

# Johne's Disease

Johne's disease is a chronic disease which progressively damages the intestines and after a period of scouring and weight loss, ultimately results in the animal's death. It causes huge economic loss to the national cattle industry and yet its presence goes unrecognised in many herds. It is also a notifiable disease within Northern Ireland.



Johne's disease is caused by a bacterium, *Mycobacterium avium subspecies paratuberculosis* (Map).

Cattle can become infected with Map at any age, although infection within the first few weeks or months of life is most common. Infection occurs via ingestion of Map from infected faeces or infected colostrum and milk.



Calves can become infected from their mothers before they are born.

Following infection, bacterial multiplication is slow so that clinical signs of disease are usually only seen once the animal has reached between three and six years of age.

It is possible for animals as young as 18 months to show signs of clinical disease.

Johne's disease diagnoses levels and prevalence is rising as indicated from recent SAC/ AHVLA surveys.

## Signs of Johne's Disease

Prior to clinical disease there is a reduction in productivity - the pre-clinical phase. The financial losses that result are of great significance.

Classic signs of Johne's disease are:

- Scouring and weight loss despite, in most cases, the affected animal remaining bright.
- Periods of remission may be seen in which affected animals appear to improve in condition however the disease is essentially irreversible.



Eventually oedema ('bottle-jaw') will be seen



- Animals become emaciated, and death will follow.
- Fertility of bulls and cows is reduced. The breeding lifespan of Map infected animals is estimated to be approximately half that of uninfected animals.
- Milk production is reduced.
- Suckler calves born to infected dams are likely to show poorer than expected growth rates.

## Diagnosis

There are various ways to determine whether Johne's disease is present within a herd: Animals can be tested that are showing signs consistent with the disease, i.e. poor condition and diarrhoea.

The prevalence of the disease within a herd can be obtained by screening all animals that are culled. This may reveal Map-infected animals which are not yet displaying the classic signs of the disease but as a consequence of their infection, are being culled, e.g. failing to conceive during a defined serving period.

Also routine whole herd milk screening or blood testing can be performed on a regular basis. Discuss these options with your vet.

## Herd Health Planning

In order to minimise the losses caused by Johne's disease it is important to define a herd's disease status and then to take appropriate action.

If Johne's disease is confirmed in a herd, controlling the disease to limit its impact will depend on biosecurity, hygiene and enlisting the farm vet's help to identify Map-infected animals so they can be culled thereby minimising the spread of the infectious organism in the environment.



**Did You Know?** In 1895, German physician Heinrich Albert Johne and his American colleague Frothingham were the first people to describe Johne's disease. *Mycobacterium avium subspecies paratuberculosis* (Map) is a bacterium genetically related to the organism that causes tuberculosis. However, Map does not cause tuberculosis in either animals or humans.



### Identification and removal of Map-infected animals:

- 1 Isolate all adult animals showing signs of diarrhoea and weight loss, and test for disease.
- 2 Cull animals confirmed to be suffering with Johne's disease and those animals in which the disease cannot be ruled out.
- 3 Trace the offspring of infected animals and ensure they are not kept as replacement breeding stock, as there is high risk that they are also infected.

### Hygiene:

- Hygiene is particularly important at calving and for the first few weeks or months of a calf's life when there is the greatest vulnerability to infection.
- Calving yards/boxes, teats and udders of freshly calved cows, should be kept as clean as possible to reduce the exposure of new born calves to the infectious agent.
- Avoid feeding pooled colostrum and cross suckling in herds known to be infected with Johne's disease.
- In dairy herds avoid feeding whole milk by using a good quality milk replacer instead.
- Prevent faecal contamination of feed and water supplies and keep troughs clean.
- Provide mains water and fence off other water sources, particularly areas of stagnant water.
- Avoid co-grazing with other livestock that may be infected and control rabbits.

- Spread dung or slurry on arable land. (If this is not possible, grass that has had dung or slurry spread on it should not be grazed, preferably for at least a year following the application).
- Keep cows and the environment as clean and free from faecal contamination as possible, especially during the calving period and for the first three months of the calves' lives.



### Vaccination:

Vaccination may have a role in helping to control Johne's disease, but only in heavily infected herds to reduce the incidence of clinical disease while other hygiene measures are put in place to reduce the incidence of Map infection. It is not a long term solution, as it will not necessarily prevent infection with Map or the disease spreading. Vaccination may also interfere with the diagnosis of bovine tuberculosis.

### Biosecurity Facts

**If Johne's disease is not present in your herd, biosecurity precautions to prevent its introduction are vital. This means screening all replacement animals.**

However, Johne's disease has a long incubation period, and so the sensitivity of the currently available laboratory test is relatively poor. This means a single negative test on a young replacement breeding animal, whether bull or heifer, is relatively meaningless.

Of greater reassurance is evidence about the status of the herd of origin of the replacement animals. Ideally the herd of origin should be accredited free of disease with a scheme compliant with CHecS standards.

The longer such accreditation has been maintained, the greater the confidence that can be placed in it. If replacements cannot be sourced from herds with such accreditation they should at least be sourced from herds with some evidence of active surveillance for Johne's disease.

For further information contact your local XLVets practice: