



Vet Call

▶ by **Bob Larson**, professor of production medicine, Kansas State University

Eradicating important cattle diseases

Depending on how old you are, you will have varying experiences with and opinions about cattle diseases such as brucellosis (Bang's disease) and tuberculosis (TB). If you are 40 or younger, these diseases will likely have had very little effect on your herd management. However, if you are older, you will very likely remember when these diseases and their control were an important consideration in your management decisions.

Official inspection

Both bovine brucellosis and tuberculosis are in the process of being eradicated from the U.S. through the combined efforts of state and federal government, local veterinarians, and livestock producers.

The U.S. Department of Agriculture (USDA) established the veterinary accreditation program in 1921 to allow private veterinary practitioners to assist federal veterinarians working to control animal diseases. Accredited veterinarians are those private practitioners who are allowed to write health papers and participate in brucellosis- and tuberculosis-control programs. Currently, more than 80% of all U.S. veterinarians are accredited.

While having private practitioners involved in national animal health programs is expected in the U.S., we are the only country to rely to such a great extent upon the private veterinary practitioner for official inspection and certification.

Bovine brucellosis

Bovine brucellosis is an important cause of abortion in countries where the disease is common, and it can cause disease in humans. The bacteria that causes brucellosis is passed from infected cattle to other cattle or humans by direct contact with blood, placenta, fetuses, or uterine fluids during pregnancy or calving, or

through consumption of raw milk. Veterinarians, farmers and ranchers in daily contact with cattle and people consuming unpasteurized dairy products are at highest risk for contracting the human form of the disease.

Brucellosis has been nearly eradicated from cattle herds in the U.S., but it is still present in wildlife (bison and elk) herds of the Greater Yellowstone area. Unvaccinated herds that have not been previously exposed to brucellosis can have 30%-80% of pregnant cows abort. In parts of the world where the disease is common, herds rarely have "abortion storms," but sporadic abortions — particularly in heifers carrying their first pregnancies — can occur.

In 1954, a brucellosis eradication program was started with cooperation between veterinarians hired by the states and the federal government, local veterinarians, and cattle producers. The eradication plan includes a combination of quarantine of infected herds, vaccination of breeding females, test-and-slaughter techniques, and continual surveillance at slaughter facilities and livestock markets.

States are designated brucellosis-free when no cattle or bison are found to be infected for 12 consecutive months. Currently, 49 states are classified as brucellosis-free (and Texas may soon reach that classification). Of the 49 states, 38 have remained in that classification for 10 or

more years, and 22 of those states have remained in the "class-free" category for 20 years or more.

Routine vaccination of young females that are likely to enter a breeding herd with a vaccine called RB51 is still done in the U.S., but as the disease becomes less common, the number of herds vaccinating has declined. Both RB51 and the older vaccine (strain 19) can cause abortion in pregnant cattle and adverse effects in humans.

Bovine tuberculosis

Bovine TB is important not only because it can cause illness and death in cattle, but because the organism can spread to humans. Today, people who consume unpasteurized milk are at the greatest risk, but animal handlers can be exposed through the air or even breaks in the skin.

Bovine TB has been an important disease of cattle and humans since the earliest recorded history. In the early 1900s in the U.S., bovine TB caused more economic loss than all other livestock diseases combined. The Cooperative State-Federal Tuberculosis Eradication Program (which is administered by the USDA, state animal health agencies and U.S. livestock producers) was started in 1917 and has nearly eradicated bovine TB from the U.S. Although bovine TB is rare in the U.S., final eradication has been difficult because the organism can also survive in other species (most importantly, deer).

Because the disease is very rare in the U.S., the most efficient method of surveillance for the disease is examination of carcasses at harvest. If laboratory tests confirm that a harvested animal had bovine TB, the infected animal is traced back through marketing channels to the originating herd and the whole herd is tested. If the herd of origin is diagnosed with bovine TB, all the animals in the herd are depopulated if possible, and the owner is paid an indemnity. If the herd cannot be depopulated, it is quarantined and tested repeatedly until the disease is no longer detected.

In addition, veterinarians attempt to determine when the herd was first infected.

As cattle producers in the U.S., we have become so accustomed to not worrying about these important diseases that it is easy to forget the amount of work, diligence and expense that it took to arrive at this fortunate situation.

CONTINUED ON PAGE 108

They try to trace all cattle that moved into or out of the affected herd and determine where the disease originated and any herds where it might have moved.

For a state to be accredited free of bovine TB, there must have been no confirmed cases of the disease for at least five years, and the state must have a set of stringent laws and regulations governing livestock dealers. The state must also maintain surveillance of cattle in marketing channels and require that

records be kept that would allow animal health officials to trace infected animals back to their source.

As cattle producers in the U.S., we have become so accustomed to not worrying about these important diseases that it is easy to forget the amount of work, diligence and expense that it took to arrive at this fortunate situation. It is also easy to forget that in many parts of the world bovine brucellosis and tuberculosis are common — causing

tremendous losses to the cattle and human populations. Only with continued vigilance can these diseases remain a nonfactor for most U.S. cattlemen.



E-MAIL: rlarson@vet.ksu.edu