

Duck Virus Hepatitis



Introduction

Duck Hepatitis (DH) is a highly contagious disease of young ducklings 1-28 days of age, characterized primarily by hepatitis. It can be caused by any of three different viruses namely duck hepatitis virus types 1, 2 and 3. The more common and internationally widespread is duck hepatitis virus (DHV) type 1, an enterovirus, which causes a highly lethal, acute, contagious infection in ducklings under 6 weeks of age and, frequently, under 3 weeks of age. The disease is rarely seen in ducklings over **4 weeks of age**. The onset of the disease is very rapid, it spreads quickly through the flock and may cause up to 90% mortality.

Sick ducklings develop spasmodic contractions of their legs and die within an hour in a typical "arched-backward" position. The liver is enlarged and shows hemorrhagic spots.



Nature of the disease

DVH is caused by three different viruses.

1-The most severe and widely distributed virus, duck hepatitis A virus (**DHAV**) **1** (formerly called DHV-1), belongs to the Picornaviridae, and causes disease in ducklings before 6 weeks old.

2-The second viruses are duck astrovirus (formerly known as **DHV-2**), which causes disease in ducklings between 6 and 10 weeks old

3-The third-**DHV-3** caused by another virus unrelated to DHV-1 and DHV-2 which causes milder disease.

It is RNA virus. It is propagated in 9 - 11 day old chicken embryo through allantoic sac causing death with stunting and edema of dead embryos.

The virus grows in cell culture of chicken and duck embryos origin with cytopathic effect. It is resistant to ether and chloroform. Relatively heat stable, and capable of survival for long periods under usual environmental conditions. Highly resistant to environmental conditions. The virus has not haemagglutinating affinity

Transmission

The disease is very contagious transmitted by infected ducks and other waterfowl and spreads rapidly, the virus excreted by faeces and transmitted by direct contact between birds or through fomites such as brooders, water, feed, equipment.

Recovered animals can shed the virus for up to 8 weeks.

No egg transmission.

Clinical signs

- 1-DHV-1 causes the most severe disease.
- 2-The incubation period lasts 1 to 2 days .
- 3-The onset and spread of the disease are very rapid, with practically all mortality occurring within 3-4 days.
- 4- At first, birds stop moving, lethargy, anorexia and squat down with eyes partially closed. Birds fall on their sides, kick spasmodically(opisthotonos) with both legs, and die with heads drawn back. Death occurs within hours or so after signs are noted.
- 5- Morbidity is often 100% and mortality reaches 80%.
- 6-Disease is less severe in ducks older than 7 weeks.

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Photograph / Copyright - Milton Friend.
Typical terminal position of ducklings that die from duck hepatitis. This posture is referred to as opisthotonos, and it is characterized by the body being somewhat bowed forward with the head and bottom of the feet bent backward.

Post-mortem findings

The liver is enlarged with haemorrhagic lesions (petechia, ecchymosis) and decolouration. The spleen enlarged and swelling with some Congestion of renal blood vessels may also be apparent.



Differential diagnosis

Duck virus enteritis

Coccidiosis

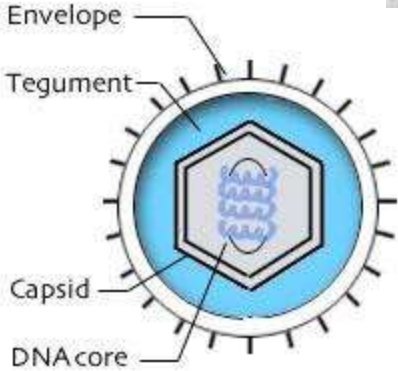
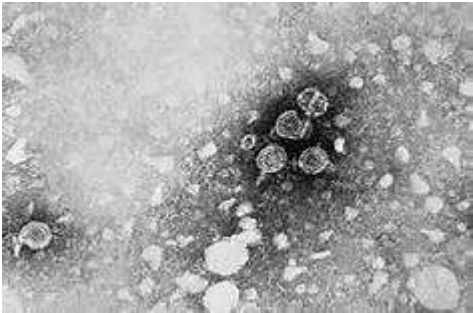
Mycotoxicosis

Pasteurella anatis

Control / vaccines

If accidentally introduced, strict isolation and control of rats are necessary measures to control DHV. Rats have been described as a reservoir and control of this pest on arrival should be systematic

Vaccination against DHAV-1 and DHV-3 is possible using live attenuated vaccines. A killed vaccine is also available against DHAV-1.



<http://stdgen.northwestern.edu/stdgen/bacteria/hhv2/herpes.diagram.jpg>



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