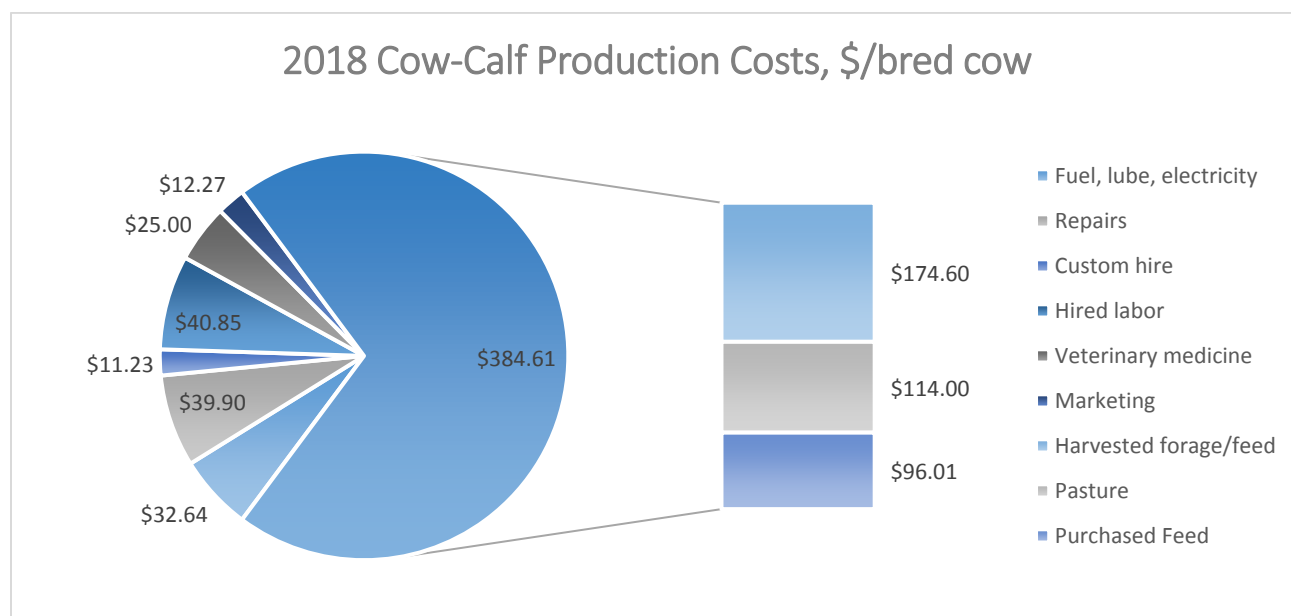


Frequently Asked Supplementation Questions

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Winter brings about many management considerations for beef producers. This time of year discussions among producers and questions posed to extension agents and beef specialists across the country often turn to feeding and supplementation. Feed costs still represent the largest expense for beef producers, and are often a subject of much concern. The graph below represents data from the USDA-Economic Research Service Commodity Costs and Returns and represent cow/calf data for the Mississippi Portal. As you can see, the largest chunk of the expense pie is made up of feeding related costs, which include not just purchased feed, but also pasture and harvested forage (hay).



Source: USDA-ERS 1

Below are several common questions that are often received during winter supplementation periods. More information not addressed here can be found:

<http://extension.msstate.edu/livestock/beef/beef-publications>

How can I know if my cows need extra supplementation?

We visually assess the energy status (fat reserves) of a cow by monitoring her body condition score (BCS). Her BCS is determined by her maintenance requirement, her past nutrient intake, and her past production, and it influences subsequent growth, reproduction, milk production, and life span. Body condition scores are numerical values that reflect fatness or condition of the beef cow, and range from 1 = severely emaciated to 9 = very obese. The change of one body condition score on this system equates to 75 to 80 lb. change in body weight on a 1050 to 1100 lb. cow. More information on BCS can be found: <http://extension.msstate.edu/node/7281>

Why do I need to test my hay? My cows will have to eat it regardless.

While it is true that your cowherd may be required to consume that hay that you have produced no matter the quality, hay testing serves several purposes. First, it allows us to determine nutrient levels in forage and eliminate guesswork in supplementation programs. There are many factors

that affect hay quality including maturity, management, harvest, storage conditions, rain damage, and insect or disease damage. Forage testing also allows producers to match forage/feed supply to animal nutrient requirements, and more efficiently design a supplemental feeding program. Animal requirements differ by animal class, body weight, stage of production, and many other factors. More information on cattle requirements, including tables giving nutrient requirements for various animal classes can be found: <http://msucares.com/pubs/publications/p2528.pdf>
More information on hay testing and forage quality can be found: <http://extension.msstate.edu/sites/default/files/publications/publications/p2539.pdf>

What do all of these numbers mean on my forage analysis report?

