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### **MOLECULAR DETECTION OF BOVINE NOROVIRUSES (CALICIVIRUS) IN HUNGARY**

The bovine norovirus Bo/Jena/1980/DE and Bo/Newbury2/1976/UK represent two distinct genotypes (1 and 2) within genogroup (GIII) in the genus *Norovirus* of the family *Caliciviridae*. There are only few norovirus sequences reported from cattle and the capsid sequence of strain Bo/Jena/1980/DE is the only one which is available in GIII/1. To detect bovine noroviruses, 47 fecal samples collected on two calf farms in Central Hungary were tested by reverse transcription-polymerase chain reaction. Four (8.5%) bovine norovirus strains – three genetically identical genotype 2 and a genotype 1 – were detected on the same farm. The full length capsid sequence of the genotype 1 strain (Bo/NoV/Aba-Z5/2002/HUN, EU360814) was characterized. This study confirms the presence of both genotype 1 and 2 bovine noroviruses in cattle in Hungary.

M. Kopecsnik:

### **EFFECT OF TRANSPORT CONDITIONS ON THE LOSSES DURING TRANSPORT OF BROILER CHICKENS**

A survey was conducted at a poultry slaughter-house of Budapest in 2005 and 2006 to reveal the relation between transport conditions, such as space for 1 kg live weight, time and temperature of transport, and the rate of death, injuries, sick animals or confiscation by inspection of meat. 244 856 chickens

of 50 consignments were surveyed, part of which were three consignments of hens (13 184; 54%) and the rest were broiler chickens. The examination was carried out by means of a 23-question survey form, which was completed by the official veterinarian of the slaughter-house for every consignment.

According to the examination, space for 1 kg live weight was 207 cm<sup>2</sup> on average except for one occasion (2%). Even the smallest space conformed to the regulations of the common decree of the Ministry of Economy and Transport and the Ministry of Agriculture and Rural Development, which had been harmonised with the European Union's legislation. The death rate (0.60%) of consignments with space smaller than 207 cm<sup>2</sup> outnumbered the loss of which had more space for each kg of light weight (0.49%). The cause of death was due to crushing or suffocation. Concerning the rate of injuries, the result was reciprocal: 0.31% in the case of consignments of smaller space per kg of live weight, whilst 0.51% of those being more spacious, because there was great chance of contusion or fluttering. The number of sick animals and the loss owing to confiscation were similar: 0.56% vs 0.51%; 0.50% vs 0.43%.

It was established that the average time span of transport from the beginning of loading to the beginning of unloading was 433.1 minutes. The death rate of longer transport was 0.74%, which significantly exceeded the figure of shorter transport 0.40%. Concerning injured, sick or confiscated animals, the rate was reciprocal: 0.32% vs 0.47%; 0.33% vs 0.58%. This can be explained by the increased time of transport in the course of which injuries and illnesses led to deaths.

The temperature of transport was + 9.6 °C on average. Under warmer weather conditions the loss was significantly lower (0.46%) than under colder weather conditions (0.73%). This was explained with the thermophil characteristic of chickens by the author. The rate of injured animals was higher in hot weather conditions (0.48% vs 0.26%) since chickens huddle together in cold. Thus, the chance of injuries decreases. The rate of injured animals and the number of confiscation were not affected by temperature (0.55% vs 0.52%; 0.49% vs

0.42%).

The results of ante mortem and post mortem examinations of chickens at slaughter-houses and those of pathological ones indicate that the most common infection of broiler chickens is mycoplasmosis, 86% of the 50 consignments was infected. Mycoplasmosis, as an indicator disease has revealed the insufficient epidemiological conditions of broiler chicken flocks in Hungary.

