

Shoppers Guide: November 6<sup>th</sup>, 2018

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### **Fall Soil Testing of Hay Fields and Pastures**

Mother Nature's weather is giving a little of something for everyone right now! Snow, rain, sunny skies, warm days, cool mornings, days and nights. The saying I always heard as a kid still holds true today: "If you don't like the Kansas weather, wait a few minutes and it will change!" One thing is for certain that is Fall is upon us.

Fall is the preferred time to test your pastures and hay fields. This allows more time for lime to have a positive impact on the next main growing season should you need to apply it and allows you, as a producer, some flexibility in planning nutrient applications. Soil samples are important to help keep you and the fields on track with the right balance of fertilizers on your soil. This can help save you money!

Soil sampling on a regular basis (every 3 – 4 years) can keep you from applying excessive and unnecessary amounts of fertilizer or manure, and can increase yields by revealing exactly which soil nutrients are too low for optimum productivity. By doing this practice properly, producers can save money and reduce the environmental impacts.

To take accurate soil samples, it is best to use a soil probe. In Butler County, you can borrow a probe from the Butler County Extension Office. A shovel or spade can also be used, but make sure to dig a hole first and then take a nice even slice to the correct depth. A shovel or spade that angles to a point at the bottom can easily result in misleading soil test results because the sample is biased by having more soil from the surface and less from lower depths.

When taking soil samples, it is important to have a representative composite soil sample from the field by combining several soil cores and mixing thoroughly. The ideal sampling technique is to take at least one composite soil sample every 10 acres. On these 10-acre areas, take 15 to 20 cores or subsamples to make up your representative composite sample.

If the field has areas where different forages or crops have been grown, or has different soil types, then soil sampling from these areas should be done separately. Sampling depth for pastures and hayfields should be 3 to 4 inches for pH evaluation. For phosphorus and potassium, a 6-inch depth is preferred when submitting samples to the K-State Soil Testing Laboratory since that is the depth we have used to calibrate recommendations.

One important soil property for forage production, especially with legumes, is soil pH. The optimal pH level is 6 to 7, depending on the forage species. Grasses such as brome or fescue do well at a lower pH. But legumes, especially alfalfa, require a near-neutral pH (~pH 7). If the soil pH is too low or too high, nutrient uptake of macro- and micronutrients can be reduced. Especially important for legumes such as alfalfa and clover is the impact of pH on nodulation and nitrogen fixation. At low soil pH, aluminum toxicity can also be an issue.

When you lime a new pasture, it is important to apply the lime 6 to 12 months before planting legumes. If you want to get a more rapid response from liming, use fine-ground liming materials with a high effective calcium carbonate (ECC). Fields that will be planted to alfalfa next spring should also be evaluated for phosphorus and potassium levels and make corrections before planting.

For more information on soil sampling and submitting samples to the K-State Soil Testing Laboratory, visit their website at <http://www.agronomy.k-state.edu/services/soiltesting/> or visit the Butler County Extension Office at 206. N. Griffith, El Dorado, KS.