The alternative-forage decision tree

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AT A GLANCE

Alternative forages can provide a means to supply high-quality fiber to the ration when growing conditions are unknown. They can also ensure adequate forage supply, which can help manage ration costs.

For those who know me well, especially my husband, they would not list decisiveness as one of my strong qualities. At the risk of sounding cliché, the typical sitcom-couple restaurant situation plays out in our household on a regular basis and extends beyond restaurants to weeknight meal planning. Decision-making is a delicate process, one where we must weigh the outcome of a variety of options, and in my meal-planning scenario, the outcome is known.

All too similarly, when we pick out what forages to plant and what hybrids to choose on-farm, the options seem endless. And oftentimes the outcome will not be known until the end of the season. This can make crop planning an especially difficult decision. However, there are several tools available that can help guide our decisions and make us feel more confident in the process. I often default to using a decision tree – utilizing several of these tools along the way.

Weighing the pros and cons

The first step in making a forage plan is often deciding what crops will be grown at what time of the year. Although corn silage and alfalfa silage are still prominent fixtures of forage plans, interest in drought-tolerant alternatives continues to grow. This makes sense as more areas in the U.S. are faced with persistent drought or water restrictions – in some cases both. This is where weighing pros and cons is a good first tool in deciding what to plant.

When plagued with the question of spaghetti or roast chicken for supper, spaghetti touts quick prep speed and requires less ingredients. However, roasted chicken may be a healthier option. This then makes me weigh what is most important to me at that time.

Alternative forages, such as forage sorghum, give us the ability to grow a reliable crop even when weather is unpredictable. It provides high quality and large amounts of silage, even when rain or irrigation are limited. Most studies have shown that sorghum requires about 15%-25% less water than corn. However, it may not have quite as much rumen-degradable starch as corn silage. Processing of the sorghum berry and proper harvest time can also help to increase the availability of the starch that is present. Forage sorghum also has higher neutral detergent fiber (NDF), but it is worth noting that the fiber portions of many brown midrib (BMR) sorghums are highly digestible. This digestible fiber can offer a sizable amount of energy for the animal.

It can be helpful to understand how sorghum silage and corn silage nutrients compare to understand the best fit in an operation. **Figures 1-6** outline the nutrients in this alternative forage more in depth. Sorghum can also be an extremely economical crop to grow as seed is often less expensive than traditional summer annuals, and many studies suggest it requires about 20% less nitrogen (N) application than corn silage. With fertilizer costs rising to extremes in 2022, this can be an even bigger economic benefit.

Manage variation

In looking at Figures 1-6, we may focus on averages. Those can be a good start in helping us understand the typical forage, but taking into consideration the variation around that average is also critical. This helps to understand the potential of the feed. The figures outline not only the average of samples tested at our laboratory over the last three years but also show the distribution of these samples. What is the upside and downside of each nutrient, and how do we best plan to land on the upside?

There can be more variability in sorghum silage when compared to a crop like corn silage. However, the top end of many sorghum silages can compare quite well with corn. Thankfully, there is a growing bank of information available from companies that supply seed and university research, as well as other growers' experiences, which can help

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FIGURE 1 Product vs. dry matter

