



# CATTLE SENSE

Information that makes sense helping you make cents

---

No. 123 January 2011

Dr. Cathy Bandyk

QLF, Dodgeville, WI 53533

---

## /// Required Reading

I find I spend a lot of time looking for information, whether I'm researching a specific topic, dealing with an unusual request, preparing for a class, planning a meal, or just satisfying my curiosity. These common quests may take us to the internet, to reference books or electronic media, or to someone with the right expertise. But when it comes to livestock feed, almost all the information we need can be found in one handy place: the feed tag.

### The Basics

By law, any commercial feed sold in the U.S. must be accompanied by a tag that gives:

- The product name and/or brand name;
- A purpose statement – the class(es) of animals and feeding situation(s) the feed is appropriate for;
- Feeding and/or mixing directions;
- Guaranteed analysis, or chemical composition, stating the levels of specific nutrients guaranteed by the company;
- Ingredient listing;
- Appropriate cautions or warnings;
- Net weight;
- Manufacturer or distributor name and address; and,
- For medicated feeds– specific purpose, directions, name and concentration of active ingredients, and relevant warnings regarding withdrawal periods and misuse.

### Did You Know?

That all appears to be fairly straight-forward. But without a little more background information, many people are left with questions about a feed even after reading the tag.

**Why do some tags list more guarantees than others?** The only legal requirements for dry feeds are crude protein (if the feed is intended to supply protein); minimum crude fat; and, maximum crude fiber. Liquid supplements must also give % dry matter. If a feed consists of more than 6.5% added mineral sources, beef feed tags must also guarantee minimum and maximum calcium, minimum phosphorus, minimum and maximum added salt (NaCl), and minimums for magnesium (Mn) and potassium (K). Other minerals and vitamins are added at the feed company's discretion.

**Why do some tags have a non-specific listing in the ingredient panel?** The feed manufacturer may use approved "collective terms" to represent some of the major ingredients being used. For example, "molasses products" on a feed tag could represent cane molasses, beet molasses, beet pulp, condensed molasses fermentation solubles, etc. Collective terms allow the company to reformulate in response to changes in ingredient availability or relative price without changing tags, or to use the same tag for multiple plants that differ in regionally available ingredients.

**Can I assume the first ingredient listed is present at the highest inclusion rate?** Actually, no. This regulation differs from labeling requirements for human food. Many companies do list ingredients from greatest to least amount present, but are not required to do so.

**What does the non-protein nitrogen statement mean?** If a ruminant (e.g., cattle, sheep) feed provides a portion of the guaranteed crude protein as non-protein nitrogen, or NPN, the guaranteed analysis section will include a line for “maximum CP equivalent from NPN.” Common sources of NPN include urea, ammonium polyphosphate, glutamic acid fermentation product (Proteferm™), ammonium sulfate, and ammonium chloride. It is critical to remember this number is given in crude protein equivalents, and is based on the assumption that protein averages 16% nitrogen. Since NPN sources contain greater concentrations of N, some simple math is required to know how much of the ingredient is present. Take, for example, a tag listing a maximum of 28% CP equivalents from NPN, and showing urea as the NPN source. Since urea is 45% nitrogen, and  $45 \div 16 = 2.82$ , urea is essentially 282% crude protein. The guarantee (28) divided by the % CP (2.82) gives us 10, meaning the maximum level of urea in the formula is 10%.

### Reading Between the Lines

We can learn more from a feed tag than the directly stated information. These additional calculations and observations can be invaluable when comparing products. The smart shopper knows to look at:

- ✓ **Units used to express guarantees.** If feed X guarantees 30,000 IU/lb of vitamin A, and feed Y claims 40,000 IU/kg, these values must be expressed in the same units before a comparison can be made. The kg-to-pound conversion is 2.2, so feed Y actually has a lower concentration of vitamin A ( $40,000 \div 2.2 = 18,182$  IU/lb).
- ✓ **Daily cost.** Expected daily intake must be considered when comparing different supplements. If mineral A costs \$500 per ton, and mineral B “only” costs \$250 per ton, which is the better buy? If the recommended daily feeding rate for the two products are 3 oz. and 8 oz. respectively, more money would actually be spent on mineral B.
- ✓ **Nutrient availability.** Just because a lab can determine the presence of, say, an essential trace mineral, that doesn’t mean it is available for the animal to use. If you are counting on a feed to supply specific nutrients, it is important to evaluate the potential sources as listed in the ingredient panel. In the case of trace minerals, remember that bioavailability of TM typically ranges highest to lowest for organic, sulfate, and oxide/chloride sources, and is usually even lower for minerals that happen to be present in other ingredients used in the formula.

### What Isn’t There

People can be surprised that there is no mention of energy per se on a feed tag. But “energy” is not something that can be readily quantified; even energy values provided in a lab analysis are calculated numbers, based on things like protein and fiber. And, especially in the case of ruminant animals, the actual yield of energy from a feedstuff can vary significantly depending on the overall diet and level of total feed intake. The same is true of DIP and UIP (sub-classification of protein into degradable and undegradable fractions).

Your feed tag can’t tell you much about product quality, consistency (other than excessive use of group terms), or manufacturing processes, either. If these things are important to you, your information search will need to encompass company reputation and personal experience, as well as that handy feed tag.

I hope to see you in Denver at the NCBA Convention and Trade Show – Booth 3048!
---