

Q-FEVER IN GOATS

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<http://biology.openlcc.net/microbial-diseases/wiki/q-fever/>

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- This PowerPoint was presented to my lab group at the University of Wyoming, as an addition to my intern duties as an undergraduate research assistant for the Summer of 2020.

QUICK FACTS ABOUT Q-FEVER

Sheep, goats and cattle can carry the organism that causes the Q-Fever disease.

It is a zoonotic disease, meaning it can be transmitted from animals to people.

The bacteria can be spread through feces, urine, milk, blood, dust and birthing membranes.

Infected animals often appear healthy, so it is important to utilize testing and other preventative measures to prevent the spread of Q-Fever.

THE HISTORY

- Q-Fever was first described in around 1935 in Queensland, Australia by Edward Holbrook Derrick.
- It was discovered during the time of a feverish illness seen in slaughterhouse workers.
- Scientists then isolated the bacteria found in the blood and urine of one of the infected people and injected it into a guinea pig. The bacteria was similar to other gram-negative bacteria and was named *Rickettsia burnetii*.
- The bacteria was classified into a new genus, and then called *Coxiella burnetii*, which is what the bacteria is called now.



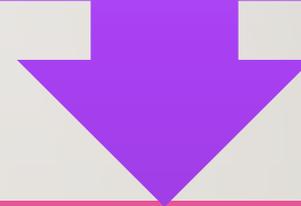
C. burnetii. Transmission electron micrograph showing a gram-negative-like wall cell. Magnification, ×75,000. (Source: <https://www.ncbi.nlm.nih.gov>)

WHAT IS IT CAUSED BY?

- Q-Fever is caused by the bacteria *Coxiella burnetii*.
- *Coxiella burnetii* is very durable and can survive in the environment for months.
- The bacteria is seen most commonly in ruminants, but it can also be found in pets and wildlife.
- Goats infected with the bacteria are the most infectious at the time of kidding. The bacteria can be shed through birthing fluids in membranes for weeks after partition.

SYMPTOMS IN ANIMALS?

Most often, goats are asymptomatic while infected with Q-Fever, but can still shed the disease.



If goats are infected and have symptoms, they can include the following:

Does may abort or have weak kids.

Aborted fetuses may present with a thicker placenta than normal.

SYMPTOMS IN HUMANS?

- Infections are most common in people that encounter livestock.
- Most people contract the bacteria through inhalation.
- Pregnant women are also at risk for infection, as it can cause abortions and pregnancy complications.
- Often symptoms are very mild.
- However, symptoms can be more serious.
 - Flu-like symptoms
 - Fever, headache, fatigue
 - Pneumonia
 - Hepatitis
 - Jaundice, prolonged fever

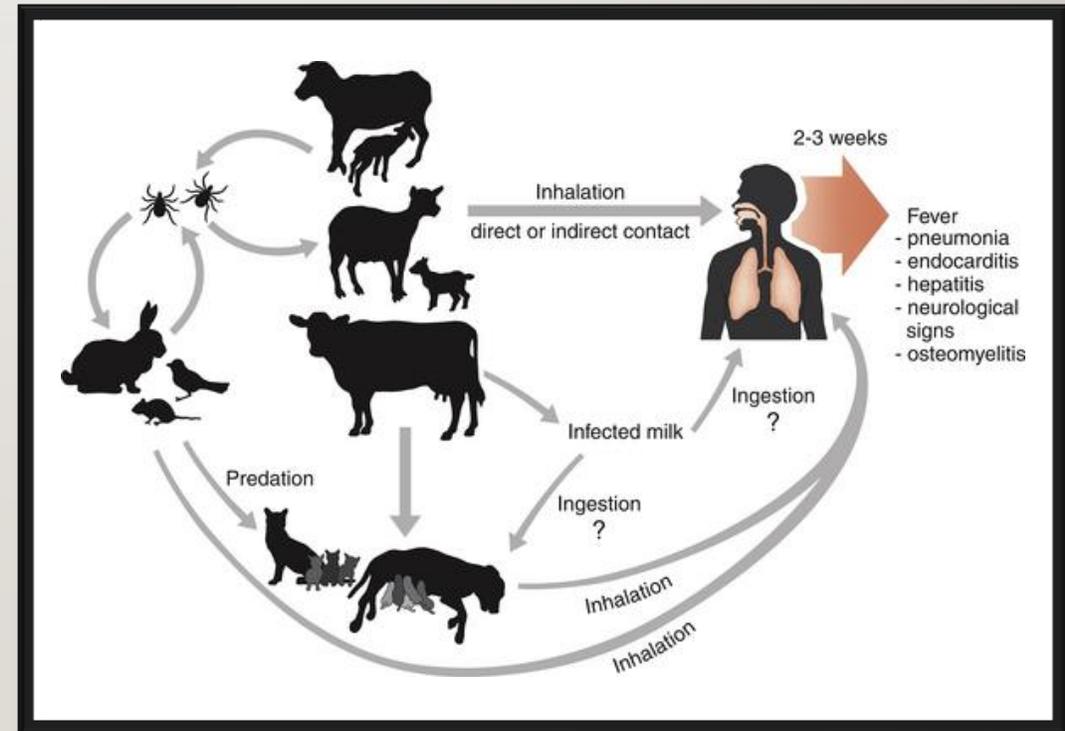


WHY IS Q-FEVER A CONCERN?

