

UK should do more to tackle Johne's to keep up with other European countries

Quarterly alerts essential

A world leader in Johne's disease control, with a track record of administering a successful Johne's control programme in his home country of Denmark, was one of the speakers at recent vet meetings organised by NMR. We put some key questions to Soren Nielsen and other speakers.

text **Karen Wright**

Johne's control plans have been running for a number of years, but there is still progress to be made.

Why is it so important to 'step up' Johne's control?

Soren Nielsen, Professor of disease modelling, University of Copenhagen: Johne's disease causes a range of problems such as poor milk production, high cell counts and poor fertility. Many

cows will be culled as a result, having contracted the disease from infected faeces, typically as calves. But clinical cases only account for between 5% and 10% of the problem – these are just the tip of the iceberg.

Also we have to acknowledge that the Johne's causing bacteria, MAP, is found in the bloodstreams of many Crohn's sufferers. This forges a link between the two diseases. Research into

Crohn's is focussed on the links between MAP and the allergen response in humans, along with human genetic predispositions.

But even if the science is unproven, perception of a potential problem may well be enough to determine policy. So, from a vet and dairy producer's perspective, we already know that beef and milk are the main areas for potential exposure and we therefore need to consider how we can minimise human exposure to MAP.

What effect does Johne's have on UK herds?

Steve West, NMR Herdwise manager: Defra estimates that around 35% of UK cows are affected by Johne's but many industry experts believe levels are much higher.

Data collated through Herdwise – the NMR surveillance testing service – during the past four years from 18,000 cows in 80 NMR-recorded herds and



Steve West: "Strong link detected between Johne's and other diseases such as mastitis"



Soren Nielsen: "Annual screening is not sufficient for effective management"



Pete Orpin: "Johne's control requires 100% commitment from the producer and the vet"

analysed by the University of Reading showed a strong statistical link between Johne's status and mastitis, high SCC, lactation number, lameness and fertility.

High risk cows, in other words those classified within NMR's Herdwise screening service as likely to have Johne's, produce between 10% and 12% fewer litres of milk irrespective of breed and lactation. There were 50% more cases of lameness and mastitis in cows testing positive for Johne's compared with their 'negative' herdmates. High cell counts were twice as likely in Johne's positive cows.

This large-scale sample will produce data that could help in the selecting of groups of cows most at risk and those worth putting forward for a Johne's screening test. Low risk or zero prevalence herds emerging from this initial screening will then be in a good position to screen quarterly as a surveillance method.

How is Denmark controlling Johne's?

Prof Nielsen: Denmark has a voluntary risk-based Johne's scheme that involves four quarterly milk tests and groups cows into three main risk groups – red, amber and green. The scheme started in 2006 and has maintained the membership of 40% of the Danish herd.

The proportion of Johne's positive cows within these herds has significantly reduced from more than 8% to less than 2%. Australia and the Netherlands are among other countries with national control programmes in place. Some countries are looking to trade only with countries capable of providing a Johne's free status which would discredit countries not able to make this claim.

What is the UK doing to control Johne's?

Steve West: In many ways we are following the Danish model. We estimate

that more than 1,200 UK producers – about 15% of herds – have introduced a level of Johne's disease screening through their milk recording organisation during the past three years. Many more have taken steps to establish the prevalence within their herd through NMR's 30-cow screening test. Results have shown that 70% of herds undergoing a 30-cow screening have a presence of the disease and further action is required.

There are still a lot of herds that need to establish their Johne's status. However, many producers who are taking action are seeing significant improvements in Johne's prevalence.

Why is quarterly testing for Johne's so vital?

Prof Nielsen: From a scientific perspective, and from experience, quarterly surveillance is the surest method of managing Johne's. Annual screening is fine to verify the status of the herd, but it is not sufficient for effective management. The Johne's status of a cow can change throughout the year, so without more frequent testing the management systems would have to be more rigid to avoid an infectious cow infecting a lot of her herd mates before she is identified.

Tests on milk can be accurately and cost-effectively carried out on a quarterly basis using a milk antibody ELISA test. One set of results is a start and any positive animals can be isolated before calving and their colostrums not used. But a bigger picture is needed over subsequent quarterly screening tests to identify the relative risk each animal poses to the herd.

Identifying the status of each cow allows control to be more targeted and specific – and cost-effective without the need to use a 'broad brushed' procedure for the whole herd to minimise transmission. This will reduce labour costs associated with infection management.

Who should interpret Johne's milk test results?

Prof Nielsen: Producers should work with their vets to establish the probability of risk among the herd. Results from quarterly screening will show up which animals are most likely to be shedding and so be a risk to the herd. Vets can interpret the test results – current and historic – and, with the contribution of additional data such as cow condition, management decisions can be taken.

Herdwise reports use repeated test results to group cows depending on their risk of spreading infection. 'Red' cows have repeated positive test results and are high risk, 'amber' group cows have had one positive result and are medium risk and a green group has repeated negative test results and are low risk. Colostrum from the first two groups should not be pooled.

Testing is not enough – why not?

Pete Orpin, vet: Many producers are now embracing Johne's control and are testing regularly for the disease. However testing is not enough. To control Johne's you must have a robust control programme running alongside the testing. There are increasing numbers of herds now testing but not all of them are controlling and you won't find out for several years that your plan will not work. Getting your vet on board and spending a couple of hours creating a robust control plan at the start is the best investment you can make.

Management actions based on the biosecurity plan play just as important a part in Johne's control as the quarterly tests. Remember, a positive lab result confirms that the disease is already established. Johne's control requires 100% commitment from the producer and vet. Bear in mind that a half-hearted approach will not lead to control and should not avoid the more challenging parts of the control plan. Eighty per cent control can lead to 100% failure. |



Johne's cows are typically infected as calves but symptoms are not normally seen until they are adults