The Drought: Purchasing Supplemental Feeds

Randy Wiedmeier, Regional Livestock Specialist, South-Central Area

Forage shortages precipitated by droughts, etc., usually require the purchase of off-farm feeds if cattle or other livestock numbers and optimum stocking rates are to be maintained. Such purchases are often relatively expensive because of diminished forage inventories. Due to this fact, it is imperative to make the **BEST BUY** possible. The following are a few things to remember when making purchases of off-farm feeds due to a drought or other problems:

1.) Try to avoid **"Buying Hay by the Bale".** It has been shown that most people Over Estimate Bale Weight and Hay Quality based on visual appraisal. The following table shows the cost/ton and cost/lb. of round bales of hay of similar nutrient content but different bales weights:

Hay	Bale Weight, lbs.	Price, $/bale	$/lb. of hay	$/ton of hay
1	700	50	.0714	142.80
2	800	50	.0625	125.00
3	900	50	.0556	111.20

This example shows that knowledge of bale weights can result in a substantial reduction in the purchase price of hay. In this case, a 22% reduction. If the daily hay ration of a beef cow was 30 lbs., Hay 1 would cost (30 x $.0714) **$2.14/cow/day**. Hay 2 would cost (30 x $.0556) **$1.67/cow/day**. (As my Grandpa would say, "That's enough to make a Cadillac payment.")

2.) Try to purchase hay and other feeds based on **Nutrient Content**. Animal feeds, especially forages, often vary greatly in this regard. Information about the nutrient content of feeds requires a laboratory analysis. Laboratory analyses usually require 10 to 14 days, so planning ahead is necessary. Although all essential nutrients are important to animal health and productivity, probably the most important number on a laboratory report is the Energy Content of the feed (TDN, Net Energy) because 80% of the cost of feeding animals is associated with supplying adequate energy. The next most costly nutrient is Crude Protein. Consequently, comparing hays and other feeds based on **Cost/Unit of Energy and Cost/Unit of Crude Protein** will help identifying the Best Buys. The following table describes the calculation of **Cost/Unit of Energy (TDN)** for three drought-priced hays and three commodities:

Feed	$/ton	$/lb.		% TDN	Cost/Unit TDN	Cost/ lb. TDN
Hay 1	110	.055	÷	55.0	= .00100	.100
Hay 2	130	.065	÷	57.5	= .00113	.113
Hay 3	150	.075	÷	50.0	= .00150	**.150**
Corn Grain	170	.085	÷	90.0	= .00094	**.094**
Corn DDG	200	.100	÷	90.0	= .00111	.111
Soybean Hulls	150	.075	÷	75.0	= .00100	.100

A few points regarding the table above: 1.) the cost/lb. of TDN in this situation (drought), is higher for the hays than for the commodities, **2.)** the least expensive source of TDN is Corn Grain, **3.)** of the hays, Hay 1 is the least expensive source of TDN, **4.)** the most expensive source of TDN is Hay 3, **5.)** a 1200 lb. 3rd term beef cow would require about 22.75 lbs. of Hay 1/day at a cost of $1.25/cow/day. The same cow would require about 25.0 lbs. of Hay 3/day at a cost of

$1.88/cow/day, an increase in cost of 33.5%, **6.)** to be on a par with Hay 1 in terms of TDN value, Hay 3 would have to be priced at (.50 lbs. TDN/lb. hay (50%) x $.100/lb. TDN) $.05/lb. of hay or $100/ton of hay.

3.) The following table depicts the same six feeds as in the table above except the **Cost/Unit of Crude Protein** is compared:

Feed	$/ton	$/lb.		% Crude Protein	Cost/Unit Crude Protein		Cost/ lb. Crude Protein
Hay 1	110	.055	÷	11.50	=	.00478	.478
Hay 2	130	.065	÷	12.75	=	.00510	.510
Hay 3	150	.075	÷	7.85	=	.00955	.955
Corn Grain	170	.085	÷	8.00	=	.01063	**1.06**
Corn DDG	200	.100	÷	29.00	=	.00345	**.345**
Soybean Hulls	150	.075	÷	11.00	=	.00682	.682

A few points regarding the table above: 1.) corn grain is the most expensive source of crude protein in this example, **2.)** corn DDG is by far the least expensive source of crude protein, 3 fold less than that of corn grain, **3.)** of the hays, Hay 1 was the least expensive source of crude protein, Hay 3 was the most expensive by nearly 2 fold, **4.)** Hays 1 and 2 contain adequate crude protein for beef cows during all segments of the yearly production cycle. However, Hay 3 is deficient and will require crude protein supplementation. In this example, corn DDG would be the obvious choice as a protein supplement.

4.) Purchase of **High-Moisture Forages** such as baleages and silages can also be considered. However, the high moisture content of these feeds can complicate purchasing decisions. Although it is not always the case, often high-moisture forages are of higher nutrient content than similar air-dried forages such as hay due to fewer harvest restriction and complications. The table below is similar to those above except grass baleage (50% dry matter) has been added for comparison:

Feed	$/ton	$/lb.		% TDN	Cost/Unit TDN		Cost/ lb. TDN
Hay 1	110	.055	÷	55.0	=	.00100	.100
Hay 2	130	.065	÷	57.5	=	.00113	.113
Hay 3	150	.075	÷	50.0	=	.00150	**.150**
Grass Baleage	**62** (111.60 air-dried)	**.031** (.056 air-dried)	÷	**32.5** (58.5 air-dried)	=	.00095	**.095**
Corn Grain	170	.085	÷	90.0	=	.00094	**.094**
Corn DDG	200	.100	÷	90.0	=	.00111	.111
Soybean Hulls	150	.075	÷	75.0	=	.00100	.100

A few points about the table above: **1.)** of the forages, Grass Baleage is the least expensive source of energy if the price on the table is a delivered price. Hauling high-moisture feeds is expensive, 2.) a 1200 lb. 3rd term beef cow would require about 38.5 lbs. of Baleage/day at a cost of (38.5 x $.031) $1.14/cow/day, a reduction in cost of nearly 5% compared to using Hay 1.

Grandpa used to say, " The more information you have, the wiser your decisions will likely be." (Go for the Cadillac!)