



Ridin' Herd

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Feed tag basics 101 — the finale

This will be our last discussion in this series on understanding the information on a feed tag. The reason for the three-part series is that feed costs are the major costs in a cow-calf enterprise. Being an informed buyer will aid you in purchasing what is needed to balance out the nutrients in high-forage diets. At times, it can be confusing to determine the intake of specific vitamins and minerals from a supplement.

Crude fat, fiber

Crude fat will be denoted on the feed tag as a percentage. Supplements are usually fed at less than 3 pounds (lb.) per head per day, and the daily fat intake on a per-head basis is not very high. Many protein supplements that are cubed or pelleted do not contain feeds that contain a lot of fat because it is difficult to make a hard cube or pellet with them as an ingredient.

Distillers' grains can be included as an ingredient because of their high protein content, and the fat content may be greater than a "typical" protein supplement. But again, it is hard to make a pellet or cube when the fat content is high.

Fat is a source of energy for cattle, so some fat is good.

Feed tags will include crude fiber. The crude fiber analysis on a feed tag is a rough indicator of energy level. The lower the crude fiber percentage, the greater the amount of grain in the feed. The higher the crude fiber, the lower the grain. Crude fiber at 8% or less indicates that a substantial amount of grain is included in the feed. Crude fiber of 12% or more is a good indication milling byproducts were used.

Vitamins

Vitamins are expressed in international units (I.U.). Commonly, vitamin A requirements are expressed as I.U. or, sometimes, referred to as USP units. These are the standard units of potency of a biologic, such as a vitamin, as defined by the International Conference for Unification of Formulae. Feed tags will include information on vitamins A, D and E. The B vitamins and vitamin K are synthesized by the microbes in the rumen, so these vitamins are not added to supplements.

It may be difficult to determine if cattle are getting enough of a vitamin. The concentration of vitamins on a feed tag are given as I.U. per pound. So if the concentration of vitamin A in a supplement

is 8,000 I.U. per pound, you can easily determine the vitamin A intake. Let's assume this is a protein supplement being fed at 2 lb. per head per day. The amount of vitamin A being ingested by the cow from this protein supplement is 16,000 I.U. (2 lb. × 8,000 I.U. per lb. = 16,000 I.U.).

If the cow's daily requirement for vitamin A is 40,000 I.U., she is short by 24,000 I.U. This deficiency could be provided by vitamin A from the other feeds being consumed or from a vitamin/mineral supplement.

Remember, vitamin A is a "fat soluble" vitamin and can be stored in the liver and other tissues, then mobilized from these tissues and used by the animal when needed. The most common methods of supplying vitamin A include:

- forages that are high in vitamin A activity (carotene), such as green grass or alfalfa and other legume hays;
- mineral mixes offered free-choice;
- protein supplements; or
- injectable vitamin A.

Typically, animals with adequate liver stores need to be on a vitamin A-deficient diet for several weeks or months before deficiency symptoms are observed. Remember, in baled and stored forages, the vitamin A content is fairly stable for four to six weeks, after which there is a gradual decline. By six months, up to half of the vitamin A may be depleted; after one year, most of the vitamin A is gone in hay or silage.

In recent years, vitamin E has taken on new significance in cattle diets. For example, supplementing highly stressed calves with 150-300 I.U. of vitamin E daily during the receiving period has been beneficial. Vitamin E has also shown a substantial increased shelf life of fresh beef when fed at 500 I.U. per day for the last 100 days before harvest.

Minerals

Macrominerals are reported as a percent

(%) and microminerals are reported as parts per million (ppm). PPM can be converted to a percentage by moving the decimal four places to the left. If the feed tag indicates that the micromineral is 140 ppm, to convert this to a percentage, move the decimal four places to the left, so the micromineral is 0.0140%.

Also reported along with the percentage or ppm is a maximum (max) or minimum (min) amount. Typical macrominerals on a feed tag are calcium (Ca), phosphorus (P), sodium (salt, NaCl), and magnesium (Mg).

Trace mineral or microminerals would include copper (Cu), iodine (I), zinc (Zn), selenium (Se), cobalt (Co) and manganese (Mn).

It's not too difficult to determine the amount of a mineral that an animal is getting from the supplement, but it may be difficult to compare it to the nutrient needs of the animal because you will likely calculate the intake in pounds and the nutrient requirements are in grams.

To illustrate this point, let's say a mineral supplement is 12% phosphorous and a cow consumes 4 ounces (oz.) of the supplement daily. The phosphorus requirement for a cow in late gestation is 20 grams (g) per day. The 4 oz. is 0.25 lb. per day. If the supplement is 12% phosphorus, then the animal is consuming 0.03 lb. of phosphorus per day from the supplement.

There are 454 g per lb. By multiplication, the cow is receiving 13.6 g (0.03 lb. × 454 g per lb.) of phosphorus from the supplement. The cow is short 6.4 g daily, but this deficiency will easily be made up from the other feeds, primarily forages, that she is consuming.

Finally, a common question is, do cattle have the nutritional wisdom to consume mineral as needed to meet their requirements? Research has consistently shown that the only mineral that cows have the nutritional wisdom to consume at a level that meets their dietary requirements is salt.

Final thoughts

Feed tags contain a lot of information. With the help of the "Ridin' Herd" reviews during the last three months, you should have a better understanding of what is included on the tag and how to use this information to better meet the nutrient needs of your cow herd.

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Editor's Note: "Ridin' Herd" is a monthly column written by Rick Rasby, professor of animal science at the University of Nebraska. The column focuses on beef nutrition and its effects on performance and profitability.