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Texas Agricultural Extension Service

Infectious Laryngotracheitis

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Laryngotracheitis (LT) is not an established disease in Texas. This gives Texas poultry producers a production cost advantage not enjoyed in states where the disease is universally present. If LT were to become firmly established in Texas, this advantage would be lost. The expense of vaccines alone would add more than \$1,000,000 annually to broiler meat and egg production costs. Other direct and indirect costs of "living" with the disease would be even greater.

Laryngotracheitis is a respiratory disease of chickens caused by a herpesvirus and characterized by a number of signs, including coughing, gasping, watery eyes, swollen sinuses, nasal discharge and expectoration of bloody exudate. The virus enters the respiratory system or ocular area, replicating in the cells which line the larynx and trachea and causing cells in this area to die. As the lining is sloughed, the underlying blood vessels are exposed, causing difficult breathing and suffocation. The typical sign is gasping for air. The chicken must stretch its neck forward and upward with each inspiration. Blood is coughed out, splattering walls and floors. But many present-day outbreaks are of a mild nature, resembling a mild Newcastle disease or infectious bronchitis. Disease losses in affected flocks may be severe as a result of lowered production (both egg and meat), elevated condemnation rates (when broilers are processed) and mortality (up to 50 percent in severe outbreaks).

Chickens are primarily affected, but in rare instances LT has been found in pheasants, peafowls and turkeys. The virus has never been recovered from other avian species and efforts to introduce the virus into laboratory mammals, such as rabbits and rodents, have been unsuccessful.

The disease usually enters an area with the introduction of carrier birds or by the movement of man and contaminated equipment. Once introduced to a susceptible flock, the LT virus spreads rapidly by contact. Birds which recover from the disease may continue to shed the virus for prolonged periods of time.

The incubation period of LT is usually 6 to 15 days, but the disease has been found as soon as 2 days following natural exposure.

In endemic areas a special program of surveillance should be activated, using strict rules and regulations regarding proper vaccination of all chickens.

Laryngotracheitis modified tissue culture vaccine may be used in Texas without restriction. Chick Embryo Origin (CEO) vaccine may be used upon tentative or confirmed diagnosis of LT

by an approved laboratory and upon written agreement between the Texas Animal Health Commission and flock owners.

According to the manufacturer, the modified live virus chicken tissue culture origin vaccine does not offer the same degree of protection usually obtained from more virulent products. But with it there is no danger of seeding down the premises with LT virus which can spread and cause the disease.

When a CEO vaccinated flock is moved, during the shedding period, next to an older flock that was never vaccinated, the virus starts spreading through the older birds. It gradually increases in virulence and eventually may cause an LT outbreak. If a CEO vaccine is used it should be administered to all flocks on a farm.

Containment and eradication of LT involve many factors, including the judicious use of vaccines, quarantine and depopulation by attrition.

The following control program should be initiated following an outbreak:

Producers

- When birds are to be introduced to the premises, determine their source and the vaccination program used with them. New or sanitized crates should be used for shipment. Birds vaccinated with CEO vaccine can become infected with LT and shed the virus without showing marked signs of the disease. A tight security program should be initiated on all vaccinated flocks. CEO vaccinated birds should not enter a clean (non-quarantined) area.
- Keep disinfectants available and use as indicated. The virus is readily destroyed by many disinfectants and is not highly resistant outside the host. A solution of 3 percent Cresol or 1 percent lye will inactivate LT virus in less than a minute. Most products from reputable companies will perform satisfactorily if properly applied.
- Provide an outside receptacle for feed slips. Drivers should not enter houses.
- Do not enter poultry houses on other farms regardless of health status. Keep all visitors away from poultry houses. Install "no admittance" signs.
- Lock all poultry houses and arrange an inside latch so that a visitor cannot follow you into the house when you are working.
- Dead birds should be removed from the house only in plastic bags and buried or incinerated. Pits should be covered so that rodents or other predators cannot spread the disease. The disease can be spread by improper dead bird disposal and failure to practice sanitation procedures.

