

Supplementation Strategies for the Beef Herd

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As temperatures are getting warmer, moisture is decent, and the grass is greening up, supplementation strategies are likely the last thing on our minds. However, now is as good a time as any to start planning for next year's winter-feeding strategy or have a plan in place in case we see another drought sooner than later. Nutrition is one of, if not the, most important component of a beef cattle system. All of our economically important factors such as reproduction, growth, and immune function are dependent on proper nutrition. Additionally, nutrition represents the largest input cost associated with cattle production accounting for as much as 70% of the annual carrying cost of a brood cow. Adding to the discussion, feed prices have increased two-fold over the past eight years. So, considering the importance of nutrition, and the increasing cost of inputs, now would be an excellent time to re-evaluate our nutrition program to come up with economical, *not cheap*, solutions to find. When it comes to nutrition, I always say it as simple as "1 – 2 – 3". That is, 1) Understand your production system, 2) Recognize the nutrients available your forage program, and 3) When one and two do not come together, develop a sound supplementation strategy. Many producers could improve efficiency in their feed programs by understanding what nutrients they have available in their forages and managing those nutrients to be allocated properly according to the changing needs of the herd.

1. Understand your production system. The first thing to ask is, "Do we really understand the nutrient requirements of our brood cows and how that changes throughout a 365-day year?" Our goal as cattle producers is to have a calf per cow every 365 days. A common figure used is annual carrying cost of a brood cow. The difference in this figure and the price received for her calf is essentially the profit or loss for that cow. If the calving interval extends past 365 days, that means less income to cover the cow's carrying cost, and then we start to lose money quickly. In order to keep on this interval, a cow has approximately 80 days to rebreed after calving. The ability to do this is highly dependent on nutrition. To put this into perspective, a brood cow will prioritize her nutrients in the following order: 1) maintenance 2) growth (heifers) 3) lactation 4) reproduction (cycling). What this means is the producer's number one priority (a calf every 365 days) is the cow's number four (reproduction). To further complicate the situation, this breeding season come during the peak of her energy and protein demands due to lactation (Figure 1). Also, Figure 1 illustrates the large fluctuation in nutrient needs of a cow from calving in one year to weaning, to calving the following year. If a herd does not have a controlled breeding season or is not separated by production stage, it becomes quite difficult to manage nutrient needs. However, if these changing nutrient demands are understood, a nutritional program can be tailored to meet these needs.

2. Understand your forage program. Under proper management, forages are the most economical source of nutrients available for cattle producers. Therefore maximizing the nutrients harvested from forages can tremendously reduce the need of supplements. In many parts of the southeast, fresh forage can be produced throughout most of the year. However, on average, hay is fed for 120 days during the winter. With testing of our pastures and hay, forages can form the backbone of a nutrition program. In some cases the majority, or all, of the nutrients needed can be provided by forages. Conversely, forage quality is often assumed to be adequate when they are actually deficient. This leads to cattle losing body condition and not breeding back in a timely manner.

Handling and knowing the nutrients available from hay may be an obstacle. Typically, a hay producer will get three to four cuttings of hay a year, and inevitably, there will be quality differences between cuttings. If a producer will go through these steps of 1) inventorying hay by

cutting, 2) storing it properly to minimize storage losses, and 3) test it by cutting, they will understand the stock, and potential range, of nutrients available. This will allow them to match nutrients available in hay to the changing nutrients needed of the herd.

3. Develop an economical supplement. In an ideal situation, supplementation of crude protein and energy will be minimal or not needed. However, there will be times when supplementation is needed. With the increase in costs of traditional supplements such as corn and soybean meal, producers are trying alternative feeds. The key is to identify feeds that supply the nutrients needed, and evaluate these feeds on a price per nutrient basis (i.e. correcting for moisture content and nutrient content) using the following equation:

$$\$/\text{lb of nutrient} = \left(\frac{\$/\text{ton}}{\% \text{ dry matter} \times \% \text{ nutrient (CP or TDN)}} \right) \div 2000$$

Example:

$$\$/\text{lb of CP from soybean meal} = \left(\frac{\$525}{0.90 \times 0.54} \right) \div 2000$$

$$\$/\text{lb of CP from Soybean meal} = \$0.540$$

This equation can be applied to all supplements being considered, and allows comparisons across feeds of the actual nutrient in need. *The UGA Feed Cost Analyzer* is available online to help perform these comparisons (www.ugabeef.com/Tools.html). This tool will allow producers to evaluate feedstuffs based on their local prices. A supplement that commonly provides an economical source of energy and protein is a 50:50 mix of corn gluten feed and soybean hulls.

Another consideration for supplementation is *when* to purchase feeds. Right now, buying feed may sound preposterous. However, waiting until the winter to buy supplements can be expensive. Simple supply and demand tells us if everyone else needs it and is buying it, price will go up. Here are a few points to consider:

1. *Historically low feed prices.* Traditionally, prices of common supplements, such as corn gluten feed and soybean hulls are at their yearly low. Therefore, start watching prices in May to see if prices are reasonable to book and/or take delivery.
2. *Gives you a chance to look at forages.* Start now, as hay is being cut and stored for next winter. Since forages serve as our main source of nutrients. It is a great plan to know what nutrients are available, and what gaps need to be filled.
3. *Risk management will give you piece of mind.* Building on the last point, its great to know exactly the nutrients you have available, and the nutrients you need. That will allow you to go into the winter without having to play a guessing game of how much supplemental feed is needed. If you buy feed when everyone else needs to buy feed (in the winter months), the price will be much higher.
4. *Extra feed may be a good thing.* I always get the question, “What if I book more than I need?” If this whole strategy works, the feed should be cheaper when you buy it than when you need it. Therefore if we get into next winter and find out we have more booked than we need, there are several options:
 - a. The contract could be sold for more than you paid.

