

Reading Labels

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If you are the slightest bit in doubt whether or not you should feed your dog a raw natural diet, you have to read this chapter - and you have to do it *now*. I know - it is a bunch of chemistry, but you simply need to know this stuff if you have any desire whatsoever for feeding pre-manufactured commercial food to your dog. It is your choice to do so, and I am certain you will appreciate making that choice on an informed basis.

If you have made up your mind and want to proceed with the details about how you put the natural diet together, you can skip this chapter for now and continue directly with "[Feeding Guide for Adult Dogs](#)". You can then always return to this chapter later - and I strongly recommend that you do so...

Comparing food analyses

There are a few important things to understand about how food ingredients are measured.

**Excerpt from Mogens Eliassen's book:
"Raw Food For Dogs - the Ultimate Guide for Dog Owners"**

As I mentioned already, natural food typically contains about 70% water. More than two thirds of the food is water! Kibble will contain maximum 10% water, most times even less than 5%. This means that the nutrients in kibble (other than water) are three times as concentrated as they would be in a comparable natural food with the same nutrients.

There are six main components, or groups of nutrients, in food:

- ◆ Water
- ◆ Protein
- ◆ Fat
- ◆ Carbohydrate
- ◆ Vitamins
- ◆ Minerals

Proteins are characterized by being very large and complex molecules that really are conglomerates of hundreds of organic molecules, mainly the so-called **amino acids** that contain *Nitrogen* (and sometimes also Sulfur and Phosphorous) in addition to the Carbon, Hydrogen, and Oxygen that make the building blocks of fats and carbohydrates.

Many vitamins are actually very similar to the components of proteins in their chemical structure, but not all of them are. Vitamins have all been discovered from the problems the body suffers when the vitamins are *absent* in the food. As for minerals, both our dogs and we need very little of them, compared to the amount of protein we need - but those small amounts are crucial for the functions of our bodies. (The name "vitamin" actually means "live mineral", referring to them being organic in nature, naturally occurring, and as essential for the body as minerals.)

"Minerals" simply means anything else, disregarding the definition of a mineral that truly is "a naturally occurring, solid element or chemical compound having a crystalline structure". On most labels, you will see "minerals" listed as the chemical elements - which is outright misleading, yet common practice.

Water and minerals are inorganic and contain no Carbon per se, although natural supplies of many important minerals are from organic material, with the minerals being only a very small fraction of the food source.

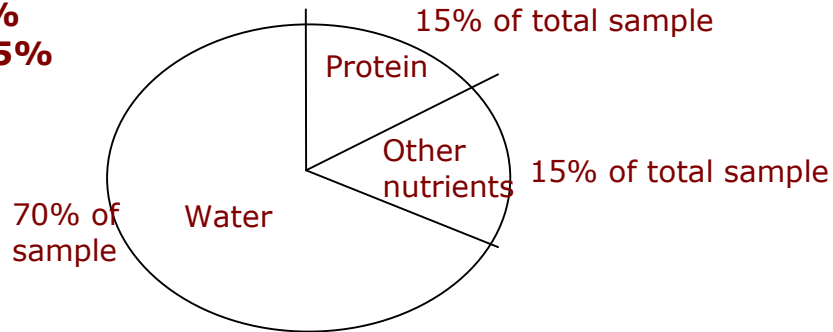
The water content of a food source will typically vary quite a lot from one sample to another. For consistency and comparison of analytical results, it is quite common to measure the contents of a given food component on a "dry matter basis".

**Excerpt from Mogens Eliassen's book:
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Let discuss an example to illustrate this: Assume we have a food source that is claimed to contain 15% protein. In order for this number to make any sense whatsoever, you need to know if it is measured on a "wet basis" or "dry basis".

If it is meant to represent the fact of 15% of the food, as is, being protein, then a natural food that contains 70% water will leave only 15% of the entire food for the other components. (This would represent a reasonable raw food source with a reasonable amount of protein for a dog.)

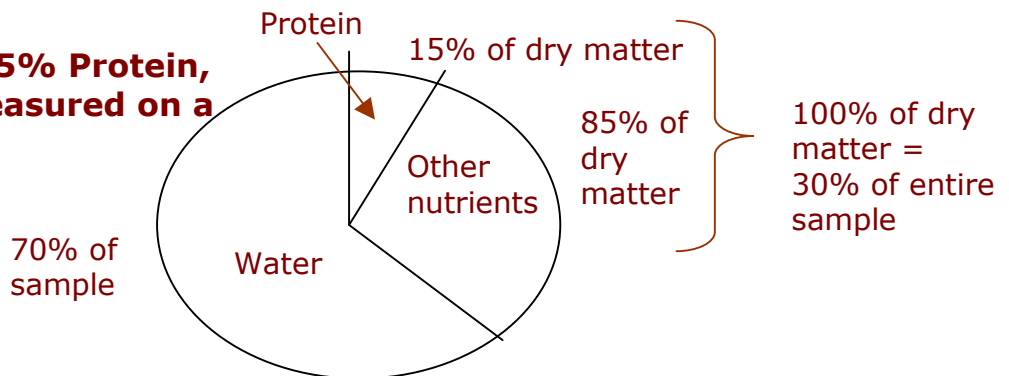
Example of 15% Protein, with 15%



But you also understand that those 15% of the total food sample will constitute 50% of that part of the food sample that is not water! So, on a "dry basis", that protein will take up 50% of the food source, not the 15% it does when measured on a "wet basis". (I know - this is very confusing, but it gets used against you, so it is important that you understand it.)

