

# Consider Hay Quality

Rain during spring and summer has reduced hay quality.

by James Neel, University of Tennessee

The frequency and amount of rain experienced this past spring and summer in Tennessee and nearby states resulted in a large amount of forage growth. That is the good news. The bad news is that the precipitation interfered with hay harvest. There were very few three- to four-day windows during which hay could have been harvested without being damaged by rain.

As a result, several hundred acres across the state of Tennessee and elsewhere were not harvested at the appropriate stage of maturity. The grasses continued to grow to a stage of maturity that resulted in increased fiber content, reduced digestibility and nutrition availability. Cow-calf producers need to be aware of the effects of feeding reduced-quality hay to their cattle.

Feeding low-quality hay during the winter can have negative effects on both brood cows and the calf crop. The cows' nutritional needs must be met to produce strong, vigorous calves at birth, as well as adequate colostrum. Calves need adequate

colostrum within two hours following birth, preferably within 15 minutes. In addition, adequate nutrients are required for the brood cow to return to heat and breed back on time. Cows can be undernourished if fed low-quality hay, even when they consume all the hay they possibly can.

Winters in Tennessee are generally cold, wet and muddy, which creates a chill factor that both the dam and her calf must endure. Cold and mud have a greater effect on energy expended or energy lost by the cows

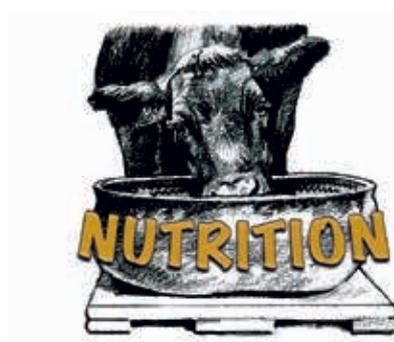
and calves than if the ground is frozen. Mud also can serve as a reservoir for disease-causing organisms.

*The Old Farmer's Almanac* predicts that temperatures during the winter of 2014 will be below normal, and precipitation will be above normal. Regardless, winters are hard on cattle that are underfed.

## Winter maintenance requirements

Cattle exposed to dry, cold weather will increase their intake of hay by up to 30%, but with low-quality hay, the consumption goes down due to the reduced digestibility. In addition, precipitation and muddy conditions at any temperature may depress hay intake by up to 30%. The reduced consumption can be overcome only by feeding grain or other appropriate concentrates. Providing shelter or a windbreak can reduce the effect of wind and rain. Hays with inadequate protein content will be even less digestible and a poor source of energy.

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When temperatures are between 20° F and 25° F, a baby calf's maintenance requirements increase about 50% compared to those in less-cold weather. Baby calves need more than a gallon of milk just for maintenance. A cow in poor condition that is fed low-quality hay will produce very little milk. Thus, the fate of a young calf that receives only a quart to half-gallon of milk per day is easy to predict.

Following are some suggestions for feeding low-quality hay in the winter and managing beef cows and their calves:

- ▶ Forage-test the hays prior to feeding. Testing is essential to developing an effective winter feeding program regardless of the quality of the hay.
- ▶ Following the results of the forage test, feed the lower-quality hay to the dry, pregnant, mature cows. Supplement if recommended.
- ▶ When feeding low-quality hay, be sure adequate protein is available. This determination can be made based on the forage test results. Inadequate protein will cause the cattle to consume less feed than desired.
- ▶ Feed cows on sod or otherwise out of the mud. Feed hay over as large an area as possible.
- ▶ Cubes are a popular method of providing supplemental protein. Cubes can be scattered across the sod of the pasture, permitting all of the cows to have access to it.
- ▶ Ensure adequate space is available for the cattle to eat from the feeding rings. Generally, the younger, stronger cows will choose the better feed, and the older cows and those that have physical problems will receive what is left over. The leftovers are usually the poorer-quality feed, which causes weight and condition loss.

Performance of the brood cows will be reduced and the performance and survival of their calves will be reduced if the effects of the low-quality feed are not offset. Low-quality hay can be utilized in the winter feeding program for Tennessee cow-calf producers, but be sure you know the nutritional content of the hay and feed accordingly.

For additional information about winter feeding of cow-calf herds, contact your local extension office.



**Editor's Note:** James Neel is animal science professor and extension beef cattle specialist for the University of Tennessee (UT). This article is reprinted with permission from the Fall 2013 Beef Cattle Time newsletter published by the UT Institute of Agriculture.

### Test soil, hay for useful information

There are two very important tests that forage producers should perform consistently — a soil test and a forage test. The results of the tests will help you determine if you need to take any action to prevent poor performance.

