



# Brucella melitensis of Goats and Sheep

## Public Health Issue

*Brucella melitensis* (*B. melitensis*) is an infectious bacterial disease that can affect most domestic animals, but goats and sheep are especially susceptible. The bacteria causes a severe debilitating disease in people and is the leading cause of Brucellosis in people globally. Do not confuse this disease with other Brucella infections, which include:

- *Brucella ovis* - causes infertility in sheep but does not spread to people or other animals.
- *Brucella abortus* - a cattle disease agent; contagious to people, very rarely infects goats and sheep.
- *Brucella suis* – mainly a swine disease agent; contagious to people, occasionally infect cattle, small ruminants, rabbits, rodents, horses and dogs.

### Where is *B. melitensis* found?

*B. melitensis* has not been identified recently in livestock in the U.S.; the last outbreak occurred in southern Texas in 1999 in cattle and in a goat and sheep herd. *B. melitensis* is common in goats in Mexico where it is the major cause of human brucellosis. It occurs in small ruminants in Latin America, the Mediterranean, the Middle East, Central and Southwest Asia, and Sub-Saharan Africa.

### Signs of *B. melitensis* in Goats and Sheep

Abortions in late pregnancy, retained placentas, birth of weak offspring, and reduced milk production are the most common signs in newly infected flocks. There may be no signs, or sporadic abortions, in flocks that have been affected for some time. Does and ewes usually only abort once but continue to shed bacteria in their birth products and only a few animals abort repeatedly. Goats become persistently infected and can shed the bacteria in their milk throughout their lifetime. Healthy asymptomatic carriers are a source of infection for other livestock and humans. Other signs include death of weak offspring, low weaning weight, orchitis and epididymitis, reduced fertility (more common in sheep) and occasionally arthritis.

### How are goats and sheep infected?

Goats and sheep infect themselves by licking aborted fetuses, placentas, newborn offspring, vaginal discharges, in utero, or by consuming milk of feed contaminated with these materials. Respiratory acquired infections can occur when animals or wind disturb contaminated dust. Milkers can spread the infection via unsanitary milking practices.

### How are people infected?

*B. melitensis* spreads to people from infected animals through raw milk, unpasteurized dairy products, processing meat from infected goats, and contact with aborted kids or infective reproductive tissues and/or secretions. Cases occur annually in California in people who eat raw dairy products, usually soft goat cheese, from Mexico. Pasteurized milk products and cooked meats do not spread disease. Inhaling contaminated dust and aerosols, contact with carcasses, or handling wool from infected animals can also infect people. Milkers can be infected through the skin and by milk that may contact mucous membranes. People exposed to infected animals should take precautions to prevent disease.

### Symptoms and Treatment in People

Brucellosis (Malta Fever, Mediterranean Fever, Undulant Fever) may be misdiagnosed as it causes nonspecific signs such as fever, night sweats, chills, headaches, joint and bone pain, muscle aches, weakness, weight loss, nausea, and depression. Complications may involve the heart and nervous system; occasionally resulting in death, and persistent long-term joint and bone problems. People can suffer from the disease for prolonged periods if not treated early or properly. Treatment usually consists of a six-week course of two antibiotics. Complications or relapses occasionally occur and require longer treatment. There is no safe, effective vaccine for people.

### What is California doing?

The California Department of Food and Agriculture (CDFA) recommends appropriate disease surveillance on goats and sheep producing Grade A milk and milk to be used in raw milk products, as described in the Federal Drug Administration (FDA) Pasteurized Milk Ordinance. CDFA Milk Dairy and Food Safety Branch (MDFS) or approved county inspection agencies verify that the required surveillance has been completed prior to issuing a permit to market milk and milk products. CDFA Animal Health Branch (AHB) monitors and investigates any suspect cases

### If You Suspect Brucellosis in Your Flock

Contact your private veterinarian or CDFA immediately. We can assist you in submitting aborted fetuses, placentas, and blood samples to the California Animal Health and Food Safety (CAHFS) Laboratory. **Diagnostic work for brucellosis investigations is free of charge.**

### Disease Prevention

There is no treatment for infected livestock, and vaccines are not used in small ruminants in the U.S.

Disease prevention includes:

- Purchasing goats or sheep from known sources,
- Avoiding mixing your animals with other flocks,
- Testing new purchases before adding to your flock,
- Not using dogs that have been exposed to infected sheep and goats in countries where the disease is endemic,
- Pasteurizing milk, and
- Proper hygiene.

#### Animal Health and Food Safety Services Animal Health Branch

Headquarters - (916) 900-5002  
Redding District - (530) 225-2140  
Modesto District - (209) 491-9350  
Tulare District - (559) 685-3500  
Ontario District - (909) 947-5932

**USDA-APHIS-VS - (916) 854-3950 or (877) 741-3690**

For more information, please click the following:  
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