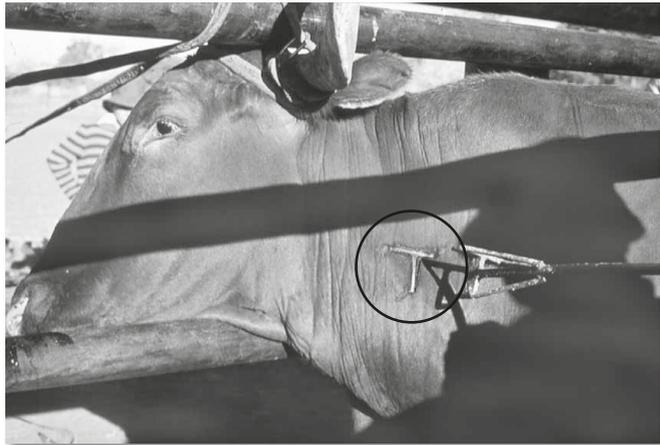
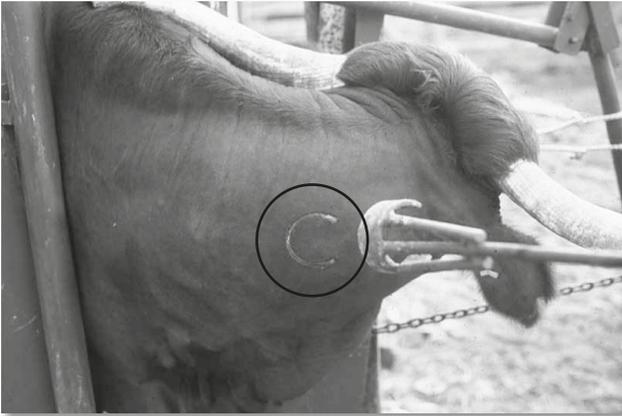


# Brucellosis and tuberculosis

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**Brucellosis and tuberculosis are both very important controlled diseases: this means that they must be reported to the government veterinary services, because there are specific control schemes for these diseases.**

They are important because they:

- ◆ are zoonotic diseases (diseases which people can get from animals)
- ◆ can cause severe illness, and even death, in cattle
- ◆ can result in loss of income because of the cost of loss of production and control.

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## **BRUCELLOSIS (CONTAGIOUS ABORTION OR CA)**

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- ◆ Brucellosis is a disease of production animals. It occurs more frequently in cattle in South Africa, but can occur in other species too.
- ◆ It is an important zoonotic disease.
- ◆ The most common sign in animals is abortion.
- ◆ It is caused by bacteria (germs) named *Brucella*.

### **How cattle become infected**

- ◆ The aborted foetus (unborn calf), the membranes around the foetus, and the fluid from the womb of the aborting cow contaminate grazing areas with bacteria.
- ◆ Cattle are infected by:
  - penetration of the bacteria through the mouth when grazing
  - penetration of the bacteria through damaged skin
  - contamination of the udder
- ◆ Breeding animals are most susceptible.





## Signs of brucellosis in cattle

- ◆ Abortion in late pregnancy (usually 5–7 months). This is why the disease is also called contagious abortion or CA.
- ◆ Infertile cows (not producing calves).
- ◆ Infertile bulls (not making cows pregnant) as a result of inflammation and swelling of the testicles.
- ◆ Swollen joints are a sign of long-standing infection.

## Brucellosis in other species

- ◆ Brucellosis in goats is similar to the disease in cattle. In humans it causes a serious illness called Malta fever. People are usually infected through goat's milk and cheese. There is a vaccine to prevent the disease, and goats should be vaccinated at about 4 months of age.
- ◆ Brucellosis in sheep is usually seen as an inflammation of the testicles of rams that can result in permanent infertility. Abortions are rare. If humans become infected, it is usually only a mild manifestation of the disease. There is a vaccine to prevent the disease, and ram lambs are vaccinated at about 4 months of age.
- ◆ Pig and dog brucellosis have not occurred in South Africa. They do not cause serious diseases in people.

## How people become infected

- ◆ By handling infected foetuses, foetal membranes and fluid (when assisting at calvings or handling aborted calves).
- ◆ By drinking infected milk.

## Signs of brucellosis in people

The signs of brucellosis in people are similar to flu and include the following:

- ◆ Fever
- ◆ Severe night sweating
- ◆ Sore throat
- ◆ Joint and muscle pain
- ◆ Continuous coughing
- ◆ Headache
- ◆ Loss of weight
- ◆ Depression
- ◆ Weakness

The disease may be of short duration or have a long course (months to years).

## How can brucellosis be diagnosed?

- ◆ Any aborted foetus should be examined to determine whether it was caused by brucellosis. Ask your animal health technician or state veterinarian to take samples of the foetus, membranes and the fluid and send these to a veterinary laboratory.
- ◆ Blood collected by your animal health technician or state veterinarian from the animal can also be tested at the laboratory. You may also want to test cows that have not calved for some time.
- ◆ Cows that are positive for the disease will be branded with a “C” on the neck.

## Treatment

- ◆ **There is NO TREATMENT for animals.**
- ◆ Infected animals remain carriers and spread the disease to the rest of the herd, and it is therefore best to remove them.

## How to prevent brucellosis

### *Vaccination*

- ◆ Vaccines are available to prevent brucellosis.
- ◆ Vaccinate all female calves between the age of 4 and 8 months.
- ◆ Do not vaccinate the bull (he may become infertile).
- ◆ Do not vaccinate older females (if they are pregnant they may abort).
- ◆ The vaccine should always be kept in a cool place. Follow the instructions for use.
- ◆ Ask your animal health technician or state veterinarian for help if you have any questions about vaccination. It may be the safest to ask them to administer the vaccine as it is dangerous for people if they accidentally inject themselves.

