International Poultry Production

Poultry**health**
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Number: 190

Avian influenza VIII

Diagnostic methods

Detection and diagnosis of influenza virus is complicated by the fact that disease/infection can be present with no obviously diagnostic or pathognomonic clinical signs. Thus, we need to resort to laboratory testing. This can involve searching for antibodies or virus, dependent on the objectives. For both types of testing, further tests can be done to confirm viral subtype or other viral biological features

A fair degree of harmonisation of tests methods has occurred.

Sample types

Oropharyngeal or tracheal swabs and cloacal swabs are the most frequently tested samples. Tissue samples can also be tested, but they are not the best for the detection of LPAI viruses.

Oropharyngeal swabs include swabbing the choanal cleft. These are better than tracheal swabs because:

• They also capture material from the sinuses

• They are less invasive to the bird

• Less operator skill is required

• Trials have shown they are equivalent to tracheal swabs in terms of influenza virus capture

In most situations the best approach is to take oropharyngeal swabs and cloacal ones. However, as a general rule, LPAI viruses in waterfowl have a higher tropism for intestinal replication and so more viruses will be shed via the cloaca, which means more detection by using cloacal swabs. Conversely, in chickens and turkeys more viral replication of LPAI viruses occurs in the respiratory tract so more viruses shed into the respiratory tract meaning oropharyngeal swabs are preferable.

For wild birds swabbing oropharynx and cloaca and putting both swabs in the same tube increases the number of positive samples.

Pooling of swabs can usually be done successfully.