Surveillance of the Asian Longhorned Tick in Virginia

Presented By:
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Tick Surveillance Coordinator
Virginia Department of Health
Haemaphysalis longicornis ticks have been collected in 18 Virginia counties and cities, as of October 15, 2018.

Jurisdictions where H. longicornis have been collected (as verified by the National Veterinary Service Lab)

- VDH Tick Drag Collections
- VDACS Livestock Collection
- FCDOH Tick Trap
- VDH Animal Shelter Collections
- VDACS Wildlife Collection
- UTK Tick Drag Collections
Haemaphysalis longicornis ticks have been collected in 30 Virginia counties and cities, as of December 2019.

Jurisdictions where *H. longicornis* have been collected (as verified by the National Veterinary Service Lab)

Jurisdictions in which VDH conducted tick surveillance (dragging) and where *H. longicornis* was not collected.

Jurisdictions *H. longicornis* was collected via tick drags.

VDH Tick Drag Collections  VDACS Livestock Collection  FCDOH Tick Trap
VDH Animal Shelter Collections  VDACS Wildlife Collection
UTK Tick Drag Collections

Larval peaks: fall
### Observed Seasonal Population Trends for Various Life Stages of *Haemaphysalis longicornis* in Virginia (2019)

<table>
<thead>
<tr>
<th></th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nymph</strong></td>
<td>25</td>
<td>255</td>
<td>14</td>
<td>194</td>
<td>721</td>
<td>0</td>
<td>188</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Larvae</strong></td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>14</td>
<td>3</td>
<td>0</td>
<td>158</td>
<td>0</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td><strong>Adult</strong></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>8</td>
<td>119</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Nymph peaks: spring, summer, early fall

Adult peaks: summer only

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<th>Month</th>
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<th>Larvae</th>
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<td>March</td>
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Positive hosts for Asian longhorned ticks: dogs, white-tailed deer, raccoon, cows, humans, Virginia opossums, cats, coyote, elk, red fox, sheep, goat, gray fox, horse, Canada goose, chicken, eastern cottontail, groundhog, red-tailed hawk, striped skunk, and woodchuck.

- Other animals have been screened, but the tick has yet to appear on them.
Asian Longhorned Tick as Vector Species

Severe Fever with Thrombocytopenia Syndrome (SFTS) Virus - Asian variant of the Heartland virus, Phlebovirus (Bunyaviridae)

Alpha-Gal

Asian Variants of:
• Lyme disease - Asian variant of *Borrelia burgdorferi*
• Ehrlichiosis - Asian variant of *Ehrlichia chaffeensis*
• Anaplasmosis - Asian variant of *Anaplasma phagocytophilum*
• Japanese spotted fever - *Rickettsia japonica*
• Powassan virus - Flavivirus
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"Failure of the Asian longhorned tick, Haemaphysalis longicornis, to serve as an experimental vector of the Lyme disease spirochete, *Borrelia burgdorferi sensu stricto.*" Breuner et. al 2020
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Monitoring the Spread

• Our current options:

1. Active Surveillance
   • Dragging

2. Passive Surveillance
   • Virginia Tick Survey
   • Animal Hospital Tick Survey
   • In the works
Virginia Tick Survey

Citizen Science Project
• We identify any ticks that are sent to us to species.
• Provide information about potential pathogens that each particular species may carry.
• Goal: to provide expert identification from a reliable source so that if a person becomes ill, they can relay that information to their doctor.

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Questions?