

**Forage Analysis:**  
*Using it to design a supplementation program*

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As beef cattle producers in the tri-state area, the majority of our enterprises rely upon forages as the foundation of our nutritional management programs. As much as we would like to rely upon a year-round supply of forages that will meet the nutrient requirements of our cattle, for most of us, that is not the case. Oftentimes, we identify forage nutrient deficiencies secondarily by observation of their signs in cattle - poor body condition, extended calving seasons and open cows, weak calves at birth and increased susceptibility to health issues, poor growth performance, and the list goes on. As a result, we are forced to react to the situation. Luckily, conducting a forage analysis provides the opportunity to identify nutrient deficiencies before they create a problem. Doing so allows us to take a proactive approach toward avoiding their negative consequences, which can ultimately affect our bottom line.

After considering the amount of information that is provided by a forage analysis and the potential impact that it can have on cattle, there are very few - if any - investments that have the potential to yield as much return and impact the entire herd. A comprehensive analysis not only tells us the amount of dry matter, energy, protein and minerals in a forage, but it also provides the information necessary to estimate voluntary forage consumption - a factor that is often forgotten when considering forage quality. One factor that is important to keep in mind is that cattle require most nutrients in amounts rather than as a percentage of their ration. When combined with the nutrient content of a forage, an estimate of voluntary consumption can be used to determine if the forage will meet nutrient requirements. In the event that it won't, the information can then be used to identify appropriate supplementation options.

Once those options have been identified, evaluating each based upon its value rather than only retail cost aids in selecting the most economical option. Calculating the cost per unit of nutrient for each option provides a simple means of doing so, and often yields surprising results. Similar to anything else, the cheapest option is rarely the most economical option. Based upon the current and projected cattle market, sound, economics-based supplementation decisions now have the opportunity to have a greater effect on profitability than in the recent past.

Although the majority of analyses are conducted on dry hay, haylage or silage, their utility is not limited to harvested forages. Likewise, conducting a forage analysis is not only important for designing an energy and protein supplementation program. Utilizing a forage analysis to evaluate pasture composition and its inherent changes throughout the grazing season provides the opportunity to identify the best mineral supplementation option(s) for your production scenario -

a commonly recurring question that cannot be answered without gaining insight into pasture forage mineral composition.

Additionally, the benefits of a forage analysis do not end with designing economical supplementation programs. Conducting a forage analysis that includes pH on ensiled feeds such as haylage or silage can also be used to screen for potential issues associated with problematic fermentations. When harvest conditions are not ideal, fermentations can shift to favor the growth of microorganisms such as clostridia or listeria. Currently, pH is the best indicator of whether or not these microorganisms may be present. Evaluating pH prior to feeding provides the opportunity to identify ensiled feeds that may potentially be contaminated with these harmful microorganisms before they affect cattle.

In summary, very few procedures that are as simple and low cost as a forage analysis can have as much of an impact on a beef cattle herd. Not only is a forage analysis the first step toward designing an informed, economical supplementation program, but it also provides the opportunity to take a proactive approach toward addressing nutritional deficiencies in the herd before they have the opportunity to arise. If you have not conducted a forage analysis in the past, I encourage you to try it at least once - it's an investment that you are not likely to regret.