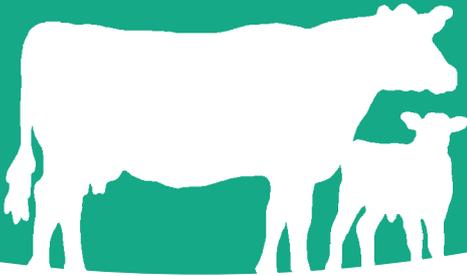


Introduction to Johne's Disease



HerdWise
Manage disease. Protect your future.



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 beforehand. 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.

It is important to understand the dynamics of Johne's disease and how it is transmitted so that you can assess your farm's risk 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 for Johne's to enter 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

MAP survives for up to 12 months in slurry so importing slurry from infected farms is a risk 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.

RISK

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, eg contaminated calving environment, teats or feed.

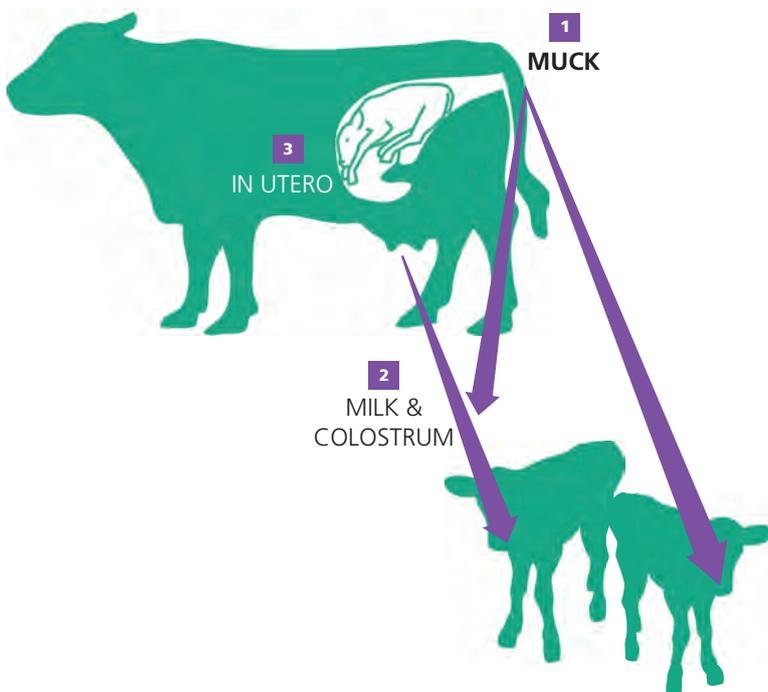
2 MILK & COLOSTRUM

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.

The spread of Johne's disease within a farm

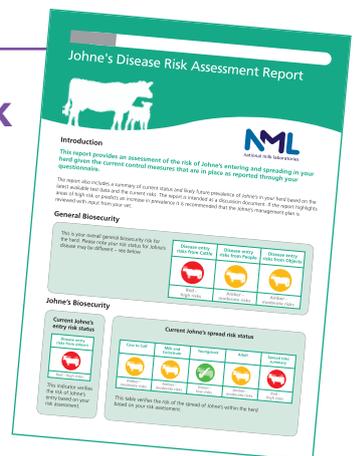


The NML Risk Assessment Tool

A simple and practical way to assess your risks and see if current Johne's management is robust and effective.

- Complete a risk assessment questionnaire with your vet
- Submit to NML for processing
- A clear and informative two sided report will be sent to you and your vet to review your management

* The risk assessment uses your latest set of Johne's test results. A minimum of a 30 cow screen in the last 12 months is required.



Johne's Disease Profile Graph

The nature of Johne's disease can make interpreting test results challenging. Results often fluctuate, demonstrating the animal's immune response (antibody production) as a means to fight off the disease. The 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 that are detected using the milk test.

