



What is bovine TB?

*This explanation of the disease is taken from the **DEFRA** website.*

Definition

Bovine TB is a infectious and contagious disease of cattle caused by the bacterium *Mycobacterium bovis* (M.bovis). It is characterised by the development of tubercles in any organ of the body.

Animals affected

Although the main reservoir and natural host of M.bovis is cattle, human beings and a wide range of mammals are susceptible to the bacterium. Infection of farmed deer, farmed wild boar, goats, llamas, alpacas, pigs, dogs and cats has been reported in GB, but these appear to be spill-over hosts. A number of wild animals (European badger, the brush-tailed possum, buffalo, bison and several species of wild deer) can act as reservoirs of M.bovis for cattle and other mammals and may pose major impediments to eradicating the disease in cattle.

Clinical signs

Aerosol exposure to M.bovis is considered to be the main route of infection of cattle, but infection by ingestion of contaminated material also occurs.

Bovine TB is usually an insidious and chronic (slowly progressing) inflammatory condition. Once an animal is infected with M.bovis, the rate of progress of infection is dependent on a number of factors including infectious dose, genotype and immune status of the host and stress.

The disease varies in severity and signs depending on the affected organ, but often signs in cattle only appear in advanced cases and, if so, are few and non-specific. This makes clinical cases of bovine TB, if present at all, rather difficult to spot by a lay person. The signs include weakness, loss of condition and appetite, swelling of various lymph nodes, persistent cough and respiratory distress. Udder involvement these days is rare, but can result in progressive hardening of the affected quarter and enlargement of the supramammary (top of the udder) lymph nodes. In such cases the organism can be demonstrated in milk samples.

Bovine TB infection is usually diagnosed in the live animal on the basis of the tuberculin test. As a result of effective control programmes introduced in the 1950s (see below), clinical cases of bovine TB in GB are very rare nowadays.

Post-mortem

After death, a preliminary diagnosis of TB can be made by the presence of typical lesions (granulomas or tubercles) in various organs and their associated lymph nodes. Generally,

lesions are confined to the lymph nodes of the head and to the lungs and their associated lymph nodes. Occasionally, TB granulomas are also found in the liver, spleen, lymph nodes of the gut and the lining of the thoracic and abdominal cavities. TB granulomas start as microscopic lesions, but can develop into large nodules containing a thick, yellow, cheese-like pus (caseation), sometimes with a gritty texture (calcification). The presumptive diagnosis of TB can be confirmed by histopathological examination and microbiological culture at specialised laboratories.

In deer, lesions caused by *M.bovis* tend to be thin-walled abscesses containing pus with little caseation or calcification.

Control

M bovis is naturally transmissible between animals and people by aerosols from infected animals or their carcasses and by consumption of unpasteurised milk and dairy products from infected cows. TB in humans caused by *M.bovis* constitutes a public health problem in developing countries. In GB the risk to human health is considered low due to vaccination at childhood, the introduction of pasteurisation of milk, routine meat inspection and the relatively low prevalence of *M.bovis* infection in the national herd.

Treatment

This is not usually undertaken in livestock because of the chronic, contagious nature of the disease and its potential public health hazards. In GB the TB Orders specifically prohibit the treatment of cattle and deer for tuberculosis.