Chapter 9

Pet Foods Labels

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"Tell me what you eat and I will tell you what you are."
Anthelme Brillat-Savarin, 1825

INTRODUCTION

The pet food label is an important means by which specific product information is communicated between a manufacturer or distributor and consumers, veterinarians and regulatory officials. Commercial pet foods differ from human food products in that the final consumer, the animal, is not the purchaser. Thus, there are two different "customers" with regards to safety, nutritional balance and palatability. Pet food label information is not directed to the final consumer, but to the owner or veterinarian who decides what the animal will be fed.

Implementation of the Nutrition Labeling and Education Act of 1990 and the Dietary Supplement Health and Education Act of 1994 in the United States has led to increased consumer awareness of the contents and effects of various human foods. Consumer interest in human food label information has increased awareness of information available on pet food labels. The regulations governing pet food labeling are similar to human food labeling rules in many respects, but deviate significantly in some important ways. Thus, veterinarians and pet owners need to understand the rules specific to pet food labeling to obtain and best interpret information about a pet food.

The Label as a Legal Document

The pet food label is more than an attractive package cover designed to sell the product; the pet food label is also a legal document. A number of agencies and organizations regulate the production, marketing and sales of commercial pet foods in different countries. Each agency or organization has different responsibilities with varying degrees of authority (**Table 9-1**). Some of these agencies and organizations regulate the information found on pet food labels whereas others influence the regulatory process.

Pet foods are regulated at their point of sale. As an example, pet food manufactured in the United States for sale outside the United States must meet the labeling requirements established by the country in which the food is sold. Conversely, pet foods manufactured outside the United States must conform to Food and Drug Administration (FDA) and state pet food labeling requirements when sold in the United States.

PET FOOD LABELS IN THE UNITED STATES

Regulation in the United States

Association of American Feed Control Officials

Early regulators recognized the need for uniform and consistent regulation of animal feeds by forming the Association of American Feed Control Officials (AAFCO) in 1909. AAFCO is a private organization, not a regulatory body per se. However, all AAFCO members must be state or federal government officials. Members include animal feed control officials from individual U.S. states and territories, federal agencies such as FDA and government representatives from Canada and Costa Rica.

Table 9-1. Major governing agencies and organizations for commercial pet food manufacturers.

Agency	Key functions
Association of American Feed Control Officials (AAFCO)	Sets nutrient standards for substantiation of claims Provides model regulations for the states Provides ingredient definitions
U.S. Food and Drug Administration (FDA)	Specifies some label requirements Regulates health claims Ensures food safety Approves food additives
U.S. Department of Agriculture (USDA)	Regulates some pet food ingredients Inspects animal research facilities
State Department of Agriculture (or similar agency)	Adopts and enforces animal food regulations
National Research Council (NRC)	Evaluates and compiles nutrition research Makes nutrient recommendations
Pet Food Institute (PFI)	Trade organization that represents major pet food manufacturers in the United States
Canadian Veterinary Medical Association (CVMA)	Administers voluntary product certification in Canada
European Commission	The main legislative body in the European Union responsible for creating new directives and regulations
European Council of Ministers	Approves directives and regulations Creates basic laws
National Government (Ministry of Agriculture)	Implements European legislation and controls its application Houses national experts
European Federation of the Pet Food Industry (FEDIAF = Fédération Européenne de l'Industrie des Aliments pour Aminaux Familiers)	Trade organization that represents major pet food manufacturers in Europe
Confederation of the Food and Drink Industries of the EU (CIAA = Confédération des Industries Agro-Alimentaires de l'UE)	Trade organization that represents human food manufacturers in Europe Works closely with FEDIAF on matters of mutual interest

Representatives from pet food trade associations such as the Pet Food Institute (PFI) and the American Pet Products Manufacturers Association and professional organizations such as the American Veterinary Medical Association, Canadian Veterinary Medical Association and American College of Veterinary Nutrition cannot be members of AAFCO, but do attend AAFCO meetings and often serve as advisors to various AAFCO committees and investigators.

AAFCO provides a forum for local, state and federal feed regulatory officials to discuss and develop uniform and equitable laws, regulations and policies. In that capacity, AAFCO has developed model laws and regulations, which although are not directly enforceable (because AAFCO is not a government agency), have become the foundation for most state laws and regulations for all animal feeds. AAFCO addressed the need for information about pet nutrition and pet food regulations by forming a permanent Pet Food Committee in 1959. Model regulations applying specifically to pet foods were adopted in 1967. Amendments to the AAFCO Model Pet Food Regulations occur frequently as needed to address new information and issues relating to pet foods and nutrition. They have been adopted in various degrees by approximately two-thirds of the states. Today, individual members look to AAFCO for guidance when establishing and revising state laws and regulations.

In addition, AAFCO remains the recognized information source for pet food labeling, ingredient definitions, official terms and standardized feed testing methodology. The Model Pet Food Regulations include calorie content statement guidelines and definition of the pet food descriptive terms "light," "lean" and "reduced calorie." The Pet Food Committee has also developed criteria for the official definition of product "families" whose lead member has been tested via the AAFCO feeding trial protocol.

Many pet owners recognize the need to feed their animals nutritionally balanced pet foods. As a consequence, consumers usually purchase pet foods that are labeled "complete and balanced." One means of ensuring nutritional adequacy of a food requires that the food be formulated so essential nutrients meet specified levels. Nutrient minimums before the early 1990s were based on the recommendations of the National Research Council (NRC). In 1990 and 1991, AAFCO established the Canine Nutrition Expert (CNE) and Feline Nutrition Expert (FNE) Subcommittees to establish updated practical profiles based on commonly used ingredients. The CNE and FNE Subcommittee reports formed the basis for new dog and cat food nutrient profiles to be used as minimum standards for the formulation of dog and cat foods (AAFCO, 2007). Two separate AAFCO profiles exist for each species: one for growth and reproduction, and one for adult maintenance. Lower amounts of some nutrients were established for adult dogs and cats, eliminating unnecessary excesses. In addition, maximum levels were established for some nutrients in dog foods, including calcium, phosphorus, magnesium, fat-soluble vitamins and many trace minerals. Maximum methionine, zinc and vitamin A and D levels were established for cat foods. The AAFCO Dog and Cat Food Nutrient Profiles have replaced NRC recommendations as the basis for the substantiation of label claims.

AAFCO (2007) also publishes minimum feeding protocols

for dog and cat foods. These are minimum testing protocols used by manufacturers for substantiating the nutritional adequacy of pet foods via feeding trials and determining metabolizable energy of dog and cat foods.

Food and Drug Administration

Under the Federal Food, Drug, and Cosmetic Act, the FDA has broad responsibilities, including authority over pet foods. Today, the Center for Veterinary Medicine (CVM), in FDA, regulates pet foods in cooperation with the individual states. FDA is responsible for: 1) establishing certain animal food labeling regulations, 2) specifying certain permitted ingredients such as drugs and additives, 3) enforcing regulations about chemical and microbiologic contamination and 4) describing acceptable manufacturing procedures. Feed control officials within each state inspect facilities and enforce these regulations. Health claims on pet food labels or literature accompanying the product are subject to regulation by CVM. A health claim is defined as the assertion or implication that consumption of a food will treat, prevent or otherwise affect a disease or condition (Dzanis, 1994).

United States Department of Agriculture

The United States Department of Agriculture (USDA) is responsible for ensuring that pet foods are labeled so they are not mistaken for human foods. The USDA inspects animal ingredients used in pet foods to ensure proper handling and to guarantee that such ingredients are not used in human foods. The USDA also inspects and regulates animal research facilities. All animal research facilities owned and operated in the United States by pet food companies must fulfill USDA requirements for: 1) record keeping, 2) physical structure, housing and care of animals, 3) food and water quality and 4) sanitation. Research facilities are subject to unannounced inspections by USDA officials at least annually.

