

# Feed-ology: How to Read a Feed Tag

WASHINGTON STATE UNIVERSITY EXTENSION FACT SHEET • FS138E

## Introduction

Purchasing commercial feeds, whether a complete feed, supplement, base-mix or a premix, can be very confusing. Knowing how to read feed tags and selecting the most appropriate feed to use to meet the nutritional needs of your animals is a challenge. Since feed is 60 to 80% of the total cost of raising animals, knowing how to evaluate feed cost is critical for the livestock producer.

In the U.S., about 10,000 feed mills are registered with the Food and Drug Administration (FDA) and manufacture medicated animal feeds that contain drugs. About 20,000 farm supply stores in the U.S. sell animal feed. Most feed is sold bulk (about 60%) and the remainder is bagged (40%). Sales of commercial feeds are mostly complete feeds (66%) with supplements, base-mixes, or premixes comprising about 34% (Jurgens, Bregendahl, Coverdale and Hansen 2012).

Commercial feed labels are designed to help the purchaser select feed to meet their animal's nutritional needs, and includes a description of the feed and information for the proper use of the feed. Most states have similar feed laws, primarily due to the Association of American Feed Control Officials (AAFCO 2013) Model Bill, published annually as the *Official Publication of the AAFCO* ([www.aafco.org](http://www.aafco.org)). This voluntary organization (AAFCO), comprised of state and federal feed regulators, with advisors from the feed industry, designs model regulations to be equitable for the feed industry and consumers.

This publication was designed to give readers the tools to understand what feed labels must contain, what they mean, and how to evaluate commercial feeds. The goal is to be able to select the commercial feed that most economically meets the nutritional needs of your animal.

## Types of Feeds

Complete feeds are fed as the sole sources of all the nutrients animals require (energy, protein, minerals, and vitamins). Feed supplements are designed to be mixed with grains and forages to be a complete feed, and may be blends of animal proteins, vegetable proteins, and non-

protein nitrogen such as urea. Base-mixes are designed to be mixed with grains, forages, and protein sources to be a complete feed. Premixes normally contain additives, trace minerals, and vitamins. These additives may include antibiotics, growth promotants, anthelmintics, flavoring, coloring preservatives, and binders.

Dry commercial feeds may be in the form of whole or coarse-cracked grain, meal, or texturized feed, cake, pellets or cubes, crumbles, wafers, or blocks. Liquid supplements have a liquid vehicle, and typically contain urea as the protein source, additives, specific minerals and vitamins. Liquid supplements with suspending agents can contain vegetable and animal proteins and more additives and mineral sources than those without suspending agents.

## Feed Labeling

To assist the purchaser in selecting feeds that will properly meet their animal's nutritional needs, the feed label is required to include the following information: brand or trade name, product name, statement of intended purpose, guaranteed analysis of specific nutrients and compounds, feed ingredients, feeding directions, warnings or cautions, drug ingredients, name and address of manufacturer or distributor, and the net weight (WSDA 2004).

Brand, trade and product names must:

- Not be misleading.
- Be appropriate for the intended use.
- Be consistent with the guaranteed analysis.

Statement of Intended Purpose:

- Must state the animal species and animal class the feed was formulated for. Examples for beef cattle include calves preweaning, stockers, feeders, replacement heifers, brood cows, bulls, and feedlot cattle. Examples for swine include pre-starter (weighing 2 to 11 lb), starter (weighing 11 to 44 lb), grower (weighing 44 to 100 lb), finisher (weighing 110 lb to market), gilts, sows, boars, and lactating gilts and sows.

- Intended purpose is not needed if the brand, trade or product name states the intended animal species and animal class.

**Medicated Statement:**

- “Medicated” must appear directly below the product name printed at least one-half the font size of the product name.
- The medicated claim is to state the purpose of every drug in the feed.

**Drug Ingredients and Concentration:**

- The common name (not the drug trade or brand name) and concentration of each active drug must be on the label.
- Units for antibiotics less than 200 g/t are expressed as g/t, but those greater than 2000g/t are expressed as g/lb.

**Guaranteed Analysis:**

- Is required for all feed tags.
- Specific nutrients required differs with the feed’s intended use.
- Should state levels of nutrients essential for the animal species and class.

