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087 – Infectious bronchitis III

Pathogenicity

Infectious bronchitis is basically a disease of chickens and the infection, irrespective of type (respiratory, renal or reproductive) enters the bird via its respiratory tract. Viral replication can occur in many cell types and which predominate is usually strain dependent. Infectious bronchitis replicates in many cell types in the digestive tract and this process results in the production of contaminated faeces, which together with respiratory excretions and aerosols, are the main vehicles for the spread of infection between birds,

This is further facilitated by ability of the virus to persist in the digestive tract of young birds and layers. Some strains can also persist in the respiratory tract.

Infectious bronchitis infection damages the respiratory tract of young chickens to the extent that this opens the door to secondary bacterial infections such as colisepticaemia, which is a common occurrence. In fact, with colisepticaemia in broilers, it has been shown that infectious bronchitis + stress + E. coli has a bigger impact on a broiler flock, including mortality, than infectious bronchitis + E. coli or stress, which in turn has a greater impact than just infectious bronchitis virus infection on its own. In cases of colisepticaemia it is often prudent to ascertain whether there is a predisposing infectious bronchitis virus infection because, if there is, the control strategy may involve infectious bronchitis vaccination.

Infectious bronchitis virus infection enhances the disease and the shedding process in infections of pathogenic mycoplasma. In both these scenarios it should be remembered that live infectious bronchitis vaccination is effectively the 'application of a mild form of the disease' and, so, live infectious bronchitis vaccination can similarly impact on E. coli and mycoplasma infections. These scenarios can be further aggravated by immunosuppression.

Even the strongly nephropathogenic strains of infectious bronchitis produce significant respiratory tract lesions and associated clinical signs.

Other factors which influence the appearance/severity of infectious bronchitis include sex (males are more susceptible), cold stress, high levels of animal protein in the diet and even breed.

The repeated passage of infectious bronchitis virus through chickens usually results in a decrease in virulence. This can be seen in the field as sometimes when a new strain of infectious bronchitis is introduced it appears to be more virulent than it subsequently is.

Many strains also infect the reproductive tract causing egg drops, watery whites and loss of pigmentation from brown eggs.

A proventricular form of infectious bronchitis, characterised by a swelling of the proventriculus, has been seen.