

## TB – THE DISEASE

### What is the cause of TB?

Bovine Tuberculosis is one of the most important infectious diseases of cattle in Northern Ireland. It is caused by a bacterium called *Mycobacterium bovis* (*M. bovis*). This bacterium is closely related to other bacteria that cause TB in humans and other animals. Together they are known as the 'Mycobacterium tuberculosis Complex.'

### How long does TB survive outside the animal?

Mycobacteria can survive on pasture for several months, even after infected animals have been removed. There is evidence that it can be present in water sources. Further research is needed in the area of environmental transmission.

### Is it necessary for direct contact between animals to spread infection or can it spread indirectly?

bTB is a respiratory infection and so primarily spreads through respiratory secretions or through inhalation of contaminated material. The main animal sources of infection are cattle and badgers and the environment contaminated by them. The infection can also spread to calves or humans by the drinking of unpasteurised milk. Mycobacteria may infect the developing foetus.

Direct transmission of TB occurs through close contact between animals; indirect transmission occurs through contact with contaminated material, such as sputum, urine or faeces in the environment. TB levels are impacted by poor nutrition, poor hygiene, poor ventilation and high stocking densities.

Disease can develop with a few weeks of exposure; at times it can take much longer for the disease to become evident.

### What wildlife is affected by TB?

While bTB is adapted to infecting cattle it can spill-over to other species. Within NI these are primarily camelids, such as alpacas and llamas, as well as badgers and deer. Badgers can act as bTB reservoirs of infection (maintenance hosts), maintenance hosts that spill-over infection to cattle, or receivers of spill-over infection from cattle. Badger density is one determinant of whether the infection can be maintained independently in the badger population.

Deer can also act as a reservoir of disease, however are less likely to be maintenance hosts than badgers. They can pass the infection to other deer and to cattle.

### When did bTB start or become an issue in NI?

The first bovine TB eradication programmes were voluntary, and in the late 1950s a compulsory scheme started. In the late 1960s herd incidence was so low that herds were tested every two to three years. Herd incidence began to increase again in the early 1970s. Biennial testing recommenced in 1976.

Annual testing was resumed in 1982. Herd incidence was recorded at 1.25% in 1987, however levels increased during the late 1980s and in the early 1990s an enhanced eradication programme was introduced. Herd incidence continued to rise, particularly after Foot and

Mouth Disease in 2001 when on-farm testing was suspended for around four months, hitting 10.21% during 2003. There was a downward trend until 2007 and herd incidence remained level until 2011, after which it increased markedly again to a herd incidence of over 9% in 2018, with the levels being around or above 10% constantly since the start of 2023.

### **Why has TB not been eradicated?**

The current programme in NI aims to reduce disease by removing infected cattle and removing carriers, and restricting movements to reduce the risk of further spread. While this continuous cycle of testing and removing infected animals has been in place in NI, this has not achieved the desired outcome and has been costly to implement.

There is no bTB vaccine approved for use in cattle that could protect the cattle population.

### **What is the cost of TB in cattle?**

The cost of the Bovine TB Programme in NI during 2022/23 was £53 million with compensation making up approximately £38 million. However the costs of bovine TB go far beyond government expenditure on the disease. Bovine TB has a significant financial impact on a herd, through loss of animals, loss of production, cost of farmer time (testing, isolating animals, cleaning and disinfecting and restocking) the emotional and psychological costs.

A Defra report that looked at consequential costs in 2018/2019 found the median cost of a TB breakdown on a farm in England and Wales was £6,600, however costs increased in chronically affected herds and as herd size increased.

Compensation covers direct economic losses due to the loss of cattle, but not consequential losses. Depending on the size and type of farm and timing of the breakdown, all farms with bTB incur costs however some will experience a much greater cost/ loss. Cash flow forecasting is needed so that budgeting and expenditure can be planned, however loss of income leads to uncertainty, cash flow issues and loss of business control, in both dairy and suckler herds. There can also be a long-term effect on a business through lost genetics, for example affecting future bonus payments for milk quality.

### **What do farmers have to pay towards the bTB scheme costs?**

Farmers pay the costs of programme compliance, such as their time for testing, and the consequential costs of having a breakdown if reactors are disclosed. An outbreak of bovine TB can have a very significant impact on farming families, as they witness the removal of cattle that represent generations of breeding and experience their ambitions for the future of their enterprise being put into jeopardy.