Ticks: 2021 Update on Diseases and Prevention Strategies

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Ticks – Fast Facts

- Vector Bacterial, Viral, Allergic Syndromes
- Rapidly developing disease profiles
  - Expanded ranges, species and diseases
- Hard shell vs. Soft shell
- Arachnids
- Hunt via Questing

Disease Transmission

- Different attachment times for different diseases
- Length of attachment → disease success
- Anaplasmosis 12-24 hours needed to transmit
- Powassan Virus – Nymphal Deer Ticks transmitted POW to mice in 15 minutes
- Lyme – > 24hrs (CDC)
- RMSF –> IMMEDIATE???

Myth #1 – Ticks are only active in summer.
  - Ticks take one to three years to complete their life cycle depending on species and are active all year long.

Myth #2 – Ticks prefer the woods.
  - Some tick species such as American Dog Tick and Gulf Coast Tick prefer open habitat such as pasture and field.

Myth #3 – Takes a day to transmit disease.
  - The disease transmission time varies depending on tick species, life cycle stage and what the disease is.

Ohio Ticks

- Brown Dog Tick
- American Dog Tick
- Black Legged Tick
- Lone Star Tick
- Gulf Coast Tick
- Longhorned Tick

https://odh.ohio.gov/wps/portal/gov/odh/know‐our‐programs/zoonotic‐disease‐program/resources/tickborne‐diseases
American Dog Tick – *Dermacentor variabilis*

Photo Credit: https://tickencounter.org/

Black Legged (Deer) Tick – *Ixodes scapularis*

Photo Credit: https://tickencounter.org/

CDC Data 2014

CDC Data 2019

Annual Cases of Lyme Disease in the US

2019 – 300,000 to 400,000 Cases estimated (CDC)
Lone Star Tick – *Amblyomma americanum*

- Larva
- Nymph
- Adult Male
- Adult Female

Photo Credit: https://tickencounter.org/

Gulf Coast Tick – *Amblyomma maculatum* (Koch)

- Long history in the USA (Koch – 1844)
- Associated with Screwworm infestations originally
- Large mouthparts, large damage to host
- Very similar to American Dog Tick in appearance and host range – open areas/meadows/pasture

- **Diseases:**
  - *Rickettsia parkeri*
  - Canine Hepatozoonosis
  - Leptospirosis
  - Heartwater
  - Tick Paralysis

Photo Credit: https://tickencounter.org/
Asian Longhorned Tick
*Haemaphysalis longicornis*

Brown Dog Tick
*Rhipicephalus sanguineus*

Disease Transmission? **YES**

Theileria – similar to Malaria in humans, but affects livestock, primarily cattle.

Protozoal parasite in saliva

No approved Veterinary acaricides currently

**Correct Removal of a Tick**
Tick Control - Personal

Permethrin Treated Clothing
- Purchased
- Self Treat

Repellents – Topical
- DEET
- Picaridin
- IR3535

Create a Tick-safe Zone to Reduce Blacklegged Ticks in the Yard
- Remove leaf litter.
- Clear tall grasses and brush around homes and at the edge of lawns.
- Place a 3-ft wide barrier of wood chips or gravel between lawns and wooded areas to restrict tick migration into recreational areas.
- Mow the lawn frequently.
- Stack wood neatly and in a dry area (discourages rodents).
- Keep playground equipment, decks, and patios away from yard edges and trees.
- Discourage unwelcome animals (such as deer, raccoons, and stray dogs) from entering your yard by constructing fences.
- Remove old furniture, mattresses, or trash from the yard that may give ticks a place to hide.

The Connecticut Agricultural Experiment Station has developed a comprehensive Tick Management Handbook for preventing tick bites.

Take Homes
- Tick diseases are prevention diseases
- All FOUR Seasons
- New diseases/species/ranges
- Bacterial, Viral, Allergic
- Need a personal plan for safety
- Permethrin Treated Clothes + Repellants
- Companion Animals can break biosecurity
- Proper Removal
- Submit Tick for Testing