



BEEF CATTLE TIME

Vol. 25, No. 1

Winter 2007

Feeding Alternatives When Hay Supplies Are Short

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Are you faced with a short supply of hay for your beef herd this winter? If so, it is time to look at some alternative sources of feed to carry the animals to spring.

When thinking about alternative feeds, a producer needs to evaluate storage facilities, feeding facilities and methods of handling feeds not normally fed on the farm. Even though some alternative feeds may be available in your area, they may be impractical if you have no way to handle, feed or store them. Sometimes the cost of getting prepared to utilize a particular feed is simply prohibitive. In these situations it may come down to reducing animal numbers to match available feed supplies.

Most producers will think of corn first, but increased corn prices may make this feed less appealing than in previous years. As a general rule-of-thumb, it takes 5 pounds of corn to replace 9 pounds of average quality hay. Corn should not be used to replace more than 50 percent of the forage in most cow-calf rations. When utilizing corn to stretch forage, you should not forget other nutrients such as protein. Remember that corn does not have to be cracked or ground, but feeding corn does require adequate bunk space so all cattle have equal access. Bunks do not need to be elaborate, but there must be enough space to prevent “boss” cows from eating too much and younger and less assertive cows from being blocked from eating any supplemental corn.

Other grains may also be possible substitutes for hay. Grains such as milo, oats, barley or wheat may be used in cow-calf rations. Each of these grains will require some processing before feeding. Be sure to include the cost of processing in the total cost of the feed.

Another option for stretching available hay is feeding by-product or co-product feeds. These feeds are

produced as a secondary product during the production of other products. Included in this list are distiller’s by-products, whey, corn gluten feed, vegetable byproducts or food processing byproducts. Regardless of which by-product is being considered, several factors must be weighed before it is used. First is the moisture content. Many by-product feeds are high in moisture, which makes transportation expensive and may make them unstable for storage. Always calculate the value of feeds on a dry-matter basis. For example, if a feed is 40 percent dry matter, divide the price paid by 0.4 to figure the value on a dry matter basis. Also, calculate transportation costs. The true cost of feed includes all transportation costs and should be calculated on the value as delivered to the farm.

Always check the nutrient content of by-product feeds. If an analysis is not available, send a sample to a laboratory. A problem with many by-product feeds is that they are often variable in nutrient content. This makes formulating a balanced ration very difficult, if not impossible. Be alert to any contaminants that may be in the feed. These could include any chemical or waste products added or formed during the production process that may be detrimental to animal performance or health. An example of this would be sulfur in corn gluten feed. Typical sulfur levels in gluten feed are 0.4 percent, but levels in the 0.6 percent range may cause problems.

Do not forget crop residues. These may be very low in quality by the time they are used during January or February; however, they will have some feed value and can be used if properly supplemented. Typical supplements would need to be high in protein and have a good mineral balance.

Whole cottonseed may be an option in some areas. The seed provides both energy and protein, but needs to be limited to 3 to 4 pound per head per day for stocker calves and 4 to 5 pounds per head per day for cows. Feeding higher levels (or free-choice) may cause scours due to the high fat (oil) content of the seed. Do not feed whole cottonseed to young growing bulls.

As you consider stretching your available hay supply, do not forget commercial supplements. Just be sure to select the proper supplement for your situation. Some supplements are primarily a source of protein. These may be used to balance the ration for protein but are not the preferred product to stretch hay supplies. Rather, feeds that contain energy are the primary ones to consider. When considering commercial supplements, make a careful comparison of available supplements. Be sure they provide what is needed and that the cost is kept as low as possible. This does not mean that junk feeds should be purchased but, the highest priced feeds may not be warranted either. Don't forget to consider the convenience cost. Some feeds that require less effort to feed may significantly increase winter feed costs.

Getting through the winter may be difficult with a limited hay supply; however, it can be done if you look closely at available feed resources that can be substituted for hay. The key is to select the most economical feeds that will meet the animals' needs.

Be Careful of Early Spring Fertilization of Pastures

*Gary Bates, Professor
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During winter, hay is the primary source of feed for most Tennessee cattle. Cattle producers usually anxiously await the warmer temperatures of spring and the grass growth in pastures that accompanies them. Warm temperatures and a little nitrogen fertilizer will cut the hay feeding season short. The question is exactly when to apply the fertilizer.