**Do not vaccinate pregnant animals.**

**Breeding rams must never be vaccinated.**

### *Testing the herd*

- ◆ You can test the herd to identify any positive cases so that you can remove them.
- ◆ This involves a blood test once a year of all animals.
- ◆ The milk can also be tested every 2 months if people drink the milk.
- ◆ Ask your animal health technician or state veterinarian for help if you have any questions about testing.

## **New animals**

Buy only healthy animals that are tested and have a certificate proving them negative for brucellosis and tuberculosis.

## **Preventing human infection**

- ◆ Pasteurise or boil milk (note that the bacteria will not be destroyed in the case of sour-milk products or cheese).

- ◆ Always be careful and wear long plastic gloves (or plastic bags as gloves) when handling aborted calves or helping cows to give birth. Burn all infected material from abortions.

## **Why is brucellosis important?**

### *Cattle production*

- ◆ Loss in production.
- ◆ Spread of disease to other animals.
- ◆ Cost of testing and eradicating the disease.

### *Human health*

- ◆ Unpleasant disease.
- ◆ Long, expensive treatment of sick people.
- ◆ Inability of infected people to work.

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## **TUBERCULOSIS (TB)**

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- ◆ TB is a disease that slowly spreads in animal populations.
- ◆ It is also an important zoonotic disease (a disease that people can get from animals).
- ◆ It is caused by bacteria (germs).
- ◆ TB can occur in many animals (cattle, sheep, goats, chickens, pigs, dogs and wildlife such as lions, baboons and buffalo), but we are mainly concerned about the disease in cattle.

## **How cattle become infected**

- ◆ By breathing in small water drops in the air from sick animals' coughing.
- ◆ When grazing grass that is contaminated with droppings of sick animals.
- ◆ Calves can be infected through the milk of sick animals.

## **Signs of TB in live cattle**

- ◆ It may take a long time before the signs are seen.
- ◆ General signs include:
  - animals become thin
  - weakness
  - poor condition of skin coat
  - listlessness
  - infertility (not producing calves)
  - mastitis
- ◆ Lung signs include chronic coughing and difficult breathing.
- ◆ Other signs depend on the parts of the body that are affected.

## **Signs of TB in dead cattle**

Abscesses in organs, varying in size from pinpoint to the entire organ, can occur throughout the body.

## **How people become infected**

- ◆ By drinking milk from infected animals.
- ◆ By eating meat from infected animals.
- ◆ By handling infected meat and carcasses.

## **Signs of TB in people**

TB is a dangerous disease of people, particularly those in poor health (elderly people, children and people suffering from malnutrition or AIDS).

- ◆ Signs in people include the following:
  - chronic coughing
  - pneumonia
  - poor appetite
  - weakness
  - weight loss
  - night sweating
- ◆ The disease is fatal if people are not treated in time.

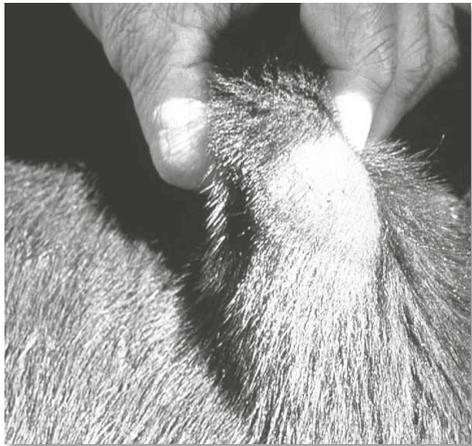
## How can TB be diagnosed?

- ◆ It is difficult to identify the disease, but when suspected in a herd your state veterinarian or animal health technician can test the herd.
- ◆ A skin test is used on the animals.
- ◆ The test is done on one day and the veterinary staff will return to read it a few days later.



## Treatment

- ◆ Animals will die after a long-lasting disease during which time the entire herd can become infected.



## How to prevent TB

- ◆ Have your cattle tested every year.
- ◆ Positive animals should be isolated.
- ◆ They are branded with a "T" on the left side of the neck.
- ◆ It is best to have them slaughtered as they will never get better and can infect other animals and people.
- ◆ Meat of animals with the disease should not be eaten unless the meat has been inspected and passed at an abattoir.
- ◆ Buy only healthy animals that have been tested and have a certificate proving them negative for TB and brucellosis.
- ◆ Milk for human consumption should be pasteurised or boiled.
- ◆ Humans who have TB should not work with animals.



## **Why is TB important?**

### *Cattle production*

- ◆ Loss in production.
- ◆ Loss of draught animal power.
- ◆ Eventual death.
- ◆ Spread of disease to other animals.
- ◆ Cost of testing and eradicating the disease.

### *Human health*

- ◆ Long expensive treatment of sick people.
- ◆ Inability of infected people to work.

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## **CONCLUSION**

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- ◆ Brucellosis and tuberculosis are very important diseases of both cattle and people.

- ◆ You can guard against these diseases by vaccinating against brucellosis, having your cattle tested and being careful with milk products and aborted calves.

For further information contact your nearest animal health technician or state/private veterinarian

*or*

*Animal Health for Developing Farmers*  
ARC-Onderstepoort Veterinary Institute  
Private Bag X05, Onderstepoort 0110  
Tel: 012 529 9158

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