

# **PATHOLOGICAL EVIDENCE OF INFECTIOUS LARYNGOTRACHEITIS AMONG LAYER BIRDS IN KERALA**

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Infectious laryngotracheitis (ILT) is an important acute and highly contagious respiratory disease of chicken causing significant economic loss in the poultry industry, world-wide. Though reports of ILT among layer flocks in India are available, confirmed cases of infectious laryngotracheitis (ILT) among layers of Kerala is lacking. The disease is characterized by severe dyspnea, coughing and rales resulting in severe production losses. Losses occur due to excessive mortality, decreased growth rates and decreased egg production. ILT virus (ILTV) belongs to the genus *Ilto virus*, family herpesviridae, subfamily alpha herpesvirinae and the *Gallid herpes virus 1* species 1. In a very severe form of disease, there will be bloody mucus in the trachea with high mortality. A milder form which causes nasal discharge, conjunctivitis, reduced weight gain and egg production has also been noticed.

A gramasree layer of four months of age was presented to the Department of Veterinary Pathology, College of Veterinary and Animal Sciences, Mannuthy, Thrissur for necropsy examination with a clinical history of expectoration of blood mixed mucus. Ten birds of the same age group were reported to have died with symptoms of respiratory distress and expectoration

of blood mixed mucus. Another layer bird of nine months old was also brought from Thrissur district. The birds were subjected to detailed postmortem examination. Gross lesions were recorded and representative tissue samples of trachea and lungs were taken in 10 percent neutral buffered formalin for histo pathological studies. Paraffin blocks were made out of the fixed tissues and sections of 4 micron thickness were prepared. The sections were subjected to routine Hematoxylin and Eosin staining. Special staining techniques for demonstration of intra nuclear inclusion bodies, as described by Luna using Lendrum and Page Green were also carried out.

On gross examination of the carcasses, the tracheal mucosa was found to be highly hyperemic and hemorrhagic with presence of blood clots mixed with mucus in the lumen. Though the crop mucosa was intact, feed contents were mixed with blood and mucus, thus indicating that it was the swallowed mucus and blood which got mixed with the feed. The lungs were edematous and showed areas of moderate congestion and hemorrhage. Microscopic examination of the H&E stained tracheal sections revealed moderate infiltration of lymphocytes in the mucosa and submucosa associated with formation of syncytia by

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Source of support: Kerala Veterinary and Animal Sciences University

mucosal epithelial cells<sup>4</sup>. The epithelial cells showed vacuolar degeneration with desquamation. The sloughed mucosal epithelial cells were seen within the tracheal lumen and high magnification of the epithelial cells revealed intranuclear inclusion bodies<sup>5</sup>. The tracheal sections were also subjected to special staining procedures using Lendrum and Page Green as described by Luna.

By employing Page Green stain, bright red intranuclear inclusion bodies were demonstrated within the tracheal epithelial cells whereas connective tissue and muscles took green and red colours respectively. In Lendrum technique, the inclusion bodies appeared as deep magenta coloured bodies against a faint yellow stained background. The observations have shown that laryngotracheitis exist among the layers of Kerala, especially in Palakkad and Thrissur districts, though official reports are lacking. The findings also necessitate the isolation of virus and its strain identification<sup>6</sup>. Page Green has been identified as an effective histopathological stain for demonstration of viral inclusions

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