- b. If you've already taken delivery, there is potential to work a deal with your neighbors (don't be greedy!).
- c. It may make an economic option for creep feed and/or ration for weaned calves.

Develop a New Program

Once a plan to address nutritional needs is developed, it is important to look at the three concepts together. In Table 1, 1) a herd is broken down into four stages of production, 2) three sources of hay/pasture have been tested and inventoried, and 3) an economical supplement of corn gluten feed and soy hulls has been identified. This step can often be overwhelming because it requires the balancing of multiple rations. The use of a ration balancing program will make this step much easier. *The UGA Basic Balancer* was developed to perform this task. It, as well as other balancing programs can be found on the UGA Beef Team website (www.ugabeef.com/Tools.html). By utilizing this program, we can tailor a nutrition program that matches nutrients from forage to the needed class of production.

With input prices continuing to rise, it is imperative that beef cattle producers evaluate their systems to decrease input costs without compromising animal performance. Although the process can be overwhelming at times, the end result can be well worth the time investment. For more information and help developing your program, contact your local county extension agent.

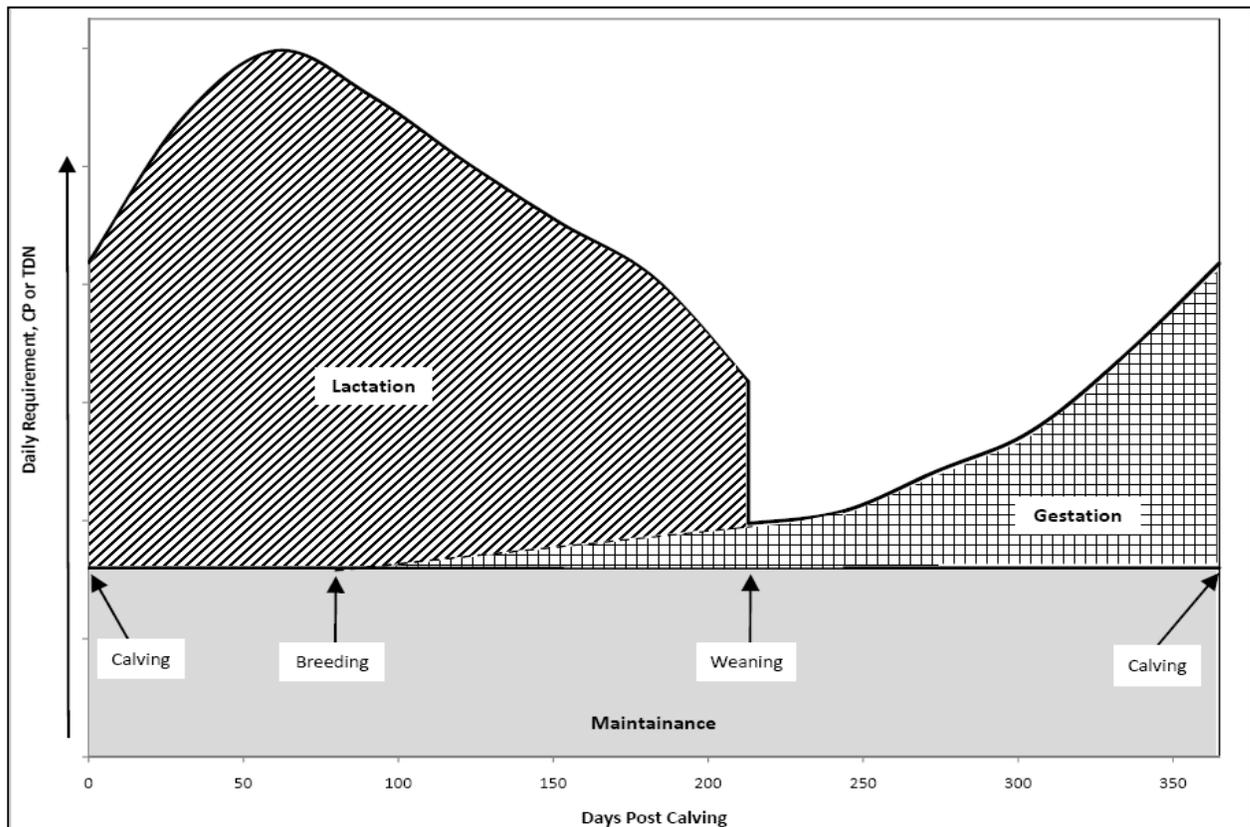


Figure 1. Daily crude protein (CP) and total digestible nutrient (TDN) requirement throughout a 365-d calving interval.

Table 1. Supplement needed (Corn Gluten Feed:Soyhulls, 50:50) to meet the daily requirements of a 1200 lb cow using three different qualities of forage as a base.

Stage of Production	CP and TDN Requirement	Poor Forage, 7% CP, 45% TDN	Average Forage,	Good Forage,
			10% CP, 50% TDN	13% CP, 56% TDN
		lb of supplement/head/day		
Dry Cow	6% CP, 45% TDN	0	0	0
Late Gestation	9% CP, 56% TDN	9	5.5	0
Early Lactation	11% CP, 60% TDN	13.5	10.5	5
Late Lactation	8.5% CP, 55% TDN	8.5	5	0