



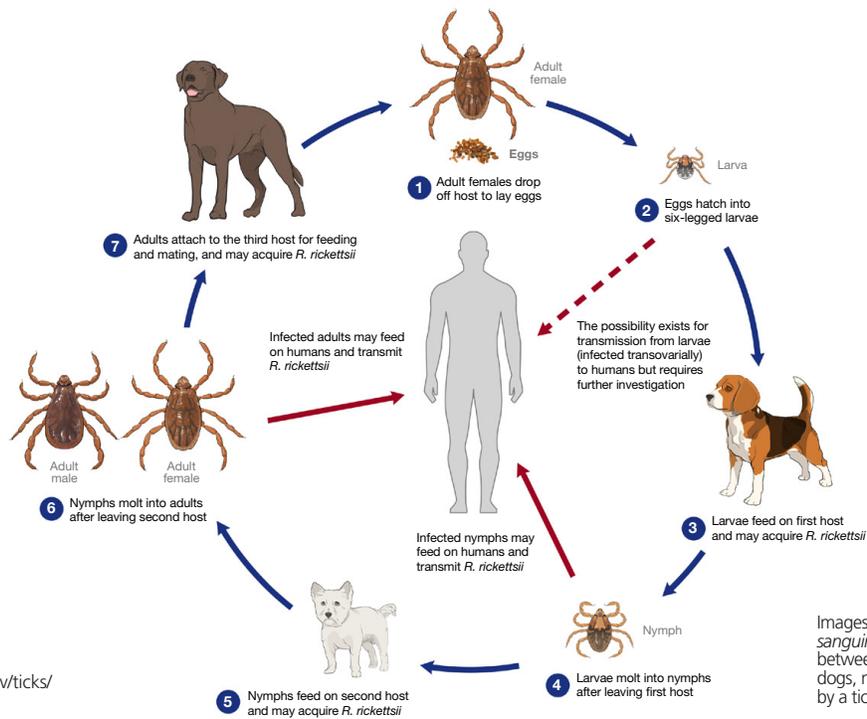
Hard Tick Control Protocol



Background

There are about 80 species of ticks in the U.S. and 865 species worldwide. Ticks have become an increasing problem in the United States due to their ability to transmit new disease pathogens and their spread to new geographic locations. The two most well-established families of ticks are hard ticks (Ixodidae) and soft ticks (Argasidae). This protocol focuses on hard ticks since they are the most commonly encountered family of ticks.

Life cycle of *Rhipicephalus sanguineus* and the transmission of *Rickettsia rickettsii* (the causative agent of Rocky Mountain Spotted Fever)



Source: https://www.cdc.gov/ticks/life_cycle_and_hosts.html

Understanding Ixodidae Habits and Life Cycle

- Ticks can live several months without feeding.
- Ticks can live for three months to three years before becoming adults.
- Females die after laying eggs and males die after mating.
- Obligate blood-feeders requiring a host animal for food and development.
- Many of the ticks encountered by PMPs are hard ticks which are typically three-host ticks.
- In three-host ticks the larva and nymphs feed one time on the host then drop to the ground, digest their meal and wait on another host.
- Ticks find their hosts by detecting animals' breath and body odors, or by sensing body heat, moisture and vibrations.
- Ticks can't fly or jump, but many tick species wait in a position known as "questing." Questing is the behavior where ticks hold onto vegetation with their third and fourth pair of legs. They hold the first pair of legs outstretched, waiting to climb onto the host.



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Common Ixodidae Encountered by PMPs

MALE	FEMALE	COMMON NAME	IDENTIFYING CHARACTERISTICS	SIZE	HOSTS	DISEASE TRANSMISSION
		Deer tick	Orange-brown with black head	1/16 to 1/8 inches	<ul style="list-style-type: none"> Larvae seek and feed on small rodents (white-footed mice) Nymphs feed on larger animals like raccoons or squirrels Adults usually feed on larger animals like deer 	<ul style="list-style-type: none"> Lyme disease
		Lone star tick	Red-brown with a distinct white spot on the backs of females; males have white markings on the edge of the body	1/3 to 1/2 inches	<ul style="list-style-type: none"> Larvae feed on birds and medium size mammals Nymphs and adults feed on large animals like deer 	<ul style="list-style-type: none"> Ehrlichiosis Tularemia Development of rare meat allergy
		American dog tick	Red-brown with white marks on back	1/8 to 3/16 inches	<ul style="list-style-type: none"> Larvae feed on small rodents Nymphs feed on larger animals like raccoons or squirrels Adults usually feed on dogs or other larger mammals 	<ul style="list-style-type: none"> Rocky Mountain Spotted Fever
		Brown dog tick	Red-brown	1/8 inches	<ul style="list-style-type: none"> Larvae, nymphs and adults prefer to feed on dogs, but can also feed on other larger mammals <p>Note: One of few tick species that can go through its entire life cycle indoors</p>	<ul style="list-style-type: none"> Rocky Mountain Spotted Fever

Inspection

- Make sure to take precautions from getting bitten when working in tick infested areas.
 - Wear light-colored long-sleeve shirts and long pants tucked into socks.
 - Apply a DEET repellent or a permethrin spray to your clothes.

