Agnote

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Cattle Ticks

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Cattle ticks (*Rhipicephalus microplus*) are the most serious external parasite of cattle in northern Australia. They transmit tick fever and if uncontrolled, can cause serious losses to the cattle industry.

HOSTS

Although cattle ticks favour cattle, infestations occur on buffaloes, deer, camels, horses and sheep. Cattle ticks may occasionally be seen on donkeys, goats, dogs and pigs.

When cattle are heavily infested, ticks can be found anywhere on the body. On lightly infested animals, the main places to look for ticks are the escutcheon, tail butt, belly, shoulder, dewlap and ear.

Engorged female

EFFECTS

Infested cattle lose condition due to 'tick worry' and loss of blood. Heavy infestations can kill calves and even adult cattle. Animals in poor condition are especially vulnerable. Previously unexposed cattle become heavily infested until they build up a degree of resistance. *Bos indicus* (tropical breeds of cattle) and their crosses, develop a greater degree of resistance than do *Bos taurus* (British and European breeds of cattle).

Cattle ticks transmit the organisms that cause tick fever, which is a serious blood parasite disease of cattle. The disease can be lethal to susceptible animals. Others may suffer severe loss of condition.

Hides of infested cattle are damaged by tick bites, reducing their value. In severe cases the hides may be unsaleable.

Horses also suffer from ‘tick worry’ and loss of blood from cattle tick infestations. They rub and bite affected areas, causing severe skin lesions. After a period, however, horses develop strong resistance to cattle ticks.

Cattle ticks have little effect on other hosts.

Adult female

SEASONAL DISTRIBUTION

In the Northern Territory (NT), cattle ticks can be seen at any time of the year, but mainly occur during the wet season and early dry season.

IDENTIFYING CATTLE TICKS

All three parasitic stages are generally present on infested cattle, but the easiest to identify is the adult stage. Cattle ticks are the only ticks with all legs that are a pale cream in colour.

SPECIMENS

Larvae, nymphs or unfed adults should be put in a bottle with three parts methylated spirit and one part water.

Engorged adult ticks should be put live on blotting paper, covered with moist cotton wool and put into a screw-top bottle with small holes for ventilation. Live adult females are required for testing for resistance to insecticides.

It is most important to provide the name and address of the property and the date the specimens were collected. As labels may become detached, lost, or illegible, identification notes should be written on a piece of paper in pencil, which is not affected by methylated spirit, and put in the specimen bottle or jar.

Packages containing methylated spirit or live ticks must not be sent by post, air or bus.

RESISTANT TICKS

Ticks can be killed by dipping or spraying cattle with an appropriate chemical (acaricide). Ticks can, however, develop resistance to acaricides. Larvae produced by engorged adult females are tested for acaricide resistance at a laboratory in Brisbane.

Contact your local Livestock Biosecurity Officer if you suspect acaricide resistance.

