



Saskatchewan Tick Surveillance
Guidelines for handling and shipping ticks for identification
And screening for pathogens

Tick Collection and Removal from Hosts

Ticks are obligate ectoparasites that require blood from a suitable host in order to moult to the next stage in the life cycle or to lay eggs (i.e., female ticks). Most tick species acquire a host by climbing vegetation such as grasses and shrubs and when a host contacts them they climb onto the host's body. Ticks then find a location on the host's body to attach and they feed in this location for 3 to 10 days, depending on the species. Thus ticks can be collected from the environment as unfed host-seeking individuals or from infested hosts (e.g., dogs, cats, and a variety of other wildlife species including humans). If unfed ticks are collected they can be placed directly into the collection vials (see below) whereas, if ticks are attached to a host they must be removed.

Ticks are most effectively removed with a fine pair of tweezers (forceps). Carefully grasp the tick with tweezers as close to skin as possible. The tweezers should be held at a right angle to the main axis of the tick's body. Gently pull the tick slowly upward away from the host's skin. Avoid twisting, turning or crushing the tick during removal (i.e., pull the tick out at a 90° angle to the site of attachment) because this could cause the tick's mouthparts to break off. When this occurs it is more difficult to identify the tick species and the feeding site could become infected. Where appropriate (i.e., when ticks are removed from people or pets), disinfect the feeding site after the tick is removed. Once removed transfer the tick to a collection vial. NOTE to record the date and location of the bite. Avoid handling unfed or feeding ticks with bare hands, use the tweezers to extract and transfer ticks (unfed and feeding) to collection vials. Wash hands and tweezers thoroughly after handling ticks.

Do not try to burn or smother the tick.

Collection Vials and Labeling

Disposable polypropylene centrifuge tubes are available from the Roy Romanow Provincial Lab (RRPL) for collection vials. These are yellow-topped tubes containing a spoon and filter paper. (These tubes are labeled "Fecal Collector"). They can be used for unfed and fed specimens. For same location or animal you can put more than one tick into the tube. To enhance survival of ticks, strips of filter paper (1.5 X 10 cm), moistened with tap water, must be placed in each collection vial to maintain a humid environment. Even if specimens are dead, do NOT add alcohol or other

preservatives to the collection vials because these compounds interfere with some diagnostic tests. Collection vials should be clearly labeled, using a permanent marker, with the following information: Collector/Submitter's name, a specimen number, and the date that the specimen was collected. A Submission Form: Passive Surveillance for Blacklegged Ticks Form should accompany each specimen. The specimen identification number and name of the person submitting the specimen will tie the specimen to the report. When ticks are removed from a host also include the host species (e.g., raccoon, deer, etc.). When ticks are removed from pets (i.e., dogs and cats or livestock) include: pet's name, approximate age, breed, and owner's last name, and the village, town or city where the animal resides. For ticks removed from people or pets also indicate whether there was a history of travel in the two weeks prior to discovery of the tick. Provide the specific localities visited (e.g., camping trip to Lyme, Connecticut) when a history of travel occurs. The collection vials should at least be labeled with the collector's name, location and date of collection as well as the host species (if tick is from a host). Submission Forms (see sample attached) should be distributed with the collection vials to ensure that all pertinent tick and host information is recorded.

Temporary Storage

Once ticks are placed within the collection vials containing moist filter paper strips they can be stored in a refrigerator (4 to 10 °C) until they can be shipped for identification and diagnostic testing. Under these conditions, most tick species can survive for several weeks or months. Do NOT place the ticks in a freezer because this will kill them.

Mailing Instructions

Return the yellow top collection vials with specimen(s) to the Roy Romanow Provincial Lab (RRPL). Use the tote system for sending regular specimens. Enclose data sheets in a plastic bag and place them inside the tote. If giving the container to the public have them return the container to your district public health office to send back to the RRPL. RRPL will identify dog ticks (*Dermacentor variabilis*) and forward other tick specimens to the National Microbiology Laboratory reference laboratory for analysis.

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Roy Romanow Provincial Laboratory
5 Research Drive
Regina, SK S4S 0A4
P: 306-787-8316 | F: 306-787-1525

Field Studies-Zoonotic Diseases and Special Pathogens
National Microbiology Laboratory
1015 Arlington Street
Winnipeg, Manitoba R3E 3R2

Submission Form: Passive Surveillance for Blacklegged ticks

Please find enclosed _____ tick(s) sent to you for species determination and possible detection of the disease-causing agents.

Specimen number (if applicable)*: _____

Type of animal the tick was found on: _____
(E.g. - human, dog, cat, other)

Patient / Owner name or Identification No.: _____

Probable geographic locality of acquisition: _____
(E.g. - specific town, city, or park)

Location of travel (if any, in past 2 weeks): _____

Date specimen was collected: _____

Was the tick attached (feeding): _____ ?

If yes, how long was it attached/feeding for: _____ ?

Tick submitted by: _____

Report to be sent to:

***RRPL Number**

Send Tick and Form to:

Roy Romanow Provincial Laboratory (RRPL)
5 Research Drive
Regina, SK S4S 0A4

Office Use Only	
Identification No:	_____
Tick Species:	_____
Stage:	_____ Engorgement: _____
Condition:	_____
Identified by:	_____
Date:	_____