

Gregg County Extension Office
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<http://gregg.agrilife.org/>

Oil Belt Farm & Ranch Club Newsletter...
Electronic Version

April - 2019

TO: Oil Belt Farm & Ranch Club Members

BY: Randy Reeves, Gregg County Extension Agent – Agriculture

Plant Nutrients & Soil Testing...

My good friend Clint Perkins, County Extension Agent in Smith County wrote this news article for the Tyler paper and I told him I was going to use it in a newsletter...

There are sixteen essential elements that are required by every plant for growth and development. Three of these nutrients are supplied by air and water. They are carbon, hydrogen and oxygen. Thirteen of these nutrients are supplied by the soil. The three primary macronutrients are nitrogen, phosphorus, and potassium. We call these the big three because they are required by the plant in largest amounts. The three secondary macronutrients are sulfur, calcium, and magnesium. These secondary macronutrients are required by the plant in large amounts but not in the quantity as the primary macro nutrients. There are 7 micronutrients which are iron, zinc, manganese, copper, molybdenum, chlorine, and boron and they are required by the plant in small amounts. If any of these nutrients are lacking, the plant will not grow to its full potential. This is called Liebig's Law of the Minimum.



Plant nutrition usually is not a problem in forested areas and pastures with native grasses because of nutrient recycling and lower nutrient needs of the plants. In garden areas and improved pastures and hay meadows where we remove the growth for production by harvesting. This removes the nutrients and takes them away from the natural recycling of nutrients. With that being said, we need to add additional fertilizers to supplement the crop that is being grown.

What is in a fertilizer that makes it so important, and what do the three numbers mean? The three numbers are the three primary macronutrients which are nitrogen, phosphorus, and potassium, and always in that order. The number indicates how much of each nutrient is present as a percentage of the total weight of the fertilizer. Thus, a 50 pound bag of 15-5-10 fertilizer contains 15% nitrogen (7.5 lbs.), 5% phosphorus (2.5 lbs.), 10% potassium (5 lbs.), or their chemical equivalents. That is only 15 pounds total. The rest of the fertilizer bag weight is simply an inert carrier or filler, such as sand, clay or other materials.

Nitrogen is necessary for vegetative plant growth of the roots, leaves, stems, flowers and fruits. It is the main component in chlorophyll production which gives the plant its green color, and amino acid production which increase protein content up to a point. Nitrogen is highly mobile in the plant which means that the plant will remove nitrogen from the older leaves and translocate it to the new growing tissue. The deficiency symptoms show up on the older leaves first and looks light green to yellow. Phosphorus is essential to cell division, root formation, flowering and fruiting. It is also involved in the storage and transfer of energy vital to all plant growth processes. Consequently, a deficiency causes stunted growth and poor flowering and fruiting. Also, the leaves will have a purplish color to them. Phosphorus uptake is by root interception. That means that it needs to be applied very close to the roots of the plant. If you are growing a garden, apply fertilizer in the furrow or very close to the roots. In pastures, the phosphorus is broadcasted over the entire soil surface and the grass feeder roots will take the phosphorus up. Phosphorus is very pH dependent and can become tied up with other elements (made plant unavailable) if the pH falls below pH 6 or above pH 7. So, try to keep your soil pH between 6-7.

Potassium is another one of the big three nutrients. It is often called potash. It has many roles in the plant with being an osmotic regulator being the main part. It regulates what goes in and out the plant cell. It makes the stem very hardy and adequate amounts prevent lodging (falling over) of the plant. It regulates the opening and closing of the stomatal openings in the leaves. A plant that is deficient in potassium will not be able to open the stomatal opening all the way and this will not allow the plant to transpire (cool itself) properly. A plant will take up more potassium than it needs. This is called luxury consumption. A potassium deficiency will start at the outer edges of the leaf and move inward toward the center of the leaf. It starts off as a discoloration and turns brown to black. We call this marginal leaf scorching, because it looks like a torch was applied to the outside of the leaf.

It is very difficult to determine how much fertilizer to apply to your soil without first conducting a soil test. I usually recommend the routine analysis. I would send it to one of the State Soil Testing Laboratories in Texas to have your soil tested. The two state labs are at Texas A&M University and Stephen F. Austin State University. We have the soil bags and forms in our office. A soil test needs to be conducted every 3-4 years. You will need to get a spade or a soil probe and take a soil sample from 0-6 inches in depth, put each core in a bucket. Mix the soil in the bucket well and fill the soil bag half full and mail it to the soil testing lab. The more samples you take of your property, the more accurate the soil test will be. It is not an exact science, but it gets you very close to what is and is not needed in your soil. I always use this analogy, you do not put oil in your vehicle without checking the dipstick first". A soil test can save you money by not over or under applying a nutrient that is or is not needed.

If you have any questions about conducting a soil test, please contact Texas A&M AgriLife Extension office in Gregg County located at 405 East Marshall Avenue or call 903-236-8429.

Happening This month...

Beef Quality Grades & LISD Meats Lab Tour...

Dr. Jason Banta and Trevor King will be leading us through the in's & outs of beef quality grades and how this is affected by genetics, management & cattle nutrition. We will also get an up-to-date tour of the meat lab at Longview High School. Plan to meet at the meat's lab located at; 3209 Airline Drive, Longview, Texas on Tuesday, April 23rd at 6:00 pm. For more information and a copy of the program flyer, go to; <http://counties.agrilife.org/gregg/files/2018/10/meats.pdf>



Sneak a peek at Next Month...

Farm Equipment Safety & Sprayer Calibration Demonstration...

The Oil Belt Farm & Ranch Club, Texas A&M AgriLife Extension and Kelly Tractor & Equipment will once again host the 2019 Farm Equipment Safety & Sprayer Calibration Demonstration at Kelly Tractor & Equipment here in Longview, Texas. The program will be held on Tuesday, May 14th, starting at 6:00 pm. We will also be offering two (2) credit hours toward any TDA pesticide license holder for re-certification hours. Meal provided courtesy of the folks at Kelly Tractor & Equipment.

Topics...

- Tractor & UTV Safety on the Farm
- Warm Season Weed Controls
- Live Sprayer Calibration Demonstration



For more information and a map to the program site, go to; <http://counties.agrilife.org/gregg/files/2018/11/tractor-1.pdf>

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Educational programs of the Texas A&M AgriLife Extension Service are open to all people without regard to race, color, religion, sex, national origin, age, disability, genetic information or veteran status. The Texas A&M University System, U.S. Department of Agriculture, and the County Commissioners Courts of Texas Cooperating.

24th Annual



Crawfish Boil

All you can eat Crawfish & Catfish
Maude Cobb Activity Center
Saturday, April 13, 2019

Proceeds go to the
Harvest Festival
SCHOLARSHIP FUND
For 4-H & FFA



3:00-6:00 pm Seating - \$40 each or Private Tables of 10 - \$400 each
7:00-10:00 pm Seating - \$40 each or Private Tables of 10 - \$400 each

Limited amount of VIP tables - \$600 each
Call 903-236-8429 for details