B. Sellyei – Zs. Varga – Pné Samu – T. Magyar:

### **CHARACTERISATION OF *PASTEURELLA MULTOCIDA* STRAINS ISOLATED FROM RABBITS**

Pasteurellosis is one of the most important diseases of commercial and laboratory rabbit populations causing significant economic losses to the breeders. Altogether 76 *P. multocida* strains isolated from different Hungarian rabbit farms were used in the study. Of the strains, 67% were *P. multocida* subsp. *multocida*, while the remaining 33% belonged to *P. multocida* subsp. *septica*. The carbohydrate fermentation pattern of the *P. multocida* subsp. *multocida* strains showed remarkable heterogeneity. They represented six biovars (1, 3, 13, 2, 4 and 9). In contrast, *P. multocida* subsp. *septica* strains were completely homogeneous: all strains were classified as biovar 6. Capsular type A was the most frequent (63%) among the Hungarian strains. The prevalence of capsular type D was low (12%), while capsular type F was present in higher number (25%) than expected. It indicates the increasing importance of F capsule type in rabbit. Only two of the strains produced *P. multocida* toxin. Toxigenic strains of *P. multocida* are rarely found in rabbits. Their role in pasteurellosis of rabbits needs clarification.

Z. Dudás Györki – K. Vörös – Cs. Hetey:

### **NEWER KNOWLEDGE ON DILATED CARDIOMYOPATHY IN DOGS. PART 2. CLINICAL SIGNS, DIAGNOSIS, TREATMENT**

The aim of this two-part review is to summarize the latest knowledge of dilated cardiomyopathy. In the previous, first part of the publication, the occurrence, etiology, and pathogenesis have been discussed. In this second part, clinical-diagnostic methods, as well as therapeutic and prognostic aspects are summarized.

J. Gál – K. Landauer – Z. Demeter – A. E. Palade – K. Ursu – Á. Bálint –T. Pap –Sz. Farkas:

### **VIRAL SEROFIBRINOUS TRACHEITIS AND RESULTING SUFFOCATION IN AN AMUR RATSNAKE (*ELAPHE SCHRENKI*)**

The authors describe serofibrinous tracheitis resulting in the obstruction of the windpipe of an adult Amur ratsnake (*Elaphe schrenki*), coupled with proliferation and desquamation of the epithel cells lining the trachea. Bacterial test results of samples taken from the windpipe and the lungs proved to be negative. Electronmicroscopic investigation of the fibrine plug blocking the trachea showed a virus particles morphology characteristic to coronaviruses, whereas RT-PCR did not reveal the presence of a paramyxo-, IBV, toro- or coronavirus. Virus particles observed by electronmicroscopy had a morphology similar to coronaviruses (*Figure 3*). Even though RT-PCR test results were negative (perhaps due to the fact that consensus coronavirus primers are unsuitable for demonstrating coronaviruses in reptiles), it is speculated that the pathology identified by the authors (*Figure 1 and 2*) was caused by a virus similar to coronaviruses in its size and morphology.

Á. Szabára – K. Czeibert – L. Müller – P. Rudas:

### **PHYSIOLOGICAL BASIS OF HOMING PIGEONS' ORIENTATION. LITERATURE REVIEW. PART 1**

For a long time the researchers and the pigeon-breeders are interested in what kind of factors play role in the management of the wandering of the birds and they procession: that let them reach their exact goal. Serious researches

are going on to understand this question. First the moving of the Sun was the basic hypothesis. With the development of the scientific knowledge and the technical conditions the researchers found a complicated and complex regulation-system. Beside the importance of the situation of the Sun, the landscapes, stars, olfactory and acustical signs, UV-light and polarisation and the knowledge of the magnetic field play role. In homing pigeon hereditary and learned behaviours have also important role.

The authors give detailed overview about the recognized elements of the homing pigeon orienting themselves till now. In the first part of the article the authors summarize briefly the present position of the science about the known basis of the orientation, and they present in details the role of the Sun, the landscapes, the stars, the acustical signs, the olfactory signs, and the UV light and polarisation.

Cs. Jakab – J. Halász – A. Kiss – A. Szász M. – Zs. Schaff – M. Rusvai – Sz. Szatmári – J. Kulka:

#### **USE OF EXTERNAL POSITIVE CONTROLS IN CLAUDIN-EXPRESSION IMMUNOHISTOCHEMICAL EXAMINATIONS**

In the present study the authors describe the significance of the immunohistochemical analysis in the pathological practice and tumour diagnostics. They confirm that during the process of immunohistochemistry the results of the immunoreactions are based on the supervision of the adequate external or internal positive and negative controls. The pictures of immunohistochemistry show the human external positive controls, which were used as the positive control of the of claudin-expression in the canine mammary glands. Further, they describe new internal positive controls for immunohistochemical analysis of claudins in the dog.