



WALTHAM VIEWPOINT

Measuring skin and coat condition in healthy dogs

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There is a strong perception that skin and coat condition is an indicator of an animal's general well-being and the nutritional adequacy or superiority of its diet. Indeed, many disease states do have an impact on the appearance of the skin and coat, such as digestive disorders, diabetes, and allergic diseases of the animal. In addition, there have been many reports in the literature of long-term nutritional deficiencies causing a myriad of problems that include excess scale, crusting, erythema, pruritus, greasy skin, and alopecia (1, 2). Correction of these nutritional deficiencies by provision of good, balanced nutrition is readily measured by the alleviation or disappearance of these signs.

Studies at the WALTHAM Centre for Pet Nutrition have investigated the potential of dietary manipulation to provide superior skin and coat condition in healthy dogs with a history of premium nutrition. The changes in coat condition of healthy dogs are likely to be much less dramatic than in animals suffering from nutritional deficiencies, and, therefore, reliable and sensitive methods for the evaluation of coat condition needed to be employed. One of the most commonly used methods of assessment in the human hair care industry for the evaluation of product performance is the sensory evaluation panel. The panel is generally made up of a group of people who have demonstrated the ability to reproducibly differentiate small differences in the look, feel, smell, or taste of the items under evaluation.

The sensory panel selected for the

evaluation of animal coat condition at the WALTHAM Centre for Pet Nutrition, known as the Quantitative Descriptive Analysis (QDA) panel, were trained to evaluate particular parameters that are outlined in **Table 1**. For each animal assessed, a score is given for each of these parameters at the beginning and again at the end of the test period. A simple category scale is used from 1.0, 1.25, 1.5, 1.75, and so on to 5.0. Statistical analysis is then carried out on the change in coat score that has occurred during the feeding of that test diet (**Figure 1**). Before assessing a group of animals the QDA panel will discuss the coat condition of reference animals to ensure common reference points in the category scale of each parameter.

To facilitate accurate and unbiased assessments of a group of test animals, a number of considerations regarding the presentation of animals to the panelist exist. These include:

- Prior to evaluation, the coat should be combed evenly all over in a standardized manner in order to eliminate the influence of the way in which the coat is lying. A clean comb should be used for each animal, which should then be degreased in alcohol or methylated spirits.
- Each animal should be assessed under identical conditions, preferably indoors, to provide an evenly and consistently lit area.
- Between each assessment the assessors should wipe their hands with an alcohol tissue or wash them with soap and water.
- The animals should be assessed in a

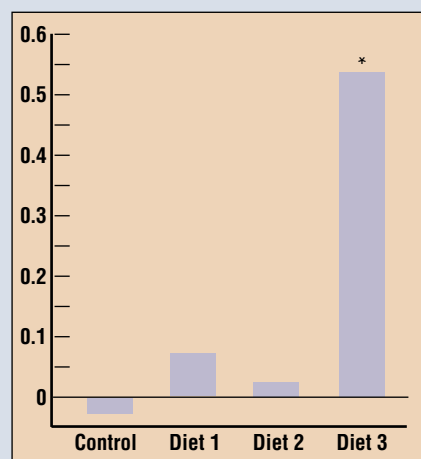


Figure 1 Change in the presence of coat scale over a 9-week period. Note that a positive score indicates an improvement in coat condition, i.e., a decrease in the amount of scale on the coat. * $p < 0.01$ compared to the control group.

random order, at each assessment stage, to eliminate any bias toward the first or last animals presented.

- Each animal should be examined by the assessors as a group but, to avoid any effect of changes in coat texture during handling, the assessors should touch each animal in the same sequence.
- Each animal should be identified only by an unmemorable number, not by name. This prevents any subconscious favoritism and prevents recall of previous score.
- The assessors must be blind to all treatment groups to which the animals may belong.

Using this methodology, investigations at the WALTHAM Centre for Pet Nutrition have established that diet can improve the coat condition of animals that were already considered to be in good condition. **Figure 1** shows an example of the improvement in coat scale that can be achieved with feeding a modified diet for a period of only 9 weeks.

REFERENCES

1. Harvey, R. G. Nutritional Therapy. In: Harvey, R. G. & Mason, I.S. (eds.) *BSAVA Manual of Small Animal Dermatology*. Br Small Anim. Vet. Assoc. 1993: 244–250.
2. Watson, T. D. G. Diet and skin disease in dogs and cats. *J Nutrition* 1998; **128**(S): 2783S–2789S.

Table 1

Parameters used to assess skin and coat condition in the dog

QDA Parameter	Parameter Definition	Method of Evaluation
Gloss	Reflection of light from the coat	Visual assessment performed before touching the animal, as texture can influence the assessor
Softness	Flexibility and compliance of the hair	Run fingers through the full thickness of the coat
Optimum Coat Feel	The absence of a greasy or a dry feel of the coat	Run fingers through the full thickness of the coat
Scale	Visible dandruff on the skin or hair	Lift hair in the opposite direction of growth and examine skin and hair for the appearance of white flakes

