

# LEADING THE WAY TO A BVD-FREE NZ



Bovine viral diarrhoea (BVD) is one of the most important infectious diseases in cattle, causing major economic losses worldwide. Annual losses for dairy farmers are estimated at around \$127M! (*Dairy NZ*)

According to Dairy NZ approximately 80% of NZ dairy and beef herds have been exposed to BVD.

With the diagnostic tests and vaccines currently available, it should be easy to break the BVD cycle in infected herds. However, at the current level of disease infection in the cattle population, and poor biosecurity practices on farm, it is estimated that at least 5% of herds are experiencing new BVD outbreaks each year ([BVDFree.org.nz](http://BVDFree.org.nz).)

The ability to determine Persistently Infected (PI) animals through testing, provides a very compelling opportunity to control and potentially eradicate BVD within New Zealand. Increasing the proportion of the national herd tested will likely reduce prevalence of persistently infected animals and hence the incidence of BVD.

In addition to testing for BVD, recording a lifetime status based on this testing would simplify the identification of PI animals in the case of a BVD incursion and should increase

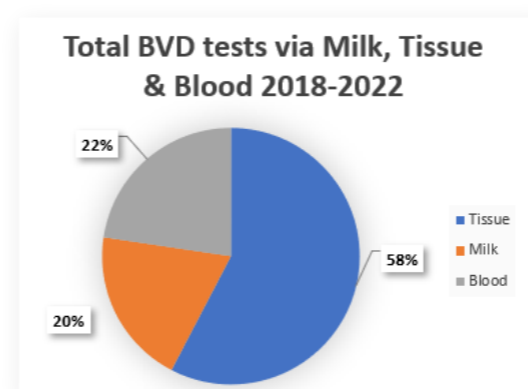
the resale value of stock. As more animals have a lifetime status recorded, it will reduce the risk of new introductions into naïve herds, help with stock purchasing decisions, and lead to better BVD management throughout NZ.

For many years LIC has devoted an extensive amount of time to the development of BVD test options, as well as building awareness of BVD within the New Zealand dairy industry. The Bulk Milk Monitor pack continues to service approximately 50% of dairy herds in New Zealand. Since the development of the Bulk Milk Monitor pack, LIC has enhanced this test, and we now have a new pack known as the BVD Status Pack, and this provides individual testing for all animals in the milking herd using herd test milk samples.

The BVD Status pack, has been designed to enable easy, convenient, and cost-effective testing of individual animals in the milking herd whose lifetime BVD Status can be uploaded to LIC's MINDA® software. This testing will detect both positive and negative animals within the herd. Allowing herds with a BVD infection to find the PI animal/s quickly and efficiently, and negative herds to benefit from additional animal information in MINDA.

In addition to milk testing, LIC can process tissue and blood samples for BVD. A significant number of calf samples are processed for BVD using the same tissue samples that are submitted for parentage testing.

The below graph shows the proportion of individual BVD tests completed at LIC since 2018 on tissue, milk and blood, totaling almost 950,000 samples. Most of these results will have been uploaded to MINDA.



## Animal Health Testing Overview

Another season, another animal health testing record for the co-op! Once again, yearly animal health testing has exceeded last year's total tests, with over 1.1 million Johnes' Disease tests and nearly 250,000 BVD tests conducted!

## BVD Bulk Tank Milk (BTM) Rollover

LIC will be rolling over all orders for both the BVD BTM monitoring & BVD Status packs from the previous season, this is to ensure BVD testing isn't forgotten or missed.

Vet clinics should soon receive an email that includes a list of all your customers' 2022/23 bookings that will all be rolled over for the 2023/24 season.

During the season the Animal Health team will call vet clinics whose clients have received a positive BVD result. For further information, or to cancel a BVD bulk milk booking, call the Animal Health advisor team on 0800 436 362 or email [testyourcows@lic.co.nz](mailto:testyourcows@lic.co.nz)

## LIC's 2023/2024 Animal Health Pricing

LIC's 2023 pricing is effective from 1 June, 2023. To view the new pricing, scan this QR code.



## How does milk & blood results compare for Johne's disease?

Blood samples have been tested from cows that were high positive, positive, or suspect on the Johne's Milk ELISA. The table below shows how these results matched (n = 9686) for the 2022-23 season.

The percentage of true positives identified remains similar year on year for the high positive milk category.

