Infectious Laryngotracheitis Disease Prevalence Patterns

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Vaccinal Infectious Laryngotracheitis (VLT)

- Caused by a chicken herpes virus, indistinguishable from live ILT-Chicken Embryo Origin vaccine virus.
- Chicken-primary natural host
- Worldwide distribution in countries with intensive and concentrated poultry growing regions.
- Mild forms: 5% morbidity, 1-2% mortality
- Severe forms: 90-100% morbidity, 10-20% mortality, daily doubling mortality.
- Infected birds are carriers for life due to virus latency.
- Virus spread by infected birds, contaminated equipment, clothing, footwear, dust, feathers, etc. ("Blow-in and Walk-in")

Vaccinal Infectious Laryngotracheitis

- Incubation period
  - Interval between infection to the virus and the onset of clinical signs
  - 6-12 days
  - Birds are contagious during the incubation period!

- LT Control and Eradication requires a coordinated effort

Poultry Farm Density and Farm Traffic Patterns Impact ILT Epidemiology

DMV Poultry Farms

DMV LT Breaks 2011
ILT Geographic Distribution in DMV

1988  

1994  

2006

VLT Signs and Lesions

VLT Signs and Lesions

VLT lesions

Mild  

Severe

Early VLT very similar to IBV, NDV lesions
Which Respiratory Disease?

Respiratory Disease RT-PCR Screening Panel can sort it out in 3hrs. (AI, NDV, IBV, LT, MG, MS Real Time PCR)

<table>
<thead>
<tr>
<th>Disease</th>
<th># Cases</th>
<th>Ave. Age</th>
<th>Ave. Mortality</th>
<th>Disease</th>
<th># Cases</th>
<th>Ave. Age</th>
<th>Ave. Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>VLT</td>
<td>4</td>
<td>30d (21-42d)</td>
<td>2.1/1000 (1.3-3/1000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEO LT Vaxn Rxn</td>
<td>160</td>
<td>38d (21-60d)</td>
<td>3.0/1000 (0.5-17/1000)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>IBV Resp. Complex</td>
<td>141</td>
<td>41d (26-57d)</td>
<td>3.4/1000 (2.5-25/1000)</td>
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<td></td>
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</tr>
<tr>
<td>Lameness- Colibacillosis</td>
<td>122</td>
<td>43d (21-64d)</td>
<td>3.4/1000 (1.1-15/1000)</td>
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</tbody>
</table>

2012 Common Non-LT Respiratory Viruses

Common IBV field isolates

<table>
<thead>
<tr>
<th>Year</th>
<th>2008</th>
<th>2010</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBV</td>
<td>20%</td>
<td>15%</td>
<td>10%</td>
</tr>
<tr>
<td>AI</td>
<td>30%</td>
<td>25%</td>
<td>20%</td>
</tr>
<tr>
<td>NDV</td>
<td>5%</td>
<td>10%</td>
<td>15%</td>
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</tbody>
</table>

IBV Severity

- Suboptimal Vaccination Programs
  - Split NDV, IBV live vaccination
    - longer duration of vaccine reaction, increased risk of secondary Colibacillosis.
  - Uneven NDV/IBV vaccination- rolling reaction/ adverse vaccine reaction.
  - LT CEO vaccination – increased severity of early and late respiratory complex
Wet Litter and High levels of Ammonia predispose to Respiratory Dz

The windpipe’s little sweepers: the cilia

Seasonality of Respiratory Diseases

Factors Impacting Respiratory Disease:
- Vaccination Program
- Flock Interval, Clean-out
- Bird Density
- Environmental stress
- Bacterial Infections
- Breed
- Respiratory Dz Severity
Predisposition to Respiratory Disease

- **Immune suppression**
  - Infectious - infectious bursal disease, chicken anemia virus, Marek's, REV, ALV, HEV
  - Stress - air quality, temperature, litter, water, lights,
- **Pathogen load**
  - stocking density, down time between flocks, built-up litter, multi-age facilities.
  - Prevalence of disease agents in the area
- **Biosecurity (or lack thereof)**

**Important Stressors**

- Poor ventilation - high ammonia levels
- Daily temperature extremes
  - cold, damp nights & early mornings, hot and dry midday and afternoon
- Seasonal changes(e.g., Fall-Winter, Dry-Wet)
- Wet litter, overcrowding, drafty housing
- Uneven NDV/IBV and LT CEO vaccination - risk for rolling reaction
Nonstarter chicks = poor maternal antibody intake, poor d1 and boost vaccine take, @risk for adverse vaxn reaction and secondary bacterial infection.

Take Home Messages

• The road to success or failure starts immediately after the last flock is moved.
  – Downtime isn’t really down time
  – It’s an opportunity to set the next flock for success

• Poultry husbandry practices and housing conditions influence disease severity

Thank You for your attention!