CONTROL

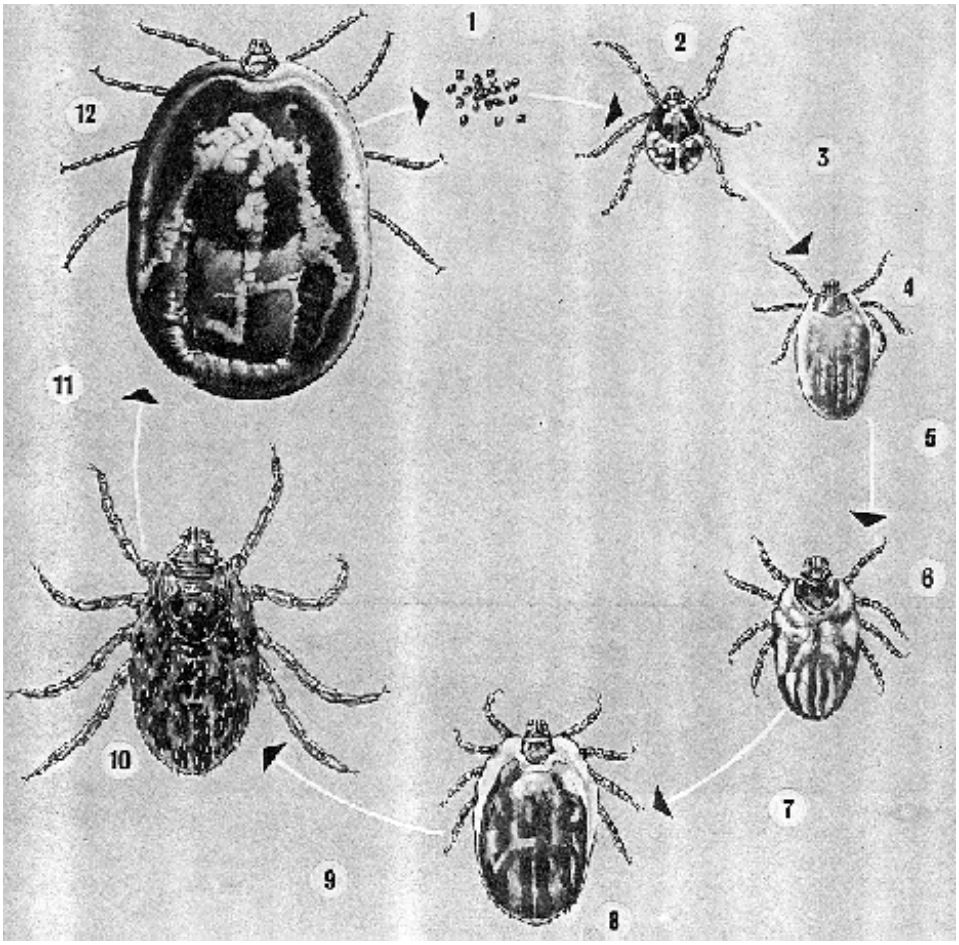
Cattle ticks can be controlled by using resistant cattle, strategic treatment with chemicals, pasture spelling or a combination of these methods. In the NT, cattle ticks are usually controlled by using resistant cattle; treatment is usually limited to cattle awaiting export or moving to or through tick-free areas.

LIFE CYCLE

There are four stages in the life cycle of cattle ticks.

Cattle ticks are one host ticks, that is, the larva, nymph and adult remain on the same animal. The parasitic phase of the life cycle lasts about three weeks.

The life cycle consists of two parts, the parasitic part during which ticks feed on cattle, and the non-parasitic part during which they spend on the ground.



Parasitic part of the life cycle

When 'seed' ticks (larvae) infest a host they usually bite immediately and begin feeding. However, during the first two days following infestation, feeding is intermittent and the larvae frequently detach to move about on the host. After five to six days, they ingest a large meal of tissue fluids and blood, and moult to become eight-legged nymphs. Nymphs also feed on the host's blood and moult to young adults after six to eight days.

Males usually moult first and can be found lying underneath engorged nymphs and female ticks. Males are much smaller and more active than females.

The parasitic life of ticks is completed eight to 12 days after the nymphal moult. The full life cycle is completed in 19 to 26 days. Fully engorged male ticks may either remain on the host or detach with the female. Males have been known to survive for 70 days, either on the host, or on vegetation, relying on dew or plant juices for their fluid needs.

Non-parasitic part of the life cycle

This begins when the fully engorged female tick, in the stage during which it is most easily seen on infested cattle, falls to the ground and finds a suitable place to lay eggs. The pre-egg laying period depends on environmental temperature and relative humidity, and can be as short as one to two days or as long as 40 days.

The duration of egg-laying is also temperature-controlled and can range from two to 44 days. Each female tick may lay up to 3500 eggs. During the wet season when both temperature and humidity are optimal, eggs hatch in approximately 18 to 21 days.

The six-legged larvae which hatch from the eggs are known as seed ticks. They are extremely active in response to moving objects. The close proximity of an animal is sufficient to activate them to climb to the tips of blades of grass, where they can attach more easily to a passing host. During the evening, seed ticks seek protection in the vegetation.

The longevity of seed ticks is influenced by temperature and humidity. They are extremely vulnerable to very low ambient temperatures and low humidity. In northern Australia the maximum longevity is two to four months depending on the season.

The non-parasitic part of the life cycle ends when seed ticks find suitable hosts. These may not necessarily be cattle. Cattle ticks have been known to infest horses, sheep, dogs, buffalo, deer, pigs and hares, although cattle are the preferred host.

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