



DOG NUTRITION

AND READING PET FOOD LABELS

by Dr Elaine Ong BVSc, University of Melbourne, Founder of Vets for Compassion

NO one should be telling pet owners there is only one brand of dog food that is best for your dog nor should anyone be saying that you should only feed your dog commercial food. Like people, dogs are individuals; some dogs cannot tolerate chicken protein or soy protein very well. There is no reason why an adult dog should not thrive on a combination of home cooked food and premium commercial food.

1. Our domestic dogs are no longer wild dogs. The basic dietary requirements have not changed but breeding and genetics have changed them (shape of head, body, constitution and prevalence of allergies).
2. You get what you pay for with commercial food. Cheaper foods have more FILLERS (corn cobs, peanut husks, cereal by products, soy, straw, cotton seed hulls, soy, feathers, and weeds).
3. Dogs are carnivores but can thrive well as omnivores.
4. Dogs cannot manufacture Vitamin C, 10 Essential amino acids and essential fatty acids (Omega 3 and Omega 6). Alpha-linolenic acid (ALA), eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA) are recognized as essential nutrients for dogs and cats. Alpha-linolenic acid and EPA + DHA have minimum values for growth and reproduction. Docosahexaenoic acid has been

shown to be important particularly for growing animals. Puppies after weaning had improved cognitive, memory, psychomotor, immunologic and retinal function compared to puppies fed a moderate or low DHA diet until one year of age. Some research would point to an omega-6:omega-3 ratio of between 5:1 to 10:1 being optimal to reduce inflammation.

5. Synbiotics are not essential supplements but are very useful in treating dogs with allergies (whether skin, ears or gastrointestinal)

FEEDING PUPPIES

- Feed puppy food until pup reaches at least 80% of anticipated bodyweight
- 12 months for small and medium sized dogs; 18-24 months for large dogs and giant dogs

Daily recommended nutrition:

- Protein >27%
- Fat <17%

Minimum daily:

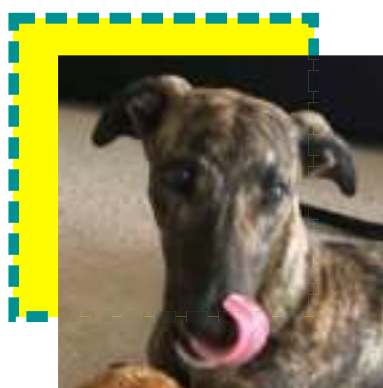
- Protein 22% Fat 5.5%

Calcium

Growing pups 3 gms/1000 kcals

Larger breeds 3-4 gms/1000 kcal

Do not exceed 4.5 gms/1000 kcal
(About 0.9-1.6% on dry matter basis)



THE LINGO and what it means

Complete and balanced — should be as stated.

Natural — supposed to have no artificial colours or flavours, but few pet food have flavours. Not necessarily balanced or of good nutritional value.

Premium, super premium, holistic, natural — no regulations, no legal definition.

Low fat — less fat, more fibre.

By-product — should exclude hair, hooves, horns and teeth, but can include brains, blood, bone, cleaned intestines and liver. Beaks, feet, hooves and teeth are poor quality indigestible protein!

Chicken and beef — may include oesophagus, diaphragm, heart, and tongue.

Chicken meal/meat meal — most water and fat removed (concentrated protein) but is mostly by-products.

Chicken digest — may not have chicken (enzymes, heat treated).

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CALCULATING ACTUAL NUTRIENT CONTENT

When comparing pet food, the reported guaranteed analysis must be converted to dry matter basis. Without making this conversion, you're essentially comparing apples to oranges and thereby drawing incorrect conclusions.

What is Dry Matter Basis?

Dry matter basis is a representation of nutrients (i.e. protein, fat, and fibre) which ignores the moisture content of the food. In other words, it's the amount of protein, fat, and fibre which would be reported if the product's moisture was completely removed.

The numbers reported on the guaranteed analysis panel of pet food packaging is commonly referred to as the "as fed" basis percentages. We can use these numbers to calculate the dry matter basis percentages. By converting the as fed basis percentages to dry matter basis, we can make meaningful comparisons between products of various moisture contents (i.e. wet food vs. dry food).

Formula: Dry Matter Basis vs "As Fed"

Ingredients are listed on the label on an "as fed" basis; basically this means that the moisture content is included. In order to compare the nutrients in one food to another, especially when comparing a canned food to a dry food, you must convert each nutrient from "as fed" to "dry matter basis" (DMB). One method to calculate this is to subtract the percentage of moisture listed in the guaranteed analysis section on the label from 100% and then divide the percentage of the nutrient by this number.

