Winter Feeding of the Cow Herd

Scott Jensen, University of Idaho-Owyhee County Extension
Ron Torell, Long-Standing Educator and Advocate of Agriculture

Whether you are selling, purchasing or feeding hay it is important to know what you are dealing with. The most accurate way to compare different feedstuffs is to compare them on a price per pound of nutrient basis, not price per ton of feed. This type of comparison can save/earn you valuable dollars.

Feeds should not be compared by cost per ton as this is very misleading. When nutrient shopping you are normally interested in protein and/or energy. Don’t get caught paying high prices for ingredients used as fillers. When comparing feeds for specific nutrients the following guidelines assist in determining the best buy.

First, determine the dry matter content per ton of the feeds to be compared. Do this by multiplying 2,000 pounds by the percent of dry matter contained in the feed as determined by laboratory analysis. This will give you the total pounds of dry matter in one ton of feed. For example, if a hay sample is 87% dry matter, multiply 2,000 pounds of as-fed hay by 87% (0.87) dry matter content which results in 1,740 pounds of actual dry matter.

Next, determine the total pounds of a nutrient in those 1,740 pounds of dry matter. Do this by multiplying 1,740 pounds by the percent of the nutrient contained in that feed. For example, if the hay is analyzed at 16.5% crude protein on a dry matter basis, multiply 1,740 pounds of dry matter x .165 (16.5% crude protein) = 287 pounds of crude protein. This leaves 1,713 pounds of water, other nutrients and filler contained in one ton of as-fed feed (2,000 pounds – 287 pounds of crude protein = 1,713 pounds).

Finally, determine the cost per pound of actual protein. Do this by dividing the ton price of as-fed feed (most feeds are priced as-fed and/or by the ton) by the pounds of actual protein contained in that ton of as-fed feed ($150/ton ÷ 287 pounds of crude protein = 52.3¢/lb).

Continued on page 2
In the example above, $150/ton of as-fed hay with a protein content of 16.5% (dry matter basis) has a price comparison shopping value of 52.3¢/lb of crude protein. This same pricing method can be applied when shopping for energy by simply replacing the protein components of the above formula with the energy numbers.

Protein supplements are perhaps the most difficult to evaluate because they can differ in the amount of utilisable protein. Feed supplements such as tubs, liquid and block often contain non-protein nitrogen (NPN) sources such as urea, biuret and others. There is also bypass protein and rumen degradable protein. Non-protein nitrogen sources of protein do not equal natural protein yet many unsuspecting cattlemen purchase these products assuming they are. The extent to which NPN is utilized is dependent upon several factors including the energy content of the ration and the quality of the available forage. The general rule of thumb nutritionists follow for animals consuming a forage based diet is that no more than 1/3 of the total protein of the ration should be provided to the animal from non-protein nitrogen sources when adequate energy is contained in the total ration and/or supplement. For this reason, read the feed analysis label and remove the NPN portion of the protein for price comparison purposes. Recognize that if a supplement contains no more than 1/3 of the protein content as NPN, animals will utilize a portion of the NPN as protein.

Factors other than price should also be considered when shopping for feed ingredients. These include but are not limited to:

- Convenience/feeds-ability; i.e. feeding blocks or tubs vs. hay or pellets
- Transportation costs of getting feed to the ranch. Keep in mind it will probably cost the same to transport a load of good hay as it will a load of junk hay.
- Storage facilities at the ranch
- Cost of feeding the product
- Availability of the product
- Consumption amount required to balance the ration
- Other nutrients required to balance the ration
- Waste
- Salt and mineral content
- Competition when fed (bunk space)
- Opportunity to medicate feed
- Worn and broken teeth on blocks

Remember that not all feed ingredients are equal in nutrient value or price. Have feed analyzed so you know what you are buying or selling and sharpen your pencil to determine the best value that meets your needs.
When Should I Start Feeding My Cows?

