



ZiwiPeak™
Trading as Wilderness Foods
Manufacturing Ltd
14 Boeing Place, PO Box 4342
Mt Maunganui, New Zealand
PH + 64 7 575 2426
FAX + 64 7 575 2425
EML info@ziwipeak.com
WEB www.ziwipeak.com

FOOD FUNDAMENTALS FOR DOGS

Shades of the Wolf: A summary of the nutritional needs of dogs

March 2005



Dietary Evolution

As pet owners are occasionally reminded, the common ancestor of today's 150 or so breeds of domestic dog is generally held to be the wolf. One of the earliest animals to be domesticated, somewhere between 13,000 and 100,000 years ago, dogs are essentially opportunistic omnivores, existing on a diet that combines a high proportion of meat with other foods. Interestingly, we talk of our pets 'wolfing' down their food but few dogs could match the ability of an 80-pound wolf to consume 22 pounds of meat in one sitting.

The feeding habits of the ancestral wolf in the wild show an almost exclusive meat-based diet with organs such as the liver and heart especially prized. An almost totally protein diet with some fat and probably less than 1% vegetable material.

Over the centuries, and up until the last 50 to 100 years, his canine cousin the dog has tended to have its diet prescribed by our human leftovers – fish heads, animal guts, scraps of meat, fat, bone and many other foods in various stages of decay. It's a tribute to the intestinal fortitude of dogs that their digestive system was able to cope with these culinary insults.

Similarities and Differences

Like us, the digestion process of dogs involves ingesting raw material in the form of food, which is then turned into usable nutrients, from which the essentials for life and vitality are then extracted and the balance excreted.

Compared to humans, dogs have a much better sense of smell and a distinctly different taste sensation when ingesting food which is largely amino acid based. The gastro-intestinal system, which converts food into nutrients, plays a vital role in canine health.

The anatomical specialisation of dogs to a largely carnivorous diet can be seen in the ratio of gastrointestinal tract to total body length which is considerably lower than the omnivorous pig or the herbivorous sheep. This specialisation is the result of the ingestion of a high protein, high fat, high water and low carbohydrate (starch) diet. Adaptation to a diet low in starch can be seen in the salivary amylase (the enzyme that breaks down starch) activity of dogs which is close to zero, unlike the rat which is used to consuming starch and has a high salivary amylase activity (Ellison 1969). Diets that use a significant amount of carbohydrates (starches), and some are as high as 60%, are unnatural for dogs. The following extract taken from a respected publication and authority on natural pet health, explains this in greater depth:



The dog's digestive tract is quite different from ours. In the dog, partially digested foods spend a far greater amount of time in the stomach (some four to eight hours compared to a half hour or so in humans). Then, the dog's relatively short intestinal tract usually allows foods to pass through in much shorter times, although transit times vary widely in both species depending on the composition of the food.

The digestive activity of the stomach is also controlled by the composition of the meal and neural and hormonal controls. In the healthy animal all these work in harmony to produce an ideal inner environment conducive to complete digestion. Commercially prepared, highly processed foods hinders normal digestion, since it does not resemble the diet the dog's digestive system has, over eons, been adapted to use. Many drugs also alter the digestive process. Stress, too, can change digestive patterns, sometimes producing diarrhea and/or vomiting.

Source: Dr Randy Kidd, DVM, PhD, "Gut Feelings", The Whole Dog Journal (Volume 8, March 2005)

Vitamins and Minerals

Dogs can generally produce sufficient vitamins and minerals on their own but there are exceptions. They are unable, for example, to synthesise sufficient vitamin D to meet their requirements so this vitamin needs to be incorporated into their diet. This can be achieved by including foods in the diet that are rich in vitamin D such as liver and fish oils.

Commercially Prepared Foods

On the surface, it would seem that the advent of modern commercial petfoods would be a blessing for our dogs and a distinct improvement on table scraps. But this isn't always the case. Many of today's commercially prepared petfoods are highly processed and are not compatible with the normal digestive system that our dogs have evolved over the centuries.

A good number of commercial petfoods at the cheaper end also contain high levels of carbohydrates in the form of low quality grains and grain by-products which dogs cannot metabolise nearly as efficiently as humans. Add to this the popular use of preservatives (36 currently listed with AAFCO), various colourings and a rich assortment of fillers and you have



a sizeable line-up of commercial foods that are more likely to be hindering, rather than helping, your pet to achieve optimum energy and health.

Checking the Label

It's very easy for pet-food marketers to make claims like 'high quality', 'premium', 'complete pet food', 'high protein' and the like. It is harder, though not impossible, to mislead buyers on the list of ingredients.

Manufacturers are legally obliged to list the ingredients on the label according to the weight of the ingredients in descending order. The first three are particularly important. It is simple to spot whether the ingredients at the top of the list are cheaper, vegetable-based foods such as corn, wheat, rice, or soybean meal or whether the diet is more meat-based with items such as meat, lamb, poultry or fish appearing at the top.

A little trick to watch out for though is the tendency for some manufacturers to break a product such as 'corn' down into smaller constituents like ground corn, corn gluten meal and yellow cornmeal in order to make the corn content seem less and appear further down the list of ingredients.

You Get What You Pay For

This is as true for pet foods, as it is for most other products you buy. The difference is that you can easily replace most cheaply purchased products when they fail whereas it's generally a different story for your favourite dog.

