

Do You Ear What I Ear? – *An Overview of Ear Tick Management*

Ticks can be a difficult and frustrating part of livestock management. Ear ticks bring about an especially frustrating aspect for camelid owners. In this brief article we will discuss the life cycle of ear ticks, management practices to keep ear ticks under control, and potential conditions caused by these creatures.

Ticks are considered arachnids, and there are two broad categories of ticks: hard ticks and soft ticks. These two categories are based on the structure of tick's shell surface. While both categories of ticks can take up residence in the ears of llamas and alpacas, the soft tick *Otobius megnini* has an affinity for ears.

Note: It is important to remember that ticks are not the same as mites. Mites are much smaller than ticks, have a different life cycle and cannot be seen with the naked eye. They actually burrow into the skin and are not readily observed on the surface. Ear mites do occur in cats, dogs, rabbits, ferrets and humans, there is not a recognized ear mite in camelids.

This tick is often called the spinous ear tick because the nymph life stage is covered in small spines and a part of its life-cycle is directly related to the ear canal. Adult *Otobius megnini* ticks lay their eggs on the ground. These eggs hatch into larvae, and the larvae begin searching for a host ear to take up residence. When a host reaches down to graze or lays down on the ground the larvae have their opportunity to reach the ear. Once in the ear canal the larvae will stay there and molt through their larval stages and into the nymph stage. Consider the nymphs teenage ticks. These nymphs continue to take blood meals from the skin and burrow into the ear canal until they reach their adult stage. Once these ticks have reached their adult phase, they leave the ear and the host to mate in the environment, lay eggs, and die. While this life-cycle may appear simple it is often times hard to break this cycle and control ear ticks due in part to the lengthy time that the ticks can survive on the host and in the environment.



Figure 1. Adult spinous ear tick (*Otobius megnini*). From <http://csu-cvms.colostate.edu/vdl/Pages/spinose-ear-tick.aspx>.



From left to right, Dr. Ben Turchin, Dr. Elizabeth Crabtree, and Dr. Cileah Kretsch.

Camelids have a particular aspect to their ear anatomy that makes managing ear ticks even more difficult due to the length and shape of their ear canal. While it is common with most other species to be able to look down the length of the ear canal and visualize the

tympanic membrane, that is not the case for camelids. Camelids have a long ear canal that makes a sharp turn. This turn prevents us from visualizing the entire length of the ear canal, and it also makes a great and safe environment for the ear ticks to hide. This often means we do not readily see the ear ticks that may be causing camelids problems until secondary conditions arise.

The most common secondary condition seen in camelids with ear ticks is ear infection. While it is possible that they can get a simple external ear infection, it often progresses to a much more complex infection involving the structures of the middle ear (otitis media) or inner ear (otitis interna).

As in humans, middle and inner ear infections require more intensive care, and often show extreme clinical signs. These signs can include, but are not limited to,

