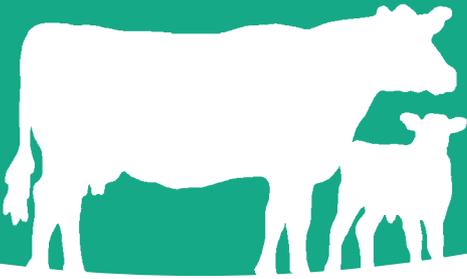


Introduction to Johne's Disease



Johne's disease is a chronic intestinal disease caused by *Mycobacterium avium* subspecies *paratuberculosis* (MAP). There is no treatment or cure for Johne's disease and infected animals will scour, waste away and eventually die if not culled. The progression of the disease is usually very slow with the majority of animals becoming infected as young calves (often in the first 24 hours of life) but not becoming clinically ill until they are adults.

It is a disease that causes considerable economic losses through decreased productivity and increased wastage of adult cattle; as well as the cost of monitoring, diagnosis and control. There is a strong association between Johne's disease and production problems – with Johne's cows being much more likely to have poor yields, mastitis, lameness or high somatic cell counts, all of which lead to premature culling.

A black and white cow standing in a green field, looking towards the camera. The cow has a distinctive white patch on its face and chest.

It is important to understand the dynamics of Johne's disease and how it is transmitted so that you can assess your farms risks of entry and spread.

How does Johne's Disease enter a herd?

1 BUYING IN INFECTED CATTLE

This is by far the most common way to bring Johne's disease into a herd whether you buy cows, calves or a bull. For more information on how to buy more safely see the National Johne's Action Group buying guide.

2 IMPORTING SLURRY

From infected farms especially if spread on land where youngstock will be grazed.

3 WATERCOURSES

Contaminated from infected farms upstream.

4 OTHER ANIMALS

Including sheep, goats, deer and rabbits.

How does Johne's Disease spread within a farm?

1 MUCK

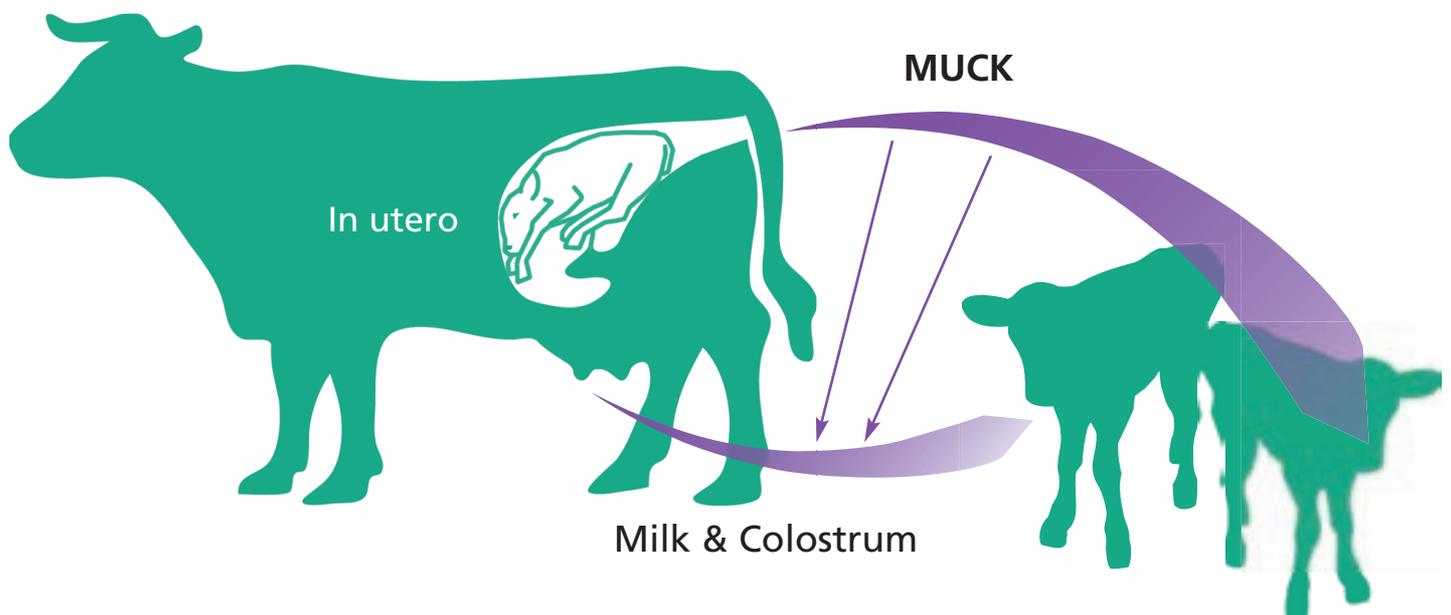
Billions of bacteria are shed in the faeces of infectious cows every day and this is the biggest source of transmission.

