**More on Plant Nutrients and Sources**

The last article covered Nitrogen so this week we will talk about the other two primary nutrients Phosphorus (P) and Potassium or potash (K). Soil sampling to see what your P and K levels are very important. A very good agronomist once offered this excellent analogy: Think of N as the fuel in the tractor-add fuel in relation to the amount of work to be done. Add N based on yield goal. Think of P&K as the oil in the crankcase- add oil in relation to the amount on the dipstick. In other words, add P&K according to levels on your soil test.

Let us begin with the exciting and often misunderstood nutrient Phosphorus. Phosphorus levels are just as important as nitrogen levels. Phosphorus is essential to plant growth; insufficient P will limit the potential response of nitrogen on the plant. Phosphorus is also critical in root development and crop maturity. When your soil test index indicates a deficiency of P, then the likelihood of response to P fertilizer is high. This is one reason soil sampling is so important, choosing not to soil sample or to ignore soil test recommendations for P means missing potential yields. If your soil test P level is only 50 percent sufficient then you can only achieve 50 percent of the maximum potential yield. This is before any other yield-limiting factors are encountered. Lack of rainfall only magnifies deficiencies. In drier years, it is important to apply fertilizer to eliminate deficiencies to take full advantage of the moisture that is present. Sources for Phosphorus are diammonium phosphate (18-46-0), monoammonium phosphate (11-54-0), and superphosphate (0-46-0).

The next major nutrient is potassium. Potassium is absorbed by plants in larger amounts than any other mineral element, except nitrogen. Unlike N and P, potassium has an indirect effect on plant growth; it does not make up any part of the plant but is vital for activation of enzymes throughout the plant. It is extremely important in ensuring the plant can withstand extreme cold and heat. It assists in making the plant more drought hardy and disease resistance. K is also important in regulating water use by the plant. Many of our soils have high concentrations of K, but the only way to know if you need to add K is with a soil test. Sources of K are potassium chloride (0-0-60) and potassium sulfate (0-0-50).

In hay production on bermudagrass meadows, you would expect to utilize nitrogen, phosphorus, and potassium at a ratio of 4-1-3. To produce 1 ton of dry forage, bermudagrass must absorb approximately 50 pounds of nitrogen per acre, 15 pounds of phosphorus, and 42 pounds of potassium. Grazing situations would be very different as you would not be removing as many nutrients, and you would be recycling many of the nutrients through the livestock’s urine and manure. The same could be said for a lawn where the clippings are not removed.

Fertilizer is still very expensive, but it is cheaper than it has been in the last few years. With some moisture predicted through the end of May, this may be the year to fertilize to meet soil test recommendations to get some forage while we still have moisture. We never know when the rain is going to shut off so having the correct nutrients in your soil will help you to take advantage of the rainfall we do receive.