spotted Winged Drosophila Cost Share

Unlike other vinegar (fruit) flies, Spotted Winged Drosophila (SWD) attacks healthy thin-skinned fruits close to harvest causing infested fruits to decay or drop.

Specialty crops at greatest risk of SWD infestation are the small fruit crops: blackberries, raspberries (especially fall crops in high tunnels), blueberries, elderberries and late season strawberries. Monitoring and insecticides are now important production tools. This serious new invasive fly has been found in 40 counties since first detected in Missouri in 2013.

The Missouri Department of Agriculture has an insecticide cost share program for the 2015 and 2016 season through a USDA Specialty Crop Block Grant. Funding is available to reimburse 50% of the purchase price of SWD insecticides to participants up to a maximum of $750 per grower.

The insecticide cost share program will benefit Missouri’s small fruit industry by helping farmers to transition to additional management strategies to reduce populations of SWD, reduce damage and retain market share.

Requirements to qualify for this cost share program are:

- Grow fruits for sale that are susceptible to SWD infestation (non-bearing plants aren’t at risk)
- Provide proof of purchase price for labeled insecticide products or insect barrier netting
- Have training in SWD identification and how to manage crops to minimize impact: 1.) Proper identification of SWD is important to avoid unnecessary insecticide applications; 2.) Training can be through workshops, online, etc.
- Using a monitoring tool to facilitate initial timing of insecticide application (traps, degree day model, etc.)

Have a pesticide applicator’s license (the most common type is a certified private applicator license. Private applicator training is available year round through your county Extension Center. This license is necessary to use or purchase restricted use pesticides.

For an information packet with details about the insecticide cost share, contact Anastasia Becker, MO Department of Agriculture at 573-526-0837.

Top picture - The adult spotted winged drosophila compared to the size of a blueberry.

Lower picture - A larva after hatching inside the blueberry fruit.
**Showcase Conservation Field Day**

**Friday, May 15 2015 (rain / shine)**

Wayne & Debbie Corse’s Farm, Patterson Missouri

9:00 am to 3:00 pm

Sponsored by the Wayne County Soil & Water Conservation District

Topics include:

- Rotational Grazing
- Pasture Weed ID
- Livestock Nutrition
- Management of Forestlands, Glades, and Streams
- Feral Hogs
- Pollinator Habitat

Come spend the day with us! Dress according to weather. Refreshments and lunch will be provided.

Call 573-224-3410 to RSVP by May 8

Please advise if you will need special accommodations.

See directions to Wayne’s Farm on back of flyer.

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**Pesticide Collection Event**

**Saturday,**

May 30, 2015 8:00am to 1:00pm

Fisher Delta Research Center, Portageville, is hosting a free Pesticide Collection Event for Missouri farmers and households, provided by the Missouri Department of Natural Resources and University of Missouri Extension. Drop-off will be available 8 a.m. to 1 p.m., Saturday, May 30. The following items will be accepted: pesticides, insecticides, herbicides, fertilizers containing herbicides or pesticides, fungicides, rodenticides, de-wormers and fly tags.

MU’s Fisher Delta Research Center is located at 147 West State Highway T in Portageville.

The collection is for Missouri residents only. Farm chemicals from businesses, pesticide production facilities, distributors or retailers, and the like will not be accepted.

Contact C.J. Plassmeyer, Missouri Department of Natural Resources, at 573-751-0616, with questions. Visit dnr.mo.gov/env/hwp/pesticide for future collection sites and dates, as well as recommendations for safe transport of the chemicals to the drop-off. For directions to Fisher Delta Research Center, go to delta.cafnr.org/contact.
For those of you who grow watermelon or other cucurbit as a cash crop there is a new insect and disease identification tool that can be utilized to help identify issues in the crop.

This application can be accessed online using any portable device that can access the web.

Once you have access to the site at http://extension.missouri.edu/Melon you can choose to identify a pest or a disease.

Select the appropriate choice and follow the tabs from there.

Each possibility will give you a description of the issue and in most cases there is a picture for comparison.

For example this picture of gummy stem blight at the cotyledons on the seedling.

This is a ‘tool’ to help with identification but in order to find out for certain what is going on a sample should be sent for lab identification.

Working with the local specialist, you will be able to pull a sample to send to the lab if necessary.

Contained within the application is a list of contacts or specialists that can help depending on where your field is located in the state of Missouri.

We have already seen some issues with seedlings as they are planted in the field, so keep an eye open and don’t be afraid to utilize this new tool.

Sarah Denkler, Horticulture Specialists, University of Missouri Extension, Poplar Bluff, MO
“An ounce of prevention is worth a pound of cure” – Benjamin Franklin

In medicine, it is better to prevent a disease than to cure it, and it is the same in crop production and management. It is better to correct soil pH and fertility prior to planting while there is an opportunity to incorporate lime and fertilizer into the soil. If a plant disease can be prevented by planting resistant varieties, it is better to plant resistance varieties than to deal with the disease later.

