

Not Just a Texas Problem

Cattle Tick Fever increasingly threatens the U.S. cattle populations in the face of changing wildlife populations, difficult treatment options and an under-funded eradication program.

by Meghan Richey

‘F’ever ticks may appear to be just a Texas problem because we’re the ones fighting it right now, but there are factors at work that could make it a big problem for many more states if we don’t get a handle on this quickly,” says Dee Ellis, Texas Animal Health Commission (TAHC) assistant executive director.

Lately, fewer cattle and horses have been documented as crossing the Mexico-Texas border with fever ticks present. At first glance, this looks like a good thing; but Ellis says the lower numbers are because of decreased surveillance not because of decreased tick presence. In fact, there have been more infestations this year to date, compared to past years (see Fig. 1).

“Our workforce is strained, and many of the so-called ‘tick riders’ haven’t been able to patrol their stretch of the Rio Grande River for weeks or even months,” he says, noting that the tick riders are employed in the Fever Tick Eradication Program, one of the U.S. Department of Agriculture’s

(USDA’s) longest-standing programs.

With fever ticks increasingly escaping the 852-square-mile permanent quarantine zone that runs along the Mexico-Texas border and infesting the seven-county free zone in Texas, (see Fig. 2) the tick riders and other staff have been forced to redirect their efforts away from their normal duties in the quarantine zone to deal with the immediate situations developing in the free zone.

“It’s like we’ve been putting a fire out in one place and been forced to let it burn somewhere else,” Ellis notes.

The disease

Fever ticks are vectors for bovine babesiosis, commonly called Cattle Tick Fever. Known by alternate names of Texas Fever, Spanish Fever, Splenic Fever or

Murraine Fever, the disease is fatal in most cases. Two species of ticks — *Boophilus microplus* and *B. annulatus* — can carry the disease-causing agent called *Babesia*, a blood parasite. Both are single-host ticks, meaning they bite only one animal and then fall off to lay their eggs, infecting the animal in the blood-sucking process.

“To get an outbreak of Cattle Tick Fever you need three factors: naive cattle,

Babesia and fever ticks. Just ticks on cattle won’t do it,” Ellis says.

Symptoms include high fever, bloody urine, dry cough, yellowing of mucous membranes and fat, greatly enlarged spleen, weakness, and difficulty breathing.

Babesia is endemic in Mexico, so cattle get protective immunity as calves and become carriers for the rest of their lives, he explains. Legally imported Mexican cattle are inspected and dipped in a tick-killing solution upon crossing the U.S. side of the Rio Grande River.

“I’m confident that the process in place and the staff that executes it prevents fever ticks from coming in on legally imported Mexican cattle,” Ellis says. So that leaves many asking why fever ticks are increasingly threatening U.S. cattle.

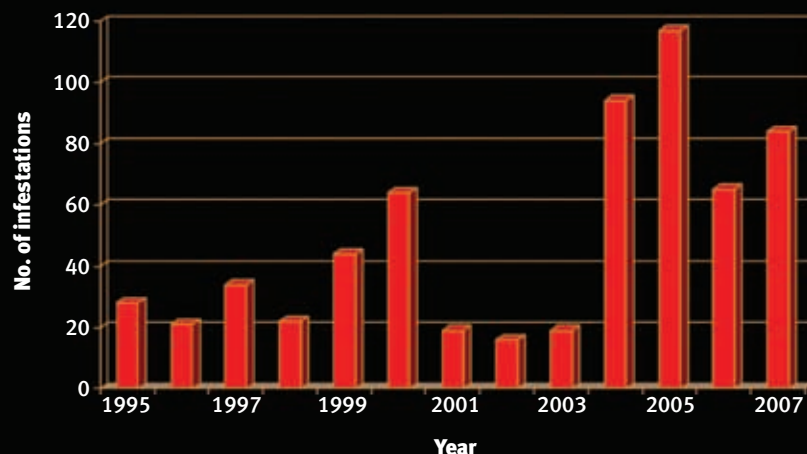
More ticks, more infestations

Since 2004, the quantity of ticks present has been increasing dramatically. Favorable climatic conditions, changes in wildlife populations and difficult treatment options are increasing the incidence of fever tick infestations in both the quarantine zone and the free zone.

Though eradicated from the United States since 1943, the native territory of the fever tick is surprisingly large, stretching across the



Fig. 1: Total cattle fever tick infestations, fiscal year 1995-September 2007



southern United States from California to the East Coast, all the way up to southern Pennsylvania. Hard freezes during the colder months usually help control the tick population, but with recent mild winters many more ticks than normal have carried over.

With more ticks present, changes in the wildlife population — both native and exotic ungulates — have provided alternative hosts and a constant source of reintroduction to cattle herds.

