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Séance thématique exceptionnelle

Nutrition des carnivores domestiques

Aimargues, sur invitation de Royal Canin

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CONTENTS

N°4, Tome 159, october 2006

SPECIAL SESSIONS:
NUTRITION OF THE PETS

On thursday 18th and friday19th of may, 2006

On the invitation of Royal Canin, Aimargues (Gard), France

COMMUNICATIONS

SOMMAIRE

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FOREWORD

On the invitation of Royal Canin, the joint meeting with the Académie Vétérinaire de France focused on pet nutrition. It was organised with the aim of presenting some behavioural, physiological and clinical aspects on this topic in the same session. It also was the opportunity to appreciate the different approaches in the applied research of the scientific team of Royal Canin, its understanding of pet physiology and behaviour, its knowledge of the digestive diseases, leading to a good expertise in diet formulation and manufacturing. In addition, some communications delivered by scientists in fundamental Physiology have brought new concepts in the control of food intake and the role of amino acids. It was interesting to take into account the results obtained from different analysis levels, with different motivations.

Regarding the control of feeding and its behavioural aspects, André JEAN (MD, PhD, Professor, University Paul Cézanne, Marseilles) reviewed the multiple brain regions involved in food intake, when focusing on energy homeostasis. Contrary to the traditional view of a hierarchical model in which the hypothalamus plays the major role, recent results are consistent with a distributed model in the processing of energy balance regulation. Network re-organisation and neurogenesis are potentially involved in food intake and body weight regulation, suggesting that neuroplasticity may provide important clues to the understanding of energy balance disorders such as obesity. Then, Pascale PIBOT (DVM, Scientific Publishing Manager, Royal Canin Communication Group) and her colleagues from the Royal Canin Research Centre developed the three essential components of palatability influencing food selection and preferences in dogs and cats: the pet (species, breeds and individual), the environment (owner, home, lifestyle) and the food (smell, shape, texture, taste, nutritional composition). Royal Canin's advanced understanding has led to a best expertise in diet formulation and manufacturing, as well as in the development of innovative tools and research methodologies for measuring diet palatability.

Concerning the physiological studies, Dominique DARDEVET and Pierre FAFOURNOUX (PhDs, INRA, Theix) focused their communications on two particular and new aspects of the dietary amino acids. As older muscle can still present an anabolic response to protein/amino acids administration if administered in large amount, it is possible to propose nutritional strategies to maintain or slow down muscle mass loss in the elderly. D. DARDEVET has shown from laboratory animal models and acute experiments that of the amino acids, leucine seems to have the greatest positive effect and thus an increase in this amino acid intake alone may represent a good and safe nutritional intervention. However, long term clinical trials are still necessary to assess the true beneficial effect of leucine supplementation in humans or eventually pets, with respect to the reduction of muscle loss caused by ageing. Amino acids have multiple and important functions, so their homeostasis has to be finely maintained, and the amino acidemia can be affected by some nutritional conditions or various forms of aggression. It follows that mammals have to adjust several of their physiological functions involved in the adaptation to amino acid availability by regulating expression of numerous genes. So P. FAFOURNOUX's report was to examine the role of amino acids in regulating mammalian gene expression: amino acids by themselves can act as "signal" molecules with important roles in the control of gene expression and physiological functions. Then an approach of applied digestive physiology has been presented by Mickaël WEBER (PhD, Scientific Communication Manager at the Royal Canin Research Centre, France). The goals of his study were to compare different parameters of the digestive function in dogs varying in body size in order to identify the reasons for poor digestive tolerance in large-breed dogs. Results showed no relationship between digestive tolerance of larger dogs and nutrients utilization, absorption capacity or transit time in the upper gastrointestinal tract. However, a low overall absorption of electrolytes as well as an increased fermentative activity could be two possible causes explaining the Giant Schnauzers and Great Danes' poor quality of feces. From these observations, it appears important to limit colonic fermentative activity in large dogs.

At last, the clinical aspects were treated by Patrick LECOINDRE (DVM, Clinique vétérinaire des Cerisioz, St Priest, France) and Denise ELLIOTT (BVSc, PhD, Director of Scientific Communication at Royal Canin USA). P. LECOINDRE has described the chronic inflammatory bowel diseases (IBD) responsible for most digestive diseases in domesticated carnivores. The histopathological observations and the response to immunodepressive therapy suggest the intervention of a dysimmune mechanism. Their diagnosis relies on the exclusion of diseases with a clinical presentation and the histological confirmation of an inflammation of the intestinal mucosa. D. ELLIOTT focused her communication on the dietary therapy which is an important aspect of management of the gastrointestinal (GI) diseases in dogs and cats. It is clear that no single diet is likely to be effective for every patient. She mainly emphasized the function and application of the emerging nutrients for the management of patients with gastrointestinal disease. Anyway, the overall objectives of dietary modification are to enhance digestion and absorption of nutrients, overcome potential nutrient deficiencies associated with mucosal damage, support the mucosal barrier function, promote normal GIT motility and function, decrease inflammation, and aid healing.

In addition to scientific lectures, members of the Académie Vétérinaire de France had the opportunity to visit the Royal Canin Research Center in Aimargues (France) and the Kennels and Catteries which are located on 29 hectares of parkland. Designed to respect the true nature of their occupants the Kennels & Catteries include a great variety of breeds : 130 dogs of over 20breeds, from Fox Terriers up to St Bernard, and 120 cats of 15 different breeds. In line with the Royal Canin philosophy "Knowledge & Respect" they participate only in palatability and digestibility analyses to ensure their well-being.

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