Vaccine-like Infectious Laryngotracheitis (ILT)

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Introduction

Infectious laryngotracheitis (ILT) is a highly contagious, respiratory disease of chickens caused by a herpes virus.

History

Natural occurring (field strain) ILT in chickens was first described in 1925. Originally, ILT caused a decrease in egg production and death.

In USA, the frequency of ILT has been increasing over the past several years with the majority of cases occurring in areas with a large amount of unvaccinated broiler flocks in close proximity to vaccinated commercial egg-layers. Most of the ILT outbreaks in USA have caused milder clinical signs and have been associated with the vaccine-like strain virus.

Species Affected

While chickens are the main host for ILT, laryngotracheitis has also been reported in pheasants, partridges and peafowl. Natural infection of turkeys with the ILT virus has also been described.
Humans cannot get ILT.

Symptoms

Some of the symptoms in **mature birds** with vaccine-like strain infections have been:

1. A mild drop in egg production
2. A slight increase in mortality, 1 to 2% (mortalities may reach 50%)
3. Coughing (snicking)
4. Watery eyes
5. Swollen sinuses
6. Nasal discharge

Some of the symptoms in **young birds** with vaccine-like strain infections have been:

1. Coughing
2. Sneezing
3. Nasal discharge
4. Blood-tinged mucus
5. Difficulty breathing

Finally, clinical signs generally appear 6 to 12 days after natural exposure to the ILT virus. Birds that have received the chicken embryo origin ILT vaccine may show symptoms later on and shed the virus. Symptoms of ILT and shedding of the virus can occur when the bird has been stressed.

Transmission

ILT is spread from infected birds to the upper respiratory system and eyes of other birds. Gaps in the biosecurity program are responsible for most ILT outbreaks. Equipment or manure that is contaminated with the ILT virus can spread the disease to other birds. Also, ILT can be airborne for up to 500 meters (~0.3 miles).

Treatment
Currently, there are no drugs that reduce clinical signs.

Vaccination
Three types of ILT vaccines are used:

1. Tissue culture origin (TCO) vaccines have a relatively low level of infectiousness and are administered by an eye drop. A disadvantage of TCO vaccines is that the level of immunity is limited; the advantage of this is that it causes a less severe reaction and the birds do not shed the virus.

2. Recombinant ILT vaccines have been developed. These recombinant ILT vaccines can be administered as a single dose, by subcutaneous injection, on day 1 or in older bird. It is reported to provide ILT immunity for up to 60 weeks. The recombinant vaccine does not cause shedding of the virus; therefore unvaccinated birds are not placed at risk. It has also limited level of immunity and birds may develop mild clinical signs of ILT. These vaccines are also more expensive.

3. Chicken embryo origin (CEO) vaccines can be administered through an eye drop or mass vaccination, such as spray or water. While these CEO vaccines result in a better immunity, it can cause severe clinical signs and disease due to the increased level of infectiousness. Also, chickens treated with CEO vaccine can become carriers of the virus, putting unvaccinated flocks at risk. In Washington, chick embryo origin vaccine is only for sale at the discretion of the State Veterinarian.

Dead Bird Disposal
Mortalities due to ILT are a potential source of infection. Because, airborne infections have been reported, it is imperative that proper dead bird disposal occurs at all times.

Composting

1. Follow guidelines in the **WSDA Livestock Disposal Manual**
   http://agr.wa.gov/FoodAnimal/AnimalHealth/docs/LivestockDisposalManual10709.pdf

2. Ag Bags© are an acceptable mechanism for animal compositing on site that reduces disease transmission associated with long distance transport of poultry.
   http://www.ag-bag.com/pdf/COMPOST.pdf

Rendering
Ensure that ILT is not spread by dead birds in route to the rendering plant. Notify the rendering company to schedule collection of poultry carcasses from the infected farms or barns.

Live Haul Transportation and Processing
Catch crews at commercial poultry farms, should not go to other farms after collecting birds from infected farms. Processing plants management should select the best route to avoid other poultry farms. Trucks and crates should be cleaned and disinfected after transporting chickens with ILT. Processing of birds infected with ILT should be scheduled for the last shift of the day.

Manure Management
It is best not to move manure from farms where ILT has been confirmed. Manure should be covered if it must leave the farm. Enhanced biosecurity must be used to prevent the spread of infection.

Cleaning of Poultry Houses
The ILT virus is sensitive to high temperatures. After emptying a poultry barn, turn off the fans and heat to 100^0 F for 3 days to kill the ILT virus. Thorough cleaning and disinfection are important steps to eliminate the ILT virus. Wait at least 3 weeks after heating, cleaning, and disinfection before putting birds back in the poultry house.

What to do if you suspect ILT in your flock?
1. Contact your veterinarians, WSDA Avian Health Program (1-800-606-3056), or Washington State University, Avian Health and Food Safety Laboratory (1-253-445-4537).
2. Notify all companies that regularly visit your farm.
3. Postpone visits by service representatives unless the need is essential.
4. Change clothing and footwear, and wash your hands when travelling between barns.
5. Try to limit the number of people work or visit the infected barn.
6. Do not wear farm clothing or footwear off the farm.
7. Avoid visiting other poultry farms.

Additional Resources
http://www.merckvetmanual.com/mvm/index.jsp?cfile=htm/bc/206700.htm
http://www.ces.ncsu.edu/depts/poulsci/tech_manuals/laryngotracheitis.pdf
http://partnersah.vet.cornell.edu/avian-atlas/search/disease/499
http://partnersah.vet.cornell.edu/avian-atlas/node/599
http://extension.umd.edu/publications/PDFs/FS821.pdf

Conclusion
Control of ILT requires early recognition, enhanced biosecurity, cleaning and disinfection of affected barns and a minimum down time of 3 weeks is recommended. To manage ILT and minimize the impact on the poultry industry, a collaborative effort by poultry producers, small poultry flock owners, veterinarians, diagnostic laboratories, allied industries and government agencies is needed.