National Research Council

The NRC is a private, nonprofit organization that evaluates and compiles research conducted by others. The NRC functions as the working arm of the National Academy of Sciences, the National Academy of Engineers and the Institute of Medicine (Phillips, 1992). The National Academy of Sciences was created in 1863 to advise the United States federal government about scientific and technological matters (Phillips, 1992). The NRC was created in 1916 in response to the increased need for scientific and technical services during World War I (Phillips, 1992). The NRC is not part of the United States government, is not an enforcement agency and is not a basic research organization with laboratories of its own.

The NRC includes a Board on Agriculture and Natural Resources. One of the major activities of the Board has been the development of nutrient requirement recommendations for domestic animals. Numerous ad hoc committees have assisted in developing the series, *Nutrient Requirements of Domestic Animals.* As part of that series, a new edition of *Nutrient Requirements of Dogs and Cats* was published in 2006 (NRC, 2006). Before that, the most current NRC recommendations for dogs and cats were published in 1985 and 1986, respectively (1985, 1986). Before the development and acceptance of AAFCO's Dog and Cat Food Nutrient Profiles, the NRC publications on nutrient requirements for normal dogs and cats were the recognized authority for substantiation of label claims on commercial pet foods. The AAFCO Dog and Cat Food Nutrient Profiles have replaced the NRC recommendations as the standard to be used by pet food manufacturers in the United States for formulating foods for normal dogs and cats.

Currently, pet food labels in the United States that make reference to NRC nutritional recommendations are considered to be misbranded. The NRC recommendations are still used by some pet food manufacturers in countries other than the United States and reference to NRC is still found on some pet food labels. With the most recent NRC edition, it is anticipated that AAFCO will reconvene its expert panel to review and update the AAFCO Dog and Cat Food Nutrient Profiles in light of the new NRC recommendations. AAFCO is not expected to reinstate the NRC recommendations as the authority cited on pet food labels.

Pet Food Institute

The PFI was organized in 1958 as the national trade association of dog and cat food manufacturers in the United States. Active members of PFI produce 95% of the total dog and cat food tonnage in the United States (PFI, 1994). Affiliate members of PFI include the leading suppliers of equipment, ingredients, packaging and services to the United States pet food industry.

PFI works closely with veterinarians, humane groups and local animal control officers to sponsor public affairs and owner education programs that encourage responsible dog and cat ownership. It also represents the industry before legislative and regulatory bodies at the federal and state levels. In the past 20 years, PFI has sponsored research on amino acid requirements of dogs and cats, as well as research on the benefits of pet ownership and the beneficial role of pets in society.

Individual States

Each individual state is responsible for adopting and enforcing pet food regulations. Many, but not all, states have adopted pet food regulations that follow the model bill and model regulations established by AAFCO. The State Department of Agriculture, Regulatory Protection Division or State Chemist administers pet food regulation and enforcement in most states.

Label Design

A pet food label is divided into two main parts: 1) the principal display panel and 2) the information panel (**Figure 9-1**). The principal display panel is defined by FDA as "the part of a label that is most likely to be displayed, presented, shown or examined under customary conditions of display for retail sale." The principal display panel is the primary means of attracting the consumer's attention to a product and should immediately communicate the product identity. The information panel is defined as "that part of the label immediately contiguous

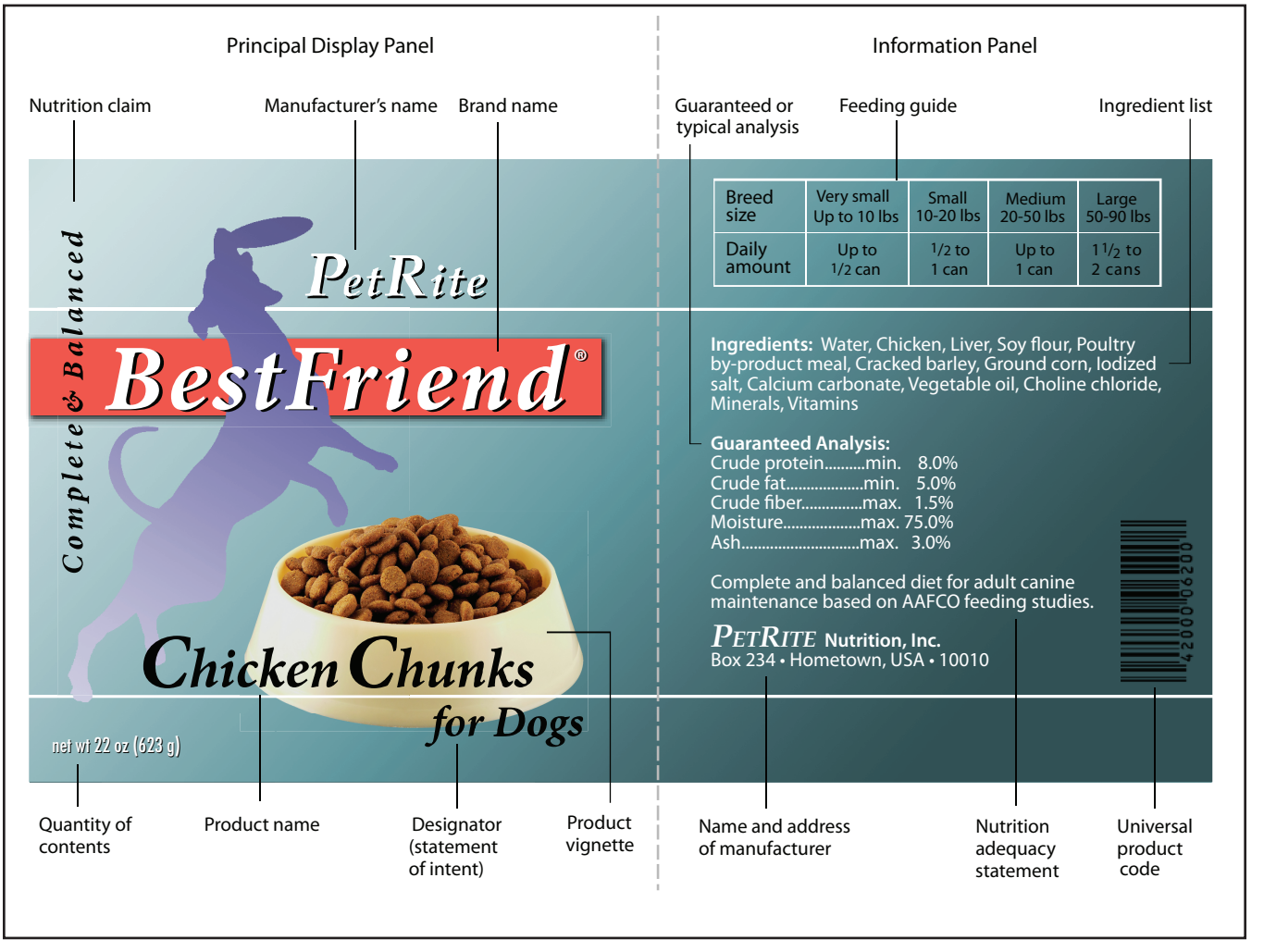

Figure 9-1. Typical pet food label with all elements.

Table 9-2. Key elements found on pet food labels in the United States and Canada.

Principal display panel	Information panel
Product identity	Ingredient statement*
Manufacturer's name	Guaranteed analysis*
Brand name	Nutritional adequacy or nutritional purpose statement (product description)*
Product name*	Feeding guidelines*
Designator (intended species)*	Statement of calorie content
Net weight*	Manufacturer or distributor*
Product vignette	Universal product code
Nutrition claim	Batch information
Bursts and flags	Freshness date

*Elements required on pet food labels in the United States, on labels certified by the CVMA Program and in some other countries.

and to the right of the principal display panel" (FDA) 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 and information panels (**Table 9-2**). The following discussion will focus on the major features found on these two portions of the pet food label.

Principal Display Panel

PRODUCT IDENTITY

The product identity is the primary means by which a specific pet food is identified by consumers. In the United States, the product identity must legally 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. The manufacturer or distributor is not required to include its name as part of the product identity on the principal display panel, but must include its name and address on the label.

