

The “Value” of Cheap Feed

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Year after year feed costs represent the largest expense for beef cattle producers. With that being the case, it is often the first place that producers look to save money. Having an efficient and economical supplementation program is important, and most producers realize the value of providing their cattle with proper nutrition. However, many producers are looking toward alternative feed sources as a way to cheapen costs. It is often tempting to purchase that “cheap” feed source, but it is important to also consider what you’ll get out of that feed source. Many feed sources are cheap because they are poor in nutrient quality or not easily digested by livestock.

First and foremost it is important to know the quality of the feed you are purchasing. When the quality of a feed is referenced, we are most concerned with several important nutrients including protein (crude protein, CP), energy (Total Digestible Nutrients, TDN), fiber, and mineral content. Every feed sold commercially must contain a feed label. In the state of Mississippi (Miss. Code Ann. § 75-45-161 2012), a commercial must be accompanied by a label bearing the following information:

- The quantity statement.
- The product name and the brand name, if any, under which the commercial feed is distributed.
- The guaranteed analysis, stated in such terms which the commissioner and State Chemist by regulation determine are required to advise the user of the composition of the feed or to support claims made in the labeling. In all cases the substances or elements must be determinable by laboratory methods such as the methods published by the AOAC International.
- The common or usual name of each ingredient used in the manufacture of the commercial feed; the commissioner and State Chemist by regulation may permit the use of a collective term for a group of ingredients which perform a similar function, or they may exempt such commercial feeds, or any group thereof, from this requirement of an ingredient statement if they find that such statement is not required in the interest of consumers.
- The name and principal mailing address of the manufacturer or the person responsible for distributing the commercial feed.
- Adequate directions for use of all commercial feeds containing drugs and for such other feeds as the commissioner and State Chemist may require by regulation as necessary for their safe and effective use.
- Such precautionary statements as the commissioner and State Chemist by regulation determine are necessary for the safe and effective use of the commercial feed.

Typically, cattle feeds contain minimum values for crude protein, crude fat, calcium, phosphorus, selenium, salt, and vitamins A, D, and E. Also included are maximum values for crude fiber, calcium, and salt. When purchasing any feedstuff, it is very important that you have an idea of the nutrient content.

Second you must consider the class of animals you are feeding. Within a class, an animal's requirements are affected by body weight, growth rate, sex, frame size, physiological status (such as pregnancy or lactation), and even activity. Tables 1, 2, and 3 give the nutrient requirements of growing cattle, pregnant heifers, and mature cows. As these tables show, the total amount of a nutrient an animal must consume each day gets larger as an animal does. However, it is also important to note that since smaller animals will eat less, the nutrient density, or percent required in a ration, of a nutrient is increased. For example, a 500 lb calf gaining 2.0 lbs per day requires 1.63 lbs of actual protein per day, but requires a feed that contains 12.9% protein. A 1,200 lb dry cow requires 1.67 lbs of actual protein per day at 10 months after calving, but only requires a diet that contains 6.9% protein. This difference in percent protein is due simply to the amount of feed we expect each animal to eat. The 500 calf can only eat 12.6 lbs per day, while the mature cow can eat twice as much (24.3 lbs per day).

Table 1. Growing Steer and Heifer Nutrient Requirements: 1,200 lb at Finishing¹

Body weight, lb	ADG, lb	Dry matter intake, lb/day	Diet Nutrient Density		Daily Nutrients/Animal	
			TDN, % dry matter	CP, % dry matter	TDN, lb	CP, lb
500	0.5	11.5	54	8.4	6.2	0.97
	1.0	12.2	58	9.8	7.1	1.19
	1.5	12.6	63	11.2	7.9	1.41
	2.0	12.6	68	12.9	8.6	1.63
	2.5	12.6	73	14.6	9.2	1.84
	3.0	12.2	80	16.8	9.8	2.05

¹ADG = average daily gain; TDN = total digestible nutrients; CP = crude protein

Adapted from NRC, 2000. NRC Nutrient Requirements of Beef Cattle, 7th revised edition

Table 2. Pregnant Replacement Heifer Nutrient Requirements¹

Mature body weight, lb	Months since conception	Dry matter intake, lb/day	Diet Nutrient Density		Daily Nutrients / Animal	
			TDN, % dry matter	CP, % dry matter	TDN, lb	CP, lb
1,200	1	19.3	50.5	7.2	9.7	1.39
	2	19.8	50.5	7.2	10.0	1.43
	3	20.3	50.7	7.2	10.3	1.46
	4	20.9	50.9	7.2	10.6	1.50
	5	21.5	51.4	7.3	11.1	1.57
	6	22.2	52.3	7.5	11.6	1.67
	7	23.0	53.8	7.9	12.4	1.82
	8	23.7	56.2	8.5	13.3	2.01
	9	24.4	59.9	9.6	14.6	2.34

¹TDN = total digestible nutrients; CP = crude protein

Adapted from NRC, 2000. NRC Nutrient Requirements of Beef Cattle, 7th revised edition

Table 3. Mature Dry (Non-lactating) Cow Nutrient Requirements¹

Body weight, lb	Months after calving	Dry matter intake, lb/day	Diet Nutrient Density		Daily Nutrients / Animal	
			TDN, % dry matter	CP, % dry matter	TDN, lb	CP, lb
1,200	7	22.4	46.9	6.5	10.5	1.45
	8	22.8	47.3	6.5	10.8	1.49
	9	23.3	47.9	6.7	11.2	1.56
	10	24.3	49.0	6.9	11.9	1.67
	11	24.1	52.3	7.7	12.6	1.86
	12	24.6	56.2	8.8	13.8	2.16

¹TDN = total digestible nutrients; CP = crude protein

Adapted from NRC, 2000. NRC Nutrient Requirements of Beef Cattle, 7th revised edition.

Lastly, another important consideration when buying “cheap” feeds is the amount of indigestible material contained in the feed. Many feeds are cheap in price because they contain a large amount of indigestible material. Parts of the plant such as cellulose, hemicellulose, and lignin are not as readily digested by the animal. If a feed contains large portions of these materials an animal will not be able to utilize as much of the feed. A large amount of fiber in a feed can also limit how much an animal can eat simply due to the fact that it will take longer to digest.

While it may be tempting to save money by purchasing the cheapest feed available, it is not always the wisest choice. It is very important to remember that the cheapest feed may not always be the best value, and may cost you more money in the long run.

For more information about beef cattle production, contact an office of the Mississippi State University Extension Service, and visit extension.msstate.edu/beef.