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SERO-EPIDEMIOLOGICAL STUDY OF NEWCASTLE DISEASE IN SWITZERLAND

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La maladie de Newcastle (NCD) est une des maladies les plus menaçantes pour les volailles de rente et est répandue mondialement. Bien que la Suisse soit déclarée officiellement indemne de NCD, cette maladie a été identifiée occasionnellement au cours de ces dernières années. Une étude séro-épidémiologique est conduite en Suisse dans différentes populations d'oiseaux, c.-à-d. les oiseaux sauvages, les volailles des élevages de petites tailles (ayant entre 5 et 50 volailles) et les volailles de race, notamment pour définir le rôle des oiseaux sauvages dans la transmission de la maladie. Cinq échantillons de sang ont été prélevés dans 107 élevages et analysés par la technique ELISA. Un sérum a été diagnostiqué positif, et confirmé par la technique d'inhibition d'haemagglutination. Ce résultat préliminaire était en voie d'évaluation au moment de la rédaction de cet article.

INTRODUCTION

During the last few years there have been sporadic outbreaks of Newcastle Disease (NCD) in Switzerland. The source of introduction however could not be evaluated in any cases and it is assumed that wild birds may play an important role in transmitting NCD since almost all bird species can be carriers of NCD-Virus (NCDV) (Hanson, 1976). The objectives of this study was to evaluate the serological status of backyard chickens in Switzerland and to investigate the role of wild birds as being a possible source for NCD introduction into the country.

MATERIALS AND METHODS

One hundred and seven randomly selected farms with chicken flocks ranging from 5 to 50 animals were visited. A questionnaire was filled in with special emphasis on all possible direct and indirect contacts of chickens with wild birds. Blood samples and cloacal swabs were collected from 5 chickens per flock. A blocking ELISA (SVANOVIR®) was used to test blood samples for antibodies against NCDV and positive or susceptible sera were retested using the haemagglutination inhibition test (HI). Cloacal swabs of the serologically positive herds were subjected to virus detection using an RT-PCR assay.

In addition, ducks, geese and pure breed chickens will be investigated with regard to NCD serology and virus detection. Breeders will be visited to collect blood and faeces of their birds and to fill in a questionnaire. All animal movements will be recorded in detail.

During the entire study dead birds were sent to us for post-mortem examination. These dead birds included hunter-killed water birds as well as dead birds found and then brought to taxidermists. Blood from organs, in particular from lungs, was obtained by centrifugation and stored at -20 °C before being tested for antibodies against NCDV at a later stage.

PRELIMINARY RESULTS

The descriptive epidemiological data will be presented. In addition, out of 535 serum samples tested with the ELISA as well as the HI, NCD antibodies were detected in a single sample. The results of a further in depth epidemiological analysis on this case will be discussed.

DISCUSSION

From these findings, it can be speculated that non-pathogenic strains circulate in small chicken flocks within Switzerland. The origin of infection however is still unknown. The sero-epidemiological surveillance of wild birds might bring insight on their importance in the epidemiology of the disease. Hobby birds might play a potential role in transmission of NCD because these birds are subject to a more vivid trade and some are being brought to expositions. Final results from this study will be used to support the implementation of sanitary measures against NCD in Switzerland.

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