Ron Torell
Long-Standing Educator and Advocate of Agriculture

Question of the day: “What a fantastic fall. Open fields, blue skies and plenty of dry standing feed. When should I start feeding my cows?”

The short answer - in generalities for each operation is different and has different resources available or unavailable.

Do not let these clear, open, blue sky and very cold days cloud your vision. Remember you can not starve the profit out of a cow. Sort your cows into young, thin and mature cow groups. Sorting cows is not only for nutrient demand but also reduces competition on the feed ground. Hopefully your cow herd has a tight calving interval so you can manage them according to stage of production, age and body condition.

Young cows, especially if they are thin, start feeding right away or at least provide a supplement. They need help. Old cows in good body condition are fine if they are in the mid trimester of pregnancy. Once the mature cows get into the last trimester of pregnancy they need more nutrition as well.

The long answer - in generalities for each operation is different and has different resources available or unavailable.

March and April calving cows are in their mid trimester of pregnancy and turning the corner on the last trimester. Mature cows in good body condition require approximately 7% crude protein in their diet at this stage of production. This standing dry feed will run anywhere from 4 to 7%. Our veteran employees in good body condition will do fine without feeding at this time although a little protein supplementation would not hurt. Every other day supplementation of protein could be considered.

It is our young cows that need our attention. Holding off on supplementation or feeding of these young cows will bite you next year in breed back. Our young cows in mid trimester of pregnancy grazing this 4 to 7% aftermath require 8 to 8.5% crude protein in their diet at this stage of production. Do the math—it does not add up. Consider protein supplementation and / or the start of hay feeding on your young cows.

What you do or do not do today will affect production and breed back next spring. Management is a process of anticipation and action. Viewing your young cows for body condition can be deceiving for rumen fill of dry feed gives the impression of a higher body condition than is actual. Also young cows have less capacity, the fetus will extend the abdomen also deceiving the true body condition. Add on the colder temperatures and you can see the need to feed these young cows now even if you have plenty of standing old feed.

Do not forget mineral supplementation. Fetal growth and immune system development of that fetus requires a good mineral supplementation program at this time. MINERAL MINERAL MINERAL is the minimum.
Selecting Heifers That Are Right For Your Operation

Melinda Ellison, Range Livestock Extension Specialist
Nancy M. Cummings Research, Extension, and Education Center
Animal & Veterinary Science Department, University of Idaho

Most beef producers are weaning calves and making selection decisions on replacement heifers this time of year. Sometimes it can be difficult to find the time to make the best selection decisions with everything else that is going on, and when there are not enough hours in the day, it is easy to select heifers on shipping day based on how they look and what you can remember about their mother. I have been as guilty as anyone in doing just that on occasion, but that selection method by itself does not always work when you are trying to make genetic improvements in your cow herd. Sure, you do not want to keep the bag-of-bones with the potbelly regardless of their genetics, but the key to making the best decision is having and referring to good records and supplementing those selection decisions with how a heifer looks. Sitting down with your records spread out in front of you can help speed up the decision-making process and ensure that you are choosing the correct heifers to retain in your herd.

1. **Identify what you want to improve in your herd.** Genetic progress is not just made through bull selection. As you bring replacement heifers into your herd, remember that the bull only throws half of the genetics, and the cows are responsible for the other half. Take some time to think about what would really benefit your herd, whether it is better growth, better mothering ability, or better performance on range. Selection can be as simple as choosing one or two traits to select for, or using several traits in an index.

- **Single Trait Selection:** Select the top performing heifers for one trait.

- **2 or 3 Trait Selection:** Select heifers that perform above a specific threshold for both/all traits OR select the top performing heifers in one trait, and then from that group, select the top performing heifer in the second trait (this method works well for selection for the first trait at one time period, and then selection for the other trait at a later date; for example, trait 1: weaning weight, trait 2: yearling weight).

