



BeefTalk 624: Grass Versus Corn, TDN Cost Per Unit

SUPPORTING MATERIALS

Do You Know Your Cost per Unit of Total Digestible Nutrients (TDN)?			
Price of corn per bushel	Cost per Pound of TDN	Price of Grass Hay per ton	Cost per Pound of TDN
\$3	7c	\$50	5c
\$6	13c	\$100	10c
\$9	19c	\$150	15c

If we take some common feeds and calculate cost per unit of desired nutrient, the trend is obvious.

In years past, given the price of feed grains, it was a given to buy grain. If one was short of forage, buy grain. If one was looking to expand, buy grain. If one was thinking of the future, build feed bunks and pens and buy grain.

The cattle industry expanded based on the grain business, and that was good. If we take some common feeds and calculate cost per unit of desired nutrient, the trend is obvious.

Let's use corn, which is the No. 1 feed grain. We calculate the cost per unit of total digestible nutrients (TDN) and cost per unit of protein at various prices. To make the point, a quick scan on the Internet and a reputable feed table can be found to provide an approximate analysis for corn.

Typical feed corn purchased through the local elevator could be 60 pounds per bushel at 88 percent dry matter, 88 percent TDN and 9 percent crude protein. So, let's look at the price per pound of TDN. However, before that, I do want to acknowledge that there are many energy values available for feedstuffs, but I am using TDN out of habit. Old habits are hard to break.

Let's price corn at \$3, \$6 and \$9 per bushel, so the price per pound of TDN would be 7 cents, 13 cents and 19 cents, respectively. The calculation is simply price divided by 60 pounds per bushel divided by .88 dry matter to adjust to a 100 percent dry matter divided by .88 TDN value.

If you use \$6, we divide 6 by 60 divided by .88 divided by .88, which equals 13 cents (.129 rounded up to 13 cents).

Now let's do the same calculations for generic grass hay that was available on the Internet. The seller indicated that the hay was green and leafy. A generic analysis could be 88 percent dry matter, 58 percent TDN and 10 percent protein. Let's price the hay at \$50, \$100 and \$150 dollars per ton delivered to the ranch. In this case, the price per pound of TDN would be 5 cents, 10 cents and 15 cents, respectively.

Again, all I am doing is dividing the price of hay per ton by 2,000 pounds to get the price per pound. I then divide the price per pound by the percentage of dry matter to get the price on a 100 percent dry matter basis. Finally, I divided



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the price on a dry matter basis by the percentage of TDN expected in the grass hay.

Some food for thought: \$3 corn costs a nickel on an as-is basis and so does \$100-per-ton grass hay. However, the cost per pound of TDN is quite a bit greater in the grass hay (10 cents) than in the corn (7 cents). The reason is simple: Corn has more TDN per pound than grass hay, so when the price is the same on a raw purchased basis, corn is the better buy. Therefore, the long-term trend is to integrate corn into the beef business and lower the amount of hay fed. This becomes even more pronounced as soon as one starts paying the trucking bill because the bulkiness of hay will not allow full-weight loads per haul.

However, if corn were to reach \$9 per bushel and local hay could be purchased at \$150 per ton, the cost per pound of TDN would be greater for corn (19 cents) than grass hay (15 cents). In fact, quite a bit greater for corn than grass hay.

Energy availability, whether expressed as total digestible nutrients or megacalories, is the life blood of a cattle operation. What's the reason? When feedstuffs are not available, there is no energy to support life. One assumes some forage always is available, but in extremely dry years, forage may need to be brought in.

In previous years, when grain was more reasonably priced, purchasing a combination of grain and some hay made fiscal sense. In other words, the ranching operation could hold its own until the rains came. Currently, that may not be the case.

It is critical to do some price shopping and evaluate what nutrients one needs to purchase. In this case, even at \$150 per ton, hay is cheaper per unit of TDN than corn. In all my years of running cattle, I never have had to consider purchasing \$150 hay.

The common response always was, "That must be dairy hay." On the flip side, the dairy business always has been considered a high-performance business, so we have the increased price of inputs. The beef cattle enterprise also may need to continue to elevate performance to justify the increased price of inputs.

In closing, the examples presented are simply that, examples. Producers need to seek good information (actual feed analysis results) and keep in mind the answer will be different for each location and producer.

However, producers need to price nutrients, not pounds of feed delivered, and seek the help of a very sound, well-educated beef cattle nutritionist.

May you find all your ear tags.

Your comments are always welcome at <http://www.BeefTalk.com>. For more information, contact the NDBCIA Office, 1041 State Ave., Dickinson, ND 58601, or go to <http://www.CHAPS2000.com> on the Internet.

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