



International Journal of Veterinary Sciences and Animal Husbandry



ISSN: 2456-2912

VET 2025; 10(2): 308-309

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www.veterinarypaper.com

Received: 21-11-2024

Accepted: 25-12-2024

Shibi Thomas K

Veterinary University Training
and Research Centre, 7/2, Kozhi
Pannai Road, Kottapattu,
Tiruchirappalli, Tamilnadu,
India

Jayalalitha V

Veterinary University Training
and Research Centre, 7/2, Kozhi
Pannai Road, Kottapattu,
Tiruchirappalli, Tamilnadu,
India

Incidence of duck plague (Duck viral enteritis) in Tiruchirappalli district

Shibi Thomas K and Jayalalitha V

DOI: <https://www.doi.org/10.22271/veterinary.2025.v10.i2e.2090>

Abstract

Duck plague is an acute, highly contagious and fatal disease of domestic ducks. Six to ten dead ducks, 75 days old were brought to Veterinary University Training and Research Centre, Tiruchirappalli from a farm of 3200 Kollam ducks reared. Dullness, inappetence, conjunctivitis, oculonasal discharge, soiled vent with green white watery diarrhoea, dehydration, ataxia and incoordination were the reported signs in sick birds. Post-mortem examination revealed abnormal inflammation of the liver with multifocal gray-white areas on the surface, petechial haemorrhages on the epicardial surface, fibrinous material over the mucosal surface of the trachea, diphtheritic membrane in the oesophagus, congestion of oesophagus, intestine, and cloaca. HA titre for New Castle Disease was nil in samples of spleen, lung, caecal tonsils, trachea and brain. Clostridium species was detected during culture examination of heart blood swab. Water sample analysis showed numerous colony forming units of lactose fermenter and non-lactose fermenter bacteria. The investigation revealed the death of ducks due to duck viral enteritis.

Keywords: Ducks, autopsy, water analysis, ha titre, culture examination, duck viral enteritis

Introduction

Duck rearing plays an important role in the lives of rural and nomadic people. High mortality and huge loss in the economy of these people is caused by duck plague which is an acute, highly contagious and fatal disease of domestic ducks and water fowl (Kaleta *et al.*, 2007) [5]. Duck viral enteritis (DVE) or duck plague is found throughout the globe between countries and continents as the spread of this disease is both horizontal and vertical through oral faecal discharges. There is no demarcation in sex and all age group of birds are vulnerable to DVE. Decreased egg production and hatchability, condemnation of carcasses with high morbidity and mortality (5-100%) etc are reported in this disease. This communication reports the findings of an outbreak of Duck Plague (duck viral enteritis) in Tiruchirappalli District of Tamilnadu.

Case history and observations

A duck farm was maintained in Edamalaipatti Puthur of Tiruchirappalli District, Tamilnadu with 3200 adult Kollam ducks of age group of 75 days. The birds were purchased from Kerala State. Mortality percentage was observed as 31.25 during the month of April, 2023. The clinical signs reported were lethargy, inappetence, conjunctivitis, oculonasal discharge, soiled vent with green white watery diarrhoea, dehydration, polydipsia, ataxia and incoordination. The incubation period observed in this outbreak ranged from 3 to 5 days.

On necropsy, gross lesions included abnormal inflammation of the liver with multifocal gray-white areas on the surface of the liver, petechial hemorrhages on the epicardial surface of the heart, fibrinous material over the mucosal surface of the trachea, diphtheritic membrane in the oesophagus, congestion of oesophagus, intestine, and cloaca.

HA titre for New Castle Disease was found nil in organs like spleen, lung, caecal tonsils, trachea and brain. Clostridium species was detected during culture examination of heart blood swab. Water sample analysis showed numerous colony forming units of lactose fermenter and non-lactose fermenter bacteria.

Corresponding Author:

Shibi Thomas K

Veterinary University Training
and Research Centre, 7/2, Kozhi
Pannai Road, Kottapattu,
Tiruchirappalli, Tamilnadu,
India

Treatment and Discussion

Clinical signs recorded in the present outbreak were in accordance with earlier works of Gough (2008) ^[4] and Sandhu and Metwally (2008) ^[8]. The mortality percentage was 31.25 in the present outbreak, while Sandhu and Shawky (2003) ^[9] and Carter *et al.* (2006) ^[1] recorded high mortality of 60 to 90%. Incubation period was 3-5 days in the present case, while Fenner *et al.* (1993) ^[3] recorded a 3 to 7 days period. The outbreak was recorded in June, which is in agreement with Dhama *et al.* (2017) ^[2] who reported that 80% of the outbreaks were reported from March to June. National Wildlife Health Center (2011) ^[6] recorded that the outbreak might be due to stress resulted from hot daylight and onset of breeding that triggers virus release during spring season. In Tamilnadu, an outbreak of duck plague is reported by Pazhanivel *et al.*, 2019 ^[10] in Chara Chemballi ducks Recent purchase of ducks from Kerala through vehicle transport during hot summer season along with heat induced stress and contaminated water source might be one of the contributory factors for the infection. A number of studies have observed that extreme heat and humidity from March to June might generate stress, thereby diminishing the host's immune competence and facilitating the reactivation of latent viruses. (Ostler *et al.*, 2021) ^[11].

The gross lesions of necrotic changes in the liver, degenerative changes in the lymphoid organs, enteritis, epicardial haemorrhages, congestion in the trachea, lung and kidney, diphtheritic membrane in oesophagus were also recorded by previous workers (Sandhu and Shawky, 2003; Sandhu and Metwally, 2008; OIE, 2012) ^[7].

Post-mortem investigation revealed the death of ducks due to duck viral enteritis. The farmer was advised to treat the remaining flock of birds with sulphachlorpyridazine and trimethoprim oral powder @ 1 g per litre and Vimeral @ 2 ml/litre. The birds and the entire area were disinfected with Virkon-S @ 5 ml/litre. It was also recommended that cleanliness, appropriate treatment, and booster vaccinations, if necessary, be administered prior to the emergence of the disease. The treatment was effective and the birds started to recover and no mortality was reported within a period of one week.

Acknowledgement

The authors are thankful to the Dean, Veterinary College and Research Institute, Namakkal for technical guidance and to Poultry Disease Diagnosis and Surveillance Laboratory, for the conduct of post-mortem and laboratory tests.

Conflict of Interest: None.

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How to Cite This Article

Thomas SK, Jayalalitha V. Incidence of duck plague (Duck viral enteritis) in Tiruchirappalli district. *International Journal of Veterinary Sciences and Animal Husbandry*. 2025; 10(2): 308-309.

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