### Comparison of Johne's Disease Milk vs. Blood test results:

Blood samples have been tested from cows that were high positive, positive, or suspect on the Johne's ELISA milk test. The table below shows how the results matched (n=9686). The percentage of true reactors for each category is similar to the comparison done at the same time last year.

		Blood Results			True Reactor
		POS*	NEG	Total Tested	
Milk Result	High Positive	6476	116	6592	98%
	Positive	905	50	955	95%
	Suspect	1674	465	2139	78%

\*POS blood includes: High Pos, Pos, Suspect

## DNA parentage and BVD testing

Currently if your customers would like to do both DNA parentage & BVD testing on calves younger than 35 days old we require two punches to be taken, as the buffer in the punch interferes with our BVD PCR tissue test.

Our Research & Development team is working on a tissue preservative buffer that will only require one punch for both DNA parentage & BVD tests. Trial work has been very positive for both individual and pooled testing. This buffer is also suitable for the DNA parentage process. Unfortunately, TSUs containing this buffer will not be available this season, but we continue to work on this product concept with the aim of offering a product in the future. The Animal Health R&D team would like to sincerely thank all farmers and vets involved with our trials into tissue preservatives over the past 2 seasons, we truly appreciate your contributions.

## Vet conference

A team of LIC representatives joined the 2023 NZVA Centenary Conference in Wellington last month. It was great to catch up with familiar faces and we enjoyed meeting new ones.

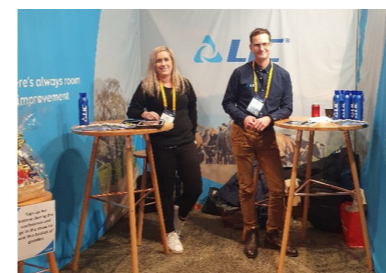
One of the highlights of the conference for us was hearing from Joe Brownlie from the Royal Veterinary College in London. He discussed BVD eradication/elimination strategies in Europe and the strategies required to ensure success of the programme. This gives us plenty to think about in terms of New Zealand's approach to elimination of this disease.

There was a lot of discussion around the use of "big" data and AI machine learning models in early detection of disease signals in populations, and how these models might change our daily practice as vets. In separate presentations, Jo Holter, Matt Buckley and Ryan Luckman showed how collar data might be used on-farm to analyse animal health, production and fertility performance in real time to allow early intervention. As a profession, we need to be early adopters of these tools to provide maximum value to our clients and optimal efficiency in the face of veterinary and on-farm labour shortages.

As a major collector of data in the production and animal health spaces, LIC is well placed to provide added value to farm data. The Johne's disease dashboard prototype was demonstrated at the conference and is an example of how LIC is leveraging the power of data to provide farmers and vets with tools for evidence-based disease management. We had several good discussions with vets around Johne's and the dashboard, and we're keen to hear from anyone interested in being part of a beta trial of the prototype in 23/24 - email [kara.dawson@lic.co.nz](mailto:kara.dawson@lic.co.nz).

More details about Kara's project in the next column.

Dave Dymock and Becky Salisbury on the LIC stand at 2023 NZVA conference



## What is LIC working on?

### Johne's disease research project

LIC securely holds a large volume of animal health testing data, along with information in MINDA. This data is currently being used to investigate various research questions, such as:

- What is the additional risk to daughters born to dams that test positive or high positive to Johne's (JD) ELISA in the season following the daughter's birth?
- What is the additional risk to earlier daughters of the same dam?
- How does JD risk vary by breed in NZ?
- What is the coverage of JD testing by region?
- How does the apparent within-herd prevalence of JD vary by region?
- How does JD ELISA status correlate with milk production, days in milk and fertility on an individual cow level?
- What are the total economic losses on farm attributable to JD on farms with varying prevalence?
- What is the cost-benefit ratio of management strategies for managing JD prevalence?

This programme of work is being undertaken by Kara Dawson, Research Associate. Results will be summarised for vets and written up for publication in peer-reviewed journals over the next couple of years. If you have a particular interest in JD and would like to discuss, or have ideas for other areas of investigation, please contact Kara Dawson at [kara.dawson@lic.co.nz](mailto:kara.dawson@lic.co.nz).



## Is there a second year slump?



### The challenge around reaching liveweight targets for rising 2-year-olds.

by Jair Mandriaza, LIC senior reproduction solutions advisor

Well grown young stock has long been linked with better productive and reproductive performance of dairy cows.

When LIC first-launched MINDA Weights after the release of a large heifer study by Lorna McNaughton and Thomas Lopdell in 2012, the cooperative got its first peek at how well farmers reared their young stock compared to liveweight targets.

