

# Cattlemen's Corner Beef Newsletter

## Importance of Colostrum

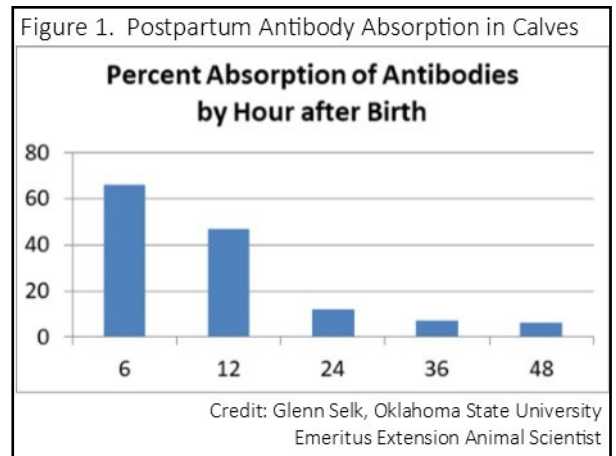
*K. Scott Jensen, Owyhee County Extension*

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Early disease resistance in calves is dependent on passive immunity. Passive immunity occurs when antibodies pass from the dam to the calf by way of the colostrum or first milk after calving. This only occurs during the first few hours after birth. The antibodies shared through colostrum have been shown to positively affect disease resistance throughout the life of the animal.

The calf's ability to absorb antibodies declines linearly and fairly quickly following parturition. This occurs because the specialized cells that allow it to happen are slough off from the epithelium (cells lining the intestine). In calves, this process is complete within the first 24 hours (see Figure 1). Even though it continues up to 24 hours, the efficiency of absorption steadily declines with every hour postpartum.

All colostrum is not created equal. Beef cows tend to produce more concentrated colostrum than dairy cows. This can be important to understand if you get some "emergency" colostrum from a dairy. In general, a calf needs to receive 2-3 quarts of colostrum in the first 4 to 6 hours.



If sufficient colostrum is not available from a calf's dam, colostrum from another cow is the next best solution. This should be collected within the first 24 hours post-calving and then used fresh or frozen until needed. If you need to freeze it, do so in containers no larger than 1 quart in size in order to facilitate thawing when it is needed. You should avoid thawing in boiling water or the microwave as this has been shown to destroy some of the protein antibodies contained in the colostrum.

Colostrum powders can also be used if necessary. Dr. Donald Hansen, retired Oregon State University Extension Veterinarian, has stated that "the label on each bag should state the concentration of antibody

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## University of Idaho Extension, Canyon County

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immunoglobulin or IgG contained in the package or delivered in the label dose. The highest concentration of IgG currently available in this product form is 50 grams of immunoglobulin. A calf requires between 150 to 250 grams, therefore, it must consume three to five bags of the best products.” With that said, colostrum powders can be a great supplement, but it is difficult to meet all of a calf’s need for antibodies and/or adequate initial disease immunity.

In order for colostrum to contain the best concentration of antibodies possible, cows need to be current on appropriate vaccinations for your area. If you are using a scour prevention vaccine, be sure to administer it within the time window recommended by the manufacturer. Cows should also be on a good plane of nutrition, including minerals, well before calving to help ensure adequate colostrum quality.

While we seldom measure colostrum production, quality, or intake in a beef cow herd, we can observe newborn calves and ensure they get up and nurse shortly after birth. This early consumption of colostrum will provide lifetime health benefits to the calf.

*K. Scott Jensen - UI Extension Educator  
County Chair Owyhee County, ID*

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## **Making the Most of Feeding Grass Hay to Beef Cows**

*Melinda Ellison, Extension Range Livestock Specialist*

As we come into winter, it will not be long until we need to start feeding the cows. Some of you may already be feeding as a result of the dry summer we experienced this year. At the very least, everyone probably has their feed purchased, stored, and ready for the upcoming winter. However, is the hay in storage going to meet the needs of your cow herd this winter? A common issue in cow herds fed grass hay is low protein, which can hit your bottom line pretty hard since protein is so important for gestation, lactation, and breeding back. Here are a few tips to make sure that your grass hay is meeting your cow herd nutrient requirements.

### **1. Get your hay quality tested.**

Grass hay quality is highly variable. The protein and energy content of grass hay can be estimated using book values, but in most cases, the estimates will not be very accurate. Crude protein in grass hay can range from 7 - 20%, depending on what grasses make up the hay, growing conditions, and how and when it was harvested. From a financial standpoint, if you underestimate the quality of your hay, you will be feeding unnecessary excess hay. If you overestimate the quality of your hay, no matter how much hay the cows eat, their performance will still decline. Most hay quality analyses run \$20-25 per sample. At that rate, it is a lot cheaper to test the hay and adjust the feeding strategy than it will be to feed extra to try and put weight on skinny cows in February.

