

Pet food labels – what you don't see is important!

How much carbohydrate is in the dog and cat food you feed?

This important information is not on the label of pet foods! Learn how to calculate the carbohydrate content, and then how to compare various types of food on both a dry matter and percentage of calories provided basis.

Pet food regulations do not allow the word “carbohydrate” on the label. Human foods are required to list carbohydrate on the label. This major difference makes it difficult to evaluate foods for dogs and cats. Concerned shoppers must do the calculations for themselves.

Fortunately, pet food labels give you the information that you need to do those calculations. These calculations apply to both dog and cat foods; the examples we use are for dogs.

The biggest building blocks of dog and cat foods (the macronutrient content) are:

- Protein
- Fat
- Moisture
- Carbohydrate

The total must equal 100%.

(Ash is sometimes listed, usually for cat foods. Ash is what remains after the food is burned. It consists primarily of elements (Calcium, Phosphorous, Iron, Zinc, Selenium and others). Typically ash content is in the 5 to 8% range, on a dry matter basis.)

Guaranteed Analysis of pet food is required information on the label of treats and foods

Here is a typical adult dry food:

<i>Minimum</i> percentage of crude protein	26%
<i>Minimum</i> percentage of crude fat	15%
<i>Maximum</i> percentage of crude fiber	4%
<i>Maximum</i> percentage of moisture	10%

These numbers tell you the percentage by weight of the macronutrients. In 100 grams of this food there are 26 grams of protein (minimum), 15 grams of fat (minimum), 4 grams of fiber (maximum), and 10 grams of moisture (maximum). Fiber is considered a carbohydrate, so don't subtract the fiber when calculating carbohydrate.

The listed figures are a good estimate, because most manufacturers keep the protein, fat and moisture levels close to the listed amount. Protein and fat look good on the label, and water adds free weight for the manufacturer.

The FDA defines how to calculate carbohydrate: *Subtract the weight of crude protein, total fat, moisture, and ash from the total weight ("wet weight") of the sample of food.*

CALCULATE CARBOHYDRATE PERCENTAGE ON AN “AS FED” BASIS

Formula 1: 100% - protein% - fat% - moisture% - ash% = Carbohydrate

Using the Guaranteed Analysis example above:

Carbohydrate = 100% - 26% Protein - 15% Fat - 10% Water – 6% Ash = 43% carbohydrate.

This typical dry dog food is about 43% carbohydrate by weight.

COMPARE CANNED AND FRESH FOOD DIETS

The label of a typical wet food states:
 minimum protein, 10%
 minimum fat, 8 %
 maximum moisture, 75%
 maximum fiber, 3%

To compare dry and wet foods you must first subtract the water from the food. What remains is the dry matter: the, protein, fat, carbohydrate and ash. A dry matter analysis tells us the percentage of the dry matter (DM) that is protein, fat, and carbohydrate.

Formula 2: How to calculate carbohydrate percentage on a dry matter basis

- Step 1. Calculate the total dry matter in the food.
 Subtract the percentage moisture from 100%.
 If a food is 75% moisture, it is **25% dry matter** (100% – 75%)
- Step2: Divide the listed macronutrient percentage by the dry matter percentage.
Protein: 10%. Divide 10% by 25% = **40% protein**
Fat: 8%: Divide 8% by 25% = **32 % fat**
- Step 3: Use formula 1 above and calculate carbohydrates
 (remember to subtract the ash)

Carbohydrates = 100% - 40% (protein)-32% (fat) -6% (ash) = 22%

COMPARE DRY FOOD WITH CANNED AND FRESH FOOD

With these results, it is now possible to compare the macronutrient content of dry and canned foods. Chart 1 compares these foods on a dry matter basis.

Chart 1: Percentage by weight on dry matter basis

	Dry	Canned	Frozen	Natural Diet	Senior Dry
protein	29%	40%	44%	54%	22%
fat	17%	32%	32%	28%	11%
carbohydrate	48%	22%	18%	12%	60%

A better picture of the overall balance of the diet emerges when the actual percentage of calories from each nutrient is known. Fat provides 8 – 9 kcal per gram, more than twice as much as carbohydrates and protein, which provide 3.5 to 4 kcal/gram, depending on the quality of the food.

Chart 2 compares the percentage of energy provided by protein, fat, and carbohydrate for five different foods: a typical dry food, canned, frozen, the natural diet of a dog, and senior dry food. (To calculate percentage of calories provided, first subtract the percentage fiber figure from the carbohydrate, since fiber provides no kcal.)

Chart 2:Percentage of the Calories Provided by Macronutrients

	Dry	Canned	Frozen	Natural Diet	Senior Dry
protein	26%	30%	34%	43%	22%
fat	34%	55%	55%	50%	25%
carbohydrate	40%	14%	11%	6%	53%

This chart clearly shows the striking difference between the profile of the natural diet of the dog, and the dry or senior foods. The premium canned and frozen foods provide a more natural macronutrient content, with fat providing about 50% of the calories.

Choosing foods becomes much easier when you know what the balance of the animal’s natural diet really is! We think that almost all dogs and cats will do much better eating diets very close to that natural balance.

For more detail on this topic and other label reading skills, read our book *See Spot Live Longer*, Available from www.naturalpetproductions.net

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