- Growers and servicemen should not own backyard flocks. Evidence gathered in Pennsylvania indicates that backyard chicken flocks may be carriers and constitute a reservoir of the disease. Usually only a small percentage of the birds in the flock remain carriers, but these serve to perpetuate the disease on the premises and may spread it upon contact with susceptible chickens. Carrier birds may eliminate the virus for 24 months.
- Do not leave stray chickens (not even one) in the house when a flock is moved. All-in, all-out practices should be followed on a premises basis.
- When birds are moved out of a house where there has been an LT outbreak, keep the house closed with the curtains over the sides for at least 2 weeks. The virus is normally destroyed at 99 degrees F. The lower the temperature, the longer the virus will survive outside the chickens.
- Do not remove litter for at least two broiler growouts following an outbreak or vaccination with CEO vaccine. Litter from breeder hens and commercial layers should be removed following the movement of birds. Litter from infected flocks should be composted under plastic before spreading on fields.
- When LT is suspected, the grower should place four fresh, dead birds in a heavy plastic bag for transportation to the diagnostic laboratory. Live, sick birds should be transported in a disposable crate. Suspect flocks should be treated as positive until a diagnosis is made. Servicemen handling infected birds should change clothes and disinfect vehicles.

Visitors

Unless absolutely necessary, visitors should not be allowed on an infected premises. Vaccination crews, servicemen and live-haul crews should conform to the following procedures:

- Park vehicles away from poultry houses near the clean-up area.
- Wear disinfected boots, clean overalls and disposable caps.
- Prior to leaving the farm, place coveralls and other washable items in plastic bags to be laundered. Articles that cannot be disinfected should be left on the farm.
- Shower, wash hair, clean fingernails, etc. before entering another farm.

Feed Delivery

- Delivery men should stay out of houses.
- Clean clothes should be worn daily.

- Feed tickets should be left in a message box.
- Feed should be delivered to infected premises last. During infection, deliveries should be kept to a minimum.
- After entering an infected area, trucks should be cleaned.

Egg Processors

- Producers should clean and sanitize floors of egg and work rooms.
- Clean and disinfect footwear daily.
- Sanitize plastic egg flats, racks and other equipment before leaving or returning to the farm. Fiber egg flats should be destroyed.
- Delivery men should not go beyond the egg room. Wear clean overalls while on the farm and leave them at the farm.
- Clean and disinfect the inside and outside of vehicles that have entered an infected area.

Catching Crew

- Clean, freshly laundered clothes should be worn daily (and changed between farms).
- Boots should be disinfected before and after working in a poultry house. Sneakers should be laundered before entering a farm.
- Disposable lunch bags should be used and left on the farm.
- Crew members must not own or visit backyard poultry.
- Clean and disinfect all catching equipment (hooks, nets, fences, etc.) before leaving a farm.
- Clean and disinfect the interior and exterior of the vehicle used to haul the catching crew.
- Crew should shower, wash hair and launder clothing when arriving home.

Summary

- Producers must conform to strict sanitation and management procedures to prevent the introduction or movement of the LT virus to new locations. Emphasis must be placed on isolation. Disease control is expensive but its alternatives can be disastrous.
- Programs to control flies, rodents, wild birds, backyard poultry and pets should be ongoing. Backyard, game and specialty fowl are located throughout the country; are

continually exchanged, traded and shown; and often are not vaccinated.

- Houses that contained LT positive flocks should be thoroughly sprayed with a disinfectant.
- Laryngotracheitis virus can survive for long time periods outside the chicken, depending upon moisture and temperature.
- Recovered or carrier flocks may continue to shed the virus for prolonged periods of time. The house must be considered contaminated.
- CEO vaccinated birds can become infected with LT and shed the virus without showing marked signs of the disease. Vaccinated flocks should be considered infected.
- Vaccination can prevent losses. When possible and practical, modified tissue culture vaccine should be used.
- Not all outbreaks of LT are of the same severity. Parental immunity, age, vaccination history and the virulence of the particular LT virus can influence the severity of disease observed.
- Chick deliveries should be made to contaminated farms on the last trip of the day. The chick bus should be properly decontaminated before reuse.
- Egg flats from infected or CEO vaccinated premises are to be returned to infected houses; disposed of; or disinfected and returned only to the farm from which they came.

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