

## Vegan Pet Diets is it Possible to Feed Dogs and Cats Only with Vegetables?

**Julio Bernal\***

*GEPSA Pet Food Technical Department, Argentina*

**\*Corresponding Author:** Julio Bernal, GEPSA Pet Food Technical Department, Argentina.

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What are the nutrients that can not be missed in a vegan diet. Possible health risks from poor diet. Veterinarian's role in proper nutritional management.

Motivated for different reasons such as the defense of animal welfare, rejection of specism, environmental sustainability, health care or simply fashion, thousands of people around the world have changed their eating habits in recent years becoming dieted without components of animal origin. Vegetarians, flexitarians, vegans, whatever their rating according to the degree of rejection against the consumption of products from animal sources, the truth is that, when it comes to the care of their pets, these people also prefer to prevent their dogs or cats from consuming proteins of this origin. According to a survey of nearly 4,000 dog and cat owners from 5 English-speaking countries, 12% of them said they had vegetarian or vegan eating habits. Of this group, most agreed to prefer balanced without animal components for their dogs because, in this way, "they contributed to protect the welfare of farm animals" [5].

### Carnivorous order

This growing trend observed in certain groups or sectors of society, in particular the younger ones, is the technical debate on whether diets formulated exclusively on vegetables cover all the nutritional requirements of dogs and cats.

Although both animal species belong to the same taxonomic order: Carnivora, they differ in their degree of dietary dependence on animal proteins. While cats are considered strict carnivores, so they must necessarily include animal proteins in their diet, dogs are instead omnivores, i.e. the inclusion of animal proteins in their diet is not as essential as in the former.

But, despite this classification, from some sectors related to the health of dogs and cats there are qualms about the use of vegan diets in these animals. According to the World Small Animal Veterinary Association (WSAVA): "the cats cannot thrive on vegetarian diets so they should not be used in the feeding of felines" [2]. Regarding the nutrition of dogs without animal proteins, WSAVA argues that "they can potentially receive all the required nutrients from a vegetarian diet". However, this organism warns that some sources of nutrients of plant origin are not absorbed or metabolized in the organism of dogs as easily as those of animal origin. For

this reason, they recommend consulting a veterinarian before giving the dog a vegetarian diet. In line with this position, the FEDIAF, the European federation that brings together the main food companies of the Old Continent, states in its portal: "The cat is an obligated carnivore and has highly specific nutritional requirements, for this reason, we advise the owners of these animals who think very carefully before providing a vegetarian medicine to their cats and to ensure that they receive advice from a nutritionist veterinarian" [3]. As for vegetarian feeding in dogs, and FEDIAF argues that, as omnivorous animals, "can adapt to a vegetarian diet as long as it is well balanced". However, he advises that such nutritional decisions should always be discussed in advance with a veterinarian.

### Poor nutrients

Plant proteins are usually poor sources of input of certain nutrients are specific as essential vitamins (D, A, niacin and B 12); fatty acids of the omega 3 family (arachnidic acid, DHA and EPA) and minerals (calcium, potassium, iron and zinc). In some cases, these nutrients are not only in small amounts in vegetables but, from a biochemical point of view, occur in an "inactive" form or of poor digestive assimilation. Most plant proteins offer an incomplete supply of essential amino acids depending on the nutritional needs of pets. Several of the nutrients mentioned are mostly found in animal proteins. The same as tominoacids sulphurized methionine, cysteine and taurine. For this reason, it is essential to keep in mind what are the needs of dogs and cats of these nutrients before making the change of their diet towards a vegetarian diet. In this sense, AAFCO (Association of American Feed Control Officials), a U.S. agency. a reference in nutrition worldwide, established what are the minimum requirements of these nutrients for dogs and cats, depending on the growth stage or the physiological stage (see apart) [1].

While pet food products exist in the pet food market without animal ingredients that are presented as complete and balanced, they do not always provide all the necessary nutrients in these sufficient doses. According to a U.S. survey of 24 vegetarian, dry and wet balanced food brands for pets, it was concluded that "most of the diets evaluated did not comply with AAFCO labeling regulations and there are doubts about the proper supply of essential amino acids" [4].

**Possible risks**

Vegan diets for dogs and cats that are not adequately supplemented with nutrients not supplied by vegetables can put the health of these pets at risk. In cats taurine deficiency, an essential amino acid in this species that is found only in animal proteins, can cause vision disorders, even blindness, and heart failure from damage to the myocardium. Arachydonic acid, another nutrient that is only available from animal sources, is an essential fatty acid for felines and its deficiency in the diet produces dermatological disorders, lack of growth, fat degeneration of the liver, lipid deposits in the kidneys, among other problems for their health. Vitamin B12 is also provided almost exclusively by animal proteins. The insufficient supply of this nutrient, both in dogs and cats, is linked to the onset of delays in growth and with the development of neurological problems. Possible deficiency in a vegan diet of essential amino acids such as arginine, lysine, methionine or tryptophan can cause various metabolic and functional disorders in both pets [6].

A complete and balanced food for dogs and cats without the contribution of animal proteins demands an accurate knowledge of the nutritional requirements of these animals. Proper supplementation of vegan pet diets with certain essential nutrients is critical to preventing deficiencies that could cause health problems. In this sense, the advice of the veterinary doctor in making decisions about the desirability or not of making changes in the diet and on the most appropriate nutritional management of each animal are the best guarantee to contribute to the welfare of the pet, beyond the personal convictions of his human family group.

Nutritious	Growth and Play (min.)	Adult Maintenance (min.)
Lives. In A	5.000 UI/kg	5.000 UI/kg
Lives. D	500 UI/kg	500 UI/kg
Niacin	13,6 mg/kg	13,6 mg/kg
Lives. B12	0,028 mg/kg	0,028 mg/kg
About	1,2%	0,5%
K	0,6%	0,6%
Zn	100 mg/kg	80 mg/kg
Fe	88 mg/kg	40 mg/kg
Arginine	1%	0,51%
Lysine	0,90%	0,63%
Methionine	0,35%	0,33%
Triptofano	0,20%	0,16%

**Table 1:** Aafco. Minimum nutrient profiles for dogs, extract (dry based).

Nutritious	Growth and play (min.)	Adult maintenance (min.)
Lives. In A	6.668 UI/kg	3.332 UI/kg
Lives. D	280 UI/kg	280 UI/kg
Niacin	60 mg/kg	60 mg/kg
Lives. B12	0,020 mg/kg	0,020 mg/kg
Taurine (extruded )	0,10%	0,10%
Taurine (wet)	0,20%	0,20%
About	1,0%	0,6%
K	0,6%	0,6%
Zn	75 mg/kg	75 mg/kg
Fe	80 mg/kg	80 mg/kg
Arginine	1,24%	1,04%
Lysine	1,20%	0,83%
Methionine	0,62%	0,20%
Tryptophan	0,25%	0,16%

**Table 2:** Aafco. Minimum nutrient profiles for gatos, extract (dry)

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