- **Index Selection:** Allows selection for multiple traits and allows you to choose how important each trait is to the selection. For example, you may want to have one trait make up 60% of the decision, the second trait make up 15% of the decision, the third trait make up 10%, etc.

  \[
  \text{Index Value} = (0.6 \times \text{Trait 1}) + (0.15 \times \text{Trait 2}) + (0.10 \times \text{Trait 3})
  \]

  Another way to weight the index is to put dollar values on each trait. For example, each pound of weaning weight may be worth $1.90, and you may estimate that it costs you $0.50 in labor for each pound of birth weight above 80 pounds. These values can be incorporated into the index as a weighted value.

  \[
  \text{Index Value} = ($1.90 \times \text{lb Weaning Weight}) + ($0.50 \times \text{lb Birth Weight above 80 lb}) + ($ \times \text{Trait 3})
  \]

As long as you calculate the index the same for each heifer, you will be able to select the best performing animals with the highest index values.

*Continued on page 5*
2. **Determine if you have the records you need to select on individual traits.** Maybe you are most interested in improving weaning weight, but to do this, you will need individual weaning weights on each of your heifers. Additionally, if you do have the capability to weigh each animal at weaning, do not forget to account for differences in age and birth weight. Selecting your biggest heifers does not necessarily mean you are getting your best growing heifers (see Figure 1, for example). Often, body weight at weaning reflects age more so than it does gaining ability. Assigning heifers into categories, such as ‘small’, ‘medium’, or ‘large’, when you do not have a scale for measuring individual body weights can also be an effective selection tool.

<table>
<thead>
<tr>
<th>Heifer ID</th>
<th>Birth Weight</th>
<th>Weaning Weight</th>
<th>Age at Weaning</th>
<th>Average Daily Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>90 lb</td>
<td>545 lb</td>
<td>195 days</td>
<td>2.3 lb</td>
</tr>
<tr>
<td>002</td>
<td>70 lb</td>
<td>497 lb</td>
<td>180 days</td>
<td>2.4 lb</td>
</tr>
<tr>
<td>003</td>
<td>65 lb</td>
<td>512 lb</td>
<td>172 days</td>
<td>2.6 lb</td>
</tr>
</tbody>
</table>

Figure 1. Heifer calves born in March/April and weaned on October 15.

3. **Use information from mothers and grandmothers to help with selection.** Quality genetics are only so good in a range cow herd. It is important to look back in the records to make sure you are not keeping heifers from a line of cows that fall out of the herd by age 4, do not bring a calf home from range half of the time, bring home a small, dinky calf at weaning every year, or have calving problems every year. For a range herd, it is important to have lines of cows that are hardy on range, bring home a big, healthy calf each fall, breed back quickly, stay in the herd to a ripe age, have no calving problems, and have good milking ability (but not too much).

These are some simple methods that you can add to improve your replacement heifer selection decisions and make bigger strides in genetic improvements in your herd. Identifying where you can improve your herd genetics and keeping a good set of records can make all the difference in your selection program. Often you can make selection decisions based on individual performance (such as weaning weight) and then weed out poor cow lines by checking each heifer’s maternal line records and assessing her physical conformation. Remember, your county or state-wide UI Extension educators are always happy to assist in this important decision making process!
Cattlemen’s Corner Beef Newsletter

Timely Marketing of Cull Cows: Every Cattleman’s Responsibility

Ron Torell

Short-term, gummer, and smooth-mouth are all terms cattlemen use to describe their older bovine employees. They have produced well for the past 10-12 years. These cows are the experienced veterans of the herd. However, due to age, lack of teeth, and an anticipated decline in production, they are forced to retire. Before issuing her “pink slip” many try to squeeze that last calf, or in the case of dairy cows, that last drop of milk out of her. Humane treatment of animals and timely marketing of these veteran employees as a means of eliminating non-ambulatory cows at sale barns and harvest facilities is every cattleman’s responsibility.

