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I have received a few calls over the past couple of weeks concerning ticks on humans, pets, and domestic livestock. All stages of ticks are exclusively parasitic. Ticks have four stages of their lifecycle, egg, larvae, nymph and adult. All ticks feed on blood during some or all stages. Ticks have remarkably long lives with many surviving for one or more years without feeding.

Most ticks that attack domestic livestock are in the family Ixodidae, the group referred to as hard ticks. In the family Argasidae, soft ticks, there is one species that is damaging to cattle, the spinose ear tick.

Hard tick females take one large bloodmeal after mating in which they swell and then drop from the host to lay hundreds to thousands of eggs. The female will then die after laying eggs. The male will feed repeatedly and mate several times before death.

Soft tick females take repeated small bloodmeals and lay several batches of eggs after each feeding. They can go several months between feedings and typically mate off of the host, they are resistant to starvation. The spinose ear tick is very different in that the female does not feed, so they lay eggs without feeding.

Ticks will attack all domestic livestock, wildlife, and humans. Listed below is the tick species that are in our area and how they impact their host.

Brown dog tick prefers dogs and often infests houses, especially when dogs are kept inside. They cause considerable stress to owners and dogs that encounter thousands of them during summer months.

The brown dog tick has been reported to transmit the bacterial agent *Ehrlichia canis*, responsible for Canine Monocytic Ehrlichiosis (CME) and *E. ewingii*, [causing Canine Granulocytic Ehrlichiosis (CGE)] in dogs, and *E. chaffeensis*, the pathogen responsible for causing human ehrlichiosis [a.k.a. human monocytic ehrlichiosis (HME)].

American dog ticks are major pests of people and domestic animals. Adults will attack dogs, medium mammals, livestock and humans. Adults are most abundant in late spring and early summer. This species is considered the primary vector of Rocky Mountain Spotted Fever (RMSF), affecting humans and companion animals in the eastern, central, and southern US. This tick is also reported to transmit tularemia, tick paralysis, and has been found to experimentally transmit *Anaplasma marginale* (anaplasmosis) to cattle, and *Theileria equi* to horses.

Lone star tick is one of the most notorious tick pest species in the US. All stages of the tick attack companion animals, livestock, wildlife, and humans. Deer are the primary hosts for the adults.

The lone star tick is recognized by the Centers for Disease Control (CDC) as the principal vector of *Ehrlichia chaffeensis* and *Ehrlichia ewingii* in the U.S.; both disease agents are responsible for causing ehrlichiosis in humans. White-tailed deer are a primary host of the lone star tick and appear to serve as a natural reservoir for *E. chaffeensis*. The lone star tick is a vector of *Francisella tularensis*, causal agent of tularemia.

The lone star tick also transmits STARI (Southern Tick Associated Rash Infection) to humans, a bacterial infection which symptoms may include the presence of a rash that appears similar to the "bullseye" rash seen in some Lyme Disease cases.

Gulf Coast tick attack a wide range of birds and mammals with adults feeding mostly on ruminants. Gulf Coast ticks feed mainly on the head and ears and can cause severe injury to the skin of cattle rendering the hides useless from the bites and secondary infections.

These ticks transmit the pathogen *Rickettsia parkeri* to humans, a type of spotted fever (rickettsiosis) to humans, Gulf Coast ticks are also responsible for transmitting *Hepatozoan americanum*, a protozoal agent that causes American canine hepatozoonosis in wild and domestic canines in the US.

Cattle fever tick ranges throughout the world in tropical regions. They typically are parasites of cattle but have been found to infest white-tailed deer and nali. They can lead to reduced weight gains and milk production with heavy infestations. The tick also transmits the protozoan *Babesia bigemina*, which causes Texas Cattle fever, a devastating disease of the cattle industry.

Spinose ear ticks are found in western North America and frequently infest livestock, especially cattle and horses. The adults do not feed but the young feed in the ears of their host causing injury to the auditory canal and secondary infections.

There are no known disease pathogens associated with this tick species. However, tick infested animals are subject to secondary microbial infections.

Ticks transmit many microbial disease agents to livestock and companion animals. They also can be debilitating and sometimes fatal to the host. Heavily infested livestock and poultry may experience economic reductions that can be significant.

Control:

Historically the way to control ticks and their diseases was to use pesticides, acaricides, to kill the ticks and their infectious agents. Slowly many ticks are becoming resistant to the commonly used pesticides.

Early removal of attached ticks is important in minimizing the risk of contracting tick-borne diseases.

Acaricide choices are limited to diazinon, pyrethroids, carbaryl and avermectins. Dipping vats have been shown to be effective ways to treat cattle by making them walk through the acaricide

baths but recent years have shown a decrease in this method except at the border for cattle fever tick populations. Applying the products with a high pressure sprayer or pour-ons are other options, as well as dusts. Ear tags were originally designed to be used against ticks and are still very effective in preventing infestations but the movement away from ear tags for horn fly control has lead to an increase in tick outbreaks on cattle.

Field management provides another way to control tick populations by eliminating stages of ticks not on the host by destroying or removing vegetation where ticks hide. Vegetation changes can be done by burning or clearing, ticks need cover to prevent desiccation from the heat.

For more information on tick biology, control, and management please go to tickapp.tamu.edu. This is a great resource for identifying and managing tick.