STAGE 1

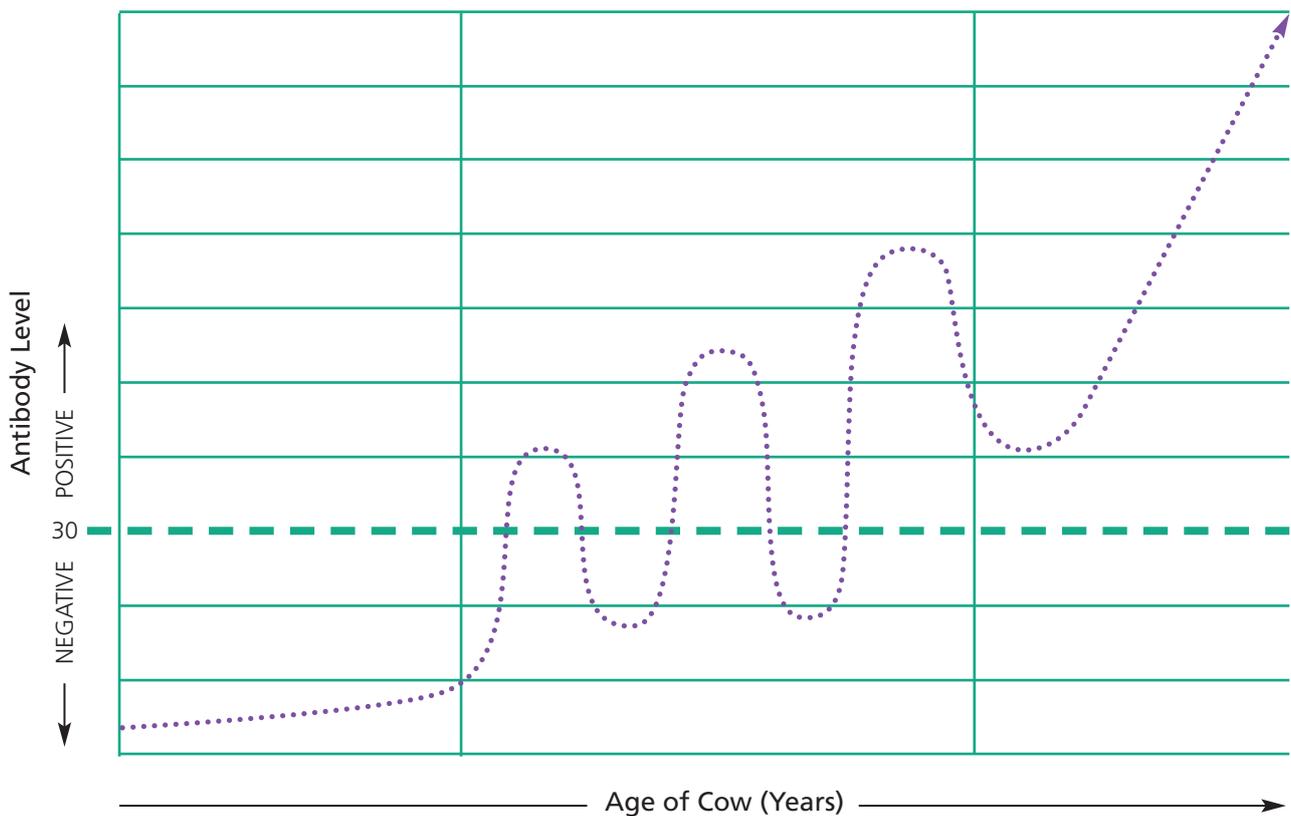
Cattle become infected as young calves and have an initial period (which can often be two or three years) during which there is little or no antibody production. The immune system is able to control the bacteria and although the animal is infected, it is not likely to be infectious at this stage. During 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 stimulate the cow's immune response to produce antibodies. There often follows a period of peaks and troughs of antibody levels as the cow tries to fight the disease. During this time the cow may not look unwell but this is usually when she would show production problems e.g. High SCC, mastitis, poor yields.

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:

- 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.

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 control. 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 positive cows, 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; or 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 can lower the risk 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 should automatically 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 your test results 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, although 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. 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 make management decisions in a timely manner e.g. breeding and separation at calving.
- 5** Work with your farm vet to make sure you are doing the right things and getting the most from your testing. Check your vet has completed the online training and is a BCVA accredited Johne's veterinary advisor. 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 stories of how some dairy farmers are dealing with Johne's visit

www.nationalmilkrecords.co.uk

For further information on Johne's Disease and the National Johne's Management Plan, please visit

www.actionjohnesuk.org



To find out more contact your area field manager or call 03330 043 043