Your county Extension office will loan you their hay core sampler, which will allow you to obtain a representative sample of the bales. In using the core sampler, you will ensure that you are not over- or under-representing the nutrients in your hay because you will be collecting a sample across several layers of the bale and including both the larger and finer particles. Take a separate set of samples from different lots of hay (i.e. different fields, baling dates, vegetation types and maturity, etc.). Take a core from approximately 20% of the bales in each lot of hay and place all of the samples from each lot together into a quart zip lock bag. Label each bag in a way that you will know which lots or bales each sample belongs. From a hay nutrient analysis, you will receive enough information to let you know if your hay will meet your cows’ requirements,

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**Questions? Contact:**

Jim Church, UI Extension, Idaho County | 208-983-2667 or [jchurch@uidaho.edu](mailto:jchurch@uidaho.edu)

Or contact your local UI Extension office's livestock educator

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and if not, what and how much you will need to supplement. Even if you are putting up your own hay, make sure to get your hay tested every year. Grass hay from the same field will vary in quality from year to year.

## 2. Storage matters for hay quality.

When possible, store your hay covered and off the ground (cover with a tarp, lay down pallets, place on a concrete pad, store indoors or under a roof) to decrease moisture absorption and susceptibility to rodents and other critters. Moisture can cause molding and age the hay more quickly, which will decrease the quality of the hay over time. If the hay is stored such that it is exposed to elements, consider having the hay analyzed closer to when it will be fed to ensure more precise quality values. Finally, try to feed exposed and older hay first, earlier in gestation when nutrient requirements of the cows are lower compared with late-gestation and lactation.

## 3. Compare hay nutrient values with cow requirements.

Remember that the requirements of cows will increase from early-gestation to late-gestation to lactation due to the growing fetus/calf. The crude protein (CP) and total digestible nutrient (TDN) values will be the first values to consider when comparing nutrient quality and cow requirements. Both values will be on the report as a percentage of the diet and make up the protein (CP) and energy (TDN) that your cows will receive on a daily basis. Refer to Table 1 for CP and TDN values required by body weight for early-gestation, late-gestation, and early lactation mature cows. Keep in mind, heifers will have greater nutrient requirements because they are growing, in addition to gestating, so it is always a good idea to check their specific requirements and feed them separate from the cows. For example, if your grass hay analysis reports 8.5% CP and 59% TDN, which would be typical for a low quality grass hay, it would be acceptable for gestating cows. However, this hay would not meet protein requirements for lactating cows. Therefore, in this scenario, you would want to start supplementing protein 2 – 3 weeks prior to calving as the cows begin making milk.

**Table 1.** Mature beef cow crude protein (CP) and total digestible nutrients (TDN) requirements for early-gestation, late-gestation, and early lactation by body weight.<sup>1</sup>

Cow Size (lb)	Early-Gestation		Late-Gestation		Early-Lactation (first 90 days after calving)*	
	CP (%)	TDN (%)	CP (%)	TDN (%)	CP (%)	TDN (%)
1,000	7.1	50	7.9	54	9.2 – 10.2	57 – 59
1,100	7.1	50	7.9	54	9.0 – 10.6	57 – 59
1,200	7.1	50	7.9	54	8.9 – 10.5	56 – 59
1,300	7.1	50	7.9	54	9.5 – 10.3	57 – 59
1,400	7.1	50	7.9	54	9.3 – 10.6	57 – 59
1,500	7.1	50	7.9	54	9.9 – 10.5	58 – 59

<sup>1</sup>Adapted from NRC, 2000.  
\*Values range by milk yield (15 – 30 lbs/day peak lactation).

## 4. Adding supplementation as needed.

A cow can only eat as much as she has room for. When supplementing, it is best to balance the diet for her nutrient requirements based on her ideal daily intake rather than just adding the supplement on top of what you are already feeding. Each cow should receive approximately 3% of her body weight per day. To simplify, calculate daily intake per cow as 3% of the average cow size of your herd. Maybe as calving gets closer, you will start supplementing alfalfa hay to boost protein. This weighted equation will help determine how much of each feed is necessary to meet protein requirements:

$$\text{Total feed (lb)} * \%CP \text{ requirement} = (\text{Grass hay (lb)} * \%CP) + (\text{Alfalfa hay (lb)} * \%CP)$$

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Assuming that the average cow size is 1,000 lbs, each cow will need 30 lbs of feed per day. If we set the CP requirement at 10.2% and the alfalfa has 20% CP, we can manipulate the amounts of each feed until they fit:

$$30\text{lb} * 10.2\%CP = (25.5\text{ lb Grass hay} * 8.5\% CP) + (4.5\text{ lb Alfalfa hay} * 20\% CP)$$

In this case, you could feed 25.5 lb of grass hay and 4.5 lb of alfalfa hay per cow per day. Make sure to double check what that does to the TDN requirements so that you are meeting both protein and energy requirements. There are several beef cow ration balancing programs and software available to do these equations for you. Using these programs, you can balance for each of the nutrients at the same time with the values from your hay analysis. A ration balancing program will allow you balance the diets in more detail, such as including fiber, minerals, etc. Feel free to shoot me an email (ellison@uidaho.edu) if you want help. I would be happy to help you interpret your nutrient analyses, help you calculate a balanced ration, or set you up with a ration balancing program that is right for you.