Prices for cull cows are based on their expected USDA carcass grade. The most common grades, in order of the least amount of marbling and dressing percentage to the greatest, are: canner (very thin body condition scores of 2 and 3); cutter (thin body condition score of 4); utility (moderate body condition score of 5); and commercial (fleshy body condition score 6 and above). Both price per pound and dressing percentage significantly increases with the higher body condition score animals. This economically favors marketing these cows in a timely manner prior to them losing body condition and falling into a lower grade. Most non-ambulatory animals are emaciated and would be classified in the canner, very thin body condition score category.

According to Dr. Dan Drake, Yreka, California farm advisor, “A major reason these old cows decline in production and body condition is due to their reduced ability to breakdown feed stuffs. Of course this is primarily due to the loss of the mechanical tools, the teeth. The digestive system of the ruminant is dependent on small particle sizes for proper digestion. Because the particle size of the feed stuffs consumed by these old cows is increased, passage rate is slowed, thus consumption is reduced. Nutrient requirements of these old cows have not increased; rather her consumption and feed efficiency have both decreased. The combination of the two requires that these cows be placed on a more nutrient dense ration with smaller particle size and softer feed. We need to do more of the feed breakdown for the cow,” concludes Drake.

Glenn Nader, Yuba County, California farm advisor, agrees with Drake. He also feels that many of these old cows have lost some of the villa in the lining of the digestive tract which adds to the lowered feed efficiency and digestion. Additionally, Nader feels functionality of some internal organs such as the liver and kidney is compromised in many of these old cows. Nader feels that these old cows need to be pampered if they are kept for the last calf. “They can no longer produce with the same feed and under the same conditions as the main cow herd. Rations such as chopped hay with a concentrate work well on these old smooth mouth cows. This is a nutrient dense ration which is high in protein and energy. More importantly, because it is chopped, the particle size of the feed is small. This compensates for the old cows lack of ability to break that feed stuff down herself.”

A University of Nevada economic evaluation on heifer development shows that on average, most cows have paid for themselves by age six showing that the longer a cow stays in the herd, the more profitable she becomes. Her production may decline after eleven years of age, so we need to recognize the impact of longevity on the total cost of production. Anything beyond those six years certainly has economic significance. This supports keeping a cow in the herd as long as she is productive and breeds back provided the added cost of winter feed for these aged cows is reasonable.

It is every cattleman’s responsibility and it is the right thing to do. In light of all the publicity concerning weak and downer cows we need to be especially vigilant of the condition of the cull cows we send to the sale barn or packing plant. The cull cows we ship to market are a reflection on all of us in the industry.

If you are unwilling to harvest these cows for home consumption by family and friends, do not send them to market! The take home message of this article is timely and smart marketing of all cull cows. It is the right thing to do.
Learn answers to the following questions:

- What are my resources & how do I use them?
- How do I know when it’s time to irrigate?
- How do I calculate how many animals can graze in my pasture?
- What are these weeds & how do I control them?
- What kind of soil do I have & why does it matter?
- Can I make money from my small acreage?
- Is my well water safe to drink?

10 week class in Caldwell
January 7 - March 11
Monday
from 6:00 - 9:00 pm

Living on the Land is an excellent place to build community with other small acreage owners!

To Receive Information About the Class & Other Programming Contact

Canyon County Extension
501 Main St.
Caldwell, ID 83605
Phone: 208-459-6003
Email: canyon@uidaho.edu

Class Cost:
10 week class = $200 per unit
Unit = Spouses, Family Members, or Business Partners
A unit of 2 people will share a set of materials & receive 1 set of soil

The University of Idaho has a policy of nondiscrimination on the basis of race, color, religion, national origin, sex, age, sexual orientation, gender identity/expression, disability, genetic information, or status as a protected veteran or military status. Persons with disabilities who require alternative means for communication or program information or reasonable accommodations need to contact Samantha Roberts by at least two weeks prior to the event at 501 Main Street, Caldwell, 208-459-6003 or sroberts@uidaho.edu.
Cattlemen’s Corner Beef Newsletter