Learning Objectives

After completing this module, your basic understanding should include:

• Being able to analyze pet food labels to make informed decisions
• Realize the value as well as the limitations of pet foods labels.
• Your obligation to the pets and people you serve regarding proper pet nutrition.
Introduction

While there is certain basic information all pet food labels must have on them by law, manufacturers can still be quite ‘creative’ in trying to convey attributes of their products on packaging. After all, pet foods, like most other goods purchased by people, ‘compete’ in a very competitive marketplace. That is why the history, philosophy, reputation, integrity and leadership of the company is so important in helping your team make the correct nutritional decisions for your practice and for your clients.

This module will help you understand pet food labels, making you even more valuable as a resource for accurate information.

Figure 1. Pet Food Label

You need to (confidently and competently) be an advocate for the pet’s best interest!
A pet food label is divided into two main parts:

- The Principal Display Panel
- The Information Panel

The principal display panel is the primary means of attracting the pet owner’s attention to a product and should immediately communicate the product identity (see Figure 1). The information panel is defined as “that part of the label immediately contiguous and to the right of the principal display panel” and usually contains important information about the product. In the United States and some other countries, several items are required by law to be included on the principal display panel and information panel (Table 1).

<table>
<thead>
<tr>
<th>Principal Display Panel</th>
<th>Information Panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product identity</td>
<td>Ingredient statement*</td>
</tr>
<tr>
<td>- Manufacturer’s name</td>
<td>Guaranteed analysis*</td>
</tr>
<tr>
<td>- Brand name</td>
<td>Nutritional adequacy statement*</td>
</tr>
<tr>
<td>- Product name*</td>
<td>- (Product description)*</td>
</tr>
<tr>
<td>Designator* (Statement of intent)*</td>
<td>Feeding guidelines*</td>
</tr>
<tr>
<td>Net weight*</td>
<td>Manufacturer or distributor*</td>
</tr>
<tr>
<td>Product vignette</td>
<td>Universal product code</td>
</tr>
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<td>Nutrition claim</td>
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*Elements required on pet food labels in the United States.
Principal Display Panel

Product Identity
The product identity is the primary means by which pet owners identify a specific pet food. In the United States, the product identity must include a product name, but may also include a manufacturer’s name, a brand name, or both. The brand name is the name by which pet food products of a given company are identified and usually conveys the overall image of the product. The product name provides information about the individual identity of the particular product within the brand.

Pet foods are best assessed initially by looking at the product name on the principal display panel. The product name is usually descriptive of the food and in the United States is subject to AAFCO (Association of American Feed Control Officials) regulations about composition of ingredients. Percentage rules are important. Let’s use beef ingredients as an example:

Figure 1. A product identity example for Hill’s® Science Diet® Adult Lamb Meal and Rice Recipe dog food: Hill’s® is the manufacturer’s name, Science Diet® is the brand name, and Adult is the product name.

Figure 2. Examples of labels with different “Beef” designations.
Principal Display Panel

• The term “Beef” in a product name requires that beef ingredients be 95% or more of the total weight of all ingredients (exclusive of water used in processing).

• The term “Beef dinner,” “Beef platter,” “Beef entree” or any similar designation requires that beef ingredients be at least 25% but not more than 95% of the total weight of all ingredients (exclusive of water used in processing).

• The term “Beef flavor” only requires that beef is “recognizable by the pet.” The beef flavor designation usually indicates that beef is less than 3% of the total product. An ingredient that gives the characterizing flavor (e.g., beef digest, beef by-products) can be used instead of the actual named flavor, beef.

Figure 3. Different terms with “Beef” designations have varying percentages of beef.

Figure 4. Various designators of an ingredient also appear on human food products. “Grape Juice” means 100% grape juice, whereas “Grape Drink” contains only 10% grape juice.
In the United States, the maximum moisture content in all pet foods should not exceed 78% unless they consist of stew, gravy, broth, juice, or a milk replacer that is so labeled. High-moisture pet foods in cans, trays or pouches will have a product name with the terms “in sauce,” “in aspic,” “in gravy,” “in meaty juices,” or some similar designation.

