

# EVALUATION OF A NEW EXTENSIVELY HYDROLYZED POULTRY FEATHER PROTEIN-BASED DRY FOOD FOR THE DIETARY MANAGEMENT OF FELINE ADVERSE FOOD REACTION (AFR): A 15 CASE PILOT STUDY.

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## INTRODUCTION

Adverse food reactions (AFR) are a common problem that may cause severe cutaneous and/or gastrointestinal signs in cats. Identifying an adapted protein suitable for a diet has become a challenge due to expansion of the variety of protein sources available in over-the-counter commercial pet foods, even in commercial veterinary diets designed for elimination trials or management of AFR. Moreover, the widespread habit of feeding table scraps and the potential for immunological cross-reactivity [1] between proteins further reduce the number of available protein sources. This and other factors have led to the development of balanced hydrolyzed protein diets which offer a good alternative [2] as they are less likely to elicit an immune-mediated response. Nevertheless, as for canine species, partially hydrolyzed protein-based diets, even though beneficial for many AFR cases, may not constitute a solution for all of them [3]. **The aim of this study was to evaluate a new extensively hydrolyzed poultry feather protein source diet as maintenance diet in cats with dermatological manifestations of adverse food reactions.**

## MATERIALS AND METHODS

### ANIMALS

Fifteen healthy neutered adult cats (9 males, 7 females) aged  $7.7 \pm 4.2$  (1 – 15) years, diagnosed or highly suspected of suffering from AFR, and clinically stabilized, from different breeds European (13), Chartreux (1), Mixed breed (1) were included thanks to 8 veterinary practices, in France.

### DIET

Anallergenic™ Feline, Royal Canin®: an extensively hydrolyzed poultry feather protein-based diet: metabolisable energy (ME) (NRC 2006) 393 kcal/100g dry matter (DM), protein 24.5% ME, fat 17% ME.

### STUDY DESIGN



- Inclusion visit (V0), at D0: clinical + dermatological examinations by the Veterinary investigator
- V1 (D14 +/- 3days): same + collection of owner inputs (on skin & coat condition, palatability, digestive tolerance, and adverse effects if any)
- V2 (D28 +/- 3days): same as V1

### RECORDED PARAMETERS

The SCORFAD [4] and pruritus [4] scoring were evaluated at 0 (V0), 2 (V1) and 4 (V2) weeks by the investigators; body weight (BW) and body condition score (BCS), on a 9-point scale) were also recorded at same frequency. Assessments (questionnaires filled in by owners) were fulfilled at inclusion and then every 2 weeks (V1, V2).

### STATISTICS

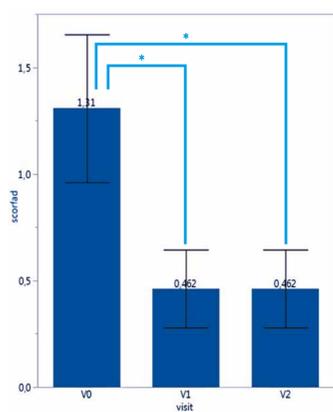
Statistical analysis was performed using validated Stata Statistical Software. The normality of data distribution was evaluated using the Shapiro-Wilk test of normality. SCORFAD & pruritus scores at V1 and V2 were compared with initial score (V0) by paired t tests. The difference and 95% confidence intervals of the difference were compared to the defined non-inferiority margin of 10% of the initial score (V0). One-sided tests were used ( $\alpha=0.05$ ). Values at V0 were used as reference.. Data are expressed as Means  $\pm$ SD

## RESULTS

2 cases were excluded on V2 by an investigator due to lack of consumption or compliance issue. Results on skin condition evolution (presented in figures below) show maintenance of low level of pruritus, and improvement of skin lesions as early as 2 weeks.

### EVOLUTION OF SKIN CONDITION AND PRURITUS

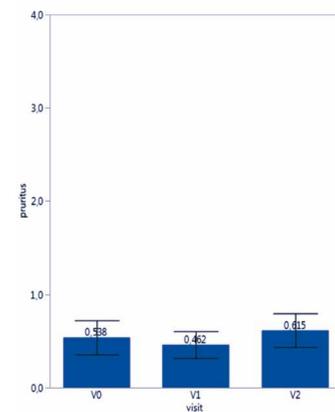
• **SCORFAD** (average score) evolution during the trial



SCORFAD EVOLUTION (##):  
 > significant differences at V1 & V2 versus V0  
 > non-inferiority of test-diet

## Statistics:  
 • 1st test (differences): The paired t-tests showed significant differences between V0 and V1, and between V0 and V2 ( $p=0.001$  for both tests).  
 • 2nd test (non-inferiority): The test diet is considered as non-inferior at V1 and V2, compared to V0 (at V1 and V2, the 95% confidence interval of the difference [-0.11] is inferior to 10% of the mean initial value)

• **PRURITUS** (average score) evolution during the trial



Pruritus remained stable throughout the study (##)

## Statistics:  
 • The paired t-tests showed NS differences between V0 and V1, and between V0 and V2 ( $p=0.673$  for both tests).

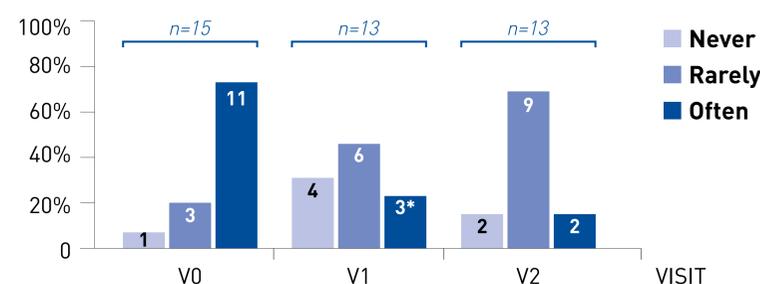
### CHOUQUETTE:

European neutered female, 2.5 y.o  
 Suspicion of AFR (incl.cervico-facial pruritus and lesions)



### EVOLUTION OF SKIN & COAT CONDITION AND « SCRATCHING »

• Number of animals according to scratching frequency



Scratching assessed by owners: **Trend to improvement.**  
 Same trend to improvement observed for the other criteria (dandruff, coat beauty, and skin & fur condition)

(NB: scratching areas were most frequently face and neck)  
 \* Including 1 between rarely and often

The mean **BCS** was maintained throughout the study, with a value of  $5.7 \pm 1.5$  on V0, to  $5.5 \pm 1.7$  on V2.

The digestive tolerance results confirmed the benefits of extensive hydrolyzed protein source and no diarrhea during food transition was observed: 85% cats had stools with normal consistency (% ideal score of 4 on a scale of 5 points, ranging from 1[diarrhea] to 5 [very hard, constipation]). In 85% of Cats, food acceptance was rated good to excellent by the owners.

**At the end of the study, 92% of the Veterinary investigators evaluated the efficacy of the test diet as very good.**

**CONCLUSION:** This novel and extensively hydrolyzed protein based test diet was well tolerated by the diagnosed or suspected AFR cats in term of skin, digestive tolerance and palatability. These parameters are key points for optimal compliance which should maximize the chance of success for the management of AFR in cats. This extensively hydrolyzed poultry feather protein source based diet might be a solution for **dietary management in cats with dermatological signs of adverse food reactions.**

### REFERENCES.

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**Conflict of interest statement:** Boutigny.L & Lesponne.I are employees of Royal Canin SAS. • **Author contact information:** laure.boutigny@royalcanin.com