FACT SHEET

JOHNE'S DISEASE IN BEEF

stock sense
health | welfare | biosecurity

Victorian Farmers Federation

WHAT IS JOHNE'S DISEASE?

Johne's disease (JD) is an infectious, incurable wasting disease of cattle caused by the bacterium Mycobacterium paratuberculosis.

It is a notifiable disease in Australia and has been heavily regulated in the past. Most regulations have now been relaxed, with the exception of Western Australia and the Northern Territory.

In Victoria, control of the disease is now managed by individual producers using available tools such as the Johne's Beef Assurance Score (J-BAS) to profile risk.

In Australia, JD has been known to affect beef and dairy herds, predominantly in the medium to high rainfall zones of southern Australia.

The prevalence is higher in dairy herds but beef herds can be affected and this has previously caused loss of interstate trade due to restrictions.

IMPACT OF JOHNE'S DISEASE IN BEEF HERDS

It is estimated that JD costs the Australian beef industry around $2.8 million annually. Individual farm losses vary, but on most infected farms there is little in the way of direct losses. Occasionally farms with high stocking rates can experience significant mortalities but this is the exception rather than the rule.

Financial losses can be high in herds that require live animal access to sensitive markets like Western Australia, the Northern Territory or some overseas countries.

Losses in individual herds include:

- death
- reduced body weight contributing to reduced fertility in the final months of life and
- potential for a loss of markets in some areas, although this has reduced recently with decreased regulation .

DIFFERENT STRAINS OF JOHNE'S DISEASE

There are three strains of JD seen in Australia. Traditionally the ovine strain was found mostly in sheep, the bovine strain principally in beef and dairy cattle of southern Australia and the recently discovered bison strain seen in cattle of northern Australia.

Over the last few years more sheep strains have been found in beef cattle, to the extent that some areas where cattle and sheep co-graze more ovine strains are found in beef cattle then bovine strains. Because of this we no longer refer to OJD or BJD in beef cattle just JD.

CLINICAL SIGNS

Many infected animals never breakdown with disease. Infected animals usually develop signs of disease after five years of age which is usually associated with some form of stress.

Infected animals develop a scour that is unresponsive to treatment and gradually waste over three to four months. The affected animal remains bright and alert during this time.

AGE RELATED IMMUNITY

Infected animals shed mycobacteria in their faeces, with animals showing clinical signs producing the most environmental contamination.

Cattle are usually infected as calves and may develop clinical signs, on average, five to six years later. When or if an animal breaks down with clinical disease depends on the age of infection and the amount of bacteria ingested. Young animals in a heavily contaminated environment tend to break down earlier than animals exposed to lower levels of contamination.

In cattle, a pronounced age related resistance develops with animals older than one year of age becoming much more difficult to infect.

RISK FACTORS FOR DISEASE

Beef cattle properties become infected by the introduction of infected animals. In Victoria, dairy cattle and sheep present the highest risk for bringing infection on to a property. Beef cattle can also pose a risk, and risk profiling tools like J-BAS or vaccination can be used to reduce that risk.

VACCINATION

Silirum® vaccination for JD in cattle is available in Victoria. The vaccine is highly effective at reducing clinical cases and shedding .

In Victoria, Silirum® is currently subsidised for infected herds, at least until the end of 2019. Vaccinated cattle need to be permanently identified with a three hole ear punch and vaccination status recorded on the National Livestock Identification System. Silirum® may cause cross reaction with TB testing and JD blood testing and treated stock are prohibited from some live export markets because of the potential for false positives in these tests.

Before proceeding with a vaccination program check the economics of doing so in your herd. The highly reactive vaccine must be administered by an approved vet or under their direct supervision.

DIAGNOSIS

If you suspect JD, a veterinarian will be able to confirm a diagnosis with a blood test, post mortem examination or faecal culture of PCR.

TAKE HOME MESSAGES:

- Control of JD is largely deregulated in Australia.
- JBAS can be used to identify low risk cattle.
- An effective vaccine reduces clinical losses but may not eliminate the disease.

The available diagnostic tests for JD are of limited sensitivity in young or individual animals but can be quite effective as a herd profiling tool.

Pooled faecal culture (PFC), or High Throughput PCR tests (HT-J PCR), on pools of five samples are the most sensitive tests for screening for JD. Faecal culture can take two to five months with PCR taking around seven to 10 days.

The ELISA blood test is reasonably sensitive in animals showing clinical signs but has a lower sensitivity in preclinical infected animals and occasionally may give a false positive.

PREVENTION

In Victoria the greatest risk for JD in beef cattle is co-grazing with sheep or dairy cattle. When agisting or buying stock always assess their JD risk, biosecurity practices are important to help reduce the risk of JD infection:

- request an Animal Health Declaration when purchasing sheep or cattle
- only buy stock with an equivalent or higher J-BAS.
- if buying sheep, purchase low risk or approved vaccinates. Remember this may still bring in infection.
- reduce the chance of strays bringing in infection by ensuring boundary fences are stock proof.

For more information contact Stock Sense on 1300 020 163 or email stocksense@vff.org.au.

FURTHER LINKS

Meat & Livestock Australia
https://www.mla.com.au/research-and-development/animal-health-welfare-and-biosecurity/diseases/infectious/johnes-disease/

Zoetis Animal Health
https://www.zoetis.com.au/product-class/silirum-vaccine.aspx

Animal Health Australia
https://www.animalhealthaustralia.com.au/jd-cattle-tools/

Agriculture Victoria
http://agriculture.vic.gov.au/agriculture/pests-diseases-and-weeds/animal-diseases/beef-and-dairy-cows/bovine-johnes-disease/subsidy-for-johnes-disease-vaccine-for-cattle

Author: VFF, original version published, September 2018.