Initial assessment of pet foods is best determined 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 regulations about composition of ingredients. Percentage rules are important; beef ingredients

Figure 9-2. Examples of pet food descriptor terms.

will be used as an example (**Figure 9-2**): 1) unqualified use of the term "Beef" in a product name requires that beef ingredients be at least 95% or more of the total weight of all ingredients exclusive of water used in processing, but in no case less than 70% of the total product, 2) use of the term "Beef" with a qualifier such as "Beef dinner," "Beef platter," "Beef entree," "Beef formula," or any similar designation requires that beef ingredients be at least 25% of the total weight of all ingredients exclusive of water used in processing, but in no case less than 10% of the total product, 3) the term "With Beef" is intended to highlight minor ingredients and this example requires that beef ingredients be at least 3% of the total product and 4) the term "Beef flavor" does not stipulate a minimum percentage. 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. In fact, some ingredients may be less than 1% of the total product and still appear in the product name as a flavor. This type of regulation is also found in human foods in which the product names cranberry juice, cranberry juice cocktail and cranberry drink indicate different levels of actual juice in the product.

Percentage rules also apply to product names and moisture content of foods. In the United States, the maximum moisture content in all pet foods should not exceed 78%. However, pet foods can have moisture contents higher than 78% if they are labeled as a stew, gravy, broth, juice or milk replacer. High-moisture pet foods in cans, pouches or tins will contain terms such as "in sauce," "in aspic," "in gravy" or some similar designation in the product name.

DESIGNATOR

The words "dog food," "for cats" or some similar terminology 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

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 and must be displayed in conspicuous and easily legible print. Most often, "dual declarations" are made, so that the net weight is stated in avoirdu-

Box 9-1. AAFCO Guidelines for "Natural" Claims.

"Natural" ingredients must be from animal or plant origin or a mined product (e.g., salt). Processes such as extraction, hydrolysis and fermentation are permitted.

Any chemical synthetic process, such as addition of a chemical moiety to a vitamin, is not "natural" under AAFCO definitions.

A pet food bearing an unqualified "natural" claim may not contain ANY ingredients that do not meet the AAFCO definition for "natural."

"Natural" pet foods may contain synthetic nutrients provided a qualifying disclaimer is added, e.g., "Natural ingredients with added vitamins, minerals and taurine," but not other synthetic substances such as artificial preservatives or colors.

The term "natural" may also be used to characterize a single ingredient, e.g., "natural cheese flavor," provided it does not imply that the product itself is "natural."

Table 9-3. Examples of words used on bursts and flags on pet food labels.

5 pounds more
Even fewer calories than _____
Freshness guaranteed
Great new taste
Great taste
More delicious taste than _____
New
New & improved
New flavor
New formula
New pâté style
New recipe
New taste
No artificial colors and flavors
Pleasant aroma
Soy free
Taste preferred 4 to 1 over leading national brand
Taste preferred over leading dog biscuit

pois (pounds and ounces) and metric (kilograms or grams) units. The regulation of net weight declarations is complex. 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, and they must be separated from all other text above, below and to each side by minimum specifications. The regulations also specify minimum type sizes depending on the square inch area of the 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. This representation should not misrepresent the contents of the package. This means that a picture or other depiction of the product or ingredients on the label should not look better than the actual product or ingredients.

NUTRITION CLAIM

Nutrition statements appearing on the principal display panel are usually brief. Examples include the terms "complete and nutritious," "100% nutritious," "100% complete nutrition" or some similar designation. A nutritional adequacy statement on the information panel must substantiate nutrition claims on the principal display panel. If the nutritional adequacy statement on the information panel is for a limited lifestage (e.g., for maintenance only), the principal display panel claim must be suitably qualified, such as "100% complete nutrition for adult dogs." Manufacturers can substantiate these nutrition claims by meeting the appropriate AAFCO nutrient profile or successfully completing a protocol feeding trial. Nutrition claims substantiation for "natural" foods is discussed in more detail below (**Box 9-1**).

BURSTS AND FLAGS

Bursts and flags (**Figure 9-3**) are areas of the principal display panel that are designed to highlight information or provide specific information with visual impact. **Table 9-3** lists the type of information often included in bursts and flags. 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 resubstantiated.

Information Panel

INGREDIENT STATEMENT

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, corn gluten meal, powdered cellulose) or when a suitable AAFCO name does not exist, should be identified by the common or usual name (e.g., beef, lamb, chicken). Ingredients listed as "meat" or "meat by-products" must designate the mammal from which the ingredients are derived unless the meat or meat by-products are derived from cattle, swine, sheep or goats. For example, ingredients derived from deer would be listed as venison or venison by-products. Brand or trade names cannot be used in the ingredient statement and no reference to quality or grade of ingredients can be made. Collective terms (e.g., "animal protein products"), allowed for use on livestock and poultry feed labels, are not allowed on pet food labels in the United States (**Table 9-4**).

The list of ingredients may be helpful, although it has some shortcomings that limit its usefulness for evaluating pet foods. The nutritive value of ingredients can be estimated, but not definitively determined, from the ingredient statement alone. A consumer must rely on the reputation or word of the manufacturer to assess the nutritive value of the ingredients appearing

on the list. A serious limitation of the ingredient statement is that terms such as "meat by-products" are difficult to evaluate. The nutritive value of various meat by-products varies widely. As an example, meat by-products such as liver, kidney and lungs have excellent nutritive value whereas other meat by-products such as udder, bone and connective tissue have poor nutrient availability.

Because individual ingredients are listed in descending order by weight for the product as a whole, careful reading of the ingredient list may be needed to fully understand the true relative proportions of ingredients in the product. A pet food that lists several related ingredients or different forms of the same ingredient separately (e.g., wheat germ meal, wheat middlings, wheat bran, wheat flour) could make wheat-based ingredients appear to be a lower portion of the food than is the fact. Also, because an ingredient's position on the list includes its inherent water content, this allows dry ingredients to appear lower on the list than ingredients that are naturally high in moisture.

This basic principle is commonly used in moist meat-type dog foods in which textured vegetable protein (TVP) is a major portion of the product. The ingredient list may look like this for a food named a "beef dinner:" Water sufficient for processing, meat by-products, beef, soy flour, cornstarch…. In this kind of food, water is typically combined with soy flour to produce TVP. The TVP makes up a predominant portion of the food, but soy flour appears lower on the ingredient statement because it is a "dry" ingredient whereas other components of the food are added as "wet" ingredients. The consumer thinks he or she is purchasing a beef-based food when in fact, there is more soy flour than beef when the two are compared on an equal moisture ("dry matter") basis.

This same principle is used in dry pet foods in which "fresh" meats are highlighted. The ingredient list may look like this for a lamb and rice dog food that claims to provide "real lamb meat:" Lamb, brewers rice, ground yellow corn, corn gluten meal, oat groats, poultry by-product meal, beef tallow…. Lamb appears first on the ingredient list because its moisture content is higher than that of the other dry ingredients. The predominant portion of the food contains a mixture of grains (rice, corn, oats) rather than "real meat."

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. Pet food additives must conform to the requirements of the applicable regulations in the United States Code of Federal Regulations as food additives (21 CFR 573) or as ingredients generally recognized as safe (GRAS) (21 CFR 582). Some additives are listed only in the sections for human direct food additives or for GRAS substances, but are allowed in pet foods by informal review. With FDA review and concurrence, AAFCO has also established definitions for some additives that are not formally codified in the federal regulations.

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 (**Table 9-5**). 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"). Guarantees for substances not listed in the AAFCO Dog or Cat Nutrient Profiles (e.g., vitamin C, L-carnitine, glucosamine, chondroitin sulfate) should immediately

Figure 9-3. One label with a flag and one label with a burst.

Table 9-4. Ingredient statement from the same dry dog food as it would appear on pet food labels from selected countries.

United States
Ingredients: Corn Meal, Chicken Meal, Soybean Meal, Animal Fat (Preserved With Mixed Tocopherols And Citric Acid), Natural Chicken Liver Flavor, Vegetable Oil, Dried Egg Product, Flaxseed, Salt, Calcium Carbonate, Minerals (Ferrous Sulfate, Zinc Oxide, Copper Sulfate, Manganous Oxide, Calcium Iodate, Sodium Selenite), Vitamins (Choline Chloride, Vitamin A Supplement, Vitamin D_3 Supplement, Vitamin E Supplement, L-Ascorbyl-2-Polyphosphate [A Source Of Vitamin C], Niacin, Thiamine Mononitrate, Calcium Pantothenate, Pyridoxine Hydrochloride, Riboflavin, Folic Acid, Biotin, Vitamin B_{12} Supplement), Beta-Carotene.

