Johnes disease and herd testing

Nena Nepia BVSc

Johnes disease is widespread in New Zealand, with an estimated 60% of dairy herds infected. Caused by the bacteria Mycobacterium avium subspecies paratuberculosis

(MAP), Johnes is a chronic and contagious wasting disease of ruminants (think cattle, sheep and deer). Given Johnes positive dairy cows have been shown to produce 15% less milk, the disease has a significant but often difficult to see economic impact on farms.

Animals are infected by ingestion of MAP in the first few months of life but show no symptoms for many years. Clinical Johnes typically presents in 4-8 year old cows, but herds with a high prevalence may see it in their second calvers. Stress may trigger clinical disease, especially at calving. The first sign is often a drop in milk production, then cows will develop a persistent watery diarrhoea that bubbles on the ground, and experience weight loss despite a good appetite. Clinical Johnes is incurable and always leads to death. Infected cows start shedding

bacteria some time before clinical signs of disease appear. As the infection progresses, increasing amounts of bacteria are excreted in the faeces of heavy shedder cows. Calves may pick up the infection in the calving paddock and re-

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main at risk if they are exposed to faeces or effluent from the adult herd. Cows with advanced infection can also transmit the bacteria to the unborn

RMT or paddle

test all cows

with herd test

SCC >400K

calf in utero and via colostrum or milk.

Johnes tests have a poor sensitivity because they rely on cows antibody response to MAP, so will not identify all positive animals, particularly early in the course of their disease. However LIC offer

testing of herd milk samples as a regular screening tool to identify individual Johnes positive cows and eliminate them from the herd. The aim is not to eradicate Johnes (this is almost impossible), but to reduce the level of contamination and eventually incidence on farm - test and culling over several seasons is required to achieve this.

It's best to schedule the Johnes test for the second or third herd test of the season (November - March). This is because false positives can occur if cows have recently calved, or their ISCC is >1 million, or they are producing low milk volumes. It is very impor-

tant that any identified positive cows are culled as soon Use glasses and as practically possible. They head light to should not be carried through to calving, as they are likely improve hand to super shed at this time and perpetuate calf and farm infection. Daughters of Johnes

> also be monitored and regularly tested as they are known to have higher risk of becoming Johnes positive.

positive cows on farm should



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Vet Clinic Staff

Rachel Blackie

Nena Nepia

Ingrid Spitze

Nikki Humfrey

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Steph Treadwell

Karen Partridge

Nurses

Accounts

Receptionist

Steve McAulay CEO

Vets

Opening stanza

Stephen McAulay BVSc

Speaking to farmers and the kind winter is frequently mentioned and in the next breath a comment about the colder night-time temperatures have delayed the spring flush. We are farmer right; we can complain about anything.

Mating is occurring on most farms and submission rates are important. Breaking the submission rate down into ages can provide valuable information. Often times the poorest submitting group are the 3-year olds. Last year's 2-year olds which had lower body condition scores when dried off which they carried forward into calving. If you don't look you will not see.

Service bulls are a key source of BVD introduction into a herd. Always test and vaccinate these, if you are buying bulls in ask to see certification of BVD status and vaccination history.

Similarly, service rams should be checked for Brucella ovis and ask what the stud flocks' status is and whether this has changed recently.

Whilst we are in the business of harvesting grass, we also need to get our fertility key performance benchmarks as high as possible.

On-farm milk culturing

Stephen McAulay BVSc

Speaking to the experts it appears that we are lagging behind the rest of the country with respect to our farms embracing new technology. Automated machines for culturing mastitis or high somatic cell count milk (post herd testing) is now on use in 1 in 5 farms in New Zealand. The farms using them are spending less on mastitis treatments, using more anti-inflammatories and have improved understanding of good economic cull cows' selection.

I am an old dog, and this is a new trick. I have been lagging behind when compared to my colleagues on usage of anti-inflammatories, both for lame and mastitis cows. Perhaps it just the more caring, empathetic female approach. Self-analysis is difficult, after all, I am an old dog.

