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130 – Avian metapneumovirus I

Introduction

Avian metapneumovirus causes turkey rhinotracheitis and swollen head syndrome in chickens. These diseases have been described by their clinical signs and in both instances there are other entities which have very similar clinical signs and co-infections are quite common.

History

Avian metapneumovirus infection was first described in turkeys in the late 1970s and some years later this turkey disease appeared in France and the UK. Shortly after this an upper respiratory tract disease was seen in chickens, in which some birds developed swollen heads.

In 1994 two subtypes of the avian pneumovirus were described and they were named A and B. Since then avian pneumovirus infections have been reported in many countries with the notable exception of Australia.

In 1996 avian pneumovirus infection was first reported in the USA in turkeys and the causal virus was genetically distinct from the two viruses previously seen elsewhere in the world. This virus is now called subtype C. Viruses similar to subtype C have been isolated from Muscovy ducks in France and pheasants in Korea. In the latter instance these were associated with respiratory and egg production problems.

The virus

Avian metapneumoviruses are pneumoviruses that belong to the Paramyxoviridae. These metapneumoviruses are closely related to mammalian respiratory syncytial viruses. There are four subtypes of avian metapneumoviruses – A, B, C and D. Subtype D was discovered in a retrospective survey of samples and has not been recorded after 1985.

This virus can probably survive in the environment for longer (months) than previously thought (hours/days).

Pathogenicity

Typically infected birds show a rhinotracheitis and swollen heads are sometimes encountered in chickens.

Concurrent infection with other respiratory pathogens, such as E. coli, Bordetella avium, Mycoplasma gallisepticum, Ornithobacterium rhinotracheale, Newcastle disease virus, infectious bronchitis virus and Chlamydia psittaci increases the severity of the infection.

Transmission

When this virus first appears in an area of susceptible stock, transmission between birds and flocks is rapid. Most of the usual routes of transmission occur, including via contaminated water, recovered birds, feed, equipment and people. The density of a poultry population in a region significantly influences the degree of spread of avian metapneumovirus.