**Required Guaranteed Analysis for Specific Species:**

- Beef cattle: crude protein, crude protein from non-protein nitrogen, crude fat, crude fiber, calcium, phosphorus, salt if added, sodium if more than provided by the added salt, potassium, and Vitamin A.
- Dairy cattle: crude protein, crude protein from non-protein nitrogen, crude fat, crude fiber, acid detergent fiber, calcium, phosphorus, selenium, and Vitamin A.
- Horses: crude protein, crude fat, crude fiber, calcium, phosphorus, selenium copper, zinc, and Vitamin A.
- Poultry: crude protein, lysine, methionine, crude fat, crude fiber, calcium, phosphorus, salt if added, sodium if more than provided by the added salt.
- Sheep and goats: crude protein, crude protein from non-protein nitrogen, crude fat, crude fiber, calcium, phosphorus, salt if added, sodium if more than provided by the added salt, copper, selenium, and Vitamin A.
- Swine: crude protein, lysine, crude fat, crude fiber, calcium, phosphorus, salt if added, sodium if more than provided by the added salt, selenium, and zinc.

**Feed Ingredients:**

- Must use the AAFCO official name, without grade or quality, or collective terms (see below).

Order on tag	Nutrient or substance	Minimum or Maximum	Units, as-is basis
1.	Crude Protein <sup>a</sup>	Minimum	%
2.	Crude Protein from non-protein nitrogen <sup>a</sup>	Maximum	%
3.	Amino acids <sup>b</sup>	Minimum	%
4.	Crude Fat <sup>a</sup>	Minimum	%
5.	Crude Fiber <sup>a</sup>	Maximum	%
6.	Acid Detergent Fiber	Maximum	%
7.	Calcium <sup>c</sup>	Minimum & maximum	%
8.	Phosphorus	Minimum & maximum	%
9.	Salt <sup>c</sup>	Minimum & maximum	%
10.	Sodium <sup>c</sup>	Minimum & maximum	%
11.	Other minerals <sup>d</sup>	Minimum	ppm if content <1%
12.	Vitamins	Minimum	IU <sup>e</sup> /lb. for Vit. A, D, and E, others mg/lb
13.	Invert sugar	Minimum	%
14.	Lactic acid producing microorganisms	Minimum	CFU <sup>f</sup> /lb
15.	Other guarantees	Minimum	

<sup>a</sup>Not required when the intended use is not to provide these substances or if in insignificant amounts in the feed.  
<sup>b</sup>Examples of amino acids required for specific species include Lysine and Methionine.  
<sup>c</sup>If minimum is less than 2.5%, the maximum is not to exceed the minimum by 0.5%-units. If minimum is between 2.5% and 5%, the maximum is not to exceed the minimum by 1.0%-units. If minimum is more than 5%, the maximum is not to exceed the minimum by 5%-units or 20% of the minimum.  
<sup>d</sup>Examples include copper, selenium and zinc for specific species.  
ppm = parts per million.  
<sup>e</sup>IU = International Units, a measure of activity.  
<sup>f</sup>CFU = colony forming units, a measure of viable bacteria.

- Must be listed in descending order by weight.
- Carriers for ingredients do not have to be listed if less than 1 % of the weight.

**Feeding Directions:**

- Directions must enhance the purchaser’s ability to use the product safely and effectively in line with the statement of purpose. It should also include details on how to mix for feeding and when to feed.

**Warnings and Cautions:**

- Statements must be prominently shown on the front of feed tags. Medicated feeds must have precautions identical to the FDA defined precautions in the Feed Additive Compendium (Miller Publishing 2014). Additionally, medicated feed labels must contain dosage, mixing instructions and withdrawal time (time from last feeding to