“We’re starting to see some incidences where nontraditional host species are perpetuating the tick problem in the free zone as well as the quarantine zone,” Ellis says. “Cattle are the tick’s preferred host, but they’ll jump on another animal rather than starve to death if there are simply way more ticks than available cattle.”

Specifically, white-tailed deer, red deer, Axis deer, Fallow deer, elk and Nilgai populations have become alternate hosts for the ticks. Ticks have even been detected on Aoudad sheep, which scientific literature says are not a natural host.

White-tailed deer make up more than half of the tick-infested wildlife hosts. A booming high-fee-based hunting industry has fueled the expansion of the white-tailed deer population as more people have started raising deer — a much more lucrative activity than cattle production. Attempts to control the tick populations on white-tailed deer have proven frustrating, with little success, Ellis says.

“Our problem has been getting treatment to the deer in a consistent and timely basis,” he notes. “Ivomec®-laced corn is effective for a few months a year, but it can’t be used year-round because it leaves tissue residue, which is a problem since people eat venison.” A 60-day withdrawal time is necessary, so the treated corn must be removed at least two months before the hunting season starts.

Another deer-treatment option uses four-post scratching stations where the deer scratch against pyrethroid-treated posts, transferring the chemical to their neck, head and ears, thus killing the ticks present. But this system also relies on luring deer with corn, and Ellis says they just won’t take the bait sometimes. If there is a natural preferred food source available, they won’t come to the four-post stations to eat the corn no matter what you do, he says.

“As long as wildlife continue serving as hosts, reintroduction is a constant threat,” Ellis says. “Cattlemen in both the U.S. and Mexico want to work with us to solve this fever tick problem, but the deer people have not been as helpful because there’s no incentive for them; they risk losing their hunting revenue. Meanwhile, the entire U.S. cattle industry is at risk if Cattle Tick Fever returns to the United States.”

Fig. 2: Cattle fever tick habitat (grey area) and quarantine zones (brown area)



Treatment options

Ellis says he is frequently asked by Texas cattle producers why their veterinarians can’t prescribe ivermectin mixed in molasses licks as a treatment for fever ticks. Though used in other countries, this treatment option is illegal in the United States because the Animal and Medicinal Drug Use Clarification Act (AMDUCA) prohibits extra-label drug use in feed. Ivomec Gold could offer another treatment option, though it is not approved for any use in the United States.

“I know it’s frustrating to know that there are tools out there that would be effective in the United States but are illegal for us to use. Despite this, it’s important that producers not use drugs in an extra-label way,” Ellis says.

Approved treatment options are time- and labor-intensive, he says. When fever ticks are found on cattle, the place of origin is considered infested and placed under temporary quarantine. Neighboring exposed herds are then checked. Owners of infested cattle are given two options: Treat the cattle for nine months while leaving them on the infested pasture, or vacate the pasture for at least nine months after two successive clean dippings two weeks apart before reintroducing cattle.

If cattle are left on the pasture they must be gathered every seven to 14 days — a job often requiring both horseback riders and the assistance of helicopters on the expansive pastures of southern Texas — and treated with an organophosphate acaricide called coumaphos, known by Bayer’s product name Co-Ral®. This can be applied with either a very large, stationary dipping machine or a mobile squeeze-chute-like device equipped with spray nozzles. Another option requires gathering cattle at a longer interval of 28 days for treatment with doramectin. Ellis says this option is promising, as many producers

appreciate the decreased labor demands.

The pasture-vacation method is increasingly becoming less effective, however. “It used to be that nine months without the cattle on the pasture would cause the tick population to die off. But now we’re seeing ticks on vacated pastures even after 14 months because the wildlife prevent them from starving,” he says.

Funding a solution

“The battle costs money, but fighting the battle against fever ticks has been like putting a band aid on a lacerated artery,” says Bob Hillman, Texas state veterinarian and executive director of the TAHC.

Beginning in August 2007, the TAHC worked with USDA to develop a funding request, which, if fulfilled, would have been sufficient to provide the personnel, equipment and supplies required to contain and then eradicate the fever tick outbreak from the temporarily quarantined areas.

In March 2008, USDA announced that \$5.2 million would be made available to control the outbreaks of fever ticks occurring outside the permanent quarantine zone. Though both Ellis and Hillman are quick to express their appreciation for the funds, it is significantly less than the \$8 million determined to be needed each year for five years (\$40 million total) and will address only the program’s most dire needs.

“If we are to be ultimately successful in eliminating fever ticks from the temporarily quarantined areas, and push the fever ticks past the permanent quarantine zone and back into Mexico, we must have sustained funding over many years,” Hillman says. “The amount provided will be utilized efficiently, but it will not be sufficient to complete the job.”