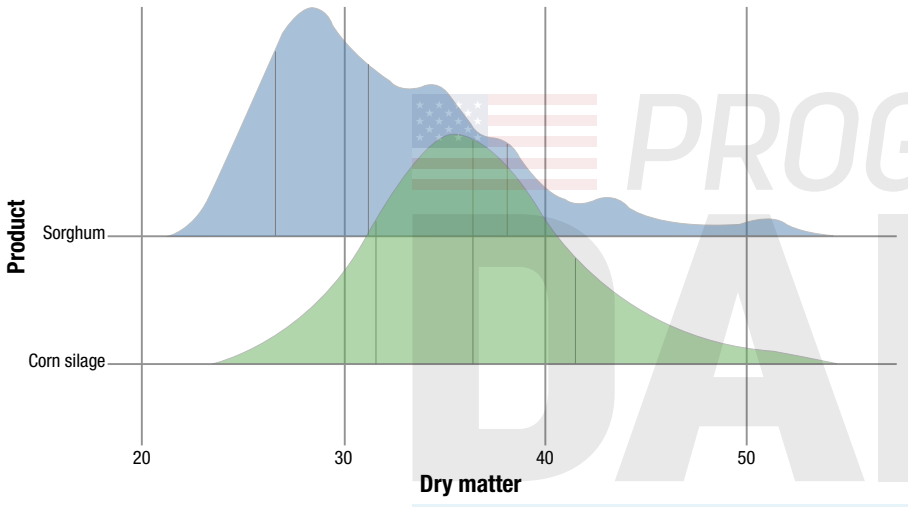


FIGURE 2 Product vs. NDF

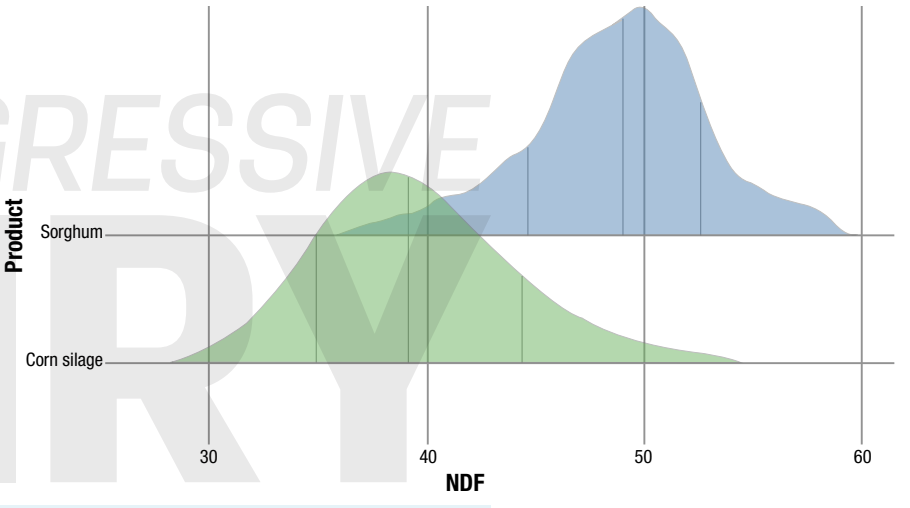


FIGURE 3 Product vs. starch

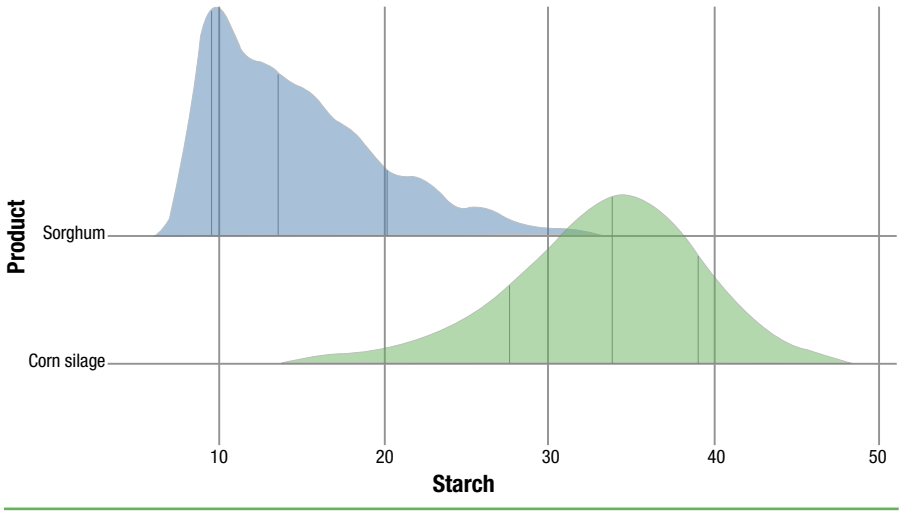
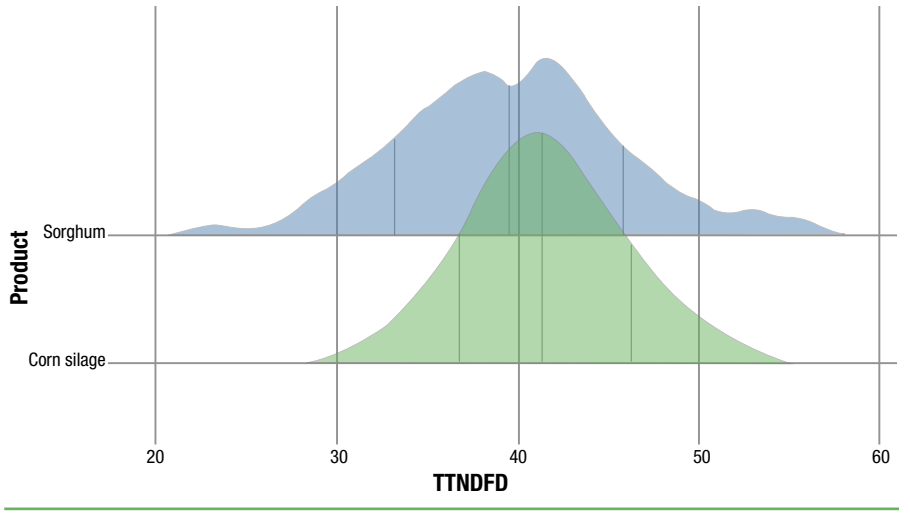


FIGURE 4 Product vs. TTNDFD



ensure we make the correct decisions for crop success.

Understanding variables such as hybrid performance, hybrid type and harvest window can help to narrow down this variability. Even after the crop is mature and harvested, the work in understanding variation is not complete. Testing the hybrids you have chosen to grow, as they are harvested, will give you a step up on making decisions for the upcoming year. It will also help to evaluate what management techniques worked well and what areas need improvement. This is valuable information that can even be implemented in the short term and give you insight as to how to place these forages in rations to achieve their maximum benefit.