This is important because the nitrogen in fertilizer will only be available for grass growth for about a 45 – 60 day period. By that time, it has either been used by a weed growing in the field, leached out with rainfall or removed by some other method. If the fertilizer is applied too early in the spring, some of the nitrogen will not be available for grass growth, and production will be reduced.

A classic scenario occurs in February nearly every year. We have cold conditions during January. About the middle of February, the weather warms, and it looks like winter is over. But during the first week of March, the worst of the snow and cold conditions hit, and pastures don't begin to grow until mid- to late-March. If you were to apply the fertilizer in mid-February when we had the initial warm conditions, some, if not most, of the nitrogen applied would not be utilized by the grass plants in the pasture. The most efficient use of fertilizer would occur after the worst of the cold conditions had passed and the tall fescue and orchardgrass had begun to grow. If plants are not actively growing, they will not be able to utilize the nitrogen.

Is there ever a place to fertilize early with nitrogen? If you want to promote early forage growth to decrease hay feeding and are willing to risk the potential for late

freezes and the loss of the nitrogen value, your success will depend mostly on the weather you encounter.

Treat a limited number of acres, which will reduce the risk. Also, apply the nitrogen to fields that do not have a stand of clover. Nitrogen applications to grass/clover fields can result in the stimulation of the grass stand and the loss of the clover component.

In general, it is better to fertilize a couple of weeks late rather than a couple of weeks early. Environmental conditions have such a large impact on early season forage production that it is important to consider the potential for late freezes when planning pasture and hay fertilization.

A Hard Hit, But Not a Knockout Punch

*Emmit L. Rawls, Professor
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The price decline seen this fall has been one of the largest in recent years, especially over a two month period. Depending on the weight of calves, prices have declined 15 to 18 percent from September to November. The drop in prices was largely driven by an increase in the price of corn from \$2 per bushel in August to about \$3.50 in early December, a 75 percent increase. At \$3.50 the price is double that of a year ago. We did have a 38 percent decline in prices for 500 to 600 pound steers from December 1995 to January 1996, another year of rising corn prices.

Feeder cattle prices are driven by the price finished cattle are expected to bring when sold, which reflects the 4- to 5-month-distant live (fed) cattle futures price and the expected cost of gain. Spring futures have stayed in the upper \$80s to low \$90s well into December. However, the projected cost of gain has risen from the low- to mid-50s per pound to near 70 cents per pound. For every 10 cents per pound increase in cost of gain, a 700 pound feeder must be bought for \$7 per hundred less.

Those hit the hardest by the downturn in prices were those who bought stockers last spring for plus or minus \$125 per hundred only to sell for prices in the \$90s in late fall. In addition, those who weaned calves in September and fed them for 45 to 60 days also wish they had sold earlier. Price breaks of this kind are rare and seldom, if ever, predictable. Those preconditioned calves sold quite well given the cattle market at the time. The market continues to reward sellers of calves considered a lower risk as far as health is concerned.

The question on the minds of most producers is, "Where are prices headed from here?" I do not know the answer; but before cow-calf producers throw in the towel, we need to point out a few things. The corn market, despite the third-largest harvest on record, has been driven by anticipated low year-end stocks for 2007. Use of corn for ethanol production is rising sharply, and the market is attempting to bid more acres into corn production in '07. Can the corn market rise further? Yes it

can. Some estimates see it going to \$4 or better sometime during this crop year, which runs from September through August of 2007. The corn market seemed to be topping out, short term anyway, in early December, but we will not have an estimate of acres intended for corn until the USDA report in March. The Livestock Marketing Information Center, of which Tennessee is a member, indicates that on a historical basis, when we have a large crop but anticipate low ending stocks, most of the price increase comes early in the crop year with the remaining increase coming later in the crop year, perhaps when the new crop is less certain.

Please remember that this break in prices has not been due to a build-up in the cow herd. After increasing modestly for two years, it is likely to show no increase in January. The drought and low milk prices have caused an 18 percent increase in cow slaughter this year. It was up 30 percent in the third quarter. Heifers earlier intended for replacements have been sold as feeders, as indicated by the 16 percent increase in heifers on feed over a year ago compared to a 5 percent increase in steers. Although corn may stay above \$3 awhile, the worst may be over for feeder calf producers. The lack of growth in the cow herd means that beef supplies will remain relatively tight. High corn prices will cut production of poultry and swine more than cattle, as they cannot use the by-products of ethanol production. The higher cost of gain will probably reduce slaughter weights of finished cattle, thus reducing total tonnage.

