

Amblyomma variegatum

Tropical Bont Tick
Tropical African Bont Tick

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Importance

Amblyomma variegatum is a hard tick that feeds on a number of domesticated animals including cattle, sheep, goats, horses and dogs, as well as humans. The long mouthparts of *A. variegatum* leave large wounds, and make this tick difficult to remove manually. Its bite is severe and painful, and can result in significant damage to the skin. Secondary infections can cause septic wounds or abscesses, and inflammation on the teats of cows may affect milk production. In some regions, *Amblyomma* bite wounds may become infested by screwworms. In addition, *A. variegatum* is a host for a number of microbial pathogens. This tick can transmit *Ehrlichia ruminantium* (formerly *Cowdria ruminantium*), the agent of heartwater, and *Dermatophilus congolensis*, the agent of bovine dermatophilosis. It is a host for *Rickettsia africae*, the agent of African tick-bite fever, an emerging zoonosis in rural sub-Saharan Africa and the Caribbean. *A. variegatum* can also carry other human or animal pathogens including Crimean-Congo hemorrhagic fever virus, Dugbe virus, Thogoto virus, Bhanja virus, Jos virus and yellow fever virus.

Species Affected

Immature ticks feed on small mammals, ground-feeding birds, reptiles, cattle, sheep and goats. Adult ticks prefer cattle, but can also be found on sheep, goats, horses, camels, dogs and some large wildlife including antelope.

Geographic Distribution

A. variegatum is found in the tropics and subtropics. This tick is endemic in savannas in many countries in sub-Saharan Africa, as well as in southern Arabia, the Caribbean, and some islands in the Atlantic and Indian Oceans. An eradication program is in progress in the Caribbean; St. Kitts, St. Lucia, Montserrat, Anguilla, Barbados and Dominica qualified for 'provisionally free' certification by 2002, although St. Kitts was re-infested in 2004.

Life Cycle

A. variegatum is a three-host tick. Immature ticks feed on small mammals, ground-feeding birds and reptiles, as well as cattle, sheep and goats. Adult ticks prefer cattle, but can also be found on other livestock including camels, as well as dogs and some wildlife. The adult ticks are usually found on the relatively hairless parts of the body; most are located on the ventral body surface and the genitalia, or under the tail. Adult *A. variegatum* feed mainly in the rainy season, while the immature ticks feed primarily during the dry season.

Identification

A. variegatum is a member of the family Ixodidae (hard ticks). Hard ticks have a dorsal shield (scutum) and their mouthparts (capitulum) protrude forward when they are seen from above. *Amblyomma* ticks are large ticks with long, strong mouthparts. The palps are long; the second segment is twice as long as it is wide. Eyes are present and the festoons are well developed. The males have no adanal shields, accessory shields or subanal shield. Female *A. variegatum* are brown, but the males are brightly ornamented with orange. When they are engorged, the adult female ticks are about the size of a nutmeg. Tick identification to the species level can be difficult, and ticks should be submitted to an expert for identification whenever possible.

Recommended actions if *Amblyomma variegatum* is suspected

Notification of authorities

Known or suspected *A. variegatum* infestations should be reported immediately to state or federal authorities.

Federal: Area Veterinarians in Charge (AVIC):

http://www.aphis.usda.gov/animal_health/area_offices/

State Veterinarians: <http://www.aphis.usda.gov/vs/sregs/official.html>

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Control

Measures used to exclude exotic ticks from a country include pre-export inspection and certification that the animals are free of ectoparasites, quarantines upon entry, and treatment with acaricides. In countries where *A. variegatum* is already present, acaricides can eliminate the ticks from the animal, but do not prevent reinfestation and must be repeated periodically. Three-host ticks spend at least 90% of their life cycle in the environment rather than on the host animal; ticks in the environment must also be controlled to prevent their spread.

If ticks are already widespread in a region, eradication can be difficult. The Caribbean eradication program is based on animal identification and mandatory periodic acaricide treatment of livestock by farmers, as well as public education, surveillance, quarantines and movement restrictions.

Public Health

Amblyomma tick bites are painful, and the wound may become infected. In addition, *A. variegatum* can transmit a number of exotic diseases to humans, including African tick bite fever, Crimean-Congo hemorrhagic fever and yellow fever.

Internet Resources

- Acarology WWW Home Page
http://www.nhm.ac.uk/hosted_sites/acarology/
- Caribbean Amblyomma Programme
<http://www.fao.org/AG/AGAINFO/projects/en/cap/home.html>
- Food and Agriculture Organization of the United Nations (FAO). Ticks and Tick-borne Diseases.
<http://www.fao.org/WAICENT/faoInfo/Agricult/AGA/AGAH/PD/pages/DEFAULT.HTM>
- The Merck Veterinary Manual
<http://www.merckvetmanual.com/mvm/index.jsp>
- The University of Edinburgh. The Tick Collection.
<http://www.nhc.ed.ac.uk/index.php?page=24.25.121>
- United States Animal Health Association.
Foreign Animal Diseases.
http://www.vet.uga.edu/vpp/gray_book02/fad/index.php
- Tick Identification Key
<http://webpages.lincoln.ac.uk/fruedisueli/FR-webpages/parasitology/Ticks/TIK/tick-key/index.htm>
- World Organization for Animal Health (OIE)
<http://www.oie.int>
- OIE Terrestrial Animal Health Code
http://www.oie.int/eng/normes/mcode/A_summry.htm

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- *Link defunct as of 2006.