2 MILK & COLOSTRUM

The bacteria can be shed directly into milk and colostrum but contamination with infected faeces through dirty teats, buckets etc is extremely important also.

3 IN UTERO

A calf can become infected with Johne's before it is born although the risk is thought to be relatively low when compared to infection with muck after birth. The risk is approximately 20-40% if dam has clinical disease and approximately 10% if the dam has subclinical disease.



Johne's Disease Profile Graph

The nature of Johne's disease can make interpreting test results challenging. Often results fluctuate, demonstrating the animal's immune response (antibody production) as a means to fight off the disease. This graph below represents the pattern of disease often seen in cows with Johne's. It is designed to illustrate a typical profile of the disease with the dotted line representing antibody levels which are detected using the milk test.

STAGE 1

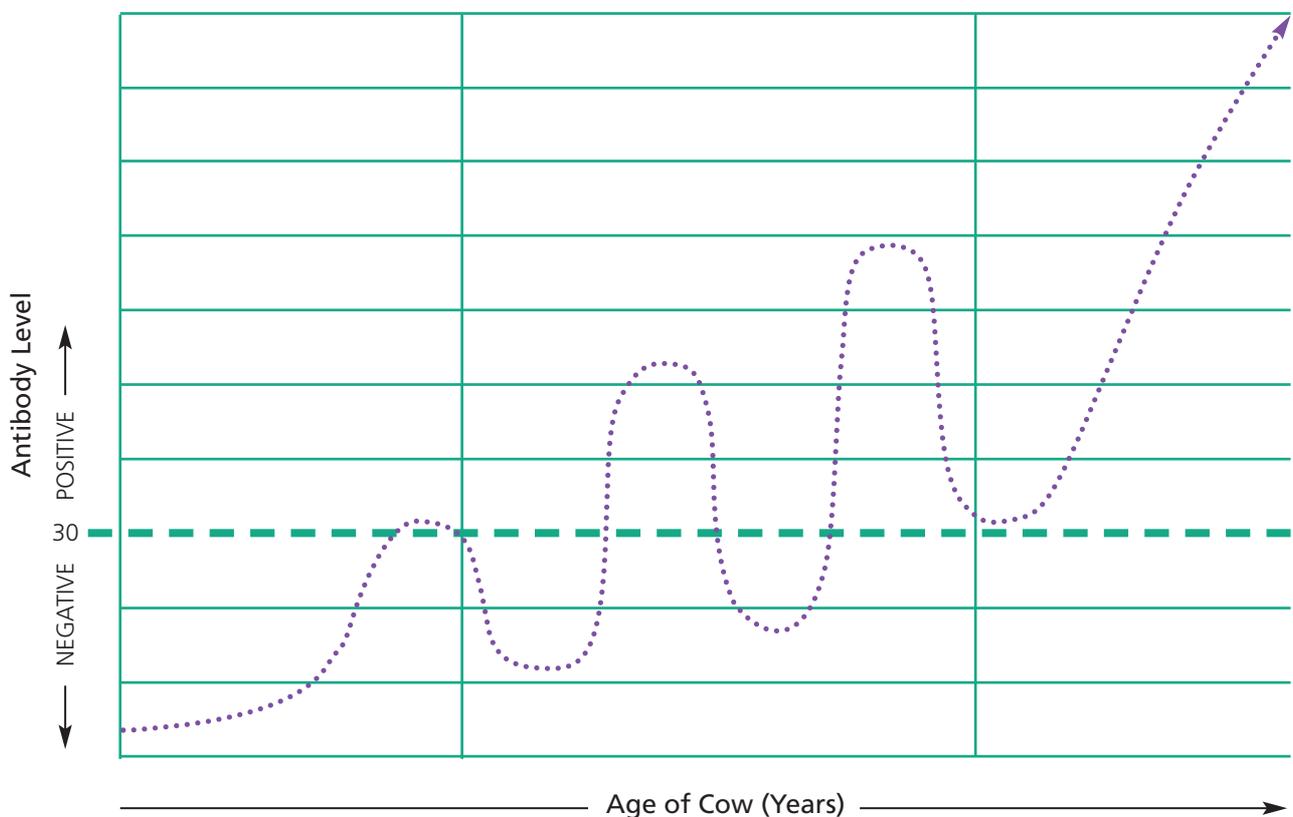
Cattle become infected as young calves and have an initial period, which can often be two to three years during which there is little or no antibody production. The immune system is able to control the bacteria and although the animal is infected, it is not likely to be infectious. During this time animals will be negative if tested for Johne's antibodies using milk or blood.