**Designator**
The words “dog food” or “cat food” or some similar terminology is called the Designator or Statement of Intent and must appear conspicuously on the principal display panel of pet foods sold in the United States. These terms clearly identify the animal for which the product is intended and that the product is not for human consumption.

**Net Weight**
Food and Drug Administration (FDA) regulations state that the principal display panel shall bear a declaration of the net quantity of contents. The term net weight is used most often. Net weight descriptions must be placed on the principal display panel within the bottom 30% of the panel in lines generally parallel to the base of the package.

You can already see how pet food labels can be confusing to clients, with just the term “Beef” and its various designations.
Principal Display Panel

Product Vignette
The term product vignette refers to a vignette, graphic, or pictorial representation of a product on a pet food label. The picture or other depiction of the product or ingredients on the label should not look better than the actual product or ingredients.

Bursts and Flags
Bursts and flags are areas of the principal display panel that are designed to highlight information or provide specific information with visual impact. New products, formula or ingredient changes, and improvements in taste are most often highlighted. The time allowed for a burst or flag to be on the label varies with the type of information. “New” or “New & Improved” can only appear on the label for six months, whereas a comparison such as “Preferred 4 to 1 over the leading national brand” can remain on the label for one year, unless re-substantiated.
Principal Display Panel

Nutrition Statements
Nutrition statements appearing on the principal display panel are usually brief. Examples include “complete and nutritious,” “100% complete nutrition,” “Dogs 1-6 years” or some similar designation. A nutritional adequacy statement on the information panel must substantiate nutrition claims such as these on the principal display panel. Manufacturers can substantiate these nutrition claims by meeting the appropriate AAFCO nutrient profile or successfully completing a protocol feeding trial. Nutrition claims substantiation is discussed in more detail below.

Figure 8. Example of a Nutrition Statement from a Science Diet® label.
Information Panel

Ingredient Statement
The ingredient panel provides general information about which ingredients were used to make a given pet food and their relative amounts. Pet foods sold in the United States must list each ingredient of the food in the ingredient statement. Ingredients are listed in descending order by their predominance by weight according to the product’s formula. AAFCO has established the name and definition of a wide variety of ingredients. The ingredient names must conform to the AAFCO name (e.g., poultry by product meal) or should be identified by the common or usual name (e.g., beef, lamb, chicken).

**INGREDIENTS:**
Water, chicken, liver cracked pearled barley, corn meal, meat by-products, dried whey, natural flavor, vegetable oil, iron oxide, minerals (potassium chloride, calcium carbonate, salt, magnesium oxide, zinc oxide, ferrous sulfate, copper sulfate, maganous oxide, calcium iodate, sodium selenite). vitamins (choline chloride, vitamin 03 supplement, vitamin E supplement, thiamine, niacin, calcium pantothenate, pyridoxine hydrochloride, riboflavin, folic acid, biotin, vitamin B12 supplement).

The ingredient panel can be useful if specific ingredients are contraindicated for certain animals or an owner has an ingredient concern. This is especially important if a pet has an allergy to an ingredient in a food. However, reviewing a pet food label provides no information about the quality of the ingredients used. Contacting the manufacturer or nutrition experts for additional information is the best way to compare the quality of pet foods.

Because ingredient panels on pet food labels are difficult for clients to interpret, your role as spokesperson for the pet’s best interest becomes even more critical. Use your understanding to help clients make an informed buying decision.

Figure 9. Example of an Ingredient Statement from a Science Diet® product.
The nutritive value of ingredients cannot be identified from the ingredient statement. A pet owner must rely on the reputation or word of the manufacturer to assess the nutritive value of the ingredients appearing on the list.

Pet food additives such as vitamins, minerals, antioxidant preservatives, antimicrobial preservatives, humectants, coloring agents, flavors, palatability enhancers, and emulsifying agents that are added by the manufacturer must be listed in the ingredient statement.

**Guaranteed Analysis**
In the United States, pet food manufacturers are required to include minimum percentages for crude protein and crude fat and maximum percentages for crude fiber and moisture. Guarantees for other nutrients may follow moisture, but a nutrient need not be listed unless its presence is highlighted elsewhere on the label (e.g., “contains taurine,” “calcium enriched”). These percentages generally indicate the “worst case” levels for these nutrients in the food and do not reflect the exact or typical amounts of these nutrients. See Figures 10 and 13 for Guaranteed Analysis examples from Science Diet® products.
Information Panel

Crude Protein (Minimum % on label)
Crude protein refers to specific analytical procedure that estimates protein content by measuring nitrogen. Crude protein is an index of protein quantity but does not indicate protein quality (amino acid profile) or digestibility.