Canada
Ingredients: Grain Products, Poultry Products, Soybean Meal, Stabilized Poultry and/or Animal Fat, Vitamins and Minerals.
CVMA-Certified Product
Ingredients: Corn Meal, Chicken Meal, Soybean Meal, Animal Fat, Dried Whole Egg, Vegetable Oil, Salt, Plus All Necessary Vitamins and Minerals.

Europe*
In Europe there are two options:
1) Ingredient groupings
Ingredients: Cereals, Meat and Animal Derivatives, Vegetable Protein Extracts, Oils and Fats, Eggs and Egg Derivatives, Minerals.
2) Individual ingredient listing
Ingredients: Ground Corn, Chicken Meal, Soybean Meal, Animal Fat, Dried Egg Product, Brewers Rice, Vegetable Oil, Iodized Salt, Calcium Carbonate, Magnesium Oxide.
*Antioxidants, preservatives, vitamins and coloring agents are not listed under ingredients because they are considered additives and are declared elsewhere on the label.

Table 9-5. Guaranteed or typical analysis from the same dry cat food as it would appear on pet food labels from selected countries.

United States (guaranteed analysis)		
Crude protein	Minimum	30.0%
Crude fat	Minimum	18.0%
Crude fiber	Maximum	2.0%
Moisture	Maximum	10.0%
Vitamin E	Minimum	275 IU/kg
Ascorbic acid (vitamin C)*	Minimum	50 mg/kg
Canada (guaranteed analysis)		
Protein	-	30.0%
Fat	-	18.0%
Moisture	-	10%
CVMA-Certified Food in Canada (guaranteed analysis)		
Crude protein	Minimum	30.0%
Crude fat	Minimum	18.0%
Crude fibre	Maximum	2.0%
Moisture	Maximum	10.0%
Ash	Maximum	5.0%
Europe (typical analysis)		
Crude protein	-	31.3%
Crude oils and fats	-	21.3%
Crude fibre	-	2.0%
Crude ash	-	4.7%
Moisture	-	7.5%
Additives (per kg)		
Vitamin A	-	17,100 IU
Vitamin D_3	-	1,710 IU
Vitamin E	-	290 mg
Copper (copper chloride)	-	21 mg
Contains EU permitted antioxidant		
Contains EU permitted colorant		

*Not recognized as an essential nutrient by the AAFCO Cat Food Nutrient Profiles.

follow the listing of recognized nutrients and be accompanied by an asterisk referring to the disclaimer "Not recognized as an essential nutrient by the AAFCO Dog (or Cat) Food Nutrient Profiles." The sliding scale method of listing guarantees as percentage ranges (e.g., minimum 15 to 18%) is not allowed. It is important to recognize that 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. This differs from pet food labels in Europe where "typical" percentages are used.

The term crude protein refers to a 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 (Chapter 5).

Crude fat refers to a specific analytical procedure that estimates the lipid content of a food obtained through either ether extraction or acid hydrolysis. In addition to lipids, this procedure also isolates certain organic acids, oils, pigments, alcohols and fat-soluble vitamins. Because fats have more than twice the energy density of proteins 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 represents the organic residue that remains after plant material has been treated with dilute acid and alkali solutions. It is determined by a specific analytical procedure that was originally developed for the wood pulp industry and then applied to animal foods. Although crude fiber is used to report the fiber content of commercial pet foods, it usually underestimates the true level of fiber in the product. Crude fiber is an estimate of the indigestible portion of the food for dogs and cats (Chapter 5). The crude fiber method typically recovers a large percentage of cellulose and lignin in a sample, and a variable percentage of hemicellulose and even ash.

Moisture is determined by drying a sample of the product to a constant weight. The drying procedure measures water in the product as a whole, but does not distinguish between added water and water in the ingredients. Subtle differences in moisture content of moist products can result in marked differences in dry matter content and therefore the economics of feeding a given pet food. Remember, the dry matter content of the food contains all of the nutrients except water. For example, compare the dry matter content of three different moist cat foods: 1) Food A contains 72% moisture, 2) Food B contains 78% moisture and 3) Food C contains 82% moisture.

Food A 100 - 72% water = 28% dry matter
Food B* 100 - 78% water = 22% dry matter
Food C** 100 - 82% water = 18% dry matter

*28 - 22 ÷ 22 x 100 = 27% more dry matter in Food A (72% moisture) vs. Food B (78% moisture)

**28 - 18 ÷ 18 x 100 = 55% more dry matter in Food A (72% moisture) vs. Food C (82% moisture)

Therefore, what appears to be a small difference in water content of a food produces a marked difference in dry matter content. Guarantees are 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., moist vs. dry foods).

Although a maximum ash guarantee is not required in the United States, many pet food manufacturers include one on the labels of their foods. In the United States, "low ash" claims are not allowed because "ash" per se is of no true significance. "Low magnesium" claims on cat food labels are allowed if the food meets certain FDA criteria. In such cases, a maximum magnesium guarantee is required. To be labeled as a "low magnesium" food, the product must contain less than 0.12% magnesium, on a dry matter basis, and less than 25 mg per 100 kcal metabolizable energy. Actual analytical values must show that the product consistently meets these levels. The estimation of magnesium content based on calculation from the guaranteed analyses must meet these criteria as well. The only exception occurs when the label bears an AAFCO calorie content statement that is higher than would be estimated from the guaranteed analysis.

Ash consists of all noncombustible materials in the food, usually salt and other minerals. A high ash content in dry and soft-moist foods generally indicates a high magnesium content. However, the ash content of moist cat foods usually correlates poorly with the magnesium content. Excessive magnesium intake may be one risk factor for feline struvite urolithiasis (Chapter 43).

Table 9-6. How to interpret label claims of nutritional adequacy.*

Claim 1: "Good Things Beef Flavor Dog Food is formulated to meet the nutritional levels established by the AAFCO (Association of American Feed Control Officials) Dog Food Nutrient Profiles for maintenance of adult dogs."
Interpretation: 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.

Claim 2: "Good Things Chicken Recipe Cat Food meets the nutrient requirements established by the AAFCO Nutrient Profile for all stages of a cat's life."
Interpretation: This food has been formulated to meet the nutrient levels in the AAFCO Cat Food Nutrient Profile for growth/lactation and adult maintenance. This product has probably not undergone AAFCO feeding tests. The language of the statement is not in compliance with AAFCO regulations.

Claim 3: "Animal feeding tests using the AAFCO procedures substantiate that Good Things Lamb Meal and Rice Formula Dog Food provides complete and balanced nutrition for the growth of puppies and maintenance of adult dogs."
Interpretation: This food has successfully completed an AAFCO minimum protocol feeding trial for growing puppies (10 weeks of feeding) or is a family member of a tested product. It probably, but not necessarily, is formulated to meet the AAFCO Dog Food Nutrient Profiles for maintenance and growth/reproduction.

Claim 4: "Good Things Cat Food with Tuna 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)."
Interpretation: This cat food (or a family member) has undergone AAFCO minimum protocol feeding studies for gestation/lactation and growth. This food would be nutritionally adequate for adult cats but is not recommended by this manufacturer for long-term maintenance of adult cats. The language of the statement is not in compliance with AAFCO regulations.

Claim 5: "Complete and balanced nutrition for adult maintenance based on AAFCO protocol feeding studies conducted at the Good Things Nutrition Center."
Interpretation: This food (or a family member) has undergone AAFCO minimum protocol feeding studies for adult maintenance only and has not been tested for gestation/lactation or growth. The language of the statement is not in compliance with AAFCO regulations.

Claim 6: "Complete and balanced nutrition for all lifestages of the dog, substantiated by testing performed in accordance with feeding protocols established by AAFCO."
Interpretation: This dog food (or a family member) has undergone AAFCO minimum protocol feeding trials for gestation/lactation and growth. The language of the statement is not in compliance with AAFCO regulations.