## Collective Terms from AAFCO Official Publication

### A. Animal protein products

1. Animal blood, dry	13. Fish residue meal	25. Meat by-products <sup>a</sup>	37. Skimmed milk, dried
2. Animal by-product meal <sup>a</sup>	14. Fish soluble, condensed	26. Meat meal <sup>a</sup>	38. Skimmed milk, dried cultured
3. Buttermilk, condensed	15. Fish soluble, dried	27. Meat meal tankage	39. Whey, condensed
4. Buttermilk, dried	16. Fleshings hydrolysate <sup>a</sup>	28. Meat soluble, dried <sup>a</sup>	40. Whey, condensed cultured
5. Casein	17. Hydrolyzed hair <sup>a</sup>	29. Milk, dried whole	41. Whey, condensed hydrolyzed
6. Casein, dry hydrolyzed	18. Hydrolyzed leather meal <sup>a</sup>	30. Milk protein, dried	42. Whey, condensed product
7. Cheese rind	19. Hydrolyzed poultry by-product aggregate	31. Poultry by-products	43. Whey, condensed soluble
8. Crab meal	20. Hydrolyzed poultry feathers	32. Poultry by-product meal	44. Whey, dried
9. Fish by-product	21. Lactalbumin, dried	33. Poultry hatchery by-products	45. Whey, dried hydrolyzed
10. Fish liver and glandular meal	22. Leather hydrolysate	34. Shrimp meal	46. Whey, dried product
11. Fish meal	23. Meat and bone meal <sup>a</sup>	35. Skimmed milk, condensed	47. Whey, dried soluble
12. Fish protein concentrate	24. Meat and bone tankage <sup>a</sup>	36. Skim milk, condensed cultures	

<sup>a</sup>Restricted to nonruminant diets except for ingredient of pure porcine or equine origin.

### B. Forage products

1. Alfalfa hay, ground	4. Coastal Bermuda grass hay	7. Flax plant product	10. Lespedeza stem meal
2. Alfalfa meal, dehydrated	5. Corn plant, dehydrated	8. Ground grass	11. Soybean hay, ground
3. Alfalfa meal, sun cured	6. Dehydrated silage (Ensilage pellets)	9. Lespedeza meal	

### C. Grain Products

1. Barley	5. Oats	8. Rice, ground brown	11. Rye
2. Corn	6. Rice	9. Rice, ground paddy	12. Triticale
3. Grain sorghum	7. Rice, brewers	10. Rice, ground rough	13. Wheat
4. Mixed feed oats			

### D. Plant Protein Products

1. Algae meal	9. Cottonseed, whole-pressed	17. Soy flour	25. Sunflower meal
2. Beans, dried	10. Guar meal	18. Soy grits	26. Sunflower meal dehulled
3. Canola meal	11. Linseed meal	19. Soybean feed	27. Yeast, active dry
4. Coconut meal	12. Peanut meal	20. Soybean meal	28. Yeast, brewers dried
5. Cottonseed cake	13. Peas	21. Soybean meal, kibbled	29. Yeast culture
6. Cottonseed flake	14. Potato protein	22. Soy protein concentrate	30. Yeast, dried
7. Cottonseed meal	15. Rapeseed meal	23. Soybeans ground	31. Yeast, primary dried
8. Cottonseed meal, low gossypol	16. Safflower meal	24. Soybeans heat processed	32. Yeast, torula dried

## E. Processed Grain By-Products

1. Aspired grain fractions	11. Corn grits	21. Malt cleanings	31. Sorghum flour, partially aspirated, gelatinized
2. Brewers dried grains	12. Distillers grains	22. Malt sprouts	32. Wheat bran
3. Buckwheat middlings	13. Distillers dried grains	23. Oat groats	33. Wheat feed flour
4. Condensed distillers soluble	14. Distillers dried soluble grain	24. Oat meal, feeding	34. Wheat germ meal
5. Condensed fermented corn extractives with germ meal bran	15. Grain flour	25. Peanut skins	35. Wheat germ meal, defatted
6. Corn bran	16. Grain sorghum germ cake	26. Pearl barley by-product	36. Wheat Mill run
7. Corn flour	17. Grain sorghum germ meal	27. Rice bran	37. Wheat middling
8. Corn germ meal (wet and dry milled)	18. Grain sorghum grits	28. Rice polishing	38. Wheat red dog
9. Corn gluten feed	19. Grain sorghum mill feed	29. Rye middlings	39. Wheat shorts
10. Corn gluten meal	20. Hominy feed	30. Sorghum grain flour, gelatinized	