Crude Fat (Minimum % on label)
Crude fat refers to specific analytical procedure that estimates the lipid content of a food. Because fats have more than twice the energy density of protein and carbohydrates, crude fat can be used to estimate the energy density of the food. If the moisture and crude fiber content of two foods are somewhat similar, the food with the higher crude fat guarantee will usually have the higher energy density.

Crude Fiber (Maximum % on label)
Crude fiber represents what remains (mostly cellulose and lignin) after plant material has been treated with certain solutions. Crude fiber is an estimate of the indigestible portion of the food.

Figure 10. Guaranteed Analysis from a Science Diet® product showing Crude Protein and Fat as minimum percentages and Crude Fiber and Moisture as maximum percentages.
Moisture (Maximum % on label)
Small differences in moisture content of canned pet foods can result in marked differences in dry matter content and therefore the economics of feeding a given pet food. The dry matter content of the food contains all of the nutrients except water.

**Figure 11.** Small differences in water content greatly affect a canned food’s dry matter content. A food containing 72% water has 28% dry matter; a food containing 82% water has 18% dry matter. Foods with less water contain more non-water nutrients.

**Figure 12.** Food A from Figure 11 has 10% more nutrients on an as fed basis, which equates to 56% more non-water nutrients on a dry matter basis than Food B.
What appears to be a small difference in water content of a food produces a marked difference in dry matter content. Guarantees are usually expressed on an “as is” or “as fed” basis. It is important to remember to convert these guarantees to a dry matter basis when comparing foods with differing moisture content (e.g., canned vs. dry foods). The Commercial Pet Foods module covers this concept more fully.

**Ash**

Ash consists of all noncombustible materials in the food, usually salt and other minerals. Some companies just list ‘Ash’ (which is legally acceptable). Others, like Hill's®, break down the ash content on the label even further (calcium, phosphorus, magnesium…). A high-ash content in dry and semi-moist foods may indicate a high magnesium content. Excessive magnesium intake may be one risk factor for feline struvite urolithiasis.

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**Guaranteed Analysis:**

- Crude Protein ..... Min 30.0%
- Crude Fat..........Min 20.0%
- Crude Fiber........Max 2.0%
- Moisture...........Max 10.0%
- Ash ................ Max 5.5%
- Calcium..............Min 0.6%
- Phosphorus......... Min 0.5%
- Magnesium.........Max 0.08%
- Vitamin E..........Min 400 IU/kg
- Taurine.............Min 0.10%
- Vitamin C............Min 50 mg/kg *

Figure 13. Subtle differences in moisture content of canned products can result in marked differences in dry matter content and therefore the quantity of non-water nutrients and the cost of the food.
Nutritional Adequacy Statement
Since 1984, regulations in the United States have required that all pet food labels, with the exception of products clearly labeled as treats and snacks, contain a statement and validation of nutritional adequacy (product description). When a claim of “complete and balanced,” “100% nutritious,” or some similar designation is used, manufacturers must indicate the method and lifestage that was used to substantiate this claim.

AAFCO regulations allow two basic methods to substantiate claims.

- The Formulation Method requires that the manufacturer formulate the food to meet the AAFCO Dog Food Nutrient Profiles or Cat Food Nutrient Profiles.
- The Feeding Trial (protocol) Method requires that the manufacturer perform an AAFCO-protocol feeding trial using the food as the sole source of nutrition.

AAFCO nutrient profiles are published for two categories: 1) growth and reproduction and 2) adult maintenance. The formulation method allows the manufacturer to substantiate a “complete and balanced” claim by calculating the nutrient content of a food using standard nutrient information about ingredients. Table 2 lists some of the wording that connotes this type of claim. The formulation method is less expensive and time-consuming, but has been criticized because it does not account for acceptability of the food or nutrient availability.