Soil test results will give information needed to correct any soil fertility issues that might be found in pastures and hayfields. Low pH, potash or phosphate levels might result in reduced yield, plant persistence and increased weed pressure. A soil test performed once every three years will help you monitor your soil fertility and give you the lime and fertilizer needed to grow the desired crop. If you plan on fertilizing next spring, go ahead and soil sample sometime over the next month or so. Then, in the spring you will know what fertilizer to order.

Be sure to take about 10-15 samples per 10- to 15-acre field. Sample the soil to a depth of 6 inches. Cover the entire field when sampling. Your results won't be as accurate if you only sample the area close to the gate.

A forage test will provide the information needed for the proper winter feeding program for your livestock. A forage test will tell you the level of crude protein, energy and fiber in the hay or silage.

It is important to remember that the most crucial factor influencing forage quality is not the forage species or fertilization, but the maturity of the plant when it is cut. Because of this factor, every year the hay quality will be different.

If you have several different fields, there is a good chance that the hay from the fields could be diverse in protein or energy. If you take a forage test of each cutting, you will know if the nutrient content is good enough to meet the needs of the animals you are going to feed, or whether you need to supplement with some corn (for energy) or soybean meal (for protein).

The University of Tennessee (UT) Soil, Plant and Pest Center can run both forage and soil tests. If you would like more information on either of these tests, you can contact your local extension agent or go to the center's website at <http://soilplantandpest.utk.edu>.

— by Gary Bates, University of Tennessee

**Editor's Note:** Gary Bates is director of the UT Beef and Forage Center. This article is reprinted with permission from the Fall 2013 Beef Cattle Time newsletter published by the UT Institute of Agriculture.

# Too Valuable to Waste

## Manage hay feeding to reduce costs, improve profit.

by James Neel, University of Tennessee

**F**eeding the beef cow herd this winter is likely to be expensive due to the added cost of production. In addition, about 30% of the hay allocated to the cows during the winter is wasted due to poor management and feeding practices, which increases the cost of wintering the cow herd.

Approximately 92% of Tennessee beef cow-calf producers winter their cow herds on hay. Hay is simply too valuable to permit a high volume of waste. Ohio State University recently published its 2013 hay enterprise budgets, which showed the cost of grass-hay production at \$67.86 per ton, and alfalfa hay was priced at \$92.96 per ton.

Tall fescue is the primary source of hay for Tennessee cow herds, and University of Tennessee (UT) economists estimated the cost of production to be approximately \$95 per ton. The average hay price reported by the USDA's National Agricultural Statistics Service (NASS) for 2006-2011 was \$80.33 per ton. Regardless of how the hay is valued, producers cannot afford a 30% loss.

The cost could rise to \$123.50 per ton with a \$28.50 loss, given the cost per ton of Tennessee fescue hay and the 30% loss in feeding. In Tennessee, a mature beef cow could consume about 1.6 tons of hay during a 120-day winter feeding period; the daily winter feed cost per cow would be about 4.8¢ per day. Factoring in the 30% loss due to poor management, the cost would increase to 6¢ per day.

Feeding methods also affect the amount

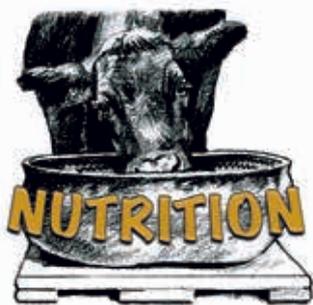


PHOTO BY SHAUNA ROSE HERMEL

► Hay feeders can reduce hay waste compared to providing unlimited access to large round bales. UT Extension Director Larry Moorehead has conducted research to estimate hay waste of various types of hay feeders.

of waste and cost. The use of hay feeders compared to allowing free access to the hay has resulted in reduced waste and is a recommended practice. For example, Michigan State University beef specialists studied four types of hay feeders: cone, ring, trailer and cradle. All types allowed approximately 14.5 inches (in.) for each cow. Dry-matter waste was 3.5%, 6.1%, 11.4% and 14.6% for the cone, ring, trailer and cradle feeders, respectively.

Normally, when cattle are allowed unlimited access to large round bales, a large percentage of the hay is wasted. Purdue University researchers have reported a 30% loss, Texas workers reported a 24% loss, and UT researchers reported a 27% loss when providing unlimited access. The use of a ring feeder reduced waste by 8%-9%.

Larry Moorehead, UT Extension director and agent in Moore County, has conducted on-farm demonstrations to estimate hay

waste for various feeding practices. He showed that by using cone feeders, waste was reduced to 1.6%. This loss is less than the reported 4%-5%. However, it was still a large

reduction in waste.

Regardless of the feeding practice applied to your cow-calf herd, some hay will be lost. However, proper management will greatly reduce these losses. Because hay is an expensive commodity, it will be to the producer's advantage to apply those practices that will aid in maintaining

waste at the lowest level possible, thereby reducing the winter feed bill and increasing profitability.

**“Hay is simply too valuable to permit a high volume of waste.”**

**— James Neel**

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