## F. Roughage Products

1. Almond hulls, ground	9. Citrus meal dried	16. Malt hulls	23. Rice mill run
2. Apple pectin pulp, dried	10. Citrus pulp dried	17. Oat hulls	24. Soybean hulls
3. Apple pomace, dried	11. Citrus seed meal	18. Oat mill by-product	25. Soybean mill feed
4. Bagasse	12. Corn cob fractions	19. Oat mill by-product, clipped	26. Soybean mill run
5. Barley hulls	13. Cottonseed hulls	20. Peanut hulls	27. Soybean hulls
6. Barley mill by-product	14. Flax straw by-product	21. Rice hulls	28. Straw, ground
7. Beet pulp	15. Husks	22. Rice mill by-product	29. Tomato pomace, dried
8. Buckwheat hulls			

harvest to ensure no residues). Feeds that contain animal proteins prohibited in ruminant feeds (see Collective Terms) must have the statement “DO NOT FEED TO CATTLE OR OTHER RUMINANTS.” Warnings should also state animals that should not consume the feed due to toxicity, such as equines not consuming feeds containing the ionophore monensin sodium, and sheep not consuming high copper-containing feed.

Name and Address of Manufacturer:

- The company or person responsible for feed distribution and principle mailing address (may be omitted if shown in current city or telephone directory). Distributors should use a statement such as “Distributed By” or “Manufactured For” to distinguish them from manufacturers.

Net Weight:

- Weight of feed in the container in pounds can be shown on the label, but if on the bag, the label must have a statement of “net weight shown on bag.”

## Additional Comments

Animal feed labels are not required to state serving size, calories per serving, or how well the feed meets an adult animal’s nutrients needs (for example: 50% of the

recommended daily allowance), as is required for human food labels. Energy content of the animal feed is not required, and no inferences as to the quality or grade of ingredients or nutrient bioavailability, are included on the label. The animal feeder needs to assess the quality and nutrient bioavailability primarily based on the ingredient list. If you select commercial feeds with higher quality feed ingredients (rather than lower quality ingredients), this would increase nutrient bioavailability for the animal.

Feed companies formulate commercial feeds with “open,” “closed” or “open/closed” formulas. Labels for open formulas show only the guaranteed analysis and state collective terms, not specific feedstuffs. These commercial feeds may look very different from one batch to the next because they are formulated to be least-cost. As feedstuff cost changes so do the ingredients, but the nutrient guarantee stays the same. Closed formulas are constant in that the proportion of all ingredients does not change from batch to batch but the price does. Open/closed formulas have specific ingredients that do not vary from batch to batch, but other ingredients do vary.

## Summary

Note the following from the label shown in Figure 1.

- The label has all the required information on the tag.

- It is high energy, but it is not a complete feed because it is to be fed with hay.
- The feed has a closed formula with no collective terms, and is comprised of ingredients with excellent nutrient bioavailability.
- There are no mammalian proteins in this feed due to the concern of Bovine Spongiform Encephalopathy (BSE).
- The feed contains urea for the ruminal bacteria.
- Horses and sheep should not consume this feed.
- The feed is a source of iodine, copper, manganese, zinc, and cobalt even though they are not in the guaranteed analysis.

## References

- Association of American Feed Control Officials. 2013. *Official Publication of the AAFCO*. Champaign, IL: Association of American Feed Control Officials.
- Jurgens, M. H., K. Bregendahl, J. Coverdale and S. Hansen. 2012. *Animal Feeding & Nutrition*. Dubuque, IA: Kendall/Hunt Publishing Company.
- Washington State Department of Agriculture. 2004. *Non-pet Food Label Design & Format Guide*. AGR PUB 630-125 (N/12/04).
- Miller Publishing Company. 2014. *2014 Feed Additive Compendium*. T. Lundeen (ed). Minnetonka, MN.

Figure 1. Example Feed Tag for Beef Cattle Feed.

**Brand Name** → Cougar Quality Feeds

**Medicated Statement** → MEDICATED • For Feedlot Cattle

**Product Name** → Sweet Club Calf Finisher

**Statement of Purpose** → For improvement of feed efficiency and reduction in liver abscesses caused by *Fusobacterium necrophorum* and *Acrobacterium (actinomyces) pyogenes* in beef cattle fed in confinement for slaughter.

**Drug Ingredients and Concentration** →

**Guaranteed Analysis** →

**Feeding Directions** → FEEDING DIRECTIONS

**Warnings or Cautions** → **Caution:** Do not allow horses or other equines access to feed containing monensin. Ingestion of monensin by horses has been fatal. Do not feed to sheep due to copper content.

**Name and Address of Manufacturer** → MANUFACTURED BY

**Net Weight** → Net weight declared on bag

**Feed Ingredients** →

Available online: <http://cougarqualityfeeds.wsu.edu>



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