

FarmerUpdate:

Johne's Disease Pilot trial

Dear Trial Participant

You are one of a number of farmers who agreed to participate in the pilot trial for the collaborative LIC-JDRC Johne's disease trial.

Your support is greatly appreciated and we hope the results of the testing of your cows have been useful for you.

The purpose of this newsletter is to give you greater insight to the objectives of the trial and findings to date. We welcome any feedback or questions.

Best wishes

Penny Back
Johne's Disease Project Manager

pback@lic.co.nz,

Phone 07 856 0801/027 270 4023

The LIC Johne's Disease Genomics Project

The Johne's Disease Research Consortium (JDRC), established in July 2008, is a collaborative research program set up by Meat and Wool New Zealand, AgResearch, DEEResearch, Massey University, University of Otago, DairyNZ, Livestock Improvement (LIC) and FRST which aims to provide cost effective tools for reducing the impact of Johne's disease on farm.

The Johne's Disease Genomics Project aims to identify genetic markers for susceptibility and resistance to Johne's disease in dairy cows.

- LIC wants to identify 2000 Johne's disease positive cows by testing milk herd test samples, followed by a blood confirmation test.
- A breed definition of greater than 13/16th Holstein Friesian or Jersey will be used.

Pilot trial

A pilot trial was recently conducted to 'road test' our testing and sampling system to ensure it was accurate and cost-effective.

Cow selection

Your herd was selected using criteria like recorded culling for Johne's disease, breed, location in high prevalence regions (like Taranaki and the West Coast) as well as low prevalence regions (like Northland), and if herd testing was being used.

This map shows the regions from which herds were tested:



LIC's Animal Health Lab has validated a commercial test for use with milk samples to identify Johne's disease positive cows. Herd test samples of cows from your herd were pooled and the sample was tested. Pools that showed they contained potential reactors were identified and samples in that pool were tested individually and animals identified.

The farmer-owners of the 56 herds identified through herd testing were contacted to have individual animals re-tested. Fifty farmers agreed to participate in the pilot trial, which was a very positive result. The confirmation test was done using a blood sample that was also used for DNA extraction and analysis.

Results

Results from the milk testing show a low occurrence of Johne's disease in the national dairy herd. Predominantly 3 year and older cows were screened. However, a small group of 2-year-olds was screened from herds with a higher risk of Johne's disease.

Older animals had a higher occurrence of Johne's disease. The graph shows the proportion of positive results by age from results of the milk tests. In total, 18922 cows were screened, with 2.43% positive for Johne's disease.

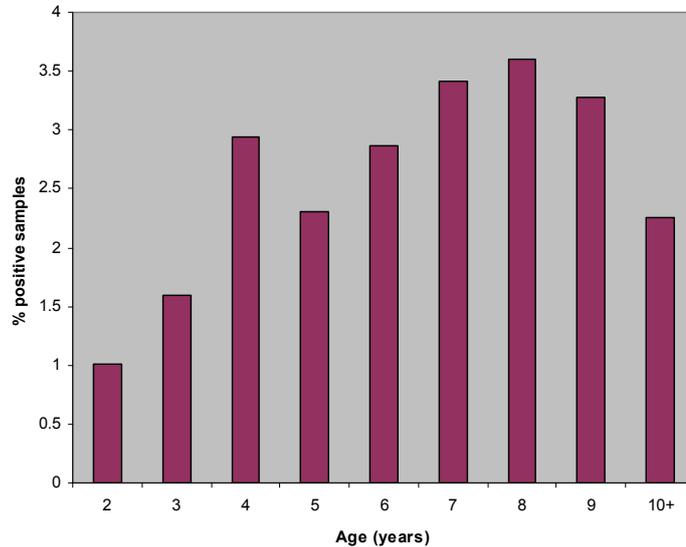


Table 2 shows the proportion of positive results by breed. HF x J have defined parentage to 16/16 Holstein Friesian and/or Jersey, while Misc contains other breeds (eg Ayreshire, Cross Breed).

Breed	Number of cows	% Positive samples
Jersey (> 13/16)	11033	3.1
HF X J	2295	2.7
Holstein Friesian (> 13/16)	4972	0.9
Misc	622	2.1
Overall	18922	2.75

In total, 286 cows were individually sampled for confirmation testing by AsureQuality technicians. Some 247 blood samples from affected animals were selected for DNA extraction and 31 were rejected due to cows testing positive on herd test milk samples but either showing a low positive reactivity or negative on blood confirmation testing. Most of these animals are likely to be in the early phase of the disease. This shows that a high proportion of animals that tested positive on their milk sample, tested positive on blood which is an excellent result and gives us confidence to start the next stage of the project.

What happens next?

- Year 2: During the 2009/10 season a large scale screen of herds will be undertaken, matching our breed and herd testing criteria.

Any questions about the information in this update or about the trial, please contact....

Penny Back
Johne's Disease Project Manager

pback@lic.co.nz,
Phone 07 856 0801/027 270 4023

