

# Johne's disease

## It pays to take Johne's disease seriously

For farmers who experience a major Johne's outbreak, with significant losses in young stock, the situation speaks for itself. Expert advice is clearly needed.

But what about the average farmer who loses the odd animal and sees the occasional lesion notified on their kill sheet?

Johne's-suspect lesions were found in 0.7% of all processed farmed deer in 2014/15 season. These animals came from a quarter of the farms that processed deer.

Analysis by Johne's Management Limited (JML) shows that on farms where the financial loss due to Johne's is less than \$2 a stock unit – about 50% of infected farms – farmers are not unduly concerned about the disease. Yet these losses add up. On large farms they may total more than \$10,000 a year. This is mainly due to higher death rates and slower growth rates in finishing deer.

Based on a \$400 replacement value for a deer at processing and a chilled carcass value of \$8/kg, JML estimates the typical financial loss for a 500 hind venison production herd with a Johne's-related death rate of 0.5% to be \$3000 a year, or \$1.43 a stock unit.

If you have Johne's on your farm, seek advice from a member of the Johne's Consultant Network. The disease is often stress related and the consultant's advice may well reveal the reasons why you have been frustrated in your efforts to hit targets and maximise profitability.



### Young deer with Johne's

*Affected deer fail to thrive, then rapidly lose weight and muscle mass. The severity of disease may increase rapidly; and deer may waste away over just a few weeks*

### What causes Johne's?

Johne's disease is caused by a bacterial infection (*Mycobacterium avium subspecies paratuberculosis*). The infection starts in the small intestine and moves to the lymph nodes. If the disease advances, the intestinal walls can thicken, interfering with digestion and absorption of nutrients. Young deer are most susceptible, while adults are far more resistant. Deer seem to be more susceptible than sheep or cattle.

Most infections are picked up when young deer eat or drink anything contaminated with Johne's bacteria. Infection can even spread from an infected hind to the fawn in her womb.

Fawns are usually infected when they suckle their mothers or other hinds that have Johne's bacteria in their faeces and/or milk.

Diseased deer shed far more bacteria in their faeces than in their milk. All clinically diseased deer shed the bacteria in their faeces, but sub-clinically diseased deer may not.

Transmission of Johne's between farms is caused mainly by the trading of deer. It may also spread to deer from infected sheep or cattle on the farm. Wildlife are not thought to play a significant part in spread of the disease, even though some may carry the bacteria.

## Key points

- Johne's disease (paratuberculosis) is a bacterial disease of ruminants. Major outbreaks can occur in young deer, while sporadic cases occur in both young and mature deer.
- Johne's can reduce productivity, even on the many farms where there are few signs of disease. Johne's-related losses on such farms are typically more than \$3000 a year.
- Deer with Johne's disease don't respond to any form of treatment. There is no cure.
- Johne's Management Ltd has been set up to help deer farmers minimise the impact of the disease in their herds.
- Johne's can be successfully controlled through careful planning and management, supported by expert advice.
- Control usually involves culling all animals with clinical infections or high Johne's antibody levels in their blood; reducing stress on young animals; reducing contact with infected animals and using stags from Johne's-resilient bloodlines.

Once Johne's is in a herd it spreads mainly from infected hinds to fawns. The infected animals then go through three stages: infected but not diseased, then sub-clinically diseased, then clinical.

The length of these stages is variable. It may take months or even years after infection for clinical signs to develop. Many infected deer develop only very mild clinical signs. Some never develop signs at all.

Clinical disease is often triggered by stress such as inadequate feed, parasitism, weaning, lactation, the rut, social mixing, and cold wet weather. Compounding different stressors are an important cause of ill-thrift and disease.

### What are the signs?

Two types of clinical Johne's disease occur in farmed red deer: major outbreaks in young deer and sporadic cases in both young and mature deer. In addition, sub-clinical disease may reduce the growth rate of deer.

### Major outbreaks in young deer

Major outbreaks usually involve deer as young as 8-months in their first winter but may occur in deer as old as 27-months. Up to 25% of the mob may be affected.

Affected deer fail to thrive, then rapidly lose weight and muscle mass. They develop diarrhoea and become soiled with green faecal material around the tail, hindquarters and hocks. The severity of disease may increase rapidly; and deer may waste away over just a few weeks. Weaners affected in early spring only partially moult their winter coat and take on a patchy or 'moth-eaten' appearance.

### Sporadic disease

Sporadic cases of Johne's occur at all ages. Affected deer typically lose weight and muscle mass over a period of a few months, and most develop continuous or intermittent diarrhoea.

