



## BeefTalk 623: Calculating Cost Per Unit Is Critical

### SUPPORTING MATERIALS

#### Calculating Cost per Unit of Total Digestible Nutrients (TDN)

**Corn Cost: \$7.94 per bushel**

**Corn Cost per pound of corn:**

Divide \$7.94 by bushel weight (60 pounds)  
 $\$7.94 / 60 = \$0.132$  per pound corn.

**Adjusting Cost to 100% dry matter:**

Divide corn cost per pound by estimated dry matter percentage (.88)  
 $\$0.132 / .88 = \$0.15$  per pound of dry corn.

**Calculating Cost per pound of TDN:**

Divide \$.15 by .88 (table value for Corn TDN)  
 $\$.15 / .88 = \$0.17$  per pound of TDN.

Once the appropriate values are found, the same process can be used for any cost per unit calculation.

If a producer accounts for feed waste all the way through harvest, processing, delivery and cleaning, the actual cost per unit of feed can be calculated.

The world of costs is not really that complicated, but often it is overlooked.

Although it is true that feed must be edible, free of digestive problems and compatible with the beef cow, that still leaves a large selection of alternative feedstuffs. Regardless of what one is feeding, the first step is figuring cost per unit of desired nutrients.

In very simplistic feeding terms, the world of the beef cow is somewhere between green and yellow. If you were told to eat all your vegetables as a youngster, the reasoning for it was simple: Vegetables contain nutrients that are needed to sustain a healthy state of living.

Likewise, a cow is more likely to sustain a healthy state of living when the feed she consumes is a mixture of green and yellow feeds. Feeding all corn without greens is not good.

Feeding all straw or grain byproducts with no greens is not good. Feeding all second-cutting alfalfa with no yellows is not good. Feeding all brown, overly mature grass hay with no green hay is not good.

A mixture of green grass with yellow corn could work. A mixture of older, yellow-looking hay with first-cutting alfalfa could work. A mixture of straw or grain byproducts with green leafy grass hay could work.

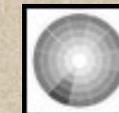
In all cases, an appropriate supplementation of minerals and vitamins is recommended.

These are basic thoughts that need to be evaluated as one reviews options during feed shortages. In most cattle operations, the most expensive variable expense is feed. If a producer accounts for feed waste all the way through harvest, processing, delivery and cleaning, the actual cost per unit of feed can be calculated. Those costs often are hidden in the busyness of ranching and farming. However, writing checks as feed is purchased brings the message home



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quickly.

Today, producers need to buy feed.

The first lesson is a simple one, but we may need to have our memories jarred loose to recall lessons we learned in math class. How does one convert prices to a common unit so prices can be compared?

I visited with Chip Poland, Dickinson State University's Department of Agriculture and Technical Studies chair, to talk about how he priced corn.

His example: One local elevator was selling corn at \$7.94 per bushel as is. So how much did the corn cost per unit of total digestible nutrients (TDN) or cost per unit of protein? Even if a producer does not have the actual analysis, feed tables certainly would provide adequate numbers to answer the question. Typical values in a table never are the actual numbers from an analysis, but the concept of pricing per unit of desired nutrient still is valid.

The formula is simple. However, for people in general, no formula is simple, so let's talk about it. We know our cost per bushel is \$7.94. We know typical corn could be 60 pounds per bushel at 88 percent dry matter, 88 percent TDN and 9 percent crude protein (obtained from a reputable feed table).

To answer the question, we divide \$7.94 by 60 (table value for bushel weight of corn) to get our cost per pound. The cost per pound of purchased or as-is corn is 13 cents. The pound of corn is 88 percent dry matter, so we need to divide the 13 cents by .88 (dry matter percentage) to get the cost of 1 pound of corn on a 100 percent dry-matter basis. Now we know the cost per pound of corn on a 100 percent dry-matter basis is 15 cents.

However, because the corn is at 88 percent TDN, the cost on a dry-matter basis per pound of TDN is 17 cents. The calculation involves dividing 15 cents (cost per pound of dry matter) by .88 (TDN percentage of corn).

Now a producer knows what the typical cost is for the desired purchase. The same calculation could be made for cost per pound of crude protein. Using the previous numbers, we divide \$7.94 by 60 to get our cost per pound of 13 cents.

We again adjust for 88 percent dry matter by dividing 13 cents by .88 to get 15 cents per pound of dry matter. These calculations are the same numbers we calculated before, but this time we divide by .09 (9 percent crude protein) to calculate cost per pound of protein. In this case, 1 pound of protein is costing us \$1.67.

Now we know that the corn that we were thinking of buying costs \$7.94 per bushel or 13 cents per pound as is. If we calculate a per-unit price, we know the corn costs us 15 cents per pound on a 100 percent dry-matter basis, 17 cents per pound of TDN and \$1.67 per pound of crude protein.

Producers need to seek good information (actual feed analysis results), but also keep in mind the answer will be different for each location and producer.

Again, producers need to price nutrients, not pounds of feed delivered. To do that, producers need to 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.