I was once told that good decisions don’t always guarantee success, but bad ones often certainly guarantee failure. In crop production, seed germination and seedling emergence are the foundation of the total crop. Getting a good stand is the key to your success. With this year, plagued with uncertainty on commodity price, and the farm bill coupled with a wet spring delaying planting; doing everything to get a good stand should be the number one priority.

In my opinion, a crop can only produce maximum yield when established under the right condition. So a season like this one where most crops will be planted later than normal due to the wet condition, taking all the necessary precautions to start with a good healthy vigorous stand with high yield potential will be the key to a successful growing season.

Key factors to getting off to a good start:

The obvious first step to getting a good stand is getting good quality seed that have a germination percentage of 85% or higher.

Treating seeds with a seed treatment that helps to ward off seedling insects and diseases is a worthwhile investment to ensure that your crops get off to a quick and trouble free start.

Getting all the necessary weed control measured accomplished (Burndown and pre-emergence chemicals) to ensure you are starting out weed free.

The later planting ensures we are planting into warmer temperatures. But, we still need to be mindful that we are always an “hour from a flood and two weeks from a drought”. Attention to weather outlook after planting is important as rain and temperatures following planting can impose significant stress on seed emergence and seedling health.

The next step is to make sure that the seed is planted into the soil that is loose enough to provide good seed to soil contact and that the seed is covered with enough soil to allow for normal development. Whether you no-till or till, the depth a seed is planted is critical (1.5 to 2 inches is recommended but may vary by soil type and planting condition). In tilled soil there is tendency to bury seed too deep and to press soil too firmly around the seed, while in no-till the failure to cover seed adequately is a common problem.

Getting a good stand is the key to success, so avoid the temptation of planting into conditions that are not ideal (i.e. too wet). Planting into wet conditions can cause compaction and reduce stand establishment.

A. J. Foster, Agronomy Specialist, University of Missouri, Bloomfield, MO.
Future Meetings & Events -

**Showcase Conservation Field Day - Friday, May 15, 2015.** Wayne & Debbie Corse’s Farm, Patterson Missouri from 9:00 am to 3:00 pm. Call 573-224-3410 to RSVP by May 8.

**Pesticide Collection Event - Saturday, May 30, 2015.** Fisher Delta Research Center at 147 West State Highway T in Portageville, MO from 8:00 am to 1:00 pm.

**Missouri State Fair - August 13-23, 2015.** Sedalia, MO. For more information visit www.mostatefair.com or call 1-800-422-FAIR.

**Commodities and markets** - [http://extension.missouri.edu/scott/crop-budgets.aspx](http://extension.missouri.edu/scott/crop-budgets.aspx)

**2014 Farm Bill** - [http://extension.missouri.edu/scott/Farm-bill.aspx](http://extension.missouri.edu/scott/Farm-bill.aspx)

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**USDA Grants Help Cut Energy Costs for Farmers and Rural Small Businesses**

USDA is offering grants and loan guarantees to help rural businesses and agricultural producers reduce their energy costs and consumption.

The funding is being provided through USDA Rural Development’s Rural Energy for America Program (REAP). Loans and grants are available to purchase and install renewable energy systems or make energy efficiency improvements to a farm or business.

Renewable energy systems include solar, wind, geothermal, anaerobic digesters, and renewable biomass.

Energy efficiency improvements include grain drying and handling, lighting, refrigeration, facility improvements (such as adding insulation or replacing windows), heating and cooling upgrades, motor replacements and automated control upgrades.

Grants of up to 25% of a project’s total costs are available. The maximum grants are $250,000 for energy efficiency improvements and $500,000 for renewable energy systems. The REAP program also provides for the guarantee of loans for up to 75% of the cost of a renewable energy or energy efficiency project.

Grant application deadlines are April 30, 2015 and June 30, 2015. Guaranteed loan applications will be reviewed on a monthly basis. Grants are awarded on a competitive basis. Residential projects are not eligible for the REAP program.

Missouri has nearly $2 million in grant funding available for renewable energy and energy efficiency projects. For information on REAP contact (573) 876-9321 or email nathan.tutt@mo.usda.gov
The Arts As A Portal to Science Communication.

July 12-16, 2015

Summer Art/Science Camp for ages 15-18

Sponsored by: MU Extension Community Arts Program (CAP), MU’s Christopher S. Bond Life Sciences Center and 4-H Center for Youth Development. CAP is offering one full residential camp scholarship (a $500 value) for a Missouri high school student. Go to http://extension.missouri.edu/communityarts/artandsciencecamp.aspx for more details or contact, wooleryl@missouri.edu.

Early registration is $500 by May 7, 2015 or $550 after May 7.