



## RESEARCH ON THE EFFECT OF MONOPROTEIN DIETS IN DOGS WITH FOOD ALLERGIES

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**Abstract:** The purpose of this study was to look into how monoprotein diets reduced clinical symptoms, particularly pruritus, in dogs with food allergy dermatitis. Monoprotein diets are commonly used as diagnostic tests for dogs with food allergies, known as food elimination trials, and are followed by provocation testing using the initial diet to confirm the food allergies. The examined canines (n = 100) had previously undergone a serologic allergy test to identify food allergens and select a more appropriate elimination diet. Depending on the animal's response to the serologic allergy test, a diet with a different protein source was chosen. In this regard, four commercial monoprotein diets based on goat, goose, veal, and rabbit meat were chosen. Diets were switched at three-week intervals only if symptoms did not improve after the first diet. The first diet consisted of veal meat, followed by goat, goose, and rabbit meats. Thus, three weeks after starting the diet, 25% (25/100; 95% CI 17–34) of the dogs showed a reduction in the intensity of pruritus and gastrointestinal symptoms on the veal diet, while the rest switched to a goat meat-based diet, and 37% (28/75; 95% CI) of the dogs showed an improvement in symptoms. Symptom improvement was observed in 15% (7/45; 95% CI) of dogs on the goose diet and in 23% (9/40; 95% CI) of dogs on the rabbit diet. In the provocation tests with the initial diet, the recurrence of pruritus was seen in all patients at different time intervals between 4 and 14 days. The findings suggest that appropriate diet selection for the food elimination trial, owner education on trial compliance, and re-challenging with the previous diet are essential in obtaining the correct diagnosis and improving the patient's life.

### • Introduction

Food allergy, also known as food or dietary hypersensitivity, is one of the most common types of allergies in dogs and cats, frequently reported to occur next to flea allergic dermatitis and atopic dermatitis [1, 3, 19]. These food allergies are typically divided into two types: (1) IgE-mediated food allergies and (2) non-IgE-mediated food allergies [1, 21]. Adverse food reactions are considered to be responsible for up to 6% of all canine and feline dermatoses in general practice and up to 20% of all cases in dermatology clinics [10, 15, 16].

The most prevalent clinical symptom of food allergies in dogs is nonseasonal pruritus (itching), which might be followed by intestinal disorders [17]. Pruritus is usually universal; however, it can affect the feet, ears, face (muzzle and chin), and inguinal region [4]. Other clinical signs include erythema with papular lesions, alopecia, excoriations, crusts, hyperpigmentation and hyperkeratosis of the affected skin areas, otitis externa, seborrhea sicca, and pododermatitis [9]. Clinical symptoms alone cannot discriminate between atopic dermatitis and food allergies; however, the seasonality of occurrence and response to steroid therapy can provide useful clues [9].

Elimination and provocation trials are considered the gold standard and the only definitive approach to diagnosing adverse food reactions in dogs [20].

### • Material and method

The study was carried out to determine the effect of monoprotein diets on dogs with food allergies. The study was conducted over a five-year period. The investigated animals (n = 100) were patients of clinics within the faculty of veterinary medicine in Timisoara, as well as cases of private veterinary practices from Timișoara and Arad. The animals had an age between 3 and 8 years, with 63% male and 37% female. The dogs included in the study had the following clinical signs: various pruritic dermatitis and gastrointestinal symptoms. Also, all of the dogs' clinical signs appeared more than a year before the research period.

After the end of the symptomatic treatment, the dogs whose symptoms persisted were subjected to an allergy test to detect and identify the allergens that triggered the allergic dermatitis and to be able to choose the appropriate diet. In this regard, the Sensitest® assay performed by Synevovet laboratories was performed.

The Sensitest® assay is an immunoenzymatic test capable of detecting allergen-specific IgG and IgE antibodies from the serum obtained from the blood of the tested animals. The test can detect allergens from beef, pork, lamb, duck, chicken, turkey, rabbit, venison, wheat, soy, barley, rice, potato, corn, oats, milk, eggs, salmon, and white fish. The reference values are divided into two categories: IgE reactivity and IgG reactivity, with values between 0 and 5.

In the current study, following the serological tests, the dogs were subjected to four commercial monoprotein diets based on veal, goat, goose, and rabbit meat, in the mentioned order. Diets were switched at three-week intervals only if symptoms did not improve after the first diet. The owners were responsible for monitoring the pruritus symptoms of the animals, and the dermatological symptoms.

### • Conclusions

The findings suggest that appropriate diet selection for the food elimination trial, owner education on trial compliance, and re-challenging with the previous diet are essential in obtaining the correct diagnosis and improving the patient's life.

For good compliance and optimal results, it's essential to establish regular communication with the pet owner as well as a diagnostic work-up along with a treatment suited to each pet's and owner's needs.

### • Results and discussions

Following the application of the Sensitest® assay, a higher sensitivity to food allergens was found in the following breeds: West Highland White Terrier, German Shepherd, French Bulldog, Boxer, and Golden Retriever. The study found no statistically significant association (p<0.05) between breed and food allergies. The Sensitest® assay revealed the following reactivity towards the tested allergens detailed in Figure 2. Distribution of reactivity based on reactivity class is described in Figure 3. Following the exclusion diet experiment on the 70 dogs that showed an improvement in the clinical signs, only 53 were exposed to the initial diet because the owners refused to continue the experiment based on the improvement of the clinical signs of the dogs. Pruritus recurred within 4–7 days in 51% (27/53; 95% CI: 37–63) of dogs and within 8–14 days in 49% (26/53; 95% CI: 36–62) of dogs.