At the end of the day, it is worth knowing up front what your hay has to offer to your cows and how you can supplement to meet requirements. Feeding poor quality grass hay to cows can translate into poor-doing calves, reduced milk production, declining body condition, and cows that do not breed back. Overcoming poor performance due to nutritional deficiency in the middle of winter is expensive and often futile, so it is best to start them off in good nutritional standing and maintain their body condition through the winter.

Melinda Ellison - Extension Range Livestock Specialist  
Nancy M. Cummings Research, Extension & Education Center

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**Time:** 9:00 am – 12 pm PST / 10 am – 1 pm MST

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Kate Painter ([kpainter@uidaho.edu](mailto:kpainter@uidaho.edu)) or

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*Preface: This article is the first in a series of writings that will focus on the human and cow connection throughout time and location that will be published throughout the year. The historical and cultural significance of cows is far beyond what can be written here. These articles are meant to be brief and educational.*

## **How Many Cows is a Daughter Worth?**

*Tyanne Roland, Adams County Extension*

In many parts of the world including eastern Europe, Asia, and Africa a dowry is still paid to a bride to-be's family, but not the bride herself. Historically and continuing today there is another custom called "bride price". This is not quite the same as a dowry, but for time's sake, it will be lumped into the dowry definition. When a woman comes to a marrying age the woman's family is losing a family member, a laborer, and often a caregiver. To compensate for that loss, a dowry is paid to the bride's family by the groom or the groom's family. For clarity sake, the term dowry will be used in this article; however, there are numerous names for the custom of accepting items in exchange for a female of marrying age. Though this seems like a cold-hearted transaction, this ritual is very important in many cultures. Even in the technological age of today, dowries are still the hallmark of wedding customs in many parts of the world.

In sub-Saharan Africa, numerous societies still consider the wealth of a man by the size of his herd. Cows are especially symbolic of wealth. Today a dowry can be paid with currency but could still include an offering of livestock to the woman's family. (LSE)

In East Africa, countries hard hit by war and drought are where girls become brides at a very young age, often for financial reasons. It reduces how many people need fed within the family and the dowry provides a cushion of support. Currency may not be worth anything in those countries, but tangible objects are. This is why cows and other livestock are still part of the dowry negotiations. Young women or girls may be worth 30 cows during peacetime or 300 cows during conflict. And unfortunately, this type of transaction is seen more as an auction rather than a familial agreement. In times of drought girls are married at younger ages and along with a dowry, there's peace of mind that that girl will be better taken care of because the man with more cows is a rich man. (Lih Yi, 2018) Poor men in poor countries may resort to stealing cattle in order to afford a bride. That practice is just as dangerous there as it was in the wild west of the United States. (Wikipedia)

So, to answer the question, how many cows is a daughter worth, well.... There's an app for that!

An app called the "Lobola Calculator" (lobola means dowry) has been created for use in South Africa. The app considers the region the woman is from, her age, measurements, attractiveness, education, and employment. The app also factors in if the woman is divorced, widowed or a mother. (Conway-Smith, 2015)

The issue of dowry is now a heavy and heated topic in Western countries. But it wasn't that long ago that even in the United States, a dowry was considered acceptable practice. In many societies, it is often the "main event" of a wedding ceremony tradition. I guess when I got married in a cow pasture it wasn't as unique as I thought it was.

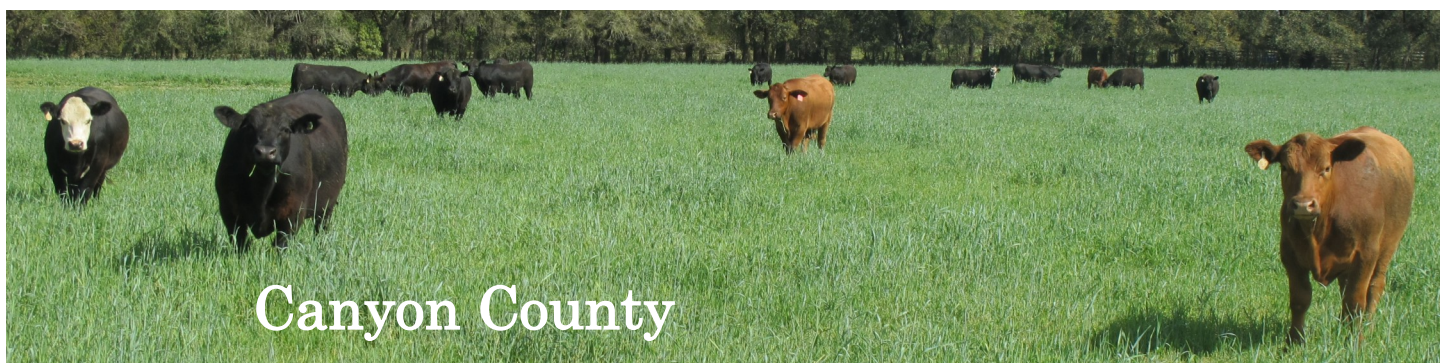
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If you enjoyed this article or have a topic idea, please contact  
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