Figure 14. Example of Nutritional Adequacy Statements, one with the formulation method, the other (a Science Diet® product), with the feeding trial method.
Table 2. How to interpret label claims of nutritional adequacy.*

<table>
<thead>
<tr>
<th>Claim</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Good Things Dog Food is formulated to meet the AAFCO (Association of American Feed Control Officials) dog food nutrient profile for maintenance of adult dogs.”</td>
<td>This food has been formulated to meet the nutrient levels in the AAFCO Dog Food Nutrient Profile for adult maintenance. This product does not meet the nutrient profile for growth/lactation and has probably not undergone AAFCO feeding tests.</td>
</tr>
<tr>
<td>“Good Things Cat Food meets the nutrient requirements established by the AAFCO Nutrient Profile for all stages of a cat’s life.”</td>
<td>This food has been formulated to meet the nutrient levels in the AAFCO Cat Food Nutrient Profile for growth/reproduction and adult maintenance. This product has probably not undergone AAFCO feeding tests.</td>
</tr>
<tr>
<td>“Animal feeding tests using the AAFCO procedures substantiate that Good Things Dog Food provides complete and balanced nutrition for the growth of puppies and maintenance of adult dogs.”</td>
<td>This food has successfully completed an AAFCO minimum protocol feeding trial for growing puppies (10 weeks of feeding).</td>
</tr>
<tr>
<td>“Good Things Cat Food provides complete and balanced nutrition for kittens and adult reproducing queens as substantiated by feeding tests performed in accordance with procedures established by the Association of American Feed Control Officials (AAFCO).”</td>
<td>This cat food (or a line extension) has undergone AAFCO minimum protocol feeding studies for gestation/lactation and growth. This food would be nutritionally adequate for adult cats but has not undergone an adult maintenance feeding trial and is not recommended by this manufacturer for long-term maintenance of adult cats.</td>
</tr>
<tr>
<td>“Complete and balanced nutrition for adult maintenance based on AAFCO protocol feeding studies conducted at the Good Things Nutrition Center.”</td>
<td>This food (or a line extension) has undergone AAFCO minimum protocol feeding studies for adult maintenance only and has not been tested for gestation/lactation or growth.</td>
</tr>
</tbody>
</table>
### Table 2. How to interpret label claims of nutritional adequacy.* (continued)

<table>
<thead>
<tr>
<th>Claim</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Complete and balanced nutrition for adult maintenance based on AAFCO protocol feeding studies conducted at the Good Things Nutrition Center.”</td>
<td>This food (or a line extension) has undergone AAFCO minimum protocol feeding studies for adult maintenance only and has not been tested for gestation/lactation or growth.</td>
</tr>
<tr>
<td>“Complete and balanced nutrition for all lifestages of the dog, substantiated by testing performed in accordance with feeding protocols established by AAFCO.”</td>
<td>This dog food (or a line extension) has undergone AAFCO minimum protocol feeding trials for gestation/lactation and growth.</td>
</tr>
<tr>
<td>“Good Things Dog Food meets or exceeds the requirements of the National Academy of Sciences (USA) for the complete nutrition of your dog or puppy.”</td>
<td>This food has been formulated to meet or exceed the nutrient levels established for growth and adult maintenance by the National Research Council (NRC) in the United States. This product has probably not undergone feeding tests. This nutrition statement would be illegal in the United States because the NRC nutrient profiles have been replaced by AAFCO Dog Food Nutrient Profiles. However, references to NRC are still made on pet foods sold in countries other than the United States.</td>
</tr>
</tbody>
</table>
Table 2. How to interpret label claims of nutritional adequacy.* (continued)

<table>
<thead>
<tr>
<th>Claim</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Meets or exceeds the nutritional levels established by the National Research Council specifications for all stages of a cat's life.</td>
<td>This cat food has been formulated to meet or exceed the nutrient levels established for growth, gestation/ lactation and adult maintenance by the National Research Council (NRC) in the United States. This product has probably not undergone feeding tests. This nutrition statement would be illegal in the United States because the NRC nutrient profiles have been replaced by AAFCO Cat Food Nutrient Profiles. However, references to NRC are still made on pet foods sold in countries other than the United States.</td>
</tr>
</tbody>
</table>

*NOTE: Claims 2, 4, 5 and 6 appear on pet food labels in the United States market, but Claim 3 is the preferred wording for products that have passed an AAFCO-protocol feeding trial and Claim 1 is the preferred wording for products that meet the profiles. Source: Small Animal Clinical Nutrition, 4th ed.
The feeding trial (protocol) method is the preferred method for substantiating a claim. Feeding tests can result in a nutritional adequacy claim for one or more of the following categories: 1) gestation and lactation, 2) growth, 3) maintenance, and 4) complete for all lifestages. AAFCO has published minimum testing protocols for adult maintenance, growth, and gestation/lactation. A food that successfully completes a sequential growth and gestation/lactation trial can make a claim for all lifestages.

