

Grain-free Pet Foods

Grain-free foods for dogs and cats are ubiquitous in the developed pet markets. At the root lies the belief that nature did not design dogs and cats to consume grains and utilise the starch constituent. Conformity, among pet owners and food manufacturers, has made grain-free a top trend. Clearly, many owners now believe that grain-free is how their pets should eat for optimum health. It is unclear whether these owners are in touch with the inferiority of the arguments against using grains. In any event, fact is that available evidence indicates that dogs and cats thrive on grain-rich foods.

The term grain-free applies to different types of foods. Grain-free foods can be high in starch, equaling high in carbohydrates (carb). These grain-free, high-carb foods are at variance with the as-nature-intended belief. High-carb foods are not high in protein. Owners disliking grains and preferring protein-rich and/or meat-first foods should look for grain-free, low-carb foods.

Pet food labels may draw attention to the absence or presence of specific grain species. Common claims are no wheat and no corn. Some brands resist the grain-free pet food wave and promote grains as excellent ingredients for dog and cat foods.

The topic of grains and health has added to the diversity of industrially produced pet foods. The descriptor grain-free is easily understood, but complexity may arise from the availability of various types of grain-free foods and the expelling and glorifying of specific grains. For many pet owners the grain issue makes it difficult to choose the best foods for their dogs and cats. The bottom line may be reassuring: well-formulated foods, with or without grains, all provide good nutrition for dogs and cats.

In the US, natural pet food accounts for about 60% of all food sales in pet retail. The natural segment consists of foods with different accentuations of which grain-free is the most significant category. Sales of grain-free pet foods at

US pet stores increased by 30% in 2013, reaching a 25%-share of all dog and cat food sales. Thus, the grain-free trend goes mainstream in the US. Likewise, grain-free is widespread in the developed markets of Western Europe.



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Cereal grains

Cereal grains are seeds of domesticated grasses. Climate, water supply and soil determine the cereal of choice for harvesting in a specific region. The major cereals grown for human and/or animal consumption are wheat, rice, corn (maize), barley, oats, rye, triticale, millet and sorghum. Each cereal is cultivated as various varieties. The starch content of grains is 50 to 70% and that of protein is 8 to 11%. Pseudo-grains, such as buckwheat, quinoa and amaranth, are grain like and rich in starch, but differ from grains botanically.

Regular dry pet foods contain 50 to 70% grains in the form of wheat, corn, barley and/or rice. These foods consist of 30 to 55% carbohydrates, which mainly is starch. Most canned and frozen complete foods also contain grains and have starch contents of 5 to 15% in the dry matter. It is generally accepted that grains have to be cooked to render the starch fraction accessible by the digestive enzymes of dogs and cats.

Carbohydrates

In plants, glucose molecules can be converted into starch as storage carbohydrate. Grains, certain tubers and leguminous seeds can be considered starch concentrates. Plants also synthesise structural carbohydrates (fibers) as components of cell walls. Meats almost lack carbohydrates.

Pet food labels usually do not declare the amount of carbohydrates. An

assessment can be made by calculating the so-called residual component of the food (Creature Companion, 2014; May, pages 62-63). The nature of the residue is intricate, but it is equated with digestible carbohydrates.

Grain-free dry foods

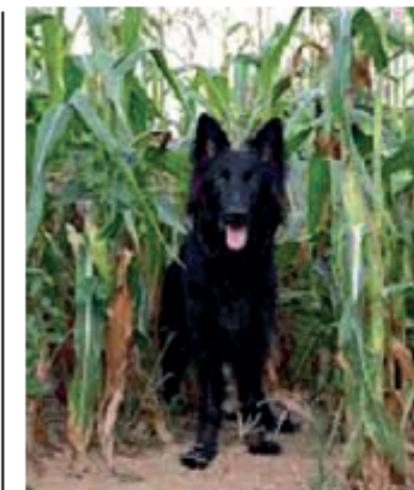
Grain-free dry foods may be divided into high-carb and low-carb foods. Grain-free, high-carb foods can be produced using non-grain starch sources such as potatoes, cassava roots, lentils, beans and/or peas. As a rule, dry foods labelled as low-carb have carbohydrate contents lower than 20%. Grain-free, low-carb foods can be starch-free or low in non-grain, starch-rich ingredients.

Grain-free, low-carb foods contain more protein and/or fat at the expense of carbohydrates. Low-carb foods normally are rich in protein, the amount being about 40% or occasionally even higher. Such protein levels are much greater than the recommended allowances. In healthy dogs and cats, high protein intakes may not be harmful, but have no health benefit.

No-carb foods are unsuitable because they would be free of polysaccharide fibres, likely causing abnormal gut motility and diarrhoea. Foods virtually free of digestible carbohydrates are feasible, but must contain more protein than the recommended allowance. In animals fed with such foods, blood glucose, which is essential for brain function, is only derived from protein.

False arguments

Widely divergent foods provide good nutrition if formulated according to



the principles of nutritional science (Creature Companion, 2014; March, pages 66-67). Grains are proper ingredients for dog and cat foods, but they are not necessary. The use of false arguments in order to reject grains is reprehensible.

Frequently propagated false arguments against grains are as follows. Dogs are carnivores not designed to consume and utilise grains. Grains are not part of the natural canine diet. Dogs cannot digest starch in grains. Dogs have no nutritional need for carbohydrates, including starch. Grains serve as filler. Grains cause diseases such as food allergy, obesity, diabetes, osteoarthritis and cancer. All six arguments can be disproved or nullified (All About Feed, 2014; volume 22, no. 5, page 33).

Grains standing out

Pulling together with the grain-free trend, there are pet foods labelled no wheat or no corn. The opposite claim, with corn ("mit Mais"), can also be found (see illustration). Grains used as ingredient and included in product names of pet foods are rice, oats, barley, spelt, millet and wild rice. Some manufacturers of pet foods or treats highlight amaranth, quinoa or buckwheat as ingredient.

Dr Beynen will be writing this exclusive column on dog and cat nutrition and nutrition-related items every month.