



January 3, 2012

Utilizing Manure in Fertility Program

AGRONOMY TOPIC OF THE WEEK

Manure can be an excellent and economical source of crop nutrients if utilized correctly. Manure from all sources such as cattle, swine and poultry can be managed effectively to benefit crop production in our area. Manure contains necessary plant nutrients such as nitrogen, phosphorus and potassium along with some micronutrients and high organic matter content that benefit our soils. Manure is highly variable in its nutrient content and can vary from different sources. We must understand this variability to properly manage manure applications to obtain the best agronomic and environmental benefits from it.

The variables that we need to understand are nutrient content, the availability of those nutrients to the crop and variability in application. If we do not understand these, we can over or under-apply manure. If we apply too little manure, we will obviously not have enough nutrients available to sustain the crop. If we over apply we can run the risk of reducing crop quality and increase the incidence of plant diseases.

The first thing that we need to do to effectively manage manure is to have a quality geo-referenced soil sample; this allows us to properly place the manure in the areas where we will see the greatest benefit. Second, we need to have a current manure analysis; this should be done every time manure is going to be applied, because the nutrient value in the manure can change dramatically. Obtaining a representative sample of the manure can be somewhat difficult. Slurry manure should be sampled after it has been agitated, which limits the time for sampling to the time of application, so using samples to obtain an average is essential. Dry or compost manure can be more difficult to sample as there is a lot more variability in it, but a sample is still essential. There are multiple types of manure: slurry, compost, sludge, ash and municipal waste are available to us; understanding what the nutrient availability is in these sources, and accurately applying them, is crucial. A manure test will tell us the total nutrient content of the sample and the amount of each nutrient available the first year of application, which is approximately 50% of the nitrogen and 70% of the phosphorus and potassium. When we have a current analysis we can correctly determine the rate per acre to be applied.

Lastly, and the thing we can sometimes have the least amount of control over, is the manure application. Manure should be applied as accurately as possible, so we can accurately address any deficiencies that the manure didn't correct. Manure applications should either be injected or worked in as closely to the application time as possible to realize the greatest nutrient benefit from it.

Fields that have a long history of manure application may have very high residual phosphorus levels and may need a break from manure applications. The first place for manure is on fields with deficient soil test levels, as they have the greatest potential to reap the greatest reward. Also keep in mind that a manure application may not cover all of the nutrient requirements that a farm may have and an application of commercial fertilizer may be required to address the variability that is present. If one understands all the variables listed above we can accurately credit those nutrients towards a variable rate application of phosphorus and potassium. Please visit with your Central Valley Co-op Agronomist and let them help you assess the nutrient availability, quality and economic value from your manure sources.