Claim 7: "Meets or exceeds the nutritional levels established by the National Research Council recommendations for all stages of a cat's life."
Interpretation: 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 considered misbranded in the United States because the NRC nutrient recommendations 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.

Claim 8: "Good Things for Dogs: CVMA Certified; Certified by the Canadian Veterinary Medical Association to meet its nutritional standards on the basis of comprehensive feeding trials, chemical analysis and on-going monitoring."
Interpretation: This dog food meets or exceeds the standards established by the CVMA Pet Food Certification Program for adult maintenance. The food meets or exceeds the CVMA standards for nutrient content, digestibility and labeling requirements. Nutrient digestibility is the only feeding test performed after the product is initially certified.

*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.

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" (and more recently as "supplements") contain a statement and validation of nutritional adequacy. 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 (**Table 9-6**).

AAFCO (2007) regulations allow three basic methods to substantiate claims. The formulation method requires that the manufacturer formulate the food to meet the AAFCO Dog 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. The family method allows product analyses to ensure that the pet food is a member of a product family in which the lead member has successfully passed a feeding trial.

AAFCO (2007) 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 or by chemical analysis of the final product. **Table 9-6** lists some of the wording that connotes this type of claim, but the only statement that is acceptable in states that follow AAFCO Model Pet Food Regulations is "(Complete name of product) is formulated to meet the nutritional levels established by the AAFCO Dog (or Cat) Food Nutrient Profiles for (lifestage)." 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. A report in 1991 documented that some commercial pet foods that made "complete and balanced" claims by formulation methods alone did not provide adequate growth of normal animals because of poor availability of nutrients in the food (Huber et al, 1991). However, that study was based on the older

NRC recommendations, not the AAFCO Dog Food Nutrient Profiles, which had additional safety considerations built in to help mitigate the potential for these types of deficiencies.

The feeding trial (protocol) method is generally considered the preferred method for substantiating a claim. Feeding tests can be used to support a nutritional adequacy claim for one or more of the following categories: 1) gestation and lactation, 2) growth, 3) maintenance and 4) all lifestages. AAFCO has published minimum testing protocols for adult maintenance, growth and gestation/lactation. A food that successfully completes a gestation/lactation trial followed by a growth trial using the offspring from the gestation/lactation trial can make a claim for all lifestages. The required terminology for labels of pet foods that have passed these tests is: "Animal feeding tests using AAFCO procedures substantiate that (complete product name) provides complete and balanced nutrition for (lifestage)." The wording must appear verbatim. Deviations from the above statement, while occasionally observed on some pet food labels, are currently considered misbranded in the United States (**Table 9-6**).

AAFCO feeding trials are minimum protocols. As an example, the adult maintenance protocol uses eight animals that are fed the food as the sole source of nutrition for six months. A veterinarian examines the animals at the beginning of the study and at the end of 26 weeks for clinical signs of nutritional deficiency or excess. Body weight is recorded weekly and minimal laboratory evaluations (total erythrocyte count, hemoglobin, packed cell volume, serum alkaline phosphatase, serum albumin and whole blood taurine in cats) are performed. This type of protocol will usually detect the vast majority of nutrient deficiencies but might not detect some nutrient excesses that may be harmful when fed over a longer period. In this respect, the AAFCO profiles are better because maximum levels of some nutrients are also established. Growth protocols include feeding the food for a minimum of 10 weeks. Because this test is conducted during the most critical stage of the puppy's or kitten's development, it is very sensitive in detecting deviations from normal growth. The gestation/lactation trial considers factors such as litter size and survivability and health of the dam.

The family method of nutritional substantiation is a combination of the formulation and feeding trial methods. An individual product can be a member of a product family and be nutritionally similar to a lead product that has undergone AAFCO feeding tests. AAFCO (2007) has established clear procedures for establishing pet food product families. To qualify, the family member must be the same processing type as the tested product, sufficiently close to the tested product in metabolizable energy content, analyzed and shown to meet the levels of the tested product for crude protein, calcium, phosphorus, zinc, lysine and thiamin (plus potassium and taurine for cat foods), meet either the tested product or the AAFCO Dog or Cat Food Nutrient Profiles minimums for all other nutrients and meet all established AAFCO Dog or Cat Food Nutrient Profiles maximums. When the calorie content of both the tested product and family members are determined by an AAFCO-sanctioned metabolizable energy feeding trial, the nutritional adequacy statement as used for the tested product may also be used for the family members. Although infrequently observed in the market, labels of family members whose calorie content was determined by calculation methods must state,"(complete product name) provides complete and balanced nutrition for (lifestage), and is comparable in nutritional adequacy to a product which has been substantiated using AAFCO feeding tests."

Pet foods that are clearly labeled as snacks, treats or supplements may make a nutritional adequacy claim but are not required to do so. Pet foods that fail to meet AAFCO requirements by any of the standard methods and are not clearly labeled as snacks, treats or supplements are required to have the nutritional statement: "This product is intended for intermittent or supplemental feeding only."

Veterinary therapeutic/wellness foods are those products that are intended for use by or under the supervision or direction of a veterinarian. These foods may contain the nutritional statement "use only as directed by your veterinarian." In addition to this statement, the label must include the appropriate lifestage AAFCO nutritional adequacy claim or an "intermittent or supplemental" feeding statement.

FEEDING GUIDELINES

In the United States, dog and cat foods labeled as complete and balanced (including snacks and treats) for any or all lifestages must list feeding directions on the product label for all lifestages for which the product is intended. 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.

There is an exception to this rule for products that bear the "use only as directed by your veterinarian" statement. Because the veterinarian will presumably provide proper instruction about feeding of the product, explicit feeding directions are not required. Many veterinary therapeutic/wellness products, however, may still provide specific directions either on the label or in accompanying product literature.

STATEMENT OF CALORIE CONTENT

The label of a dog or cat food in the United States may bear a statement of calorie content provided the statement is separate from the guaranteed analysis and appear under the heading "calorie content." At this time, it is required for "light" and "less calorie" pet foods, but is voluntary on others. The statement is based on kilocalories of metabolizable energy (ME) on an as fed basis and must be expressed as kilocalories per kilogram (kcal/kg) of product. The statement may also be expressed as kilocalories per familiar household measure (e.g., kcal/cup, kcal/can), in addition to, but in lieu of, the kcal/kg value.

There are two methods for determining calorie content. The

first is the "calculation method," wherein analytical values for the calorie-containing nutrients in the food (protein, fat and carbohydrates) are used to estimate metabolizable energy by the "modified Atwater" formula. This formula is based on average digestibility of these nutrients in commonly used pet food ingredients. As such, it tends to underestimate the true calorie content of very highly digestible foods and overestimate the calorie content of poorly digestible foods.

Calorie content may also be determined by conducting AAFCO-sanctioned feeding trials to obtain a more accurate measurement of digestibility. The most common method is to feed animals the pet food in question for five days, then to very carefully measure food intake and fecal excretion for an additional five days. Comparing "what goes in" to "what comes out," with some additional estimates for nitrogen loss in urine, is a more reliable method for determining metabolizable energy.

To differentiate the two methods on a pet food label, a calorie content statement determined by the calculation method must include the word "calculated."

GENERAL INFORMATION

In the United States, the name and address of the manufacturer, distributor or dealer must be found on the label, usually on the information panel. The phrases "Distributed by...." or "Manufactured for...." or "Imported by...." indicate that a company other than the one selling the product has manufactured the pet food. This is a common practice with private label brand pet foods. The manufacturer in this case is called a co-packer. Regulations require that if the product is manufactured in a country other than where it is sold, the manufacturer's information be accompanied by "Product of (country of origin)."

Although not a legal requirement, most manufacturers include the universal product code (UPC) or bar code on the label. Other information such as batch numbers and date of manufacture are also frequently found on pet food containers or labels. This information is important to know when communicating with a manufacturer about product in a specific container. Some manufacturers will use a freshness date such as "Best before (date)" or list other guarantee policies.