If the pet food you are buying is cheap, chances are the ingredients are cheap. Your dog may not turn it down, but it is likely to be eating more of this grain-dominant diet to try to get the nutrients it needs and thereby producing excessive stool volume. With a high quality meat-based diet, your dog will generally consume less quantity, be more healthy and active, and produce less stool volume. To borrow another truism from its human context, 'You are what you eat'.

How Much to Feed

It's not just bottoms and bermudas that are getting bigger these days. Recent studies in the United States reveal that as many as 40% of the nation's dogs may be obese. The most common, but not only, reason is that they are eating over-large portions and not getting the exercise they need to burn off the calories.



The risks associated with canine obesity include musculoskeletal disorders such as osteoarthritis, diabetes, reduced immune function, slow wound healing, and skin infections. By trimming down your dog to its proper weight you can improve its health, its quality of life and longevity by as much as two years.

Most pet-food products include a feeding guide on the packet or container. Take note of the word 'guide'. It is designed to give an estimation of the amount you should feed your pet bearing in mind its weight, life-stage, possibly its breed and the make-up of the pet food. But the metabolism and lifestyles of dogs vary, so don't continue to follow the guide slavishly if your pet is clearly gaining too much weight. Often a relatively small and gradual reduction in the amount of food, combined with an improved exercise regime, will do the trick but if it's more serious, a visit to the vet would be advisable.

Wind in the Willows

The occasional bout of flatulence is a common and natural occurrence in the canine world. But constant bouts can point to a diet that may be inadequate in terms of quality or indigestible content. Dogs are generally deficient in the digestive enzymes required to metabolise carbohydrates which, when not properly digested, can often ferment in the intestine and create a multitude of gases, none of which smell very pleasant. So do yourself and your dog a favour with a diet check.

Getting Close to Nature

An ideal diet would be one that resembles as closely as possible the natural balance of meat-based ingredients that dogs would find by hunting in the wild. A diet that is high in protein, fat and water and low to medium in non-digestible carbohydrates. And because dogs hunting in the wild would eat virtually the whole animal, and derive the nutritional benefits of consuming items like the liver, heart, kidneys and stomach lining (tripe), these should also form a small part of a naturally healthy diet. Dr Randy Kidd, writing in the Whole Dog Journal, explains:

. . . . "Consider that the canine's intestinal tract has evolved to eat meats, fats, and rotting and decaying matter. The dog's GI system is not prepared to process the refined carbohydrates most people feed their dogs, and it is certainly not functionally capable of utilizing or detoxifying the many synthetic substances it is exposed to today".

Source: Dr Randy Kidd, DVM, PhD, "Gut Feelings", The Whole Dog Journal (Volume 8, March 2005)



Retaining Nutritional Value

In order for dogs to derive the most benefit from their food, it is important to retain as much as possible of the original nutrition value during the processing of the pet food. Air-drying the product to reduce the moisture and thereby naturally preserving it, then sealing it in an airtight package, is an effective way of retaining the nutrition value of the protein and vitamins for your pet. As a means of natural preservation, air-drying is as old as time and avoids the need for artificial substances to provide added shelf life.

Changing Up

Dogs are creatures of habit, so if you switch your dog's diet to a new, improved food, it is best to make it a gradual change. One suggestion is to start on Day 1 by introducing of the new food to of the old food and continue to substitute the new food for the old by a further each of the next three days until it's 100% new.

Getting Enough Energy

After water, energy is the largest essential nutrient required by your dog. Energy derived from food is generally expressed in terms of calories but this doesn't really reflect a dog's ability to utilise the food for energy. This is because a percentage of the 'gross energy' will not be absorbed but simply passed through and excreted in faeces and urine.

Truer measures these days are probably 'digestible energy' (the energy available after faecal energy loss is taken into account) or 'metabolisable energy' (the energy available after both faecal and urinary energy loss is taken into account).

Most dogs are adept at matching their intake to their energy needs. A premium meat-based food, with a high energy content and a correct balance of other essential nutrients, will generally result in your dog adjusting its intake by consuming less.



The ZiwiPeak Advantage

ZiwiPeak 'Daily Dog' cuisine measures up nutritionally because it:

- 1) Is ideally matched to the anatomical specialisation that dogs have evolved over centuries, especially in relation to digestion. A specialisation that suits a diet high in protein and fat and low in carbohydrates.
- 2) Mirrors the natural, predominantly meat diet that dogs would ingest if they were hunting in the wild. A diet that stimulates optimum energy and good health.
- 3) Retains the original nutritional value of the protein and minerals through a process of gentle air-drying and airtight sealing.
- 4) Offers pets the nutritional benefits of other animal parts, including the heart, liver, kidney and stomach lining (tripe).
- 5) Contains valuable ingredients such as New Zealand mussel to nutritionally support long-term joint health, tripe to support digestive activity and parsley which contains many vitamins and minerals and promotes fresh breath.
- 6) Provides essential vitamins, such as Vitamin D, which dogs are unable to sufficiently synthesise themselves, in a readily usable form.
- 7) Is free of any preservatives, fillers or grains.
- 8) Reduces flatulence and stool volume associated with high carbohydrate diets.
- 9) Avoids the weight control difficulties that frequently accompany diets high in carbohydrates.
- 10) Is fully compliant with AFFCO's requirements for a nutritious diet.



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