



Tikrit University  
College of Veterinary Medicine

# ***Duck diseases***

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Lecturers link

**Duck viral enteritis (DVE)**

**Definition:**

This is an acute viral disease of Ducks, Geese and Swans characterized by weakness, thirst, diarrhea, high mortality, and present lesions on all the viscera.

**Other names:**

Duck plague, DVE

**Etiology:**

The causative agent is *Herpes virus*. This virus have ability for grows well on chorioallantoic membrane at 9-14 days-old embryonating duck eggs or on duck embryo fibroblasts. It's can be produced **intranuclear inclusion bodies in hepatocytes** of infected ducks.

**Incubation period:**

The incubation period extended from 5- 7 days.

**Susceptibility:**

1. Wild and domestic ducks are affected.
2. All age groups susceptible ; however, mostly adult ducks are affected.

**Transmission:**

1. The virus can be transmitted form infected birds to health birds through the direct contact or duo to contaminated water.
2. Recovered birds remained source for viral infection.
3. Etiology may be transmitted through eating arthropods.
4. Vertical transmission has been reported experimentally.

**Clinical signs:**

**A- In case of duckling we can seen :**

1. Diarrhea.
2. Dehydration.
3. Blood-stained vent with ruffled feathers .
4. Cyanotic bill and death usually occurs in 1-5 days after infection
5. Photophobia.

**B. In case of adult ducks we can showed:**

1. Sudden death.
2. High mortality.
3. Decrease in egg production.
4. Sick birds can be seen undergo from loss appetite, weakness, ataxia and photophobia.
5. Adhered eyelids, nasal discharge, and watery diarrhea.

**P.M. lesions:**

1. Hemorrhages often occur on the mucosa of the gastrointestinal tract ,heart and ovary.
2. Edema may be present in the cervical region.
3. There may be present the crustys aggregation in the esophagus, ceca, rectum, bursa of Fabricius, with the esophageal mucosa may slough off in the young duck.
4. The spleen is usually of normal or reduced size and the liver contain petechial hemorrhages.

**Microscopically:**

Present the *intranuclear inclusion bodies* in degenerating hepatocytes.

**Diagnosis:**

1. Typical clinical signs and lesions (especially demonstration of intranuclear inclusion and the virus in tissues using fluorescent antibody technique) are diagnostic.
2. The viral agent can be isolated in 9-14 days- old embryonated duck eggs incubated by the chorioallantoic route.
3. Increasing antibodies titer for duck viral enteritis in the serum.

**Differential diagnosis:**

1. Duck enteritis must be differentiated from duck viral hepatitis.
2. Pasteurellosis (fowl cholera).
3. Newcastle disease, highly pathogenic avian influenza, coccidiosis, and other causes of enteritis.

**Treatment:**

There is no effective treatment.

**Prevention:**

1. The commercial ducks should be isolated from free-living water fowl which are reservoirs of infection.
2. The quarantine and sanitary practices should be followed to prevent the introduction of this disease.
3. Live attenuated chickens embryo derived vaccine has been used for prevent outbreaks.



## **Duck Viral Hepatitis (DVH).**

### **Definition:**

Its viral disease which responsible for economic loss in Ducks and characterized by high mortality and by ecchymotic hemorrhages in the liver. The disease occurs in ducklings less than 5 weeks of age.

### **Etiology:**

This disease caused by an Enterovirus in the family *Picornaviridae* which responsible for DVH type 1 and 2. Its chloroform resistant and does not hemagglutinate. DVH viruses stimulate a high degree of immunity in ducklings that survive infection and in inoculated adult ducks.

### **Incubation period:**

The virus has a short incubation of around 24 hrs.

### **Transmission:**

1. Wild birds are mechanical vectors of disease
2. Ducklings infected by contact with infected ducklings
3. Rodents are mechanical vectors and hosts for the virus

### **Clinical signs:**

1. Weakness
1. Closed or partially closed eyes with nasal discharge
2. Ataxia
3. Watery diarrhea
4. Mortality (5-100%).
5. Stargazing

**P.M .lesions:**

1. **Liver** is enlarged and covered with hemorrhagic foci up to 1 cm in diameter.
2. The **spleen** may be enlarged and mottled.
3. **Kidneys** may be swollen, and renal blood vessels congested.
4. Airsacculitis and peritonitis may be observed.

**Microscopically:**

Microscopically there may be areas of hepatic necrosis, bile duct proliferation, and infiltration inflammatory response.

**Diagnosis:**

1. Clinical signs and gross lesions
2. DVH type 1 can be isolated in embryonating chick or duck embryos or 1-day old susceptible ducklings and identified by serum neutralization test.
3. DVH type 2 can be identified through electron microscopy on liver or blood.
4. A direct fluorescent test on duckling liver has been reported

**Treatment:**

Treatment is of no value.

**Prevention:**

1. A modified live DHV-1 vaccine can be used for vaccination of doublings at day old administered by S/C in a single dose
2. Isolate young ducklings less than 4 to 5 weeks of age from older ducks
3. Avoid contact with wild waterfowl
4. Rodents should be eradicated.

## **Duckling septicemia**

### **Definition:**

The disease caused economic losses in all areas where ducklings are reared commercially and characterized by cause morbidity and mortality during the first two weeks of the brooding period.

### **Etiology:**

The disease caused by **Riemerella anatipestifer** is a Gram-negative bacteria, nonmotile, nonspore-forming rod. It is the principal pathogen responsible for duckling septicemia. Concurrent infections include E. coli, septicemia, salmonellosis and duck viral hepatitis.

### **Transmission**

1. The bacteria is spread through respiratory droplets.
2. The bacteria can be spread through droppings in feed and contaminated water.

### **Clinical Signs:**

1. Affected ducklings show depression and ataxia.
2. Ocular, Coughing, nasal discharge and respiratory rales.
3. Greenish diarrhea

### **P.M. lesions:**

1. Septicemic changes characterized by perihepatitis, pericarditis and fibrinous airsacculitis.
2. Hepatomegaly and splenomegaly are observed.
3. In some cases, fibrinous meningitis occur, especially in ducklings which display nervous signs.

**Diagnosis:**

Diagnosis is based on isolation and identification of **Rimerella anatipestifer** from heart blood, liver or brain tissue on either blood agar or trypticase soy agar.

**Treatment:**

- 1.Supportive therapy and administration of water soluble tetracycline may be attempted.
- 2.Enrofloxacin can be administered in drinking water at a level of 250 – 300 gm. / 1000 liters drinking water for the first 5 days .

**Prevention:**

- 1.Managemental interventions including effective sanitation between placements, avoiding overcrowding and chilling should be implemented.
- 2.Bacterins have been prepared for administration to ducklings at 1 to 2 weeks of age.
- 3.Live attenuated vaccine against serotypes 1, 2 and 5 has been developed, which is administered to ducklings by the aerosol





