# Surveillance of Ticks on Companion Animals in Alberta

## 2014 Summary

Alberta Government

2014 marked the 8th year for Alberta Agriculture and Rural Development's *Surveillance of Ticks on Companion Animals* program. The program originated in 2007 in collaboration with veterinarians in Alberta, and expanded in 2013 through a partnership with Alberta Health and Alberta Health Services. The *Enhanced Tick Surveillance Program* now monitors the types of ticks that attach to companion animals, livestock, and humans, as well as those found in the environment.

Certain species of tick, such as *Ixodes scapularis* and *Ixodes pacificus*, are considered to be possible carriers of *Borrelia burgdorferi*, the bacteria that causes Lyme disease. All ticks received that are possible carriers of *Borrelia burgdorferi* are further tested for the presence of the bacteria to better understand the risk of Lyme disease in Alberta.

### Program Highlights:

- 1,008 ticks from 679 host companion animals were submitted, most frequently in the months of May, June and July.
- Ticks were primarily recovered from dogs (92%), with cats (3%), horses (3%) and others (rabbits, cows, etc.) comprising the remainder of submissions.
- Of the 679 submissions*, 269 hosts animals had associated travel outside of Alberta in the two weeks prior of the submission, 348 host animals had no associated travel, and 62 submissions were received with no travel history.
- Of the 113 submissions having ticks identified as possible carriers of *Borrelia burgdorferi,* 12 tested positive for presence of the bacteria

### Distribution of Tick Species:

| Tick species | # submissions* | % | # ticks | % | Travel outside of Alberta 2 weeks prior to submission? | | |
|---|---|---|---|---|---|---|---|
| | | | | | Yes | No | Unknown |
| *Dermacentor variabilis* | 320 | 47.13 | 486 | 48.21 | 187 | 106 | 27 |
| *Ixodes scapularis* | 71 | 10.46 | 77 | 7.64 | 18 | 48 | 5 |
| *Ixodes kingi* | 67 | 9.87 | 89 | 8.83 | 6 | 51 | 10 |
| *Dermacentor andersoni* | 59 | 8.69 | 71 | 7.04 | 17 | 36 | 6 |
| *Rhipicephalus sanguineus* | 56 | 8.25 | 94 | 9.33 | 15 | 34 | 7 |
| *Dermacentor albipictus* | 54 | 7.95 | 125 | 12.40 | 6 | 47 | 1 |
| *Ixodes* spp. | 28 | 4.12 | 29 | 2.88 | 7 | 18 | 3 |
| *Ixodes pacificus* | 13 | 1.91 | 18 | 1.79 | 11 | 1 | 1 |
| *Haemaphysalis leporispalustris* | 8 | 1.18 | 16 | 1.59 | 1 | 5 | 2 |
| *Amblyomma americanum* | 1 | 0.15 | 1 | 0.10 | - | 1 | - |
| *Ixodes ochotonae* | 1 | 0.15 | 1 | 0.10 | 1 | - | - |
| *Otobius megnini* | 1 | 0.15 | 1 | 0.10 | - | 1 | - |
| **TOTAL** | **679** | | **1,008** | | **269** | **348** | **62** |

*A single submission includes all ticks recovered from an individual host animal

### Results of Testing for the Presence of *Borrelia burgdorferi*:

| Real-Time PCR Result$^{\sigma}$ | # submissions‡ | % | # ticks | % | Travel outside of Alberta 2 weeks prior to submission? | | |
|---|---|---|---|---|---|---|---|
| | | | | | Yes | No | Unknown |
| Positive | 12 | 10.91 | 14 | 11.48 | 3 | 8 | 1 |
| Negative | 98 | 89.09 | 108 | 88.52 | 32 | 58 | 8 |
| **TOTAL** | **110** | | **122** | | **35** | **66** | **9** |

$^{\sigma}$A positive *Borrelia burgdorferi* result by Real-Time PCR indicates the presence of bacterial DNA. The presence of bacterial DNA does not indicate whether the bacterium is viable or whether the bacterium has caused an infection.

‡3 of the 113 submission identified as *Ixodes* ticks (excluding *Ixodes kingi*) were unsuitable for analysis.

This report summarizes the results of all submissions of companion animal origin in 2014. Submissions are voluntary from provincial veterinarians, who are important partners in monitoring the risk of Lyme disease in Alberta.

Refer to Alberta Health website for full results of the *Enhanced Tick Surveillance Program*.

For more information, visit www.agriculture.alberta.ca/ticks.