Understand the fit

Understanding the end goal of the forages planted can help determine which hybrid or forage will be the best fit for an operation. If there is a feed surplus and chances of water limitation are low, growing the highest-quality tonnage may be the best option. However, if tonnage is a requirement to keep all animals fed without having to purchase feed, implementing sorghum into the crop plan will increase the likelihood of a productive crop regardless of environmental conditions.

Keep in mind, the wide variety of sorghum types and hybrids can make it difficult to choose which one to implement in a given year. Understanding what the need is on the farm will help us determine what type of sorghum can hit those targets.

For example, a sorghum-sudan with high-quality fiber and high tonnage potential may be a great fit

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FIGURE 5 Product vs. uNDF240

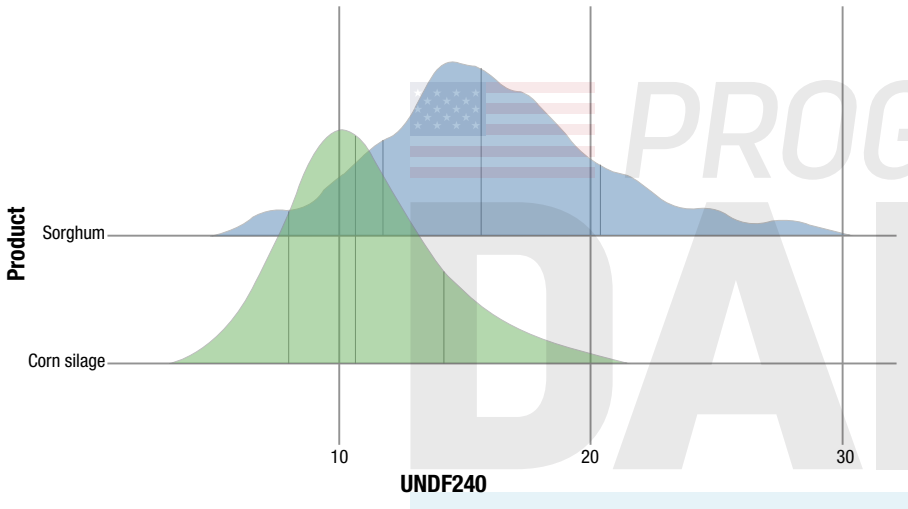
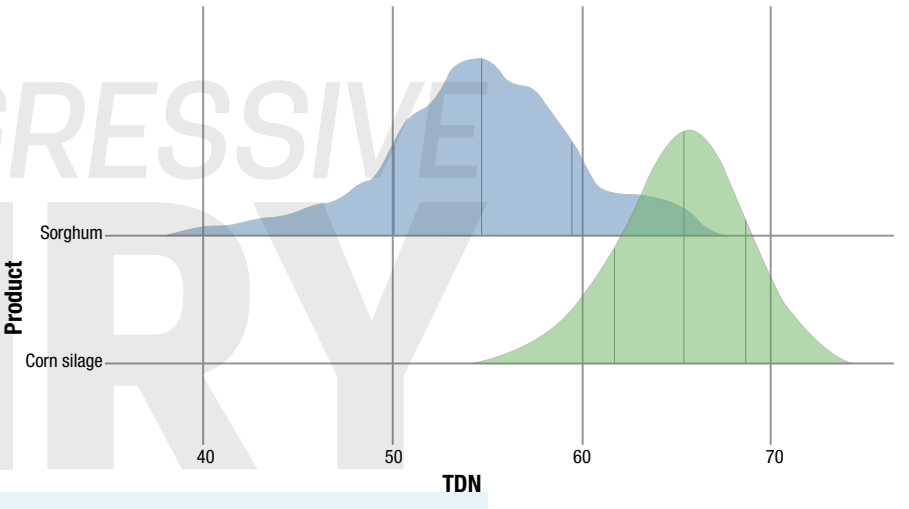


FIGURE 6 Product vs. TDN



Figures 1-6: Density plots of nutrient content in sorghum and corn silage analyzed at Rock River Laboratory over the past three years.

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in heifer rations. However, if looking to fill gaps in a milk cow ration, choosing a BMR forage sorghum that will produce a berry may be a better fit to provide both high-quality fiber and starch content in the 20% range. Again, processing the berry will allow starch to be utilized by the cow as an energy source.

Understanding alternative-forage placement can also help better determine which type of sorghum is best suited. Inputting mock rations into supporting software can help outline what forages and how much can be utilized successfully to help determine what and how much to plant. Although some of these forages may be considered lower quality or not suited to milk cow rations, they often test quite well and can help stretch forage supplies and decrease ration cost.

Increasing milk prices offer a great opportunity for increased profits, but keeping an eye on purchased feed costs will be key to maximizing margins this year. By increasing the amount of forage fed in the ration, we can offset the amount of purchased commodities needed to fill in the blanks. Keep in mind that the highest milk production does not always lead to the highest profitability, especially if it requires more purchased feeds.

Alternative forages can provide a means to supply high-quality fiber to the ration when growing conditions are unknown. They can also ensure adequate forage supply, which can help manage ration costs. Careful planning and research remove much of the guesswork of planting choices and eliminate some of the stress of the process. Work with your trusted forage team to ensure that the right decisions are made to fulfill the needs of your or your customers' unique operations.

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