

TUBERCULOSIS IN CAMELIDS

What is tuberculosis (TB) and what happens if it affects your herd?





Bovine TB is one of the most complex animal health problems currently facing the farming industry in Great Britain. This advice and guidance leaflet is an introduction to TB in Camelids – including llamas, alpacas, vicuñas and guanacos – and explains what TB is, how it is transmitted, how we detect it, and what happens if TB is detected in your camelid herd. It also provides some tips on how you can reduce the risk of introducing TB to your herd.

WHAT IS TB?

TB is a disease of warm-blooded animals arising from infection by organisms of the Mycobacterium tuberculosis (MTB) complex. This is a group of closely related bacteria that includes:

- Mycobacterium bovis (M. bovis) - responsible for TB in cattle and other mammals.
 - » Cattle, buffalo and bison are the natural host of M. bovis but nearly all mammals, including camelids, are susceptible to the infection.
 - » This broad range of animal hosts complicates the control of bovine TB
- M.tuberculosis - the primary agent of TB in humans which rarely causes problems in animals.

TB is not a major health problem for camelids worldwide and reports of infection in their natural habitat, South America, are rare. However, recent experience in New Zealand, USA, Holland, Spain, Ireland and Great Britain has shown that camelids can become infected with TB. Infected camelids pose a significant risk to others within the herd, to other herds through movements and potentially to other livestock, people and local wildlife.

HOW IS TB TRANSMITTED?

Transmission of TB can occur between animals, from animals to humans, more rarely from humans to animals and between humans. Transmission is predominantly through exposure to respiratory aerosols from an infectious animal.

Camelids have a habit of spitting a mixture of gastric contents and saliva and this could increase the risk of transmission, particularly in the later stages of infection when lesions are present in the lungs and bowel.

Transmission between animals

TB can spread in a number of ways, including:

- within the herd by direct or indirect contact
- through contact with infected domestic animals, usually cattle brought onto the premises
- through contact with infected cattle on neighbouring farms
- through contact with infected camelids brought on to the premises
- through contact with infected camelids at shows or studs
- through direct or indirect contact with infected wild animals
- through contact with contaminated equipment, feedstuffs, slurry etc.

Transmission to people

The transmission of TB to people can occur:

- by inhaling the bacteria shed by infectious animals in respiratory and other secretions e.g. sputum or saliva, or through contamination of unprotected cuts or abrasions while handling infected animals or their carcasses
- through consumption of unpasteurised milk and unpasteurised milk products from infected animals.

Transmission of TB to humans, cattle and other camelids is of primary concern and the main reason for government intervention when the infection is diagnosed in camelids.

SIGNS OF TB IN CAMELIDS

The disease is difficult to diagnose by clinical examination and TB should be considered as a possible cause of chronic loss of condition in camelids.

Signs of TB in camelids are not specific and may include sudden onset of respiratory problems such as a cough or increased rate of breathing, gastrointestinal problems e.g. diarrhoea, weight loss and skin disease. Camelids can be infected with TB and show no signs until the infection is very advanced.

It can take several months, or even years, from the initial infection to the development of clinical signs of TB.

WHAT TO DO IF DISEASE IS SUSPECTED

You should always consult with, and seek advice from, your private veterinary surgeon if you are concerned about the health of any camelids on your farm.

It is also best practice to have a post mortem examination carried out by a veterinary surgeon on any camelid that dies or has to be euthanased for reasons that cannot be determined.

Under the existing legislation, farmed mammals that are infected, or suspected of being infected, with TB must be reported to your local Animal Health office.

Animal Health will serve a notice TR148 (Notice Prohibiting Movement of Animals other than Bovine Animals) when there is confirmation of infection with *M. bovis* on your premises, or when there is reasonable suspicion that animals in your herd are infected with *M. bovis*.

Movement of camelids onto and off your premises will be restricted until Animal Health is satisfied that your herd is free from TB, through a programme of testing.



FIG 1: SITE OF TB INJECTION

HOW DO WE TEST FOR TB?

Camelids are tested for TB using the tuberculin skin test, the Single Intradermal Comparative Tuberculin Test (SICTT). This is the official TB screening method for camelids traded internationally. It is also the only diagnostic test for TB currently recognised for use in live camelids in most countries.

Where *M. bovis* infection has been confirmed by culture in a camelid herd, it is strongly recommended to supplement the skin test with a more sensitive blood test that can detect circulating antibodies to *M. bovis* in the blood of infected animals.

This will increase the chances of eliminating the infection from the herd more quickly and reduce the risk of leaving undetected infected animals in the herd once the restrictions have been lifted. At present, a gamma interferon test is not available for routine use in camelids.

The skin test involves injecting a small amount of tuberculin into the skin layers in the axilla behind the elbow. Avian tuberculin is injected on one side and bovine tuberculin on the opposite side. The skin is first clipped and a fold measured using special callipers before the tuberculin is injected.

After 72 hours, the veterinary surgeon returns and re-measures the skin on the site of the injections.

The skin thickness is measured in mm and the comparative difference between the reaction to both tuberculins determines if the animal is classified as a reactor or a pass.