The data showed the industry wasn't meeting targets at 15- and 22-months-of-age.

At that time, it was estimated that 70% of heifers in NZ were undergrown at 22 months by 5% or more - and the average was 11% below.

More-recent data shows the industry has improved its practices, and many more farmers have been hitting, or slightly exceeding Planned Start of Mating (PSM) liveweight targets at around 15 months. Although, understandably due to climatic conditions in many regions, the last two seasons have proved more-challenging.

But in terms of meeting targets at 22-months-of-age, the industry has never quite hit the mark. On average, data shows the industry is still typically 3% to 5% behind target. This is still much better than it used to be before the spotlight was placed on growing heifers, post the heifer study.

Despite still being a bit behind target at 22-months-of-age, first calvers are still the better-performing age group when it comes to reproductive performance in the milking herd.

This is a significant positive because most younger animals will be the highest genetic-merit animals in the herd. As an industry, we

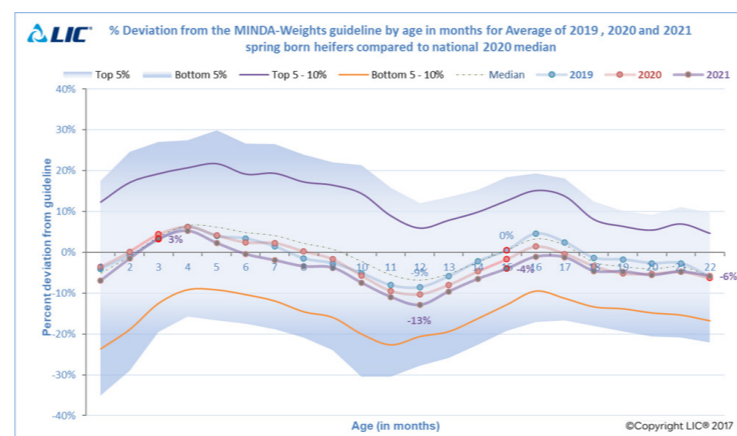
want to keep these young cows in the herd, preferably calving early so they can reach their high milk-producing years, and therefore express their genetic potential for as many days in milk as possible.

There are still real gains to be made due to the liveweight target gap (i.e. 3% to 5% short of liveweight targets at 22-months). Research shows that, in heifers, there is an approximate 2kgMS production loss per year, for every 1% behind their target liveweight (McNaughton and Lopdell 2012).

Latest figures for 2019-, 2020-, and 2021-borns show that heifers were approximately 5-6% behind-target liveweight around calving time. This equates to a potential 10kgMS loss per 2-year-old in the herd. When replacements are high, potential production losses quickly add up (this is usually the largest age group in the milking herd).

**Also of note** is a more recent study showed a clear negative impact on lifetime production the bigger the difference liveweights are at 12 months compared to 21 months. That first winter dip.

"Heifers that were a greater proportion of their 21-month LWT at 12 months of age produced more their first lactation and cumulative 3-year milk yields, than heifers that were a lesser proportion of their 21-month LWT at 12 months of age. These results indicate that increased growth in early life of New Zealand dairy heifers is



beneficial to future milk production." (Rhiannon Handcock 2019)  
In the graph you can clearly see the seasonal impact on the 2020 and 2021 born at 2% and 4% below PSM target respectively after five years of consistently hitting or slightly exceeding it.

### What can be done to address this issue?

Based on the trends observed in heifer rearing, the better an animal is reared in the early part of their life (before being sent to the graziers), the more likely it is that they will meet liveweight targets both at 15- and 22-months-of-age.

The current trend is that farmers do a good job getting calves to target, or well ahead of it, by 4-months-of-age. As an industry, targets break-even at 15-months-of-age, only to see a gap appear again by the time animals get to 22-months.

It seems that increasing daily weight gain in the second winter period for heifers is not easily achieved.

Perhaps the most practical course of action then, is to ensure heifers are reared well in their first few months of life and to not let the first winter dip get below the normal MINDA Weights average of 8-10%.

Regular weighing and preferentially managing the 'poor doers' in the mob goes a long way towards reaching liveweight targets.

Having a plan in place with your grazier to help minimise the drops in daily weight gain will also be of benefit to farmers and would go a long way towards helping bridge the gap that we currently see in the young stock.

See LIC's vet resources page:  
<https://www.lic.co.nz/tips-and-advice/vet-resources/>