In summary, I expect this combination of decline in cattle prices and the drought to lengthen the build-up phase of this cattle cycle, unless we have significant additional price increases for feed grains. If that occurs, we may see a reduction in the herd for a brief period. We badly need to get the export markets open, but that looks like it is going to take months or years. I believe the worst of this price break is behind us. Cows should stay profitable, though less so.

Distiller's Grains for Beef Cattle

*Warren Gill, Professor
Animal Science*

Distiller's co-product feeding is not a new topic in Tennessee, but the expansion of the ethanol production industry has important implications for people looking for a new, economical feedstuff. Every bushel of corn processed produces 2.65 gallons of ethanol and 17 pounds of distiller's grains. Since billions of gallons of ethanol are produced each year, a tremendous amount of co-product is also being produced.

Distiller's grains can come from either the production of alcohol for human consumption (whiskey) or from ethanol production for fuel. This can be fed as a high-moisture product without drying (sometimes referred to as "slop feeding"). This form of feeding is typically done close to the source because the high per-

centage of water makes this product expensive to haul more than a few miles.

More commonly, distiller's grains are partially dried to a product that is 35 to 50 percent moisture or more completely dried to a product that is about 10 percent moisture. The dried product is called distiller's dried grains (DDG). Another co-product of the industry is distiller's solubles, which can be dried and sold as distiller's dried solubles (DDS). If the solubles are added to the dried grain, the product is called distiller's dried grains and solubles (DDGS).

DDGS is relatively high in protein (28 – 30 percent) and, since it is fairly high in fat (11 to 14 percent), the energy is as high as corn (or maybe slightly higher). Another component that makes it a desirable feed stuff is the fiber. DDGS is up to 45 percent neutral detergent fiber (NDF) which makes it desirable for feeding in a forage-based diet.

The protein in distiller's grains has relatively low rumen degradability but is readily digested in the lower gut. This "bypass" characteristic makes it nutritionally superior to other protein sources, particularly in the diet of growing calves.

The mineral profile is a slight concern. Calcium is low (0.1 to 0.3 percent) while phosphorus is high (0.9 to 1.3 percent). This calls for supplemental calcium if significant amounts are used. Another problem is sulfur, which can be as high as 0.7 percent. This level of sulfur is one reason for limiting the amount of distiller's grains included in the diet.

Distiller's dried grains have a range of potential uses in beef cattle rations. First consideration would be to feed it as a source of protein. For example, cows being fed a poor quality hay are likely to be short of protein. Feeding 1.5 pounds of DDGS would provide about 0.4 pound of protein.

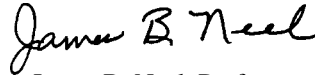
For cows on lower quality forages, up to 20 percent of the ration dry matter can be fed as DDGS. At 3 to 5 pounds of DDGS per head, the cows are not only getting protein but are also receiving a significant amount of fat. Providing fat at 4 to 6 percent of the diet has been shown to improve reproductive efficiency in heifers and cows.

DDGS may have a role in stretching forage supplies. Nebraska researchers fed DDGS to heifers at either 0, 1, 2, 3 or 4 pounds per head per day. They found that for each pound of DDGS consumed, the heifers consumed 1.72 pounds less forage.

Distiller's dried grains are often used in the diets of growing calves to provide a portion of the protein and as an economical source of energy. Inclusion rates of 20 to 40 percent are common. Concerns at the higher rates include the calcium to phosphorus ratio as well as possible copper and selenium deficiency due to excess sulfur. These problems can be addressed by balancing the ration with supplemental minerals.

Beef Cattle Events — Winter 2007

Jan. 17	Senior Bull Sale, Central Bull Test Station, Spring Hill
Jan. 25 – 27	Tennessee Cattlemen's Association Annual Convention, Music Road Hotel & Inn, Pigeon Forge
Jan. 29 – Feb. 3	National Cattlemen's Beef Association Annual Convention, Opryland Hotel, Nashville
Feb. 13 – 14	Mid-South Stocker Conference, Convention Center, Cave City, Kentucky
Feb. 24	Smoky Mountain Feeder Calf Sale Association, Feeder Calf Workshop, East Tennessee Livestock Center, Sweetwater
Feb. 28	Tennessee Nutrition Conference, Williamson County Ag Center, Franklin



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Beef Cattle Time

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21M E12-4415-00-002-07 07-0142

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