This test is difficult to perform and technically demanding. It is important to bear in mind that reactors to this test will not always show lesions typical of TB at post-mortem examination, nor provide a final culture positive result.

However this does not mean that the animal was not infected. The animal may be in the early stages of infection or have lesions in unusual locations in the body which may not be routinely examined or are very difficult to find.

WHEN DO I NEED TO TEST ANIMALS AND WHO PAYS FOR THE TEST?

The skin test may be carried out at government expense in cases such as:

- TB in the camelid herd is confirmed in laboratory culture samples, or if Animal Health has reasonable suspicion that infection with *M. bovis* is present in your herd

- Camelids have moved on to your premises from a herd with confirmed infection
- TB has been confirmed in a cattle herd co-located with, or neighbouring, a camelid herd
- To comply with specific government policies.

Otherwise the test is carried out at the owner's expense.

Where *M. bovis* infection has been confirmed by culture, all remaining animals in that herd of camelids will have to undergo two consecutive skin tests with negative results at minimum intervals of 90 days since the removal of the last infected animal.

Usually, for tracings and neighbouring herds, a single skin test with negative results is required.

Testing camelids for TB is voluntary in England and Scotland. In Wales, The Tuberculosis (Testing and Powers of Entry) (Wales) Order 2008 may be invoked to ensure that testing is carried out where necessary.

However the law in England, Scotland and Wales requires the notification to Animal Health of any suspicion of TB infection in a camelid.

Where TB has been confirmed in a camelid herd, restrictions on their movement on and off the premises will be served and will remain in place until Animal Health is satisfied that the herd is free from TB.

In practice, this means that movement restrictions can only be removed once all infected and test-positive animals have been slaughtered and any remaining animals in the herd have completed the appropriate testing programme.

It is important to discuss with staff from Animal Health what testing will need to be completed for restrictions to be lifted from your herd.

Where there is a strong suspicion of the presence of infection with TB in your herd you may be advised to agree to an immediate and additional 'check test' of the herd, prior to the two clear short interval tests, to reduce the likelihood of further spread of TB.

If the owner does not give permission for further testing for TB, then the herd will remain under permanent movement restrictions.

Alternatively, the whole herd can be depopulated by slaughter at the owner's expense.

WHAT HAPPENS TO REACTORS AND WILL I RECEIVE COMPENSATION?

Reactor camelids must be slaughtered. However there are no statutory provisions at present to compensate owners for the loss of camelids identified as reactors or animals identified as suspect clinical cases in herds where TB has been confirmed.

Therefore if owners agree to have their animals tested for TB at the government's expense, Animal Health will ask for written consent to release for slaughter any animals identified as reactors prior to that testing taking place.

A flat rate ex gratia payment may be made for any reactors removed for TB control reasons. Any non-reactor animals that need to be culled as dangerous contacts or suspect clinical cases of TB may also be eligible for this flat rate payment. This will be in the opinion of an Animal Health veterinary officer and after confirmation of *M. bovis* infection in a herd.

Any queries about the current compensation payment arrangements should be discussed with staff from your local Animal Health office.



HOW TO REDUCE THE RISK OF TB IN YOUR CAMELIDS

Your private veterinary surgeon can advise on steps you can take to reduce the risk of introducing TB into your camelid herd. It is good practice to isolate animals when they arrive on your premises.

Consider where you source animals from and consider private pre- and

post-movement skin testing, by your private Veterinary Surgeon, of purchased animals and those returning from shows, studs, etc.

Where possible avoid co-grazing camelids with cattle, especially in areas where TB is endemic in cattle, or reduce the amount of contact between the cattle and camelids. If a camelid dies on your premises, Animal Health advise you contact your

private veterinary surgeon to organise a post mortem examination of the carcase.

Post mortems have so far been one of the main ways in which TB has been detected in camelid herds.

You should also keep comprehensive records of the movement of animals on and off your premises, as this information may prove valuable in

tracing the origin and potential spread of TB and other infections that may be diagnosed in your herd.

Movements to events where your animals will have close contact with other camelids and cattle (e.g. livestock shows, travelling to other farms for mating) should be kept to a minimum.

Badgers may transmit TB to your camelid herd, and there is also a risk from other wildlife such as deer.

Badgers are known to visit farm buildings to feed, and can contaminate unprotected food sources.

Make your farmyard less attractive to wildlife, particularly badgers, by taking practical measures to stop them from gaining access to feed stores, silage clamps and feeding troughs.

Where possible, keep your livestock away from high risk areas where you have identified badger setts and latrines. Feeding at pasture increases the risk of contamination; avoid feeding concentrates on the ground and clean out troughs regularly.

Aim to make salt and mineral blocks inaccessible to badgers by raising them off the ground. Water troughs should also be raised at least three feet above the ground to prevent badger access.

FURTHER GUIDANCE

For further guidance or the latest information on the most up to date policies for the country where your camelids are kept, please contact your Animal Health office, or consult the Animal Health website or the relevant website for your herd's location:

www.defra.gov.uk/animalhealth/

<http://www.defra.gov.uk/foodfarm/farmanimal/diseases/atoz/tb/>

<http://www.scotland.gov.uk/Topics/farmingrural/Agriculture/animal-welfare/Diseases/SpecificDisease/bTB/>



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