Johne's Disease
in New Zealand Farmed Deer

Bulletin One September 2004

What does this mean for you and your farm in 2004?

An information bulletin provided by the Johne's Research Group

The Johne's Research Group (JRG)

The JRG is a South Island-based management group of seven deer farmers and deer vets, supported by the NZ Deer Farmers Association and Deer Industry New Zealand.

JRG is an industry signatory to the 5 year FORST grant for research and investigation into vaccination, laboratory tests and epidemiological studies for JD in deer.

AgResearch, Massey University and the Deer Research Lab are the principle science providers within a coordinated national approach.

As well, JRG has undertaken to communicate existing and new JD research findings to New Zealand deer farmers over the next five years.

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Johne's Disease - what is it?

Johne's Disease (JD) is a bacterial disease of the intestines, affecting a range of farm ruminants, including deer, and is caused by a mycobacterium named *Mycobacterium avium subspecies paratuberculosis.* It is a distant relative of the bacteria *Mycobacterium bovis*, *tuberculosis* and *leprae* that cause Tb in humans and animals and leprosy in humans, but *M. paratuberculosis* does not cause Tb or leprosy. It is seen in two forms in New Zealand deer:

• Weaner deer: Outbreaks of scouring, weight loss and death in up to 25% of affected weaner deer herds during the first winter of life.

• Adult deer: Hinds and stags are affected, exhibiting symptoms of scouring, weight loss, and eventually death, usually as one-off cases in small herds or as a tail end of animals in large herds.

Slaughter premises lesions :

JD can cause abscesses especially in lymph nodes of the intestine. To the naked eye these look like Tb and some abscesses can even look like Tb under a microscope. Therefore JD is a major cause of "detain rail" carcasses and a reduced per kg schedule. As well, non-specific skin reactions to the Tb test can be seen.

How is JD is spread?

New infections come from other infected deer via faeces on pasture. Some infected deer are clinically affected while others are symptomless carriers. Other infected livestock such as sheep and cattle or even possibly infected wild animals can act as an infection reservoir. Otherwise we know very little about the how JD spreads.

How do i know if my deer have JD?

Clinical symptoms are an indication that JD maybe present. However, never Just assume that your deer have JD based on symptoms alone, as other diseases cause identical symptoms. Always seek a confirmed veterinary diagnosis.

This will include:

• history of the property

• history of the source of the deer

• examination of the deer

• laboratory confirmation through

- blood testing

- post mortems - gross symptoms

- other laboratory samples, e.g. gut and lymph nodes from the post mortem.

For enquiries or donations contact:

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Note: Currently there are no laboratory tests (blood or tissue) that can identify 100% every JD-infected animal in a herd. At best, laboratory tests can identify some or most of the infected deer, but not all of the recently infected deer that are incubating JD will be identified. However by removing any blood-test positive deer from a herd, you will be reducing the number of infected deer shedding JD bacteria onto pasture.

What if I already have JD on my farm?

- Work with a veterinarian who is fully familiar with the latest recommendations for JD.
- Confirm the diagnosis of JD in the first place, then if positive, gain an indication of how many deer and which age groups are affected.
- Cull affected deer vigorously, and as early on in the disease process as possible. This should reduce the exposure of other healthy deer to infective JD organisms, and reduce the spread of JD.
- Ensure that your deer health programme for parasites, Yersinia, trace elements etc is adequate and that nutrition is optimal. Stressed deer are more likely to become diseased.
- Be honest to would-be purchasers about your JD status. Johne's-infected deer are a reality and there are methods to allow for any losses due to JD.
- Eliminate JD as a source from other livestock classes such as sheep or cattle. This is probably most easily done by segregated grazing.

NOTE: Until more research into vaccination, laboratory tests and epidemiology has been completed, chances of completely eradicating JD from a herd are small. At best, removal of some or most of a herd's clinically affected deer will be achieved through testing and slaughter programmes.

How do I buy "Johne's-free" deer?

It is likely that JD is widespread throughout New Zealand, especially the South Island. Buying Johne's-free deer can't be fully guaranteed as:

- JD may be widespread and there is no formal property status system.
- JD has symptomless carriers.
- There is no one-off laboratory test that detects all JD-infected deer; recent infections that are still in the incubation phase will probably test negative.

Recommendations

- Ask the vendor outright for a firm answer on JD status and ask for permission to talk to other buyers, vets and deer agents. IfJD has not been diagnosed, it that does not mean that the vendor's property is JD free. It is, however, a useful start, especially if the farmer has actively investigated any form of on-farm disease.
- It is also useful to know whether or not slaughter premise carcass lesions have been detected, or if there have been non-specific skin reactors to the Tb test.
- Consider requesting laboratory testing of individual deer prior to purchase and then be prepared to quarantine and repeat test those individuals on your property. Repeat testing after a quarantine period will allow for some of the limitations of laboratory tests as listed above.
- Consider not buying in live deer, i.e. close your herd to outside deer bloodlines.

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