The required terminology for labels of pet foods that have passed these tests is as follows: “Animal feeding tests using AAFCO procedures substantiate that (brand) provides complete and balanced nutrition for (lifestage).” The inclusion of the term “feeding test,” “AAFCO feeding studies,” or “AAFCO feeding protocols” in a nutritional adequacy statement supports the idea that the food has successfully completed a minimum feeding protocol (Table 2).

AAFCO feeding trials are minimum protocols. This type of test will usually detect nutrient deficiencies but might not detect some nutrient excesses that may be harmful when fed over a longer period.

AAFCO regulations allow two methods to substantiate pet food claims: the formulation/analysis method and the feeding trial method. The latter is the gold standard because it documents how an animal performs when fed a specific food.

For a number of different reasons, pets of the same size and weight may need different amounts of nutrients and energy. Feeding guide instructions are only guidelines; a nutritional assessment should be conducted at every patient visit to ensure the feeding amount is still appropriate.
Commercial pet foods that have undergone AAFCO-prescribed feeding tests provide reasonable assurance of nutrient availability and sufficient palatability to ensure acceptability (i.e., food intake sufficient to meet nutrient needs).

Pet foods that are clearly labeled as snacks or treats may make a nutritional adequacy claim but are not required to do so. Pet foods that do not meet AAFCO requirements by either of the standard methods will have a nutritional statement as follows: “This product is intended for intermittent or supplemental feeding only.”

There are certain products (such as Hill’s® Prescription Diet® formulas) that are intended for use by, or under the supervision or direction of a veterinarian. These products will state this fact, which is important in regards to keeping the client in contact with the veterinary health care team. The food must include a supplemental feeding statement or the appropriate AAFCO lifestage claim.

Few, if any, homemade recipes have been animal tested according to prescribed feeding protocols.
Feeding Guidelines

In the United States, dog and cat foods labeled as complete and balanced for any or all lifestages must list feeding directions on the product label. These directions must be expressed in common terms and must appear prominently on the label. Feeding directions should, at a minimum, state, “Feed (weight/unit of product) per (weight unit) of dog (or cat)” and frequency of feeding. These feeding statements are general guidelines at best. Because of individual variation, many animals will require more or less food than that recommended on the label to maintain optimal body condition and health. Feeding guidelines should always be considered starting points only. Once again, that is why your involvement in helping your clients with feeding recommendations and follow up is so important.

Figure 15. A comparison of two label feeding instructions.
Summary

Pet food labels can help us ‘directionally’ understand which products should be used and how. Many pet owners however, are perplexed by the marketing of pet foods, and need your advice to understand and do what is best for their pet. Realize that pet food labels do not provide information about nutrient bioavailability or other specifications you might need to help the pets and people you serve. That is why it is important to have confidence in the product manufacturer. As you can see by our websites, we provide you (HillsVet.com) and your clients (ScienceDiet.com and PrescriptionDiet.com) with a lot more information to assist you in your efforts. Also, we encourage you to use Hill’s Veterinary Consultation Service by contacting us by phone at 800-548-VETS, by fax at 800-548-VFAX or email at vet_consult@hillspet.com.

Are you ready?

To continue, you will need to complete the quiz for this module. When you are ready, click on the forward arrow below to take you to the quiz.
The nutritive value of ingredients can be determined from the ingredient statement on a pet food label.

- True
- False

PROPERTIES
- On passing, 'Finish' button: Close Window
- On failing, 'Finish' button: Close Window
- Allow user to leave quiz: After user has completed quiz
- User may view slides after quiz: At any time
- User may attempt quiz: Unlimited times