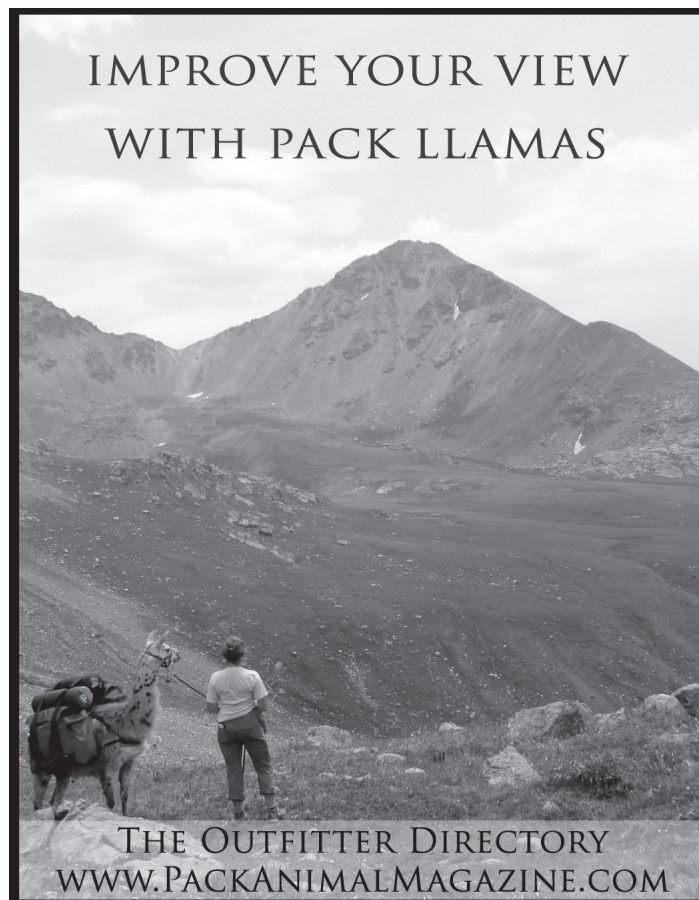
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tilting of the head, drooping ears on the affected side, foul smelling discharge from the affected ear, wide based stance, difficulty turning, and seeming to not be able to balance when walking. If any of these signs are seen, a veterinary consultation is warranted immediately. Some other subtle signs of ear tick infestation include shaking their heads, rubbing or scratching their ears on inanimate objects, and pain on manipulation of the ear.

So, what can be done to manage these little buggers? As previously mentioned, it is very difficult. Unfortunately for us, and our camelids, there is no oral medication for the prevention of tick infestations like there is for small animals. Fortunately, there are management practices that can aid in decreasing the occurrence of ear ticks.

On an environmental management standpoint, pasture should be kept short, and access to heavily wooded areas could be decreased. Tick larvae do not survive well in direct sunlight, and they will try to find suitable places deep in grass, in bushes, or shade in other environmental structures like log piles. Keeping the pasture forage short can facilitate keeping the larvae further away from the camelid's ear when they graze. Brush and wood piles should be removed from pens and pasture areas. You can also use commercial permethrin sprays to reduce the population of ticks in the environment.

While these efforts may help, it is often more feasible to treat the animals and kill the ticks in the ears. This can be done in many different ways. Catron[®] IV fly spray is available at the majority of farm and ranch supply stores, and it is a great option! It is effective in treating the ticks, economical, and it is labeled for use in controlling ear ticks. Catron[®] IV can be sprayed in and around the ears. Many llamas and alpacas do not particularly like to have their ears sprayed, so as an alternative you can spray some into a cup and then draw the fluid into a syringe and apply into the ear canal. Another great option is using Ivermectin. It can be placed directly into the ear to kill the ticks on contact. This is an extra-label use of Ivermectin and you should work with your veterinarian to determine if it is an appropriate treatment for your animals. Both Catron[®] IV spray and Ivermectin can be administered in the ear on a monthly or bi-monthly basis to control the ticks.



Based on the *Otobius megnini* life cycle and the amount of time it spends on and off the host, we recommend treating all animals once monthly for at least 8 months. While the ticks will be controlled in the animals sooner than the full 8 months the ticks can survive in the environment for up to 7 months. In addition, other wildlife and domestic animals including deer, coyotes, dogs, rabbits, goats, and horses can be hosts for ear ticks and continue to maintain exposure from the environment. Work with your veterinarian to develop a prolonged treatment and control program based on your herd's environment and management.

We are aware that Fipronil is also used in the ears to control ear ticks. While this is very effective at controlling ear ticks, Fipronil is labeled as a pesticide and regulated by the EPA. It is a violation of Federal Law to use this product in a manner inconsistent with its labeling such as applying in the ear of a llama or alpaca. Because of this labeling we do not recommend its use for the control of ear ticks in these species.

The CSU Livestock Service hopes that this article was fun and informative, and if you have any further questions please do not hesitate to contact us by calling 970-297-5000!