PET FOOD LABELS IN CANADA

Regulation in Canada

The Canadian government has few pet food labeling regulations. The *Consumer Packaging and Labelling Act* specifies that three basic mandatory statements must appear in English and French languages on a pet food label for food sold in Canada: 1) product identity, 2) product net quantity (metric units first) 3) and the dealer's name and principal place of business.

The Canadian government's Competition Bureau has published a "Guide for the Labeling and Advertising of Pet Foods" (2001). This guide provides a voluntary code of conduct setting out best practices for the labeling and advertising of Canadian-produced pet foods. Although these guidelines are not law, the guide is used by the Competition Bureau in evaluating possible violations of Canadian labeling legislation and in assessing complaints about false or misleading pet food labels or advertising. For this reason, most reputable Canadian pet food companies adhere to the Competition Bureau guidelines.

CVMA Pet Food Certification

The Canadian Veterinary Medical Association (CVMA) Pet Food Certification Program was established in 1976 as a voluntary, third-party, quality assurance program for pet foods sold in Canada. The CVMA Program establishes nutrient standards, lifestage feeding protocols and digestibility feeding protocols for dogs and cats (CVMA, 1999; Allard, 1988). Similar to PFI and NRC, the CVMA is not a regulatory agency but provides a method of voluntary enforcement of certain standards for pet foods. Involvement in the CVMA Pet Food Certification Program is not mandatory.

The mission of the CVMA Pet Food Certification Program is: "To improve the health and well-being of pets by: 1) providing a nutritional standard for pet foods for manufacturers to meet in order to satisfy the nutritional requirements of a normal pet throughout its life, 2) certifying pet foods that meet the CVMA nutritional standards and monitoring continuously those foods to ensure that they continue to meet the standards of composition, digestibility and palatability, 3) providing the consumer with a quality assurance program and a means of identifying a nutritionally sound pet food in the marketplace, 4) ensuring the CVMA Seal of Certification becomes synonymous in the Canadian public's mind with quality and integrity by assuring that all advertising statements are fairly presented and can be supported by the advertiser and 5) helping pet owners understand the importance of proper nutrition in preventive health care and 6) encouraging the funding of small animal nutrition research" (1999).

All CVMA-certified pet foods are allowed to display the CVMA Seal of Certification on their labels for products sold in Canada. Because of AAFCO restrictions, pet food containers sold in the United States cannot display the CVMA Seal.

Principal Display Panels

Principal display panels on Canadian pet food containers may vary. The Canadian government requires that product identity and net quantity (net weight) be listed on all principal display panels of pet foods sold in Canada. Other elements of the principal display panel described under United States regulations may appear on the container depending on several factors.

The CVMA Pet Food Certification Program requires more extensive labeling requirements than does the Canadian law (Allard, 1988). The CVMA Program labeling requirements include product identity, designator and net quantity, which are usually found on the principal display panel (Allard, 1988). Nutritional claims can be stated but must be substantiated. Product names can contain ingredients (Beef stew, Beef flavor, etc.) as described earlier for United States' labels and follow roughly the same percentage rules. Pet foods that

meet the requirements can display the CVMA Seal of Certification on the principal display panel (**Figure 9-4**) (CVMA, 1999). Requirements dictate the maximum size of the logo for different sizes of containers (CVMA, 1999).

The Competition Bureau voluntary guidelines regarding the principal display panel are similar to those for the United States and the CVMA Certification Program. These guidelines require the substantiation of any nutritional claims, and provide definitions for ingredients referenced in the product name (i.e., Beef dog food, Beef dinner etc). The Competition Bureau's guidelines follow similar percentage rules to those of the United States.

Commercial pet foods produced in the United States for sale in Canada will usually contain the elements of the principal display panel legally required in the United States; namely, 1) a product name, 2) designator and 3) net weight. Pet foods produced in Canada that are not CVMA certified are not legally required to conform to the stricter labeling requirements of the United States or CVMA Program, but most Canadian pet foods do follow the comparable guidelines published by the Competition Bureau. Other elements of the principal display panel such as the manufacturer's name, brand name, product vignette and bursts/flags are also found on Canadian labels.

Figure 9-4. The CVMA seal.

Information Panels

Ingredient Statements

Ingredient statements on pet food containers in Canada also vary. Canadian government regulations do not require an ingredient statement. However, the Competition Bureau guidelines state that ingredients must be listed on the label, that manufacturers should follow the AAFCO feed ingredient definitions and ingredients should be listed in descending order by percentage of weight. The CVMA Program states that ingredients should be listed on the label in decreasing order of concentration in the product. Pet foods produced in the United States and sold in Canada will usually meet the United States regulations for ingredient lists. Pet foods produced in Canada that are not CVMA certified generally follow the Competition Bureau's guidelines even though they are not required to by law (**Table 9-4**).

Guaranteed Analysis

Canadian law does not require guarantees on pet food labels. The voluntary Competition Bureau Guidelines state that a guaranteed analysis must be shown on the label and must include the following on an "as fed" basis: crude protein (minimum %), crude fat (minimum %), crude fibre (maximum %) and moisture (maximum %). Pet foods certified by the CVMA Program must also include the above guarantees. Ash maximums (not more than 6% dry matter) are required for cat foods certified by the CVMA Program, and magnesium maximums (not more than 0.1% dry matter) are required for cat foods that make a "low ash" claim.

Nutritional Adequacy Statements

The CVMA Pet Food Certification Program has published nutrient standards and protocols for digestibility feeding trials for dogs and cats (1989). Nutrient, digestibility, feeding protocol and feeding guideline standards have also been published for "special foods" including light (lite) foods, calorie-reduced foods, geriatric foods, growth foods, gestation/lactation foods and low-ash, low-magnesium cat foods. Feeding trials are incorporated into the standards for geriatric foods (three-month period) and growth foods (weaning to six months). Products that meet these standards can display the CVMA Seal of Certification and use the following words as a nutritional statement: "This product meets nutritional standards established by the Canadian Veterinary Medical Association (CVMA)." In addition to the CVMA certification logo, products certified as special foods may carry language to the effect that: "This product is formulated to provide (claim for level of nutrients)" or "This product meets the CVMA standard for a (type of special food)."

The Competition Bureau Guidelines state that nutritional adequacy claims can be made if they are based on animal feeding protocols and nutrient profile programs such as those administered by the Pet Food Association of Canada, the CVMA or AAFCO. The guidelines further state that products that are formulated for or suitable for only a limited purpose, such as supplemental feedings or that are limited to specific lifestages, must contain a statement to that effect. If a product is intended to be used under the supervision of a veterinarian, the following claim must be included on the product label: "Use only as directed by your veterinarian." The guidelines specifically forbid drug claims (i.e., the words "diagnose," "cure," "mitigate," "treat" or "prevent" disease must not be used on a pet food label).

Some products in Canada will reference the NRC for complete and balanced nutrition claims, although this reference is no longer legal in the United States. Based on published NRC nutrient standards, these claims refer to the formulation/analysis method. **Table 9-6** includes nutritional claims that appear on pet foods sold in Canada.

Other Items on Information Panels

In Canada, pet foods certified by the CVMA must provide feeding instructions on the label if they are sold as light, calorie-reduced or geriatric foods. Pet foods certified by the CVMA Program as light, calorie-reduced or geriatric foods have energy density (kcal/gram of dry matter gross energy) standards, but

caloric density is not required on the label.

Competition Bureau guidelines also require that feeding instructions appear on the product label. The guidelines also cover misrepresentations with respect to business claims (i.e., rank of the company in the industry, length of time in business, etc.) as well as deceptive endorsements or testimonials.

PET FOOD LABELS IN EUROPE

Regulation in Europe

The regulations about pet food labeling for Europe, as discussed in this chapter, apply primarily to the 25 member states of the European Union (EU) and Switzerland. Legislation controlling pet food labels originates in EU institutions and is then implemented into national law. Outside the EU, individual countries have different structures and rules.

European Union

COUNCIL

The Council of the EU is the EU's main decision-making institution. The Council of the European Union is the forum within which the ministers of the EU meet. Depending on the subject on the agenda, each country is represented by the minister responsible for that particular subject (e.g., agriculture, public health etc.) There are nine different Council "configurations."

