

UCD VET VIEWS
CALIFORNIA CATTLEMAN, JANUARY 1996

FOOTHILL ABORTION UPDATE PART III: PREVENTION

The last two columns have discussed the tick that transmits Foothill Abortion (EBA) and the evidence that there is a microorganism (virus, bacteria, or rickettsia) that causes the death of the fetus and the subsequent abortion. While the search for the agent goes on, there are a number of steps that can be taken to help minimize losses. The only known way that cattle develop immunity to the disease is by exposure to the agent through the bite of the Pajaroello tick. Also, cattle do not seem to develop an immune response to the agent until they are sexually mature, which for English breeds is 10 to 12 months of age and for Zebu breeds is about 12 to 14 months of age. The length of time cows and heifers are immune after exposure is not known. It is probable that the cows' immune response is boosted from time to time by re-exposure to feeding ticks. So that once the cattle become immune, the periodic re-exposure aids in maintaining immunity. Some observations indicate that cattle may need to be re-exposed on an annual or every other year basis to provide the best protection.

At least three groups of cattle seem to have immunity to EBA and can be classified as follows:

1. Open heifers, that are sexually mature (10 months of age or older, depending on breed, feed, and individual maturity), and mature open cows which have been bitten by EBA carrier ticks **prior** to the breeding season.
2. Cows which have either aborted due to EBA or given birth to weak EBA calves.
3. Cattle bitten by EBA infected ticks after 6 months of pregnancy. In this case it seems that the fetus can respond to the EBA agent and is born normal and healthy.

Pregnant cows and heifers without pre-exposure to EBA are most susceptible and abortion storms can cause losses of 50%, or more, of the expected calf crop. Susceptible cattle are common in the following circumstances:

1. Pregnant heifers in a tick infested area. In areas with low tick exposure, some females may not be bitten until they are four or five years of age.
2. Pregnant females brought into a high risk area from a tick free area or from outside the state.
3. EBA "immune" cows from tick infested areas may lose their protection if removed from tick re-exposure for two or more years.

Possible circumstances for EBA abortion outbreaks include the following:

1. A warm period of weather (instead of the usual cold or wet period) during the second trimester of pregnancy, causing pregnant animals to be exposed to the ticks.
2. Brush burned over areas (within the last few years) may have opened up tick areas in pastures and ranges where cattle have not usually been grazing, exposing them to increased tick activity.
3. Drought conditions may force cattle to graze higher, more remote pastures where the tick density may be greater.
4. When increasing herd size, the grazing pressure may open up new areas that may have more ticks. Also, when repopulating cow herds or adding pregnant cows or heifers from other areas it is important to consider the risk of EBA to these animals.

Based on our understanding of EBA, there are a number of management strategies that can help control, or minimize, the losses due to EBA. One of the important items is to learn which pasture and/or range areas have the greatest number of ticks and therefore, the greatest risk of exposure to EBA. Your University of California Livestock Advisor and/or your veterinarian can be very helpful in this respect. Those pastures that most likely have Pajaroello ticks are those where dry bedding areas are frequented by both deer and cattle. These areas include oak, pine or juniper tree areas and high brush or rock outcroppings where cattle and deer prefer to bed. Wet areas or irrigated pastures are usually free of the Pajaroello ticks. Bedding areas can be examined for the presence of these ticks by using dry ice (carbon dioxide) traps to attract the ticks so they can be identified. The ticks are attracted to the carbon dioxide from the dry ice as they would be attracted to a large mammal. These areas can easily be identified with a little help. Once these areas are identified, they can be included in the management plan.

1. Expose heifers that have reached puberty to active tick areas **before** breeding. Heifers born in the spring can be bred as fall calving replacements and heifers born in the fall can be bred for spring calving replacements. This will allow for pre breeding exposure.
2. Breed susceptible heifers as yearlings and turn them into tick areas **after** six months of pregnancy.
3. Alter the breeding season to prevent tick exposure of pregnant cattle **before** they are six months in gestation. Examples of this would be to place pregnant cattle on irrigated pastures until after they are pregnant at least six months. Another example would be to change from spring calving to fall calving.

4. Run stocker cattle or bulls in EBA areas.
5. Keep cows or heifers that have had EBA abortions. They should be immune for the next season or two at least.
6. Buy replacements from areas known to have high tick exposure or EBA.
7. Manage tick infested pastures to more efficiently expose cows or heifers or to prevent exposure. Place pregnant females on irrigated pastures or open valleys where tick exposure is minimal.

Unfortunately, periods of drought and heavy rainfall years can both modify the tick activity patterns greatly. While these management methods are far from perfect, knowledge of tick exposure and subsequent risk of EBA should help to minimize losses. Until a more predictable means of prevention is developed, we will have to use the above concepts to try and control this costly condition.

John Maas, DVM, MS
Diplomate, ACVN & ACVIM
Extension Veterinarian
School of Veterinary Medicine
University of California-Davis

[Home](#) | [Beef Cattle Programs](#) | [FAQ/Beef](#) | [INFO/Beef](#) | [Top](#)

Your support of the School of Veterinary Medicine makes a difference



[Contact us](#) | [Animal Health Inquiries](#) | [Check us out on Facebook, Twitter, & YouTube](#) | [Online Donation Form](#) | [Site Map](#)

UC Davis School of Veterinary Medicine • One Shields Avenue • Davis, CA 95616

Copyright © The Regents of the University of California, Davis campus. All Rights Reserved.