However, if the protein is meant to represent only 15% of the 30% "dry material", then the total concentration of protein in the food is nothing more than 15% of the 30% - which is 4.5%! This means that 85.5% of the remaining "dry matter" is something different from protein. (This is certainly *not* an adequate protein source for a dog....)

Example of 15% Protein, with 15% measured on a



In general, it is pretty safe to think of natural food as being 2/3 water. The difference between measuring on a "dry basis" compared to a "wet basis" will then be that the concentrations expressed on a "dry basis" will be 3 times greater than those expressed on a "wet basis".

**Excerpt from Mogens Eliassen's book:
"Raw Food For Dogs - the Ultimate Guide for Dog Owners"**

There is one advantage of kibble here: because of the very low water content, the difference between "dry basis" concentrations and "wet basis" concentrations will be negligible.... But, in order to make a fair comparison with natural food, you need to use the "dry basis" concentrations of the natural food. This makes biological sense also, because the dog will drink a lot of water when you feed kibble - and hardly any at all when you feed a natural diet! Just think of this: for every one pound of kibble you feed, you need to let the dog drink at least two pounds of water, in *addition* to its normal need for water...

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What the law says - and doesn't say...

Most countries have laws and regulations for how a manufacturer must describe a food product on the label. And there are also things that are illegal to do.

First of all, when the food is for human consumption, those rules are very tough, and the penalties for breaking them are devastating for the manufacturer. In general, nobody dares to mess with this if they want to stay in business...

However, when it comes to *dog food* (or "pet food", as the legal term is in North America), the picture is totally different... The applicable laws are nothing but the *common trade laws*. There are no special laws protecting the dog, as there are laws within the health ministries that protect *people* from being exposed to ruthless exploitation by commercial industries. And there are no government regulations in place at all that commit the pet food industry to any diligence and honesty.

This means that, as long as the food is clearly labelled in a way that does not make it appear like human food, *everything* goes, legally, as long as it is not in conflict with the general trade laws... The pet food industry is "self-regulated", as the legal term is - which basically means that the industry sets its own standard, and unless somebody wants to launch a law suit, nobody holds a manufacturer responsible for the standards he uses in his production.

Now, you might still think that there would be at least some protection in this; if you can sue a pet food manufacturer for selling poisonous food, you would think it would discourage those manufacturers if enough people would do that!

**Excerpt from Mogens Eliassen's book:
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Not the case. Even if your dog truly died because of food you bought from a manufacturer, then you have to *prove* your case in court (which is very far from easy!), and the maximum you could ever get a judge to award you in damages if you won the case would be *the price of purchasing another dog!*

It would never pay your legal fees. You would be doomed to lose, even if you won...

So, don't assume that a pet food manufacturer is concerned about liability for your dog. It is naive to think so.

But what if you could catch them in doing false advertising or something to that effect? Wouldn't that give rise to more severe penalties?

It would, but it is also easy to avoid. The politicians who make the law base their work on recommendations from *lawyers*. Lawyers generally don't know much about chemistry - at least not enough to outsmart a chemist...

Lets look at some examples:

Mineral analysis

You cannot make false statements on a label, of course. A label is a piece of advertising, and advertising with false claims is illegal in most countries. But if you can back up your statement, it would not be considered false in a court of law - even though, with all common sense, it would be ridiculous.

As you know, there are many minerals that are essential, also for your dog. Iron, for example.

Now, iron occurs in several forms, or types of compounds:

- ◆ solid, inorganic, insoluble compounds, such as rust, iron ore, and iron minerals;
- ◆ organic compounds, such as haemoglobin - the important chemical in blood that takes care of the oxygen transport in the body. There are many other similar chemicals in the body that binds iron *organically* (that means next to *Carbon*);
- ◆ iron ions - as soluble iron salts in water;

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- ◆ the metal itself, as we find it in all kinds of man-made materials, such as steel, cast iron, etc.

And which of those would you think are valuable as nutrients?

Well, the first and the last category are certainly not, but the organically bound iron and the dissolved iron ions are sources the body can use.

The bad news is that when you want a fast chemical analysis of the iron content of a sample, the standard chemical analysis does not tell you the difference between those four types of iron sources. The standard is based on injecting a small droplet into an extremely hot flame and then measuring the emission of light at those specific wavelengths that are exclusive for hot iron atoms cooling off. In the hot flame, everything is literally split into atoms, so you get the same kind of result regardless the origin of that iron. By measuring the intensity of the light emitted, you get a measure for the total concentration of iron in the original sample.

Now, the \$1,000,000 question: when a label gives a certain concentration of iron in the food, what can you then deduct about the value of this food in terms of supplying iron to your dog?

You got it: NOTHING! The reading could originate from rust mixed in with the food during the manufacturing process, simply to ensure that the final analysis would read OK... (I know of an example where this actually happened!)

Iron was just one example. You can take almost any mineral, and the same problem will apply, Sodium and Potassium being the only common exemptions, simply because they naturally *only* occur as organically bound or as free ions in water solution...

It is natural to ask if this really happens. Do manufacturers really do these kinds of tricks?

The sad answer is "yes". But it is very costly to prove. And even when you can prove it, you cannot use the proof to nail the manufacturer, because he did not lie with his display of the analysis on the label....

It is not illegal to display *meaningless* information, as long as it is not *false*!

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(To be continued)