The experts also tell me that the success of having the automated mastitis culture machines at the cowshed works better than having them at home, timing is everything. Saving time and money.

> One of our farms believe they paid for the machine just from using less antibiotics; choosing cows which wouldn't respond to antibiotics and either waiting for the cows own immune systems to treat mastitis or culling cows early. Culling an infective cow earlier is a hidden benefit as less healthy cows can get infected from them during the milking process.

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The Mad Cow Client Newsletter 116 Rodney Street, Wellsford 0900. Ph 09 4238 008 Fax 09 4328 178

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That's not beri(beri) noice...

Rachel Blackie BVSc

"Blind staggers" or "star-gazing" is a brain damaging disease that can occur in animals, and is also related to "beriberi", which is a nutritional disease of humans!

This disease goes by other names too such as PEM (polioencephalomalacia), CCN (cerebrocorticalnecrosis) or "thiamine deficiency", and is caused by a lack of thiamine (pronounced 'THIGH-A-MEAN').

Normally, an animal's gut flo-

ra produces enough thiamine(aka Vitamin B1) to meet nutritional requirements. So why do we get a deficiency of it under normal pastoral conditions? Well, if the gut flora changes eg. due to diet change, or the animal eats plants containing thiamine-

destroying enzymes (aka thiaminases) eg. bracken fern, then disease follows. Also thiamine absorption from the gut where it is made can be disrupted, for example by high intakes of sulphur. In some species, Vitamin C and copper appear to be protec-

tive, while clostridial and other bacterial overgrowths accelerate disease.



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PEM is most common amongst well-fed dairy weaners from late November through December and occasionally into January. Only one, or a small percentage in a mob,

tends to be affected. To begin

with, affected animals are a bit 'unco' and look like they have ryegrass staggers. Incoordination gets progressively worse and though the eyes appear fine, blindness develops, with disorientation. Animals may be down, perhaps

with twitching or seisures. In cattle, the disease is rare in animals over two years old, but looks a lot like lead poisoning by ingestion, and usually fatal if left untreated. The treatment of choice is injectable thiamine followed by an oral version, and

> is often fully curative when given early enough. Sometimes anti-inflammatory is also helpful.

Interestingly, fish/shellfish may develop and contain thiaminase if not stored properly. Cats, dogs (and even live fish) can develop thiamine

deficiency if they consume dodgey seafood product, due to thiaminase build up. Symptoms include wobbliness, weakness, and depression, changes of head carriage, dementia and fitting.

> So, in summary, if you see any young stock walking around incoordinated before the traditional ryegrass staggers time and you discover they can't actually see anything then think PEM, it's not beri(beri) good.

Small animal surgery

Ingrid Spitze BVSc

gas they breathe in. The percentage of gas is changed depending on the animal's needs. If we expect a lengthy surgery or if the patient is elderly we recommend that they receive intravenous fluids. This helps support the kidneys, helps regulate the blood pressure (which can drop during an anaesthetic), and also supports the organs

So what happens when you've dropped off your pet for surgery? A pre-anaesthetic health check is done to ensure that the patient is healthy. If you have agreed to it we take bloods and run them "in house" to check the red and white blood cells and platelets as well as that the

liver and kidneys are functioning well to ensure an easy and rapid post-surgical recovery. If there seems to be a problem, we give you a ring and discuss the options. Sometimes we need to adjust the anaesthetic medications. The pet then receives a seda-



tion with pain relief which lowers the dose of anaesthetic required and makes it safer. Once this is effective, they receive their injectable anaesthetic, have a tube placed into their trachea and from then on receive anaesthetic via the



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which need to break down the anaesthetic in order for the patient to wake up. When the operation is done, the gaseous anaesthetic is withheld and the animal gradually wakes up. Once they are able to swallow the tracheal tube is re-

moved.

They are kept warm in a kennel until they are fully awake and able to walk before they are allowed home.