The Council passes laws, usually in cooperation with the EU Parliament. In principle, the EU Commission proposes laws for the Council, which examines and adopts them or proposes modifications.

EUROPEAN COMMISSION

The Commission acts with complete political independence, and must not take instructions from any member state government. The Commission has the right to propose new EU legislation and ensures that the regulations and directives adopted by the Council and Parliament are implemented. A civil service made up of 36 "Directorates-General" (DGs) and services, based mainly in Brussels and Luxembourg, assists the Commission. Each DG deals with specific matters; DG Sanco (Health and Consumer Protection Directorate General) largely regulates pet food and labeling issues. DG Sanco's work is divided into three main areas: public health, food safety and consumer protection.

In most cases, the various DGs of the European Commission prepare an initial text for adoption as a Commission Proposal. During this preparation phase, national civil servants, the industry, consumers and other interest groups and outside professionals may be consulted.

EUROPEAN PARLIAMENT

The European Parliament is the only supranational institution whose 732 members are directly elected by the citizens of the 25 member states. The European Parliament is involved in legislative activity through its 20 parliamentary committees.

Table 9-7. National member organizations of FEDIAF.

Austria: ÖHTV	Italy: ASSALCO
Belgium: BKVH/CPAF	Netherlands: VKH
Denmark, Norway & Sweden: NPFA	Poland: Polikarma
Finland: Lemmikkieläinruokayhdistys	Portugal: ALIAN
France: FACCO	Slovenia: GIZ_PHMZ
Germany: IVH	Spain: ANFAAC
Greece: GPFMA	Switzerland: VHN
Hungary: HPFA	United Kingdom: PFMA
Ireland: PFAI	

These Committees draw up legislative proposals, and amend and adopt Commission and Council proposals. Two Committees can be involved in pet food legislation: "the Committee responsible for environment, public health and food safety" and "the Committee responsible for agriculture and rural development."

LEGISLATIVE PROCESS

Two kinds of legislative pieces can come forth: a directive or a regulation. A directive must be implemented into national law within a period stipulated in the directive. The national law can be more restrictive than the European directive but must always be within the scope and spirit of the directive. A regulation must be adopted by national law without changes and is applicable almost immediately after publication. The directives for feeding stuffs contain strict provisions and stipulate definitions for ingredients, for methods of sampling and analysis and for types and maximum levels of permitted additives.

NATIONAL AUTHORITIES

The national, regional or local governments in EU countries apply the EU's health and consumer protection laws. Their job is to ensure traders, manufacturers and food producers in their country observe the rules. After a piece of legislation has been published in the Official European Journal, the national government must implement it immediately (regulation) or, in the case of a directive, translate the legislation into national law within the specified time (Borchardt, 1994). The individual countries through their Ministries of Agriculture are responsible for controlling the application of the law by checking labels and taking samples for analysis. National experts, who work closely with the European Commission on legislation, reside under the Ministries of Agriculture of the different member states.

FÉDÉRATION EUROPÉENNE DE L'INDUSTRIE DES ALIMENTS POUR AMINAUX FAMILIERS

Established in 1970, the Fédération Européenne de l'Industrie des Aliments pour Aminaux Familiers (FEDIAF) represents the pet food industry in Europe and unites the national professional organizations of 19 countries, whether they belong to the EU or not (**Table 9-7**) (FEDIAF, 1993; PFMA, 1993). FEDIAF represents approximately 450 compa-

Table 9-8. Product descriptors used in Europe.

Claim/description	Level of the named ingredient
With beef flavor Beef flavor	Greater than 0 but less than 4% of the named flavor should be present
With rabbit Contains rabbit	At least 4% of the named species should be present
High in chicken With extra chicken Extra chicken	At least 14% of the named species should be present
Beef variety Beef dinner Beef recipe Beef menu Beef with cereal	At least 26% of the named species should be present
Brand name rabbit	All contents are of the named origin with no other ingredients present except gravy, jelly, sauce, permitted additives and nutrient supplements

Table 9-9. Information found in the statutory statements of European pet food labels.

Additives
Address of person (company) responsible for the accuracy of declarations
Complete/complementary food
Expiration date and reference to manufacturing date
Ingredient list
Instructions for use
Net weight and/or volume
Reference (batch) number
Registration number of the plant
Species/category
Typical analysis

nies responsible for producing more than 90% of European pet food. The national organizations represent manufacturers, packers and importers of prepared pet food, including foods for dogs, cats, birds and other pets.

FEDIAF's main role is to represent the European pet food industry in all external forums (FEDIAF, Website 2006). FEDIAF cooperates with the European authorities to implement pet food law designed to ensure the manufacture and distribution of healthy, balanced and quality products. New legislation is translated by FEDIAF into labeling guidelines, which in some countries is then implemented into a "Code of Practice" for the members.

Through the nutrition working party, FEDIAF publishes nutrition guidelines as a policy paper for members. To develop these guidelines the group uses NRC recommendations, AAFCO guidelines and studies published by internationally recognized nutritionists, veterinarians and other researchers. These guidelines are updated yearly.

Through their national organizations, FEDIAF also collaborates with local and national authorities to make pet owners more aware of their responsibilities toward their pets and society.

CONFÉDÉRATION DES INDUSTRIES AGRO-ALIMENTAIRES DE L'UE

The Confédération des Industries Agro-Alimentaires de l'UE (CIAA), also known as the Confederation of the Food and Drink Industries, is analogous to FEDIAF for human foodstuffs. Both federations work closely together in matters of common interest that are regulated by the same legislation. Advertising, claims and environmental matters are regulated for human and animal foods by the same law.

Label Design

Pet food labels in Europe are divided into a Principal Display Panel and the Statutory Statement, although the distinction may be less visible than that for pet food labels in the United States. The Council Directive on the circulation of compound feeding stuffs (79/373/EEC, April 1979) regulates the statutory statement. This directive has been updated several times with a major update (Council Directive 90/44/EEC), which has been in force since January 1992. The pet food industry is also protected by Directive 2002/32/EC and amendments, which regulate maximum residue levels of undesirable substances such as heavy metals, mycotoxins and dioxins in feeding stuffs for animals and ingredients for commercial foods/feeds.

Principal Display Panel

As in the United States, this part of the label gives information about product identity, shows graphics and pictures, includes marketing claims to promote the product and contains descriptions of meat types and other information that companies may choose to convey outside of the statutory statements.

No specific rules apply to the principal display panel other than general legislation concerning misleading claims that applies to all advertising (Council Directive 84/450/EEC and amendments). Labels should not mislead the purchaser; the label must not suggest that the product possesses properties that it does not have, nor should the label imply that the product is special when similar properties are found in other products. A pet food label must not claim that the product will prevent, treat or cure disease.

Directive 90/44/EEC, Art. 5.c.4 is the only text directly referring to claims on pet food labels. It allows pet food manufacturers to claim a low or high level of a specific ingredient on the condition that the percentage is specified and that the claim reflects an essential aspect of that particular food. In the absence of more specific legislation and to protect the consumer against unsubstantiated claims, a policy for claiming meat and flavor varieties has been proposed within the FEDIAF (**Table 9-8**). These guidelines serve an advisory role and are currently under discussion. Although they are not official law with force of application, in some countries (e.g., France) the authorities use those guidelines to judge labels for misleading claims.

Statutory Statement

GENERAL

The mandatory and optional declarations are encapsulated in a space provided for that purpose and called "The Statutory

Statement" (United Kingdom) or "Cadre Réservé" (France) (Art. 5 of 90/44/EEC). In addition to being visible, legible and indelible, the statutory statement must be separate from all other information on the label (**Table 9-9**).

Some of this information may be outside the statutory statement, but the statutory statement must indicate where to find the information. Such information as the "best before" date, net weight and the name and address of the company responsible for the product are often found elsewhere on the label.

