



Dr Anton C Beynen is affiliated with Vobra Special Petfoods. In the period of 1993-2007, he was professor of veterinary nutrition at the Faculty of Veterinary Medicine, Utrecht University, The Netherlands.



Vegetarian Pet Foods

Quite a few people maintain their pets on vegetarian diets. Most of these caregivers follow a vegetarian lifestyle for religious, ethical or health reasons and decided to feed their pets in a similar fashion. Vegetarian-fed dogs and cats receive home-made diets without or with supplements, table scraps, commercially prepared foods and/or combinations. The nature of these various rations can be flexitarian, lacto-ovo-vegetarian, lacto-vegetarian or vegan.

Vegetarian canine diets must contain adequate amounts of added vitamins D and B12 as they are missing in most plant products and synthesised marginally or not, respectively, by the dog's body. Apart from the vitamins D and B12, cats also require dietary vitamin A, taurine, arachidonic acid (AA) and eicosapentaenoic acid (EPA) which all are insufficiently produced by the cat's metabolism and principally present in animal feedstuffs only. Thus, vegetarian feline diets must be supplemented with preparations containing the six nutrients.

Feeding a veggie diet to dogs and cats requires special attention. The basic nutrient profile of homemade, meatless foods should be appropriate and topped up with the lacking nutrients. The adequacy of commercially prepared vegetarian foods should be verified. Pets fed on vegetarian diets should be monitored continuously for any abnormalities that might occur. This care, of course, is not reserved for vegetarian diets only.



Pet Owners

The general founding belief of vegetarianism, as rooted in religion or ethical concern, is not killing or causing harm to other living beings. People may also go vegetarian to acquire healthy nutrition and/or to counter the eco-unfriendly meat production. By feeding their pets a diet free of animal products, owners transfer their attitudes about food and distance themselves further from animal consumption. Vegetarians giving their pets conventional food may do so because of convenience, health benefits or their animals' preference. Non-vegetarian fanciers may keep their pets on vegetarian food because of presumed meat-induced allergies or intolerance.

Critical Nutrients

Self-prepared and commercial vegetarian diets can be designed to provide adequate nutrition, but the critical nutrients must be considered. Recommended allowances (National Research Council, 2006) for dry food (1.5 MJ/100 g) fed to adult cats are as follows: vitamin D3, 250 IU/kg; vitamin B12, 20 µg/kg; vitamin A, 3,000 IU/kg; AA, 55 mg/kg; EPA + DHA, 90 mg/kg; taurine, 360 mg/kg. Dry dog foods are recommended to contain 495 IU vitamin D3/kg and 30 µg vitamin B12/kg. For wet foods (0.5 MJ/100 g), the allowances are about one third.

Vegetarian canine and feline diets may be enriched with vitamin D3 using egg yolk as carrier or a chemically synthesised preparation. Vitamin D3 may be replaced by vitamin D2, but then the allowance is about 50 percent higher. Vitamin B12 can be added as a component of milk and/

or some yeast products or in purified form. Cats should also ingest pre-formed vitamin A with egg yolk or as industrially produced compound. Taurine must be administered as chemical. In addition to EPA, cats might need docosahexaenoic acid (DHA). Specific algae can serve as a source of EPA, DHA and/or AA. Cats can synthesise AA from gamma-linolenic acid in evening primrose or borage oil.

Studies in Dogs

A controlled experiment has demonstrated that a carefully balanced, meat-free diet sustains excellent physical condition in exercising sled dogs. In practice, day rations may be unbalanced. A German PhD study computed that vegetarian, homemade rations of individual dogs often had nutrient levels far below the recommended allowances. In contrast, none of the animals showed clinical abnormalities related to malnutrition.

Recommended allowances include a buffer of safety. Furthermore, each daily ration is not required to be complete and balanced as long as the over-all diet is. Day-to-day variations intercept short-term insufficient (and excessive) nutrient intakes. The PhD study showed that for 66 adult dogs fed different types of vegetarian rations the average intakes of 32 nutrients, including vitamins D3 and B12, were sufficient.

Studies in Cats

The PhD study also found that the home-prepared vegetarian diets of 6 adult cats provided on average 2.5 percent of the recommended allowance for taurine.

One cat showed retinal degeneration associated with a very low blood taurine level. Under controlled, experimental conditions, taurine deficiency as the sole dietary variable causes lesions across the retina.

US investigators published that two vegan cat diets claimed to be complete actually contained too little taurine and AA. The report involved a canned food, which also fell short of vitamin A, and a homemade ration based on a commercial supplement and the manufacturer's directions.

Other investigators documented two years later that cats eating one or both of those diets had a adequate blood taurine concentrations. Obviously, the manufacturers had improved their products.

When assessing the intake of nutrients by cats, it should be realised that many well-fed pet cats spend time outside their houses and engage in hunting. A conservative estimate puts the number of preys eaten by inside/outside house cats at one item every other day. Consumption of voles, for instance, would meet the cat's taurine requirement.

Commercial Foods

Before purchasing a complete vegetarian food, the contents of the critical nutrients should be checked. Possibly, all information wanted is not presented in the food label, brochure or website. Then, the manufacturer can be asked for the dietary concentrations of the critical nutrients.

True meat allergy is uncommon in dogs and cats. Nevertheless, protection against meat-induced allergies is an important selling point of vegetarian foods. Endorsement comes from some veterinarians prescribing vegetarian, hypoallergenic foods. Vegetarian foods often claim to solve skin, fur, stomach and intestinal problems, fatigue, inappetence and hyperactivity. However, there is no objective evidence that vegetarian foods are healthier than meat-based foods.

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