

Assessment of the digestive tolerance in cats of a new diet based on insects as the protein source

I Leriche¹, S Fournel², V Chala³

¹ Virbac Nutrition, Vauvert, France

² Virbac Statistical Department, Carros, France

³ Virbac Medical Department, Carros, France

Introduction

Insects may be an alternative source of protein for animal nutrition and could represent a “novel” protein source for managing adverse food reactions. Publications describe the high-quality nutritional profile of selected insect species, but there is little data on the tolerance of insect-based diets.

This study was designed to evaluate the digestive tolerance of a new dry insect-based protein source diet in adult cats.

Animals, materials and methods

Twenty-three healthy adult client-owned cats were recruited and monitored for 28 days. After a 4-day diet transition, they were fed exclusively with the new diet (Table 1). This diet was formulated to meet FEDIAF requirements for adult cats and was characterized by mealworm (*Tenebrio molitor* larvae) as the protein

source. Owners filled in online questionnaires on D0 (basal assessment with usual diets), D7, D14 and D28. To evaluate tolerance of the diet, 4 parameters were assessed (Table 2). Owners also evaluated coat condition and palatability on D28. Wilcoxon signed rank and Mc Nemar’s tests were used to compare results, with a 5% significance level.

Table 1: Characteristics of the test diet

Metabolisable Energy (ME) (kcal/100g)	355
Protein (% ME)	31
Fat (% ME)	36
Carbohydrate (% ME)	33

Table 2: List of the digestive parameters

Faecal score	from 1=very dry to 5=watery
Faecal odour	from very slightly odorous (very acceptable) to very odorous (unbearable)
Faecal quantity	from very small to very large
Flatulence	from never to several times a day



Results

The tolerance of the test diet was high, with no significant changes vs usual diets. Mean faecal scores varied from 2.3±0.5 on D0 to 2.2±0.4 on D28 and none of the cats developed diarrhoea (highest scores: 3.5 in 2 cats on D7). Table 3 shows percentages of normal cats on D0 and D28 for each digestive

parameter. At the end of the trial, palatability was described as good or very good by 74% of owners. Coat condition was unchanged, improved or degraded in 70, 26 and 4% of cats respectively.

Table 3: % cats with normal digestive parameters at different time points

Digestive parameter	Considered as normal if:	% normal cats	
		D0	D28
Faecal score	≤ 2.5	87	91
Faecal odour	≤ mildly odorous / slightly acceptable	74	91
Faecal quantity	≤ medium	96	100
Flatulence	never	78	96



Conclusion

These preliminary results showed the good tolerance of the test diet in healthy adult cats. The next step will consist in testing the diet in cats with adverse food reactions.