After you've made the decision to test your hay, collected and submitted your sample, and received your report, the analysis itself can be a daunting task to interpret. The first 2 values typically given on a forage analysis report are moisture and dry matter. Moisture is simply the water in a feed or forage. Moisture level is of particular interest in stored forage samples, as excessive moisture levels in hay crops can lead to hay heating, quality losses, and even hay fires. Dry matter (DM) is the air-dried component of the feedstuff with all the moisture removed. Next you'll notice that nutrient values are given in 2 columns on the report, as fed (AF) or dry matter (DM) basis. It is important for comparing hay samples or feedstuffs to only compare values under the dry matter basis column. This represents the nutrient levels after the moisture content of the sample have been removed, and thus allows forages to be compared on a similar basis. Crude Protein (CP) is often the next value given on the report, and is especially important because it is the most expensive nutrient to supplement. Total digestible nutrients (TDN) is another important nutrient to consider on your report, and it gives an estimate of the energy content of the feed or roughage. There are typically 2 measures of fiber given on the report as well Neutral detergent fiber (NDF) and acid detergent fiber (ADF). Neutral detergent fiber represents the total fiber component of the feedstuff, and consists of cellulose, hemicellulose, and lignin. Typically, this is used to help predict intake by animals consuming the feedstuff. As NDF increases, intake is expected to decline. Acid detergent fiber is the value that corresponds to the level of cellulose and lignin in the plant. It is important because lignin is considered indigestible by the animal. Therefore, ADF is the estimation of the component of the feedstuff that is indigestible. The greater the ADF value, the more indigestible the feedstuff. More information on interpreting forage analysis reports can be found: <https://extension.msstate.edu/sites/default/files/publications/publications/p2620.pdf>

How do I know what type of supplement to use? Is high protein or high energy best?

This common question can be addressed by answering a series of general questions about your pastures or hay and cow condition. The first question that must be addressed is "Question 1: does the cow have all she can eat in the pasture?". If the answer is "Yes" then forage supply is adequate. The next question that must be asked is "Question 2: What color is the forage?". If you answered "Green", your cows most likely don't need to be supplemented as there is plenty of green growing forage available. If you answered "Brown", then protein is likely limiting in the forage, and you must ask "Question 3: Are the cows in adequate body condition?". If the answer to question 3 is "Yes" then you should supplement with a high protein (>32%) feed source at a low level (0.1 to 0.3% body weight/day). If the answer to Question 3 is "No" then your cows need a supplement that contains both energy and protein at a higher level. It is a good idea to supplement with a more moderate level of protein feed (28-32%) at a slightly higher level (0.25 to 0.4% body weight/day).

If the answer is "No to Question 1", the forage supply is inadequate, and forage supply is inadequate, and the cows are likely energy deficient. It may be wise to consider reducing stocking rate or feeding a supplement to reduce the forage needs of the herd. Question 2 should

then be asked “What color is the forage”. If the answer is “Green”, then your cows should be supplemented with an energy source that is moderate in protein (<20%). If the answer is “Brown” then cows need both protein and energy, and a general rule of thumb is to supplement with a moderate protein supplement (20-28%) at 0.3 to 0.5% body weight/day.

It is important to remember that these questions give a very general guide to start in the right direction for supplementation, and these questions do not accurately measure forage quality or quantity, actual forage testing is always the best method. When feeding an energy source to cattle on pasture, it is best to supplement with sources of highly digestible fiber, as high starch grains can negatively affect pasture utilization.

What’s the best thing to feed my cows this winter?

This is by far the most common question posed to any beef specialist, county extension agent, local co-op, or coffee shop gathering this time of year. Unfortunately (or fortunately depending on how you look at it), there is not a simple answer to this question as many factors must be considered. There is no one size fits all supplement for the beef business. Cattle can effectively utilize a variety of feedstuffs to meet their nutrient needs.

One consideration is handling and storage capability. While some producers have access to facilities and equipment to handle large amounts of bulk commodities, many smaller producers do not. While a truckload of a commodity feedstuff may appear to be the best deal, if the feed goes bad before it can be fed it could equal a big loss. More information on feedstuff handling, storage and feeding systems can be found

<https://extension.msstate.edu/sites/default/files/publications/publications/p2570.pdf>

Another consideration is feedstuff availability. While cattle are able to consume and utilize many feed sources, not all are consistently available. It is important to consider if a feed will be available consistently during your feeding period. More information on feedstuffs for beef cattle can be found: <https://extension.msstate.edu/publications/publications/feedstuffs-for-beef-cattle>.

Another important consideration is your time. Many producers have jobs that do not allow them to deliver a supplement on a daily or even weekly basis to their herd. In this situation, a self-fed supplement such as a liquid, block, or tub may be the best option. Finally an important thing to consider when choosing a supplement is value. While there is a wide range in the prices of feedstuffs and supplements available, choosing the feed with the lowest price per bag or per ton might not always be the best option. Feeds come in a wide range of nutrient levels and digestibility levels. A more expensive feedstuff may contain more nutrients and may be a better value in the end because you will feed less in the long run. A good rule of thumb is to start with your forage quality. Compare cow requirements to forage quality to determine how much of a nutrient cows may be lacking, and match the feedstuff to the deficiency. For example, if a lactating cow is deficient 1.5 lbs of protein, and we have a choice between feeding soybean hull pellets (12% CP) or corn gluten feed (24% CP), we would need to feed her 13 lbs of soybean hull pellets or 6.5 lbs of corn gluten feed to meet the same deficiency.

It is important to remember that cattle supplementation can be a very complicated decision making process. It is important to consider your operation and your cattle when choosing which feed fits you best, and when in doubt ask! Your local county Extension agent is always a good source to start with a question, even if they do not know the answer personally they have many resources at their disposal to find the answer that best fits you.

For more information about beef cattle production, contact an office of the Mississippi State University Extension Service, and visit extension.msstate.edu/beef.