Usually only one or two deer are affected, but once they show signs they will almost certainly die. This is very similar to the way Johne's disease presents in cattle and sheep.

**Prompt diagnosis is important**

Johne's can look similar to yersiniosis (in weaners) and some other diseases, so veterinary input is needed to confirm a diagnosis. The earlier the diagnosis is made, the sooner measures can be taken to minimise losses.

Deer with Johne's don't respond to any form of treatment. There is no cure.

**Subclinical Johne's**

Sometimes infected deer show only subtle signs of disease, for example slow growth rates, a failure to thrive and a partial moult in spring.

Neither the prevalence nor the impact of sub-clinical Johne's can be measured accurately. But at slaughter, about 0.5 to 1% of deer have lesions indicative of Johne's. The carcasses of these deer are typically 5-15% lighter than the carcasses of herd mates without lesions.

**Diagnosis**

Often the first indication that Johnes may be present in your herd comes from JML and the DSP. As part of the JML programme,ASUREQUALITY staff routinely record Johne's-type lesions during carcass inspection. These are usually in the mesenteric lymph nodes.

When the first lesion is recorded in deer from a farm that was previously lesion-free, JML follow up with a letter recommending that the cause of the lesion be investigated with veterinary support.

On-farm, the blood test (Paralisa) and faecal test (qPCR) are most commonly used to diagnose disease. These tests have different strengths and weaknesses and should be selected with veterinary support.

**Is vaccination an option?**

Vaccination is an option for deer destined for slaughter. However it is not commonly used because it is relatively expensive and some farmers have reported mixed results.

It is not an option for breeding stock because it interferes with the TB skin test.

All vaccinated animals must be appropriately ear-marked. The appropriate box must be ticked on the ASD form and the DSP notified before they are sent for slaughter.

**What can I do if there is Johne's on my farm?**

Members of the Johne's Consultant Network are specially trained to help farmers manage the disease. A consultant from the network can work with you to tailor-make a control plan that suits your farm and Johne's situation.

The plan may include some or all of the following actions:

- Cull all clinically affected deer as soon as possible.
- Protect young deer (most susceptible) – immediately cull diseased hinds, provide clean water and reduce causes of stress.
- Reduce stress by providing good nutrition, effective drenching, low stress weaning management, and shelter.
- Never put healthy young deer in your 'hospital paddock' no matter how much grass is there.

- Blood test appropriate groups of deer to detect any that are antibody-positive but not yet showing signs.
- Test the faeces of blood test-positive high value deer to confirm the presence of disease.
- Minimise contact between diseased animals and other deer.
- Use cattle, sheep, or older deer (which are more resistant) to clean up pastures after weaners.
- Avoid grazing weaners on pasture contaminated by infected deer, cattle or sheep.
- Discuss the breed composition of your deer with an expert and consider using Johne's-resilient blood lines.

These actions have been shown to be highly effective at reducing or eliminating clinical disease on farms where Johne's has previously caused major losses.

Contact: [www.johnes.org.nz/johne-s-consultant-network](http://www.johnes.org.nz/johne-s-consultant-network)

**Culling decisions**

Deer with high antibody levels in their blood and/or clinical signs of Johne's should be culled immediately. A much less effective option is to prioritise their removal based on blood test results.

**Protecting 'clean' farms from Johne's**

If Johne's has never been diagnosed in a deer herd and there is no reason to suspect the herd is infected, it is wise to take precautions to prevent its introduction:

- Keep a closed herd, as far as possible, using AI to bring in new genetics.
- Test deer for Johne's before purchase (testing may not identify every single infected deer, but it is well worthwhile).
- Only purchase animals from low-risk herds – ask the vendor about their Johne's control plan.
- Avoid share grazing dairy cattle, especially mixed age cows.

There is currently no restriction on the movement of animals from Johne's-infected herds, so it's 'buyer beware' – or 'buyer investigate'.

**Professional advice**

In 2004 JML was set-up by the industry to monitor the incidence of the disease across the country and to assist farmers to control the disease on their farms. The Johne's Consultant Network is an important part of this.

To contact one of the consultants in the network, [www.johnes.org.nz/johne-s-consultant-network](http://www.johnes.org.nz/johne-s-consultant-network), or Freephone JML (0800 456 453).

**More >>**

The Johne's Research Group in partnership with MPI's Sustainable Farming Fund has produced a manual that explains all you need to know about Johne's disease. Freephone 0800 456 453 or email [info@johnes.org.nz](mailto:info@johnes.org.nz) for a copy.

There is also a lot of useful information on the JML website: [www.johnes.org.nz](http://www.johnes.org.nz)



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