Infectious Laryngotracheitis (ILT OR LT)

- An acute, highly contagious disease of fowl, characterized by respiratory distress, slow spread and high mortality.

- Airsacculitis in uncomplicated outbreaks is uncommon.

- Doesn’t occur in birds less than 2-weeks-old and most commonly occurs in chicks over five weeks of age.

- Can be a serious problem in roasters.

- Occurs naturally in pheasants.

- Reported from most countries.
Etiology

HERPESVIRUS - an enveloped virus

The virus is heat labile but can remain viable in cool weather.
Incubation Period

- 6 to 12 days following natural exposure
  - The long incubation period allows easy spread of the virus prior to the onset of clinical signs
Comment

- Herpesviruses may remain dormant in the host
- LT virus exhibits this. It’s site of latency is in the dorsal root ganglion
- Chickens may become infected, lose immunity, and show clinical signs again when stressed. This explains “mystery outbreaks”. Vaccinated or field infected birds can shed the virus indefinitely.
Course of the Disease

- Most chickens recover in 10-14 days. Mortality will usually decline within one week of onset of clinical signs.

- Extremes of 1-4 weeks.
Mortality

- Ranges from 5 to 70%
- Usually between 10 & 20%
- Mortality in broiler flocks may double daily until it reaches 200 per day.
Method of Spread

- Contact with infected birds within a house through the upper respiratory tract or intraocular route
- From carrier birds for up to 2 years
- Vaccinated flock (2 wks.) chicken embryo origin (CEO) vaccine spreads readily while the tissue culture (TCO) vaccine is less likely to spread
- Mechanical transmission – Contaminated equipment & litter spreads the virus from farm to farm
- Live-haul trucks
- There is evidence of wind transmission
Signs

- Sudden death with bloody beaks (choked)
- Swollen, watery eyes with most rales, coughing, and gasping
- Extended head with mouth breathing and “squawking”
- Bloody tracheal casts on equipment & house walls
- 10-20% decrease in egg production
- May have mild forms of above with low virulence strains
Conjunctivitis
Conjunctivitis
Conjunctivitis
Conjunctivitis
Gasping
Postmortem Lesions

- Edema and congestion of the conjunctiva and infraorbital sinus
- Sticky, blood tinged mucus in the laryngeal area
- Varying amounts of blood and blood-tinged mucus in the trachea
- In the late stages and in dead birds, cheesy cores may be in the trachea
- Very few carcasses condemned but there will be a high number of DOAs
Blood in Trachea
Chronic Tracheitis
Chronic Tracheitis
Differential Diagnosis

- Infectious bronchitis
- Newcastle disease
- Fowl pox
Diagnosis

- **History + below**
  (i.e., birds which are coughing with expulsion of blood will show the most severe gross lesions)

- Histopathology of tracheas should be taken from birds with very mild or early signs because once the tracheal mucosa sloughs, there will be no diagnostic inclusions – typical intranuclear inclusion bodies. Syncytial cells will be formed. And look for inclusions in the eye lid.

- VI from trachea in CAM of embryos (<3 days) (Plaques). Send this for histopathology.

- Inoculate suspect material into susceptible chickens.
Pocks on CAM
Pocks on CAM
Syncytial Cell & Inclusions
Treatments

- None specific
- Broad spectrum antibiotics to reduce secondary infections
- You can vaccinated ahead of the disease
Prevention

- **Vaccination** – Vaccine costs approximately $3-$4 / 1000 doses
  - **Eye drop vaccine** – for lasting immunity administered at 10 and 16-18 weeks of age (layers and breeders) – use tissue culture origin or CEO vaccine.
  - **Water vaccine** – quick method for layers, breeders, & broilers – CEO vaccine titer must be over $10^5$ for successful mass application. TCO is not recommended for mass application.
  - **Spray** – to establish good lasting immunity – should vaccinate at 3-4 weeks & 12-13 weeks and after molt.
Comment

- Since the incubation period of LT is long, 6-12 days, vaccination ahead of an outbreak is feasible.

- Vaccination crews should clean thoroughly and change clothes and decontaminate between premises.

- Catch nets and other equipment should be properly decontaminated.
Comment

- Keep in mind that LT can be spread very easily from farm to farm by mechanical fomites (bags, egg flats, and equipment). Personnel and chicken carriers are the most likely methods of spread.

- Backyard flocks are extremely hazardous as they may serve as a reservoir to carry the disease organism over from outbreak to outbreak.
Comment

- Even vaccinated flocks can spread the disease so once one company starts vaccinating broilers, every company in the area most also do it.
- It can cost $0.05 in lost body weight to vaccinate a flock for LT.
This virus is heat sensitive. After an outbreak, the house should be closed up with brooders turned on to raise the internal temperature of the house to 100°F for 100 hours.