



## **LIC Press Release, August 2009**

### **GROUND BREAKING RESEARCH UNDERWAY**

Ground breaking genomic research is underway to gain better understanding about a disease which, each year, costs the livestock industry in excess of \$80 million.

The condition is known as Johne's disease, and the collaborative research is being conducted by LIC (Livestock Improvement) for the Johne's Disease Research Consortium.

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 and FRST which aims to maximise the research opportunities for the benefit of New Zealand pastoral industries.

Johne's (pronounced yo-knees) disease causes thickening of the intestinal wall reducing the animal's ability to absorb nutrients, leading to wasting and ultimately death.

The cost of Johne's disease to the New Zealand livestock industry has been estimated at \$88 million per year. Animal health impacts - decreased production and increased mortality and culling - are the main reasons Johne's disease is being targeted by the Consortium.

LIC's Johne's Disease Project Manager Dr Penny Back, says a significant amount of research has been conducted into Johne's disease, both in New Zealand and overseas, but "infection is passed from adults to calves and the disease is difficult to eradicate from the herd".

"Further research is therefore needed to develop tools, such as genetic resistance, to help mitigate the effects of Johne's disease in livestock farming."

A pilot trial at LIC developed a pooled milk testing approach that allows cost-effective screening of whole herds using LIC's Herd Testing system. Any reactors need to be blood sampled for confirmation testing and DNA analysis.

Back says as a result of the excellent results achieved by the pilot trial, LIC will now look to identify a large number of animals that fit the study criteria.

"We will be contacting farmers to seek their cooperation and ask if they are willing to be involved in the trial. Participating farmers can rest assured that all test results will be kept confidential.

"Identifying herds from the national database in high-risk areas with predominantly recorded Friesian or Jersey cows, will allow researchers to target herd-testing herds so we can obtain DNA from cows with Johne's disease for genetic studies to find genes for resistance and susceptibility to the disease."

Penny Back says the recommendation for animals that test positive to the disease is "to move them up the culling order, as there is no cure for Johne's disease". This can be difficult as some animals still look healthy."

However, testing alone cannot control Johne's disease because of the slow progression of the disease.

"Infection usually occurs in young calves that often remain healthy and test-negative for several years before the clinical disease develops.

"Diagnostic tests perform poorly in the early stage of the infection so management and preventing transmission to calves is therefore key to reducing the incidence of the disease.

"Keeping calves out of paddocks grazed by older cows and hospital paddocks can help reduce the spread of the organism," Penny Back said.

Genetics may be a useful tool to help reduce the prevalence of the disease in New Zealand. The aim of the Consortium researchers is to try and identify a gene marker that will allow farmers to select stock that are resistant to the disease.

Penny Back says there is no cost to farmers involved in the LIC section of the trial, "we will come out and test the cows in participating herds and the farmers will be advised of the results within two weeks."

