



Cattle Producer's Handbook

Animal Health Section

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Foothill Abortion: A Western States Problem?

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Epizootic bovine abortion (EBA) is commonly referred to as “foothill abortion” because it was originally recognized as an abortion disease of cattle that occurred after summer grazing in the foothill regions of coastal and central California. In the early 1950s, with the advent of calving 2-year-old heifers, it became a recognizable disease with abortion rates up to 50 percent. EBA is also a phenomenon of summer grazing in the Sierra Nevada Mountains and the Great Basin regions of California, and has been diagnosed in southern Oregon and western Nevada.

Tick-Transmitted Abortion Disease

EBA is a disease that is apparently only transmitted by the bite of a particular soft-bodied tick commonly known as the pajahuello (or pajaroello) (pronounced pa-ha-way'-lo). The scientific name of the tick is *Ornithodoros coriaceus*. Despite several decades of study, the disease agent the tick is transmitting has eluded researchers. Suspected agents have been isolated from aborted fetuses and from the tick, but none has proved to fulfill Koch's postulates for recreating the disease when put back into pregnant cows. Recently, thymus from an aborted fetus has apparently transmitted EBA to a pregnant cow under experimental conditions.

Requirements Needed for EBA to Occur

1. Cattle must be 6 months or less in pregnancy. Experimentally, cattle that were as early as 35 days pregnant when exposed have aborted.
2. Pajahuello ticks must be present and hungry in the range the cattle are using. Ticks don't refeed for about 2 months after exposure to cattle.
3. No previous exposure to the disease means animals have no immunity to it. Immunity can apparently be lost if exposure to the disease has not occurred for 1 to 2 years. Apparently, immunity can only be obtained when an animal is sexually mature (10 months or older).



Adult pajahuello soft-bodied tick.

4. Ambient temperatures must be warm and dry enough to activate the tick's metabolism or incubate the unknown agent within the tick's body (possibly above 70°F), while still staying above freezing at night. In coastal and central California, this weather pattern usually occurs from May through October. In the mountains and high desert regions, the warm months typically are June through October. Unusually warm, dry winters can cause EBA to occur in normally “safe” periods.

After Tick Exposure

If all of the four factors exist at the same time, EBA abortions can be expected to occur 3 to 4 months later. To determine where disease exposure (tick exposure) happened, the cattle producer must be able to identify where cattle were grazing 3 to 4 months before the onset of abortions.

Lifecycle and Habitat

The existence of pajahuello ticks in a pasture can be verified by collecting them. The tick resides in the soil and