- As seen in the previous slides, Q-Fever symptoms in animals most commonly include abortions or weak kids. This can cause a great deal of economic damage to farmers if the disease is not detected or treated in time.
- Q-Fever is also concern because it can affect humans. As the previous slide reiterates, Q-Fever symptoms in humans are often mild, but can also cause miscarriages in pregnant women. If Q-Fever is suspected in a herd, it is important to get the animals tested so that preventative measures can be put in place for both pregnant women and all other people.

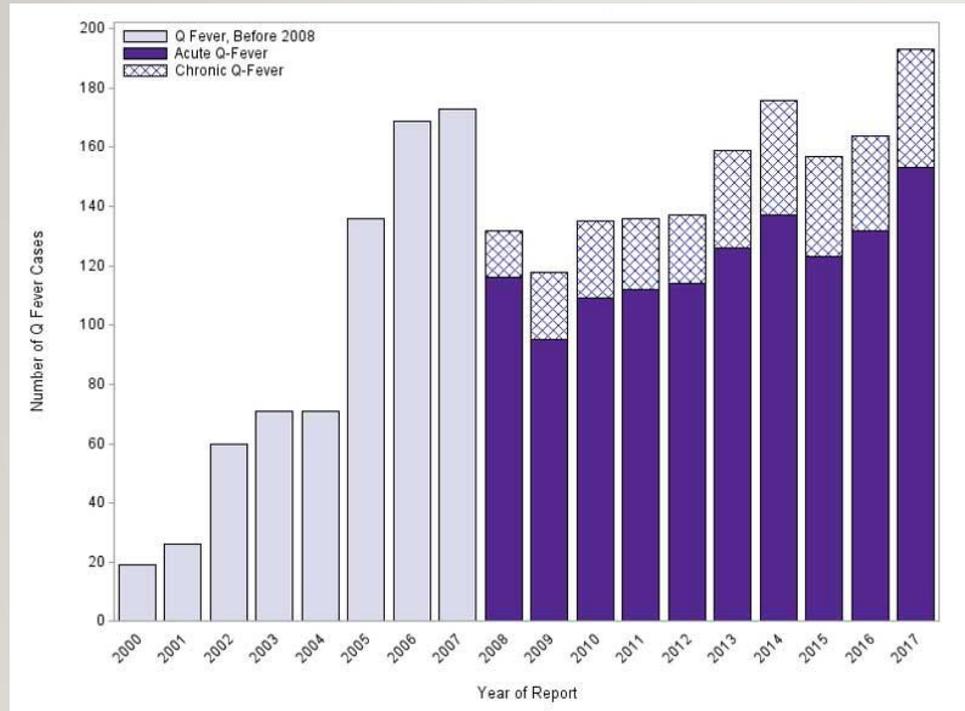
THE PRESENCE OF Q-FEVER IN THE WORLD

- The bacteria is found throughout the world, but it has not been found in New Zealand.
- In Europe, cases are reported more frequently in Spring and early Summer.
- It is most commonly reported in France and Australia.
- Although it is an important disease in animals, most case reporting's across the world have only been recorded in humans.



<https://veteriankey.com/coxiellosis-and-q-fever/>

Q-FEVER'S IMPACT ON PEOPLE IN THE US



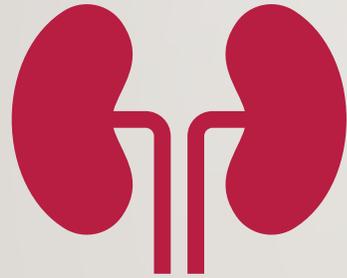
<https://www.cdc.gov/qfever/stats/index.html>

- This picture represents the number of cases of Q-Fever by year in humans.

HOW CAN WE, AS PRODUCERS, STAY PROTECTED?

- Eat and drink only pasteurized milk and other dairy products from livestock.
- Be cautious of goats around birthing time.
 - Avoid being in contact with goats during kidding unless necessary.
 - Wear protective equipment such as eye protection, masks, and gloves.
- High risk people, including pregnant women, people with depressed immune systems and recipients of organ transplants should be extremely cautious and avoid animals and herds that have tested positive for the disease.

TESTING IN GOATS



Diagnoses of Q-Fever requires testing. This can be done through testing of the placenta or fetus of a suspected case.



Most cases of Q-Fever can be detected through an antibody test.

MANAGEMENT STRATEGIES

- It is important to buy animals from a herd that has had no incidence of the disease or has tested negative.
 - Because many animals are asymptomatic and there is no vaccine for the disease, this step may not always fully prevent disease occurrence.
- Isolate newly purchased pregnant animals from the rest of your herd until they have kidded.
- In the case of an abortion in your herd, it is important to get the placenta or fetus tested for the disease.
- If there is a confirmed case in your herd, treatment of tetracycline given to does may reduce future abortions.

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