A pet food label must indicate whether the food is a complete or a complementary pet food (in other words, whether the food can satisfy all nutritional demands without an additional ration [complete] or whether it must be fed with another product [complementary]). For complementary foods, the other food or supplement should be stated (Burger, 1993). The description "complete" or "complementary" must be considered in relation to the intended purpose of the food or to the particular lifestage for which it is defined (e.g., adult, growth or all lifestages).

The species or category of animals must be stated with the indication complete or complementary (e.g., Brand X is a complete food for adult dogs). This statement of intent is often communicated on the principal display panel, but is repeated in the statutory statement.

INGREDIENT LIST

In Europe, ingredients are declared by the individual name or grouped under various categories (**Table 9-4**). These categories are designed to provide consumers with some indication of the source of raw materials used, while allowing the manufacturer some flexibility in the selection of the ingredients within a specific category (Burger, 1993). These categories are well defined and names and descriptions are officially published (**Table 9-10**). Ingredients should be listed in descending order by weight of each individual ingredient or category.

Vitamins are considered additives and are not listed under ingredients. Water does not have to be declared as an ingredient even if added during processing.

TYPICAL ANALYSIS

Contrary to pet food labels in the United States, where minimum and maximum guarantees are stated, the EU regulations dictate that the typical analysis must be declared for: 1) crude protein, 2) crude fat, 3) crude fiber and 4) ash (**Table 9-5**). Moisture must be declared if it exceeds 14%. Typical analysis (percentage) is the average of the nutrient level calculated from several samples and should correspond with the target level of each nutrient for which precise limits of variation are defined.

The typical analysis gives the percentages found in the actual food. Declaration of nutrients such as calcium, phosphorus, sodium, potassium and magnesium is optional. Energy declaration is forbidden in the EU except for some veterinary dietetic pet foods. Other nutrients must be declared if a manufacturer wants to draw attention to them by saying a food is "high in" or "low in" a particular nutrient.

Table 9-10. Common ingredient categories found on European pet food labels.

Cereals
All types of cereals, regardless of their presentation, or ingredients made from the starchy endosperm
Derivatives of vegetable origin
Derivatives resulting from the treatment of vegetable products in particular cereals, vegetables, legumes and oilseeds
Egg and egg derivatives
All egg products, fresh or preserved by appropriate treatment, and derivatives from the processing thereof
Fish and fish derivatives
Fish or parts of fish, fresh or preserved by appropriate treatment, and derivatives from the processing thereof
Meat and animal derivatives
All fleshy parts of slaughtered warm-blooded land animals, fresh or preserved by appropriate treatment, and all products and derivatives of the processing of the carcass
Milk and milk derivatives
All milk products, fresh or preserved by appropriate treatment, and derivatives from the processing thereof
Minerals
All inorganic substances suitable for animal feed
Oils and fats
All animal and vegetable oils and fats
Various sugars
All types of sugars
Vegetable protein extracts
All products of vegetable origin in which the proteins have been concentrated by an adequate process to contain at least 50% crude protein, as related to the dry matter, and which may be restructured or textured
Vegetables
All types of vegetables and legumes, fresh or preserved by appropriate treatment
Yeasts
All yeasts, the cells of which have been killed and dried

ADDITIVES

Five types of substances are commonly declared as additives: 1) vitamins, 2) copper, 3) preservatives, 4) antioxidants and 5) coloring agents (**Table 9-5**).

Vitamins A, D and E must be declared when added by the manufacturer. The added amount should be declared although some countries ask the manufacturer to declare the total amount of the vitamins found in the food. Vitamins are declared in IU or in milligrams per kilogram (mg/kg) of food.

Pet foods are regulated by the same legislation that regulates livestock feed. Although clear exceptions are made for companion animal foods, situations arise in which an unusual nutrient must be declared. This is the case for copper because sheep are much more sensitive to copper toxicity. If a copper salt is added to a pet food, the name of the salt and the total copper content must be declared.

If a container has a net weight of up to 10 kg, the manufacturer can use the following statements: "Contains European Economic Community (EEC) permitted antioxidant(s)," "contains EEC permitted preservative(s)" or "contains EEC permitted colorant(s)." However, if a container has a net weight of more than 10 kg, the name of the additive must be stated in the following way: "With antioxidant X," "with preservative Y," or "preserved with Y" and "with colorant Z," or "colored with Z."

Table 9-11. Indications permitted for dietetic pet foods in Europe.

Support of renal function in case of chronic renal insufficiency
Dissolution of struvite uroliths
Reduction of struvite urolith recurrence
Reduction of urate urolith formation
Reduction of oxalate urolith formation
Reduction of cystine urolith formation
Reduction of ingredient and nutrient intolerances
Reduction of acute intestinal absorptive disorders
Compensation for maldigestion (including exocrine pancreatic insufficiency)
Support of heart function in case of chronic cardiac insufficiency
Regulation of glucose supply (diabetes mellitus)
Support of liver function in case of chronic liver insufficiency
Regulation of lipid metabolism in case of hyperlipidemia
Reduction of copper in the liver
Support of skin function in case of dermatosis and excessive loss of hair
Reduction of excessive body weight
Nutritional restoration, convalescence

Table 9-12. Required information on labels of dietetic pet foods in Europe.

Particular nutritional purpose (**Table 9-11**)
Essential nutritional characteristics
Species or category of animals
Labeling declarations
Recommended length of time for use
Other provisions

Only those additives are declared that have been added during production of the food. Additives (e.g., preservatives or antioxidants) added during rendering to preserve raw materials (e.g., meat or fish meals) do not have to be declared on the label.

Maximum permitted levels of additives are strictly regulated. Additives are only permitted after European authorities accept a dossier that documents efficacy and safety.

BEST BEFORE DATE

The Best Before Date is listed as a day, month and year. The date itself can be found outside of the statutory statement in a place in which it may be more convenient for printing on the container (e.g., the can lid or top of the bag). In this case the statement "Best before..." must appear within the statutory statement with instructions of where to find the date.

FEEDING INSTRUCTIONS

Feeding instructions are compulsory on European pet food labels but are not as strictly regulated as in the United States. The manufacturer will usually list the weight of the food to feed per body weight of the animal.

NET WEIGHT

The "net weight" declaration is regulated by packaged goods regulations. The "e" often seen after the net weight is not specific for pet foods, but indicates that the net weight is an average. Strict rules regulate the limits of variation permitted under or above the declared net weight statement to ensure that the consumer receives the full amount purchased. The net weight declaration is often mentioned on the front of the label but some countries require that the statutory statement declare where the net weight can be found.

OTHER DECLARATIONS

Regulations now incorporate the batch number into the obligatory declarations for pet foods as well as the plant-specific registration number. The name and address of the company responsible for the product must also appear.

Dietetic Pet Foods in Europe

In July 1995, labeling of dietetic pet foods for dogs and cats became strictly regulated. Definitions and scope of the legislation are published in Council Directive 93/74/EC, whereas Commission Directives (i.e., 94/39/EC and 95/9/EC) give the applications (Council Directive 93/74/EC; Commission Directive 93/39/EC; Commission Directive 95/9/EC). Consequently, a number of statements have appeared on the labels of dietetic pet foods. The Commission Directives publish lists (**Table 9-11**) with the permitted indications for dietetic foods ("Particular Nutritional Purposes"), the characteristics of the corresponding foods and specific label declarations (**Table 9-12**). The objective of the legislation is to prevent unsubstantiated and misleading claims on pet food labels.

The term "dietetic pet food," and its official translations, is the only term to be used to indicate that a product falls under this legislation. The new label declarations apply without prejudice to the Council Directive on the circulation of compound feeding stuffs and other provisions regulating nonveterinary medical pet foods.

The legislation considers most indications for nutritional management as "temporary situations" making it mandatory to publish a defined length of use on the labels. This period of time has been determined by the commission and its experts, and does not always reflect the manufacturer's recommendations.

Energy declaration is not permitted on pet food labels other than dietetic foods marketed for obesity and convalescence. The energy density is a calculated value expressed in megajoules per kilogram (MJ/kg) of product.

New nutritional purposes may be accepted when new products are marketed and the manufacturer has introduced a dossier showing sufficient data to support the claims.

REFERENCES

The References for **Chapter 9** can be found at www.markmorris.org.