STAGE 2

A period of stress is thought to be the trigger that allows the bacteria to multiply and stimulates the cow to produce antibodies. There often follows a period of peaks and troughs of antibody levels as the cow tries to fight the disease. Often the cow does not look unwell but this is usually the time when she would show production problems (high SCC, mastitis, poor yields etc).

STAGE 3

In the terminal phase, the cow has lost control of the disease and this is when she will display the classical clinical signs of Johne's disease (scouring and weight loss). At this stage the cow will not be able to recover, is shedding vast amounts of bacteria and is highly infectious.



Key points:

- It is important to note that antibody response will vary from cow to cow.
- The age and length of time it can take a cow to go from low to high is also variable and dependent on many factors.
- The majority of animals begin to mount an immune response at 2 – 4 years old.
- Often peaks in antibody levels are triggered by a calving or stressful event e.g. lameness, illness or even stock movements.
- By testing quarterly, you increase the chances of finding the disease early and minimising the damage from it remaining undetected. You also have information to help with management decisions in a timely manner e.g. breeding and separation at calving

Practical Johne's management

The fundamental question of Johne's disease control is 'What can I do to stop the MAP bacteria getting into the mouths of my calves?'. Every management decision you make should look to answer that question.

- 1** Management of the calving area is critical to protect your calves from infection. This is often the biggest sticking point in Johne's management. It needs to be practical and work with your farming system. There is no 'one size fits all' solution but everybody can do something. From snatch calving or individual calving pens to segregation of positives, decide what will work for you and make it happen.
- 2** Milk and colostrum management is the next key step. Don't feed waste milk, and avoid feeding milk and colostrum from Johne's positive cows. Have a bank of frozen colostrum from low risk cows available for when you need it. Pasteurisation is a good risk reduction step but hygiene protocols should still be observed when harvesting milk and colostrum.
- 3** Buyer beware. If you are looking to buy cows, make sure you ask the right questions. Find out about the farm of origin, their management plan and testing history. Once you bring the cows into your herd they will enter your Johne's management plan and should be managed as a risk until proven otherwise through consistent negative test results.
- 4** Testing has never, and will never cure a disease, you need to use the test results you get to help you make robust management decisions about your cows. They can be used to help make decisions about calving and milk management, culling and breeding. The testing available to us, whilst by no means perfect, is absolutely good enough to enable you to manage Johne's on your farm. Pick a testing method, stick to it and make best use of the results.
- 5** Work with your farm vet to make sure you are doing the right things and getting the best from your testing. Everyone on the farm needs to be part of your Johne's management plan in order for it to be a success. Make sure all of your family and staff know who the Johne's positive cows are (red tag, leg band, freeze brand) and understand what should happen with them, it only takes one person not engaging to derail your efforts.

There is no doubt that Johne's is a complex disease but with a robust management plan in place it can be practically and effectively tackled on farm. To see how some dairy farmers are dealing with Johne's visit

<http://www.nationalmilklaboratories.co.uk/images/pdf/hwfarmerfocus.pdf>

For further information on Johne's Disease please visit www.actionjohnesuk.org

To find out more contact your area
field manager or call 01902 749920