Common Hot Spots

- Inspect all areas around the home, including tick hot spots.
 - The lawn perimeter (where lawn meets woods)
 - Tall grasses or bushes
 - Pet kennels or places that animals or pets frequent

Control Strategies

- Source reduction
- Wildlife management
- Tick prevention treatments for pets
- Adulticiding

Customer Communication & Cooperation

Exterior

- Keep grass mowed.
- Remove leaf litter, brush and weeds at the edge of lawn.
- Remove brush and leaves around stonewalls and wood piles.
- Use plants that do not attract deer, or exclude deer through fencing.
- Discourage rodent activity by removing food and water sources, and items that can provide them shelter.
- Treat pets with a product registered for use on animals.

Interior

- Vacuum
- Wash pet bedding
- Have pets treated by vet



Pre-Treatment

Exterior

- Walk around the premises.
 - Check wind direction and potential drift issues.
 - Remove items from the yard that are subject to prolonged human or animal contact, such as toys, lawn chairs and animal bowls.
- Communicate the importance of keeping people, pets and sprinklers off treated surfaces until product is dry.
- Determine equipment and product needs.

Interior

- Inspect the entire infestation area to identify all pockets of active ticks.
- Remove all items from the floor and underneath furniture.
- Remove pet food and water dishes and cover fish tanks.
- Communicate the importance of keeping people and pets off treated surfaces until product is dry.
- Determine equipment and product needs.

Application Equipment

- Compressed air sprayers
- Backpack or power sprayer

Dilution Rates

Mix Onslaught® FastCap Microencapsulated Insecticide and OneGuard® Multi MoA Concentrate according to the following table:

PRODUCT	INDOOR RATES	OUTDOOR RATES
Onslaught FastCap	0.50 fl. oz. per gal*	0.10 to 1 fl. oz. per gal
OneGuard	1 to 2 fl. oz. per gal*	0.60 fl. oz. per gal*

* or sufficient water to treat 1,000 sq. ft.

Treatment

Exterior

- Seal all cracks and crevices around the home.
- Using an adulticide such as Onslaught® FastCap Microencapsulated Insecticide or OneGuard® Multi MoA Concentrate:
 - Apply to kennels, dog runs and other areas where pets have been present.
 - Apply to vegetation along paths, brush, branches and other areas near habitation where ticks may harbor or frequent. See common hot spots on page 2.
 - Treat under decks, crawl spaces or porches.
 - Do not allow animals and people access to treated areas until the application has dried.

Interior

- Using NyGuard® Plus Flea & Tick Premise Spray:
 - o Turn the can upside down and hold can 2 to 3 feet from surfaces to be treated and spray.
 - Avoid over wetting furniture and carpeting. A fine mist applied uniformly is all that is necessary.
 - Treat pest bedding and areas where pets frequent.
 - Remember the ticks' "questing behavior" – treat legs of furniture and the areas under furniture.
- Using Onslaught® FastCap Microencapsulated Insecticide or OneGuard® Multi MoA Concentrate:
 - o Thoroughly apply as a spot treatment to infested areas such as pet beds and resting areas, nearby cracks and crevices, along and behind baseboards, window and door frames, and localized areas of floor and floor coverings where these pests may be present.

Post Treatment

- Re-inspect in 1–2 weeks. Always be aware of product retreatment intervals prior to reapplying.
- Educate customers about signs of re-infestation other than physical bites.



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Featured Product Solutions



Onslaught® FastCap Microencapsulated Insecticide

- Fast-acting microencapsulated formula with long-lasting control
- All-in-one combination product containing a knockdown agent, adulticide and synergist for maximum control
- For indoor and outdoor use



OneGuard® Multi MoA Concentrate

- All-in-one combination product containing a knockdown, adulticide, synergist and IGR for maximum control
- Provides knockdown within 1 hour and kill of ticks
- Kills ticks, including those that may transmit Lyme disease and Rocky Mountain Spotted Fever
- For indoor and outdoor use



NyGuard® Plus Flea & Tick Premise Spray

- Kills ticks
- Prevents ticks from developing into egg-laying adults
- Fast-acting
- No drip application

**Contact Your Local
Distributor Rep
for More Information**



8810 Tenth Avenue North
Minneapolis, MN 55427

TOLL FREE 800.645.6466
TEL 763.544.0341
FAX 763.544.6437
WWW.MGK.COM

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