Step 1 - Subtract the moisture content of the food from 100%

Step 2 - Divide the nutrient content by the DMB

Example:

A canned food label lists the moisture content as 75% and protein as 10% (as fed basis).

Step 1 - $100\% - 75\% \text{ (moisture)} = 25\% \text{ DMB}$

Step 2 - $10\% \text{ protein divided by } 25\% \text{ DMB} = 40\% \text{ protein}$

This food is 40% protein on a dry matter basis (DMB).

Example:

A dry food label lists the moisture content as 10% and protein as 18% (as fed basis).

Step 1 - $100\% - 10\% \text{ (moisture)} = 90\% \text{ DMB}$

Step 2 - $18\% \text{ protein divided by } 90\% \text{ DMB} = 20\% \text{ DMB}$

This food is 20% protein on a dry matter basis (DMB).

There are pros and cons to each type of food:

- Canned food: paying for a lot of water although from a calorific basis, it has more protein
- Canned food has gelling agents which are worse for teeth
- Dry food is more economical but beware of fillers and preservatives

PRESERVATIVES

It is a legal requirement to list the type of preservative (unless fish meals/meat meals are processed outside of Australia).

Preservative types

- Corn syrup to Benzoyl peroxide!
- BHA, BHT, ethoxyquin (stops fats from turning rancid)
- Natural preservatives- Vitamin E, Vitamin C rosemary extract (the shelf life is short)
- Canned food has a lot of gelling agents , no preservatives
- Dry food has preservatives but no gelling agents

FOOD LABELS

Current labelling requirements of pet food requires that the following information is provided:

- Product name and brand name.
- Species the food is intended for on the principal display panel (PDP).
- Quantity statement on the PDP; this should be in English and metric units (e.g., ounces and grams).
- Guaranteed analysis including minimum percentage of crude protein, minimum percentage of crude fat, maximum percentage of crude fibre, and maximum percentage of moisture.
- Ingredient statement with ingredients listed in descending order by weight.
- Nutritional adequacy statement.
- Feeding directions.
- Statement of caloric content in terms of metabolizable energy (ME) or as fed basis as kcal/kg and kcal per familiar household measure (e.g., cup, can, treat, piece).
- Name and address of the manufacturer or distributor.

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TREATS

- Commercial treats must state that the product is a treat or snack.
- Some chews and bones include: hooves, ears, pizzelle sticks, and ligaments.
- The treats are exempt from food labelling but should include proper product identification, the name and place of business of the manufacturer or distributor, and the listing of the ingredients by weight. Beware that some treats manufactured outside of Australia (especially unpackaged ones) may be contaminated (bacteria toxins harmful preservatives) as the regulations on treats are lax.

HOW THE VETERINARY PROFESSION ASSESSES THE QUALITY OF PET FOOD

Assessing the quality of pet food by simply reviewing the label can be challenging. The World Small Animal Veterinary Association (WSAVA) and American Animal Hospital Association (AAHA) have released a list of questions/guidelines to help consumers and veterinarians select commercial pet food.

These questions to pet food companies include:

1. Does the company employ a full-time, qualified nutritionist?
2. Who formulated the company's foods and what are his/her credentials?
3. Are the diets tested using AAFCO feeding trials or by formulation to meet AAFCO nutrient profiles? If the latter, do the diets meet AAFCO nutrient profiles by formulation or by analysis of the finished product?



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Mya and Santa

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4. Where are the diets produced and manufactured?
5. What specific quality control measures does the company use to assure the consistency and quality of the ingredients and the end product?
6. Can the company provide an average/typical nutrient analysis for the dog or cat food in question or their lead product? This is different from the guaranteed analysis which only lists minimums and maximums.
7. Can the company provide the calorie content of their diet by gram, can, or cup?
8. What kind of product research is conducted and are these results published in peer-reviewed journals?

SUMMARY

- The first five ingredients are crucial and must be of high quality (the pure protein must be in top three).
- Check type of protein — listed in order by weight, but consider water content.
- Check the type of by-products — ask the manufacturer.
- Check Dry Matter basis to work out % of protein, % of fat.
- Check metabolizable energy (Kcal= Cal).

Then

- Work out weight of food that gives you that amount of calories needed for the dog.
- There is no point in feeding your dog 6 cups per day! If so, it means the food is mostly fillers and indigestible.
- Check calcium and protein levels.
- Check that it is complete and balanced.



Eddie and friend



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