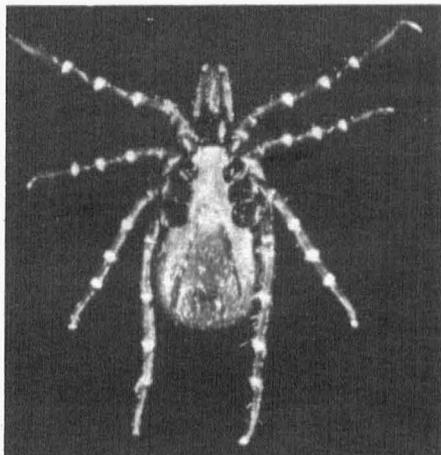
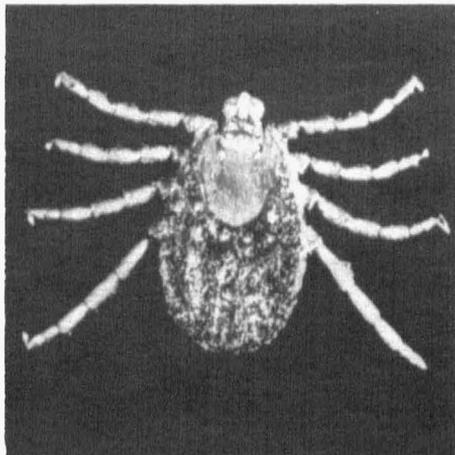


The Two Winter Tick Pests of Missouri

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The Black-legged Tick,
Ixodes scapularis



The Brown Winter Tick,
Dermacentor albipictus

Ozark cattlemen know that the coming of fall and winter usually subjects their stock to infestation by the so-called winter ticks. This is especially true when the cattle browse the wooded pastures. Many times these ticks are overlooked because of the animals' heavy coats of hair, and the injury to the stock is first revealed by their poor condition. These two winter ticks are not the same species as the summer pests, the lone star tick and the American dog tick.

The Black-legged Tick.—Attacks by the black-legged tick begin when fall temperatures drop to around 45 degrees and continue until spring. These ticks generally attack the stock on the neck, under

the chin and around the ears. On horses, they spread their attack over the body and rump and between the front legs. On cats and dogs they may be found attached anywhere.

The female black-legged ticks are smaller than those of summer species. The shield is almost black as are their legs from which their name is derived. Before feeding, the body is a dull reddish-brown while after feeding it turns to a dull yellow-grey. The males are black in color, oval in shape and smaller than the females. Many times when an engorged female is picked from the host, the male can be found sticking to her underside. In some localities, this habit has been responsible for the name "shingle-tick". Other common names are the "poison tick" or "deer tick".

As is true of all our ticks, there are four stages in the development; namely, egg, seed tick, nymph and adult. This tick is a 3-host species. In other words, after feeding, each stage drops to the ground to digest its meal of blood and shed its skin thus developing into the next stage. In the case of the engorged female, she drops to the ground and there lays her eggs, about 3000. The eggs hatch into seed ticks by early spring. The seed ticks and nymphs are active throughout the summer, obtaining their food from the smaller forms of wildlife. These are usually small rodents and reptiles. There has been only one observation in Missouri where a nymph was found attacking man. As fall progresses, through the warmer periods of winter and early spring the adults may be found attacking domestic animals and man.

The Brown Winter Tick.—The adult brown winter ticks are about the same size as our summer active American dog ticks. The females are a dull brown color with a noticeably slick, angular shield. The males are also a dull brown with streaks of darker brown. The mouthparts of this species are short as compared to those of the black-legged tick and the ticks are easily brushed loose from the host in spite of the animal's thick winter coat of hair.

As seed ticks, the brown winter ticks become active in late October and early November but are not generally noticed on the host until they have developed into nymphs or adults. They prefer to attack horses but they may also attack cattle, in addition to many forms of wildlife. On horses they are usually found over the back and rump. On cattle they may be found anywhere over the body and neck. This is a one-host tick and once the seed tick attacks an animal it remains on the same host through the nymph stage and until the adult becomes fully engorged. The seed tick attaches itself to the host and engorges, then with its mouthparts still attached digests its meal of blood, and

sheds its outer covering and becomes a nymph. Finally, by reattaching its mouthparts, it feeds and develops into the adult stage without leaving the host. The adult female reattaches her mouthparts, is fertilized, completes her feeding and then drops to the ground in early spring to lay her eggs. These eggs hatch and the seed ticks remain inactive throughout the summer and until fall, when they become active and then attach to any host that brushes past them. By the time the nymphs and adults are first noticed on the host all the seed ticks will have been picked up from the woods by cattle and other animals.

GENERAL OBSERVATIONS

In observations of these two ticks in the fall, the engorged female black-legged ticks are first noticed as the weather gets chilly. They will be found on the necks of the livestock and over the horses' bodies. At first there are only a few but after several weeks they become numerous. As cold weather sets in, the number of black-legged ticks lessens, but during the warmer periods of winter they may become numerous again.

When checking closely for tick attack on the stock at that time only the nymphs and an occasional adult of the brown winter tick will be found. If these are permitted to remain for a period they will appear to have multiplied rapidly. This is the result of the nymphs developing into the adult stage. These brown winter ticks began to attack the animals first as very small seed ticks some six weeks earlier and developed into the nymphal and later into the adult stages before becoming noticeable. There is only one peak in the activity of the brown winter tick each year.

CONTROL

Control is comparatively easy in the case of brown winter tick. By waiting until the animals have collected all of the brown winter seed ticks and then thoroughly treating the animals once, the entire population of this species can be killed out. Another year will pass before the stock will again be attacked by this species.

This is not true of the black-legged tick, the 3-host species. For controlling this tick it will be necessary to treat the animals periodically throughout the winter as the weather permits.

Of the newly developed materials that kill ticks, toxaphene or chlorinated camphene shows promise of being the safest and most efficient. Three years' work with benzene hexachloride, however, has also given effective control.

The toxaphene should be prepared in a 0.5 per cent solution and

may be applied either as a spray or dip. The directions found on the container should be followed to obtain this concentration. The infested animals must be thoroughly treated to obtain the best results. One application will kill all the ticks present and kill all those ticks that may be picked up by the animal during the next nine days. By treating the animals every two weeks, or when needed, and weather permitting, the ticks can be kept under control. Other ectoparasites of cattle such as lice are also killed. Toxaphene seems to be just as lethal to the summer active lone star ticks as it is to the winter active ones. A 0.5 per cent solution of benzene hexachloride used every two weeks when ticks are active either as a dip or as a spray has also proven effective.

The control of ticks out in fields is not considered practical when dealing with these two winter species, partly because the seed ticks of the brown winter tick are so small and inconspicuous and partly because of the wide distribution of the black-legged ticks over the area. The most satisfactory method of dealing with these two ticks is to treat the infested animals.

PRECAUTIONS

All the new chlorinated hydrocarbon insecticides which include DDT, BHC and toxaphene, are poisonous to all warm blooded animals. They are still considered as being in the experimental stage and the recommended directions on